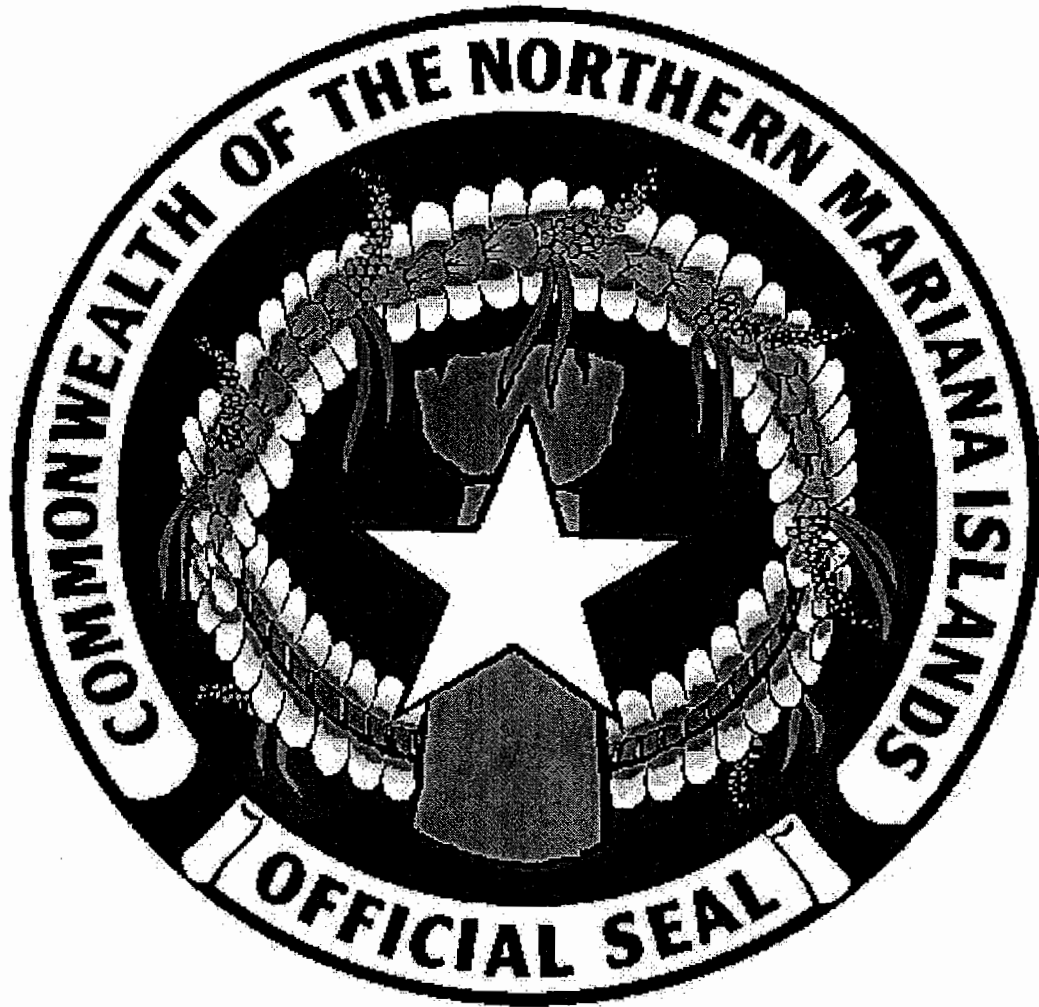


**COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
SAIPAN, TINIAN, ROTA, & NORTHERN ISLANDS**



**COMMONWEALTH REGISTER
VOLUME 27
NUMBER 04**

MAY 18, 2005

COMMONWEALTH REGISTER

VOLUME 27
NUMBER 04
May 18, 2005

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PUBLIC NOTICE:

There was no Publication for April 2005 Commonwealth Register

PUBLIC NOTICE OF EMERGENCY REGULATIONS AND NOTICE OF INTENT
TO AMEND REGULATIONS ON CONDITIONS FOR CONTINUING ELIGIBILITY
FOR FINANCIAL ASSISTANCE BY FIRST-TIME RECIPIENTS OF SHEFA FUNDS
ENROLLED FULLTIME IN U.S. ACCREDITED POST-SECONDARY EDUCATION
GOVERNING CUMULATIVE GRADE POINT AVERAGE REQUIREMENTS

EMERGENCY: The Saipan Higher Education Financial Assistance (SHEFA) Board for the Saipan Higher Education Financial Assistance Program, finds that under 1 CMC 9104(b), the public interest requires an amendment of section 10 of the Rules and Regulations for the Saipan Higher Education Financial Assistance Program published in the Commonwealth Register, Vol. 26 6, June 24, 2004 beginning at page 22797 and adopted in Commonwealth Register, Vol. 26 No 8, August 26, 2004 at page 23121. These regulations outline the requirements and procedures for obtaining educational assistance, the types of assistance available, and the qualification requirements. Sections 10(3), 10(5), 10(8), 11, and 18 of those regulations, including Section 16 subsections 2, 3, 4, 5, and 9 of the Promissory Note, currently require a cumulative grade point average of at least 2.5 at the end of every term based on the most recent cumulative GPA in order to be initially eligible for or to continue to receive SHEFA funds outlined in Section 8 for grant-in-aid, need-based scholarship, priority field of study, career prep voucher and student loan, except for the academic performance scholarship which requires a minimum cumulative grade point average of 3.5 at every term of the most recent cumulative GPA. These current provisions automatically terminate from continuing financial assistance any recipient of SHEFA funds below 2.5 cumulative GPA at the end of every semester or quarter for an undergraduate student enrolled on fulltime or below 3.0 cumulative GPA for a graduate or advanced student. The regulations, including the pertinent provisions in the current promissory note, presently do not provide for an exception to recipients of SHEFA funds from the minimum GPA requirements for an undergraduate or graduate and advanced student enrolled fulltime in U.S. accredited colleges, universities or technical institutes an opportunity to meet the SHEFA cumulative GPA requirement over a period of a semester or quarter or during the first summer session of the academic year. Presently, a failure to maintain the required cumulative GPA at the end of every semester or quarter of the most recent term constitutes a material breach of the promissory note and a default, requiring the student debtor to repay the entire award received from the SHEFA funds, regardless of the reason. The Board believes an exception from the current restriction in these regulations and pertinent provisions in the promissory note should be incorporated in the current regulations in order to allow the board to consider a one-time deferral on default on account of the most recent cumulative GPA for a recipient of SHEFA funds enrolled fulltime for a period not to exceed one semester or quarter, upon a written request to the board by the recipient on a showing of cause based on substantiated compelling reasons or extenuating circumstances on account of medical, health, or psychological reasons, and other credible and verifiable information provided by a first-time recipient enrolled on fulltime status, provided, however, that no course repeat or below-level course shall be considered in determining fulltime status or in meeting the GPA requirements for an undergraduate, graduate or advanced student.

Furthermore, this conditional eligibility for a continuing financial assistance from SHEFA does not include the academic performance scholarship that requires a higher GPA as indicated above. The SHEFA Board further finds that the public interest mandates adoption of these regulations upon fewer than thirty (30) days notice, and that these regulations shall become effective immediately after filing with the Registrar of Corporations, subject to the approval of the Attorney General and the concurrence of the Governor, and shall remain effective for 120 days.

REASONS FOR EMERGENCY: The SHEFA Board finds that the adoption of these regulations upon fewer than thirty (30) days notice is necessary because: (1) the automatic default without a one-time exception especially to first-time recipients would cause extreme financial hardship to postsecondary students on Saipan and abroad and would cause severe academic distraction in their studies and result in academic and financial default en masse, beginning January 1, 2005 to July 1, 2005 for recipients of SHEFA funds enrolled on fulltime status; (2) the SHEFA Board has received calls and requests for consideration concerning the automatic termination and default provisions in the regulations and the promissory note which impede recipients of SHEFA funds from continuing eligibility; (3) the SHEFA Board has been advised that the current provisions of the regulations and the pertinent provisions of the promissory note governing conditions for continuing SHEFA may not be considered carte blanche, and which would result in automatic termination of SHEFA assistance and repayment on default from recipients of SHEFA funds; and (4) the amendment is necessary to eliminate the slightest possibility that such recipient may be deterred or prevented from requesting in writing to the SHEFA Board for continuing assistance, and exerting due diligence in meeting SHEFA's requirements based on credible and verifiable information, and thus may be unnecessarily denied continuing financial assistance for the Spring 2005 academic term. The SHEFA Board finds that it is in the interest of the public and those who would like to continue undeterred in their pursuit of higher educational opportunities but for their inability to pay for their education that these regulations be approved and adopted immediately.

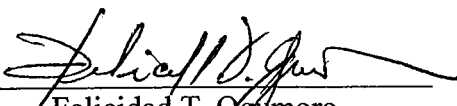
INTENT TO ADOPT: It is the intent of the SHEFA Board to adopt these emergency regulations as permanent, pursuant to 1 CMC 9104(a)(1) and (2). Accordingly, interested persons may submit written comments on these emergency regulations to the SHEFA Office at the Saipan Mayor's Office. P.O.Box 501457, Saipan, MP 96950 or by facsimile at (670) 233-5996

AMENDMENT TO THE SHEFA REGULATIONS
SECTION ELEVEN
REQUIREMENTS FOR CONTINUING FINANCIAL ASSISTANCE

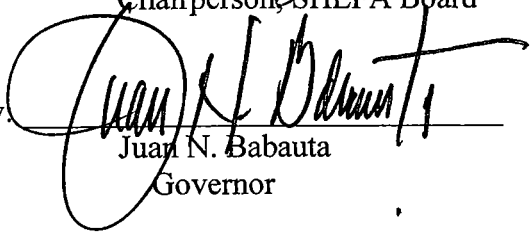
Section Eleven of the SHEFA Rules and Regulations is hereby amended to read as follows:

SECTION ELEVEN

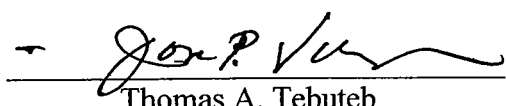
Conditions for Continuing Assistance: Any new applicant and recipient of SHEFA financial assistance must qualify and be eligible for the assistance as provided for in section eight (8) of these rules and regulations at all times and must adhere to all other rules and regulations herein, including the provisions of the promissory note / memorandum of agreement incorporated herein as a necessary and sufficient condition to receiving and continuing to receive financial assistance from the SHEFA board pursuant to law subject to availability of funds. (New) The Board may consider an exception to the applicable regulations and provisions in the existing promissory note / memorandum of agreement, and grant a one-time continuing financial assistance to a currently enrolled fulltime undergraduate, graduate or advanced student upon signing a supplemental agreement to the existing promissory note / memorandum of agreement, thereby allowing the board to grant a one-time deferment on the automatic default provisions based on the most current cumulative GPA. A written request by the recipient to the board for an exception to section 10 of these regulations and the existing promissory note / memorandum of agreement must be received by SHEFA not more than ten (10) working days following the end of the most recent semester or quarter of the academic year in which the recipient failed to meet SHEFA's minimum cumulative GPA. A show cause hearing may be held or in the alternative a written request may be submitted to the board along with evidence based on substantiated compelling reasons or extenuating circumstances on account of medical, health, or psychological reasons, and other credible and verifiable information provided by a first-time recipient enrolled on fulltime status. Provided, however, that no course repeat or below-level course shall be considered in meeting SHEFA's fulltime and cumulative GPA requirements for an undergraduate, graduate or advanced student. Furthermore, if the board decides to approve a one-time deferral, then it shall be deemed a conditional eligibility for a period not to exceed a semester or quarter immediately thereafter, and such eligibility shall not include eligibility for the academic performance scholarship which requires a 3.5 cumulative GPA for an undergraduate, graduate or advanced student enrolled on fulltime status.

Submitted by: 
Felicidad T. Ogumoro
Chairperson, SHEFA Board

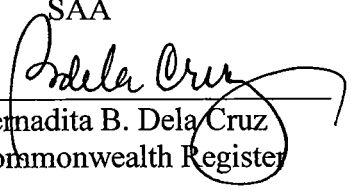
4/29/05
Date

Concurred by: 
Juan N. Babauta
Governor

5/2/05
Date

Received by: 
Thomas A. Tebuteb
SAA

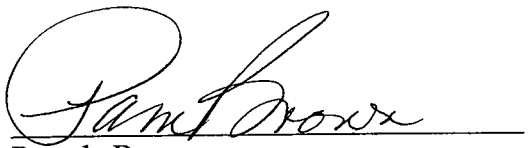
5/3/05
Date

Filed and Recorded by: 
Bernadita B. Dela Cruz
Commonwealth Register

5/3/05
Date

Pursuant to 1 CMC & 2153, as amended by PL 10-50, the emergency rules and regulations attached here to have been reviewed and approved as to form and legal sufficiency by the CNMI Attorney General's office.

Date this 2nd May day April, 2005


Pamela Brown
Attorney General **KEB**



Commonwealth of the Northern Mariana Islands
OFFICE OF THE GOVERNOR
Division of Environmental Quality



P.O. Box 501304 C.K., Saipan, MP 96950-1304
 Tels.: (670) 664-8500 /01
 Fax: (670) 664-8540

PUBLIC NOTICE

**PROPOSED COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
 ABOVEGROUND STORAGE TANK REGULATIONS**

The Director of the Division of Environmental Quality (DEQ), Office of the Governor, Commonwealth of the Northern Mariana Islands (CNMI), hereby notifies the public that DEQ proposes to adopt Aboveground Storage Tank Regulations. The regulations are proposed pursuant to the authority of the CNMI Environmental Protection Act, P.L. 2-32, 2 CMC §§ 3101 *et seq.* (as amended by P.L. 11-103).

These regulations are intended to address and prevent potential sources of pollution that may result from aboveground storage tank (AST) systems. To ensure the prevention and early detection of any release of a regulated substance, new and existing AST systems are required to meet acceptable design, installation, monitoring, release response and closure criteria.

In accordance with 1 CMC § 9104(a), the public has the opportunity to comment on the proposed amendments. Copies of the proposed revisions are available at the office of the Division of Environmental Quality, located at the Gualo Rai Center Office Building, Gualo Rai, Saipan. Copies are also available for viewing or download at the Division of Environmental Quality website at www.deq.gov.mp/Regulations.htm. Written comments should be submitted to: Director, Division of Environmental Quality, P.O. Box 501304C.K., Saipan, MP, 96950. Comments must be received by DEQ within thirty (30) days of the date this notice is published in the Commonwealth Register.

Issued by:

Date: MAY 05 2005

 John I. Castro, Jr., Director
 Division of Environmental Quality



Commonwealth of the Northern Mariana Islands
 OFFICE OF THE GOVERNOR
 Division of Environmental Quality




P.O. Box 501304 C.K., Saipan, MP 96950-1304
 Tels.: (670) 664-8500 /01
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**DIVISION OF ENVIRONMENTAL QUALITY
 PROPOSED REGULATION OF
 CNMI ABOVEGROUND STORAGE TANKS**

- Citation of Statutory Authority:** The Director of the Division of Environmental Quality (DEQ) proposes to adopt CNMI Aboveground Storage Tank regulations pursuant to the CNMI Environmental Protection Act, P.L. 2-32, 2 CMC §§ 3101 *et seq.* (as amended by P.L. 11-103).
- Short Statement of Goals and Objectives:** The proposed regulations are intended to address and prevent potential sources of pollution that may result from aboveground storage tank (AST) systems. To ensure the prevention and early detection of any release of a regulated substance, new and existing AST systems are required to meet acceptable design, installation, monitoring, release response, and closure criteria.
- Brief Summary of the Proposed Regulations:** The proposed regulations include: permit requirements, AST location requirements, AST system standards, AST tightness testing requirements, spill containment requirements, corrosion and overfill protection for ASTs and piping, leak detection and recorkeeping requirements for ASTs and piping, release response requirements, security, signs and labeling requirements, requirements for ASTs in vaults, temporary and permanent closure of ASTs, and enforcement authority and procedures.
- For Further Information Contact:** John I. Castro, Jr., Director, Division of Environmental Quality
 P.O. Box 501304, Saipan, MP 96950
 Phone: (670) 664-8500/8501, fax (670) 664-8540
- Citation of Related and/or Affected Statutes, Regulations, and Orders:** Authorizing statutes are listed above.

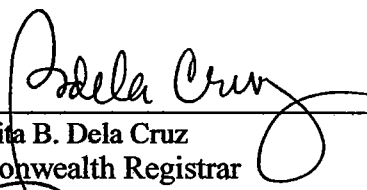
Pursuant to 1 CMC § 2153(e) (AG approval of regulations to be promulgated as to form) and 1 CMC § 9104(a)(3) (obtain AG approval) the proposed regulations attached hereto have been reviewed and approved as to form and legal sufficiency by the CNMI Attorney General and shall be published (1 CMC § 2153(f) (publication of rules and regulations)).

Dated the 12th day of May, 2005.


James Liptone for
PAMELA S. BROWN,
Attorney General *as acty*

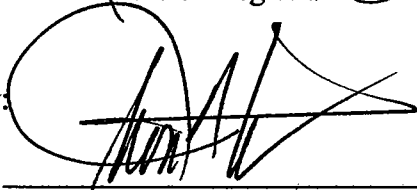
Filed by:

Date: 5-12-05


Bernadita B. Dela Cruz
Commonwealth Registrar

Received at the Governor's Office by:

Date: 5-13-05


Thomas I. Tebuteb
Special Assistant to the Governor for Administration



Commonwealth of the Northern Mariana Islands
 OFFICE OF THE GOVERNOR
 Division of Environmental Quality



P.O. Box 501304 C.K., Saipan, MP 96950-1304
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 Fax: (670) 664-8540

NOTISIAN PUPBLIKU

MAN MA PROPONE NA AMENDASION GI COMMONWEALTH I
 SANKATTAN SIHA NA ISLAS MARIANAS POT REGULASION TANKEN
 DIPOSITU GI HILO' OTDA

I Direktot i Dibision i Environmental Quality (DEQ), Ofisinan i Gobietno, Commonwealth I Sankattan Siha Na Islas Marianas (CNMI), este na momento ha infotoma i pupbliku na i DEQ ha propone para u ma adopta Regulasion i Tanken Dipositu Gi Hilo' Otda. I regulasion siha man ma propone sigun i aturidat i CNMI Environmental Protection Act, Lai Publiku 2-32, 2 CMC Seksiona 3101 et seq. (ni inamenda nu i Lai Publiku 11-103).

Este na regulasion siha man ma intensiona para u satba yan hu suheta i inaplacha ni sifa ginen i sisteman Tanken Dipositu siha Gi Hilo' Otda. Para u ma asigura na ma suheta ya hu guaha tafaf ma sodda i man ma arekla na atikulo, nuevo yan presente na AST na sistema ginagagao na hu kumpli i ma disikna, ma na guahaye', ma adu, ya hu ma laknos, ma oppe' yan ma huchom-niha.

I Publiku guaha opotunidat-niha u fan gai opinion pot i ma propone na amendasion, sigun i Lai 1 CMC Seksiona 9104 (a). Guaha kopian i ma propone na tinilaika siha gi Ofisinan i D.E.Q., ni gaige gi Gualo Rai Center Offie Building, giya Gualo Rai, Saipan. Guaha kopia siha para u ma adu pat u ma kopia gi D.E.Q. website gi www.deq.gov.mp/Regulations.htm. Debi di u ma entrega guatto gi Direktot i D.E.Q., gi P.O. Box 501304 C.K., Saipan, MP 96950. Debi di u ma risibi i opinion siha ni D.E.Q. gi halom trenta (30) dias gi fechan este na notisia anai ma pupblika gi Rehistran i Commonwealth.

Linaknos:

Fecha: MAY 05 2005

John I. Castro, Jr. Direktot
 Division of Environmental Quality


Sigun i lai 1 CMC Seksiona 2153 (e) (ma aprueba nu i Abugao Henerat ni regulasion siha ni para u ma establesi pot para u fotma) yan 1 CMC Seksiona 9104 (a)(3) (hu inaprueba nu i Abugao Henerat) i ma propone na regulasion siha ni man che'che'ton guine esta man ma adu yan aprueba pot para u fotma yan suficiente ligat ginen i Abugao Henerat i CNMI ya debi di u ma publika (1

Ma fecha este _____ na dia gi Máyu, 2005.

Pamela S. Brown,
Abugao Henerát

Pine'lo as:


Fecha: 5-12-05



Bernadita B. Dela Cruz
Rehistran i Commonwealth

Ma risibe' gi Ofisinan i Gubietno as:

Fecha: 5-13-05



Thomas I. Tebuteb
Especiát Na Ayudánte
Para i Atministrasion



Commonwealth of the Northern Mariana Islands
 OFFICE OF THE GOVERNOR
 Division of Environmental Quality



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ARONGORONGOL TOULAP

POMWOL ALLÉGH REEL TANGKKIL SCHAAL

Samwoolul Bwulasiyool Limifischil weleór (DEQ), Bwulasiyool Sów Lemelem, Commonwealth Falúwasch Marianas (CNMI), ekke arongaar toulap bwe DEQ ekke pomwoli bwe ebwe fillóóy alléghúl tangkkil schaal kkaal. Allégh kkaal nge raa fasúl pomwoli sáangi bwángil Alléghúl Ammwelil weleór mellól CNMI, Alléghúl Toulap 2-32, 2 CMC táilil 3101 et seq. (iye aa lliwel mereel P.L 11-103).

Allégh kkaal nge re mángemángiy bwe rebwe abwáari me afálii milikka e nggów ye emmwel bwe ebwe tooto mereel ammwelil tangkkil schaal. Rebwe alúghúlúghúw ammwelil me rebwe kkeyil schuungi alongal allégh kka e toowow, ye ffé me ighila AST system ikka ebwe yááyá ngáli igha ebwe tabweey design, installation, monitoring, isisiwowul apalawalil me closure criteria.

Sáangi allégh ye 1CMC táilil 9104 (a), eyoor bwángiir toulap reel rebwe aghiyegh wóól pomwol lliwel kkaal. Tiliighial pomwol ssiwel yeel nge eyoor mereel Bwulasiyool Limifischil weleór, elo Amai raaw, Seipél. Tiliighial nge ebwal mmwel bwe rebwe amweri fischiy me ngáre download mereel Division of Environmental Quality website at www.deq.gov.mp/Regulations.htm. Ischil mángéang nge ebwe atotoolong reel: Samwool, Division of Environmental Quality, P.O. Box 501304 C.K., Seipél, MP 96950. Aghiyegh nge rebwe bwughil mereel DEQ llól eliigh (30) ráálil sáangi ráálil yaar arongowow mellól Commonwealth Register.

Isaliyallowow:

Rál: MAY 05 2005
 11:11 U 0 2803

John I. Castro, Jr., Samwool
 Samwoolul Bwulasiyool Limifischil
 Weleór (DEQ)

Sáangi allégh ye 1CMC téilil 2153 (e) (AP alúghúlúghúl allúgh kkaal igha ebwe akkatéeló) me 1CMC táilil 9104 (a)(3) (bweibwogh alúghúlúghúl AG) pomwol allégh kkaal ikka e appasch nge raa takkal amweri fischiy me aléghéléghéló mereel CNMI Sów Bwungúl Allégh Lapalap me ebwe akkatééwow (1 CMC táilil 2153 (f) (akkatéél ammwel me allégh kkaal)).

Rááilil _____ Ilól Ghúúw, 2005.

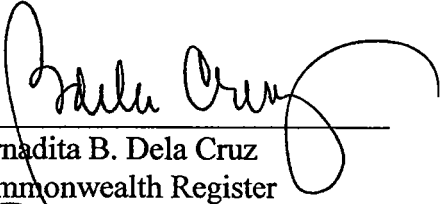
PAMELA S. BROWN
Sów Bwungúl Allégh Lapalap

Aisis ghatch:


Rál: 5-12-05

Mwir sáangi Bwulasiyool Sów Lemelem:

Rál: 5-13-05



Bernadita B. Dela Cruz
Commonwealth Register



Thomas I. Tebuteb
Sów Alillisil Sów Lemelem

Commonwealth of Northern Mariana Islands

Aboveground Storage Tank Regulations

PART 1 GENERAL PROVISIONS

- 1.1 Authority and Scope: The Division of Environmental Quality is responsible for protecting, preserving and enhancing the environmental quality of water, air, and land of the Commonwealth. These Aboveground Storage Tank (AST) regulations are intended to address potential sources of pollution that may result from AST systems. To ensure the prevention and early detection of any release of a regulated substance, new and existing AST systems are required to meet acceptable design and installation criteria. These regulations are promulgated by the Division of Environmental Quality pursuant to the Commonwealth Environmental Protection Act (CEPA), 1982, 2 CMC §§ 3101 to 3134, Public Law 3-23; and the Commonwealth Environmental Amendments Act (CEAA), 1999, Public Law 11-103. These regulations and technical provisions shall have the force and effect of law and shall be binding on all persons and other legal entities subject to the jurisdiction of the Commonwealth of the Northern Mariana Islands.

PART 2 APPLICABILITY

- 2.1 These regulations shall apply to all new AST systems which store regulated substances in excess of 500 gallons with the exception of those AST systems excluded under 2.4 of this Part.
- 2.2 All AST systems in existence in the CNMI at the effective date of these regulations which store regulated substances in excess of 500 gallons shall comply with Parts 15.2, 16, 21, and 22 of these regulations with the exception of those AST systems excluded under 2.4 of this Part.
- 2.3 All AST systems in existence in the CNMI at the effective date of these regulations shall be upgraded to meet the requirements of these regulations when the AST system is repaired, reconstructed, relocated, replaced, or at any time as determined by the Director of DEQ to be necessary to protect human health and the environment.
- 2.4 The following AST systems shall be exempt from the requirements of these regulations
- 2.4.1 Bulk plants or terminals that are regulated under the Clean Water Act and Spill Prevention and Countermeasure Plan (SPCC) requirements.
- 2.4.2 An AST system which has been permanently closed and is in compliance with all the requirements of Part 22 of these regulations.

PART 3 PROHIBITIONS

- 3.1 No storage tank that was originally designed for use as an underground storage tank may be used as an AST.

- 3.2 No single-walled fiberglass reinforced plastic (FRP) tank shall be allowed for use as an AST for the storage of flammable or combustible liquids. ASTs that have an outer wall of concrete and/or steel and an inner lining of FRP are allowable.
- 3.3 No tank that has been constructed of plastic (e.g. polyethylene, polypropylene, polyvinylchloride (PVC), and acrylonitrile butadiene styrene polymers (ABS) shall be allowed for use as an AST for the storage of flammable or combustible liquids.

PART 4 DEFINITIONS

- 4.1 "Aboveground Storage Tank " or "AST" means any tank or combination of tanks, that is used to contain regulated substances and is not an underground storage tank (UST) under CNMI Revised Underground Storage Tank Regulations.
- 4.2 "Aboveground Storage Tank System" means any aboveground storage tank, connected piping, ancillary equipment, and spill containment system.
- 4.3 "Act" shall mean for the purpose of these regulations unless otherwise specified the Commonwealth Environmental Protection Act (CEPA), 1982, 2 CMC §§ 3101 to 3134, Public Law 3-23; and the Commonwealth Environmental Amendments Act (CEAA), 1999, Public Law 11-103.
- 4.4 "Ancillary Equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an aboveground storage tank.
- 4.5 "Bulk Plant or Terminal" means the portion of a property where regulated substances are received by tank vessel, pipelines, tank car, or tank vehicle and are stored or blended in bulk for the purpose of distributing such regulated substances by tank vessel, pipeline, tank car, tank vehicle, portable tank, or container.
- 4.6 "Cathodic Protection" means the technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell through the application of galvanic anodes or impressed current.
- 4.7 "Commonwealth" or "CNMI" means the Commonwealth of the Northern Mariana Islands.
- 4.8 "Compatible" means the ability of two or more substances or materials in a AST system to maintain their respective physical and chemical properties upon contact with one another.
- 4.9 "Corrosion" means the degradation of metals due to chemical reactions with their environment. In steel, this is commonly known as "rust."

- 4.10 "Corrosion Expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal ASTs. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal ASTs.
- 4.11 "Dialectical material" means a material that does not conduct direct electrical current.
- 4.12 "Dike" means an embankment, ridge, or wall which is impermeable to stored regulated substances and which forms the perimeter of a secondary containment or spill containment area.
- 4.13 "Director" means the Director of the Division of Environmental Quality.
- 4.14 "Double-Walled AST" means an aboveground storage tank with an inner primary shell and an outer secondary shell, which extends around the entire inner shell and a method in place for monitoring the interstitial space between the shells for leaks.
- 4.15 "DEQ" means the Division of Environmental Quality.
- 4.16 "Facility" means the location or property where the AST system is or was installed and operating.
- 4.17 "Free Product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in groundwater).
- 4.18 "Inland Water" shall mean surface fresh waters, such as streams or springs, that are not subject to the ebb and flow of the tide.
- 4.19 "Maintenance" means the normal operational upkeep to prevent an aboveground storage tank system from releasing regulated substance.
- 4.20 "New AST" means any AST or part of an AST system installed or reactivated on or after the effective date of these regulations and is required to comply with the provisions of these regulations.
- 4.21 "Operator" means any person in control of, or having responsibility for, the daily operation of the AST system.
- 4.22 "Owner" means :
- 4.22.1 In the case of an AST system in use as of the effective date of this regulation, or brought into use after that date, any person who owns an AST system used for storage, use, or dispensing of regulated substances; or

- 4.22.2 In the case of any AST system in use before the effective date of this regulation, but no longer in use on that date, any person who owned the AST system immediately before the discontinuation of its use, and the title holder of the property where the AST system is located.
- 4.23 "Overfill Release" means a release that occurs when an AST is filled beyond its capacity, resulting in a discharge of regulated substances.
- 4.24 "Person" means any individual, firm, partnership, association, corporation, or entity or agency of the CNMI or the United States of America.
- 4.25 "Pipe" or "Piping" or "Pipeline" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials for the purpose of transferring a regulated substance.
- 4.26 "Regulated Substance" means :
- 4.26.1 Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA - 42 U.S.C. § 9601(14)) but not including any substances regulated as hazardous waste under RCRA subtitle C; or
- 4.26.2 Petroleum, including crude oil, or fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds of pressure per square inch absolute). The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
- 4.27 "Release" means any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an AST system.
- 4.28 "Release detection" means determining whether a release of a regulated substance has occurred from the AST system or into the interstitial space between the AST system and the secondary barrier or secondary containment around it.
- 4.29 "Repair" means any work necessary to maintain or restore an AST system to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the AST system and that does not weaken the AST system.
- 4.30 "Shop-built tank" or "Shop-fabricated tank" means an aboveground storage tank that is constructed at a AST manufacturer's plant and transported to a facility for installation.
- 4.31 "Spill Containment Area" is a structure which is intended to contain any release of a regulated substance resulting from a spill, leak, or rupture of the AST.

- 4.32 "Tank" means a stationary device designed to contain an accumulation of regulated substances, constructed of non-earthen materials (e.g., concrete, steel, plastic), and all associated structural supports.
- 4.33 "Wetlands" means those areas that are inundated or saturated by surface water or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

PART 5 PERMITTING

- 5.1 Prior to installation of any AST system, the owner or operator shall apply for and obtain an AST Permit to Install from DEQ. The AST Permit to Install application shall be completed in full, signed by the owner or operator submitting the application, and be submitted to DEQ with a copy of the design blue prints and vicinity map.
- 5.1.1 The owner or operator shall pay an AST Permit to Install application fee of five hundred dollars (\$500.00) per tank payable to the CNMI Treasurer, at the time the AST Permit to Install application is submitted.
- 5.1.2 DEQ shall notify the applicant if any additional information is needed within fifteen (15) working days from the date the application is submitted to DEQ. An AST Permit to Install application will not be considered complete until DEQ has received the additional information requested.
- 5.1.3 DEQ shall not issue an AST Permit to Install until the owner, operator, or designated contractor has obtained a DEQ Earthmoving and Erosion Control Permit.
- 5.1.4 There will be a maximum thirty (30) calendar day processing period for any AST Permit to Install application from the time that DEQ determines the application is complete.
- 5.1.5 The DEQ has the right to reject or deny an AST Permit to Install application that does not comply with all requirements as specified in these CNMI AST regulations, or as the Director may deem necessary to protect public health or the environment.
- 5.1.6 All AST Permits to Install shall be non-transferable from person to person, and from location to location.
- 5.2 The owner or operator of the AST system shall apply for and obtain an AST Permit to Operate from DEQ prior to commencing the operation of all newly installed AST systems or within one (1) year of the effective date of these regulations for any AST system existing prior to the effective date of these regulations. An AST Permit to Operate must be renewed every five years from the date of issuance under these regulations.
- 5.2.1 The AST Permit to Operate application shall be completed in full, signed by the owner or operator of the AST system, and submitted to DEQ.

- 5.2.2 The owner or operator shall pay an AST Permit to Operate application fee of one hundred dollars (\$100.00) per tank.
- 5.2.3 There will be a maximum thirty (30) calendar day processing period for any AST Permit to Operate application from the time DEQ determines the application is complete.
- 5.3 The DEQ has the right to reject or deny any AST Permit to Operate application and revoke any AST Permit to Operate if DEQ finds that the AST system is:
- 5.3.1 Not constructed in accordance with nationally recognized codes and standards or of materials that are not chemically compatible with the regulated substance stored in the AST system; or
- 5.3.2 Operated in a manner that threatens human health or the environment.
- 5.4 If DEQ should revoke an AST Permit to Operate, the placement of regulated substances in the subject AST system is prohibited.
- 5.5 If DEQ should revoke an AST Permit to Operate, the owner or operator shall implement PART 21 of this regulation (Temporarily Out-of Service AST Systems).

PART 6 ABOVEGROUND STORAGE TANK LOCATION REQUIREMENTS

- 6.1 Groundwater Management Zones (From Section 25 of the *CNMI Well Drilling and Well Operations Regulations as Amended*)
- 6.1.1 Island of Saipan Class I Groundwater Management Zone AST System Restrictions
- (A) No new single AST or combined volume of multiple ASTs at one (1) facility exceeding 1,320 gallons shall be permitted.
- (B) Replacement of AST systems in existence and operation at the effective date of this regulation may be permitted provided they are in compliance with 6.1.1.(C) and:
- (1) USTs are replaced by similar or smaller sized ASTs; or
- (2) existing ASTs may be replaced in kind.
- (C) Minimum down gradient and up gradient AST system setback requirements from existing public and private drinking water wells:

- | | | <u>Wellhead Setback Requirement</u> | |
|-----|--|-------------------------------------|---------------------|
| | | <u>Upgradient</u> | <u>Downgradient</u> |
| (1) | Boundary of AST facility | | |
| | Double-walled AST | 400 feet | 200 feet |
| | Single-walled AST | 500 feet | 500 feet |
| (2) | If the groundwater gradient cannot be reasonably estimated, then the AST system facility setback requirement shall be 300 feet for double-walled ASTs and 500 feet for single-walled ASTs. | | |
| (3) | Downgradient and upgradient AST system facility setback requirements for seawater wells and wells undergoing reverse osmosis treatment may be reduced as allowed under Section 14.1 and Section 15.1 of the CNMI <i>Well Drilling and Well Operations Regulations as amended</i> . | | |

6.1.2 Island of Saipan Class II and III Groundwater Management Zone Restrictions (Also applicable to all other Islands of the CNMI).

- (A) Minimum down gradient and up gradient AST system setback requirements from existing public and private drinking water wells:

- | | | <u>Wellhead Setback Requirement</u> | |
|-----|---|-------------------------------------|---------------------|
| | | <u>Upgradient</u> | <u>Downgradient</u> |
| (1) | Boundary of AST facility | | |
| | Double-walled AST | 400 feet | 200 feet |
| | Single-walled AST | 500 feet | 500 feet |
| (2) | If the groundwater gradient cannot be reasonably estimated, then the AST system facility setback requirement shall be 300 feet for double-walled ASTs and 500 feet for single-walled ASTs. | | |
| (3) | Downgradient and upgradient AST system facility setback requirements for seawater wells and wells undergoing reverse osmosis treatment may be reduced as allowed under Section 14.1 and Section 15.1 of the CNMI <i>Amendments to Well Drilling and Well Operations Regulations</i> . | | |

6.1.3 No AST systems shall be installed after the effective date of these regulation in the following locations:

- (A)
- (1) Within a wetland or within five hundred (500) feet of a wetland boundary;
 - (2) Within five hundred (500) feet of inland waters;
 - (3) Within five hundred (500) feet of the shoreline (as measured from the mean high water mark);

(4) Within tidal or storm water inundation areas.

(B) The Director of DEQ may, on a site specific basis, waive the requirements of 6.1.3 (A) if it can be demonstrated to the Director's satisfaction that such a waiver will not adversely impact human health or the environment. An application for such a waiver must be supported in writing by the owner or operator with the following information:

(1) The unique or particular conditions which make compliance with Section 6.1.3 (A) unfeasible (increased project cost in order to obtain compliance with these regulations may not be considered the sole reason for unfeasibility);

(2) The project design shall meet the requirements of Parts 7 through 20 of this regulation, and provide additional measures beyond Parts 7 through 20 to ensure adequate protection of those locations listed in Part 6.1.3(A)(1-5). Such measures may include but are not limited to: facility design (e.g., site drainage control and oil water separators); AST system design (e.g., audible release alarm); compliance monitoring (e.g., daily versus monthly check of AST system) and complete facility release containment.

(3) When granting a waiver to the requirements in 6.1.3 (A)(1-5), the Director of DEQ may impose additional conditions necessary to assure adequate protection of human health and the environment.

6.1.4 Each AST system installation shall conform with the setback requirements with respect to property lines, public ways, and buildings as specified in National Fire Protection Association Code 30 (Flammable and Combustible Liquids Code) and 30A (Automobile and Marine Service Station Code).

PART 7

ABOVEGROUND STORAGE TANK SYSTEM STANDARDS

7.1 The standards and requirements established in these regulations shall be applied through the use of codes of practice developed by nationally recognized associations such as, but not limited to, those referenced below and through the use of manufacturer's specifications and sound engineering practices.

7.2 Nationally recognized associations which are referenced throughout these regulations are as follows:

7.2.1 American Concrete Institute (ACI)

7.2.2 American National Standards Institute (ANSI)

7.2.3 American Petroleum Institute (API)

7.2.4 American Society of Mechanical Engineers (ASME)

- 7.2.5 American Society for Nondestructive Testing (ASNT)
 - 7.2.6 American Society for Testing and Materials (ASTM)
 - 7.2.7 National Association of Corrosion Engineers (NACE)
 - 7.2.8 National Fire Protection Association (NFPA)
 - 7.2.9 Petroleum Equipment Institute (PEI)
 - 7.2.10 Steel Structures Painting Council (SSPC)
 - 7.2.11 Steel Tank Institute (STI)
 - 7.2.12 Underwriters laboratory (UL)
- 7.3 Nationally recognized codes and standards shall be used in conjunction with manufacturer's specifications. When used to meet the technical standards and requirements of these regulations, the most current or latest edition of the codes and standards shall be applied. Other nationally recognized codes and standards, not referenced in this Part, may be used to show compliance with these regulations, when appropriate.
- 7.4 When nationally recognized codes and standards are updated, AST systems installed in conformance with previously existing standards, will not automatically be required to be upgraded to meet the new standard.
- 7.5 All new ASTs shall be constructed of industry recognized materials that are chemically and physically compatible with the regulated substance is to be stored in the AST.
- 7.6 All new ancillary equipment for the ASTs (pipes, valves, fittings, pumps, etc.) shall be constructed of industry recognized materials that are chemically and physically compatible with the regulated substance stored in the AST.
- 7.7 All new AST systems shall be protected from corrosion and deterioration as specified at PART 11 and PART 14 of this regulation.
- 7.8 All new AST systems shall have a leak monitoring system as specified in PART15 of this regulation.
- 7.9 All new AST systems shall have release and overflow prevention systems as required in PART9, PART 12, and Part 13.
- 7.10 All new AST systems shall be tested according to industry standards before being placed into service as specified in PART 8.

PART 8 ABOVEGROUND STORAGE TANK TIGHTNESS TESTING

- 8.1 All new ASTs shall be tested for tightness in accordance with manufacturers specifications and current codes of practice developed by nationally recognized associations, except for manufactured, shop built tanks that meet the requirements of Part 8.2. The tightness testing shall be completed as part of the installation process, witnessed by DEQ, before an AST Permit to Operate is issued.

- 8.2 Manufactured, shop built tanks that are tightness tested after full assembly at the plant do not require additional tightness testing at installation if the manufacturer certifies that the tank was tightness tested at the plant and the manufacturer's installation instructions do not require additional tightness testing.
- 8.3 Any AST that receives major modifications to the tank shell, tank bottom, or are relocated shall be tested for tightness in accordance with current codes of practice developed by nationally recognized associations or manufacturer's specifications prior to being returned to service.

PART 9 SPILL CONTAINMENT REQUIREMENTS FOR ABOVEGROUND STORAGE TANKS

- 9.1 Each AST system shall include a concrete pad designed to adequately support the tank and necessary ancillary equipment.
- 9.1.1 The concrete in each pad should be mixed to provide sufficient bearing capacity and to provide water tightness to prevent migration of any regulated substance release to the underlying soils. Each pad shall be either seamless or have sealed joints to prevent the migration of any regulated substance release to soil.
- 9.1.2 If the owner or operator chooses the option of sealing the joints, the material used must be:
- (A) an industry recognized standard method and product; and
 - (B) chemically compatible with the regulated substance that is to be stored in the AST system; and
 - (C) be resistant to environmental degradation.
- 9.2 Each AST pad shall be equipped with a spill containment dike or dike which will contain any regulated substance release.
- 9.2.1 Single Wall ASTs: For all single wall ASTs, the spill containment dike shall be designed to hold at least 110% of the tank maximum design capacity and have a minimum two (2) inch freeboard. In all cases, the minimum allowed dike height, including two (2) inch freeboard, shall be eight (8) inches.
- (A) The containment dikes are to be either:
 - (1) seamless, or
 - (2) have sealed seams. Any material used to seal containment dikes must also be compatible with the regulated substances stored in the AST system and be resistant to environmental degradation.

9.2.2 Double-Wall ASTs:

- (A) For double-walled ASTs, containment dikes are to be a minimum of eight (8) inches in height.
- (B) Double-walled AST containment dikes shall be either seamless or have sealed seams.

9.2.3 Storm water shall be removed from the spill containment area prior to the capacity of containment being reduced by 10 percent.

- (A) If gravity drains are used, the drain valves shall be secured in the closed position when not in use.
- (B) Discharge or disposal of substances from the spill containment structure shall comply with applicable CNMI and Federal requirements.

9.3 Any new AST system shall demonstrate compliance with this Part at installation. Any AST system existing prior to the effective date of these regulations shall demonstrate compliance with this Part upon completion of reconstruction or relocation of the AST system or when the tank floor is replaced.

PART 10 RELEASES TO SPILL CONTAINMENT AREAS

10.1 An owner or operator shall immediately investigate any release of a regulated substance to a spill containment area.

10.1.1 The owner operator shall keep a written log of all releases which have occurred in the past three (3) years into spill containment areas which exceed twenty five (25) gallons of regulated substance. The log shall include the following information:

- (A) date of the release; and
- (B) type and amount of regulated substance released; and
- (C) description of cleanup procedure and disposal of released regulated substance.

10.1.2 The owner or operator shall assess the spill containment area for any damage upon any release of twenty five (25) gallons or more of a stored substance. The owner or operator shall repair the spill containment area, as necessary, prior to continued regulated substance storage.

PART 11

CORROSION PROTECTION FOR ABOVEGROUND STORAGE TANKS

11.1 All AST system components susceptible to corrosion must have some method of corrosion protection. Methods include:

11.1.1 Elevation of the AST so that the underside of the tank floor is not in contact with any surface other than the tank supports.

(A) Tank supports or foundations must be designed and constructed to minimize the possibility of uneven settling of the tank and to minimize the corrosion to any part of the tank resting on the foundation.

11.1.2 Coating the tank exterior with corrosion resistant materials.

11.1.3 Coating or lining the tank interior with corrosion resistant materials. The coating or lining system shall be designed in accordance with current codes of practice such as API 652 or associations such as NACE.

11.1.4 Cathodically protecting the tank by one or more of the following methods:

(A) Sacrificial anodes and dialectical coating; or

(B) Impressed current; or

(C) Another method specified in an appropriate nationally recognized association code or practice such as API 651 or associations such NACE.

11.1.5 Cathodic protection systems shall be designed by a corrosion expert and maintained to provide protection against external corrosion for the operational life of the AST system.

11.1.6 Each cathodic protection system shall have an access point which enables the owner or operator to check the adequacy of the cathodic protection. The cathodic protection systems shall be monitored periodically as determined by the corrosion system design.

11.1.7 Tank and pipe connections, of two dissimilar metals, which create a galvanic cell are prohibited.

PART 12

OVERFILL PROTECTION FOR ABOVEGROUND STORAGE TANKS

12.1 An AST must have one of the following methods for overfill protection:

12.1.1 A high-level alarm, set at no greater than 90 percent of the tank's capacity, that is visible or audible to the person controlling the substance transfer;

- 12.1.2 A system that automatically shuts off the flow of regulated substance into the tank, set at no greater than 95 percent of the ASTs capacity;
- 12.1.3 A permanently mounted sight glass or gauge, visible to the person controlling the regulated substance transfer, that accurately shows the level of regulated substance in the tank;
- 12.1.4 A person who manually gauges the level of regulated substance in the tank with a stick during regulated substance transfer and controls the regulated substance transfer or is in contact with the person who controls the regulated substance transfer.
 - (A) If any level stick, sight glass, or gauge does not read in volumetric measurements and requires conversion, a clearly labeled conversion chart indicating maximum working capacity of the tank must be available to the person controlling the substance transfer.

PART 13 SECONDARY CONTAINMENT AND LEAK DETECTION FOR PIPING

- 13.1 All piping that is underground must be either:
 - 13.1.1 Constructed of a double-walled non-corrodible material; or
 - 13.1.2 Constructed of steel and placed within a non-corrodible secondary containment system such as a seamless or sealed concrete vault.
- 13.2 All piping that is underground must have a leak detection method such as a sensing device, mechanical device, or monthly visual examination.
- 13.3 All underground piping must be constructed so that a release is directed to a location where it can be detected by a leak detection method.

PART 14 CORROSION PROTECTION FOR PIPING

- 14.1 AST system piping (including flanges and joints) which routinely contains a regulated substance must be protected from corrosion using one of the following methods:
 - 14.1.1 Piping made of non-corrosive materials which are compatible with the regulated substances stored in the AST system.
 - 14.1.2 For steel piping:
 - (A) the piping shall not be in contact with soil (i.e., aboveground and coated with a corrosion resistant material or below ground in water tight, non-corrodible vault);
or

- (B) the piping must be cathodically protected and utilize of one or more of the following methods:
 - (1) sacrificial anodes and dialectical coating; or
 - (2) impressed current; or
 - (3) a method specified in an appropriate nationally recognized association code or practice such as API 651 of associations such NACE.
- (C) cathodic protection systems shall be designed by a corrosion expert and maintained to provide protection against external corrosion for the operational life of the piping.
- (D) each cathodic protection system shall have an access point which enables the owner or operator to check on the adequacy of the cathodic protection. The cathodic protection systems shall be monitored periodically as determined by the corrosion system design.
- (E) AST and piping connections of two dissimilar metals which create a galvanic cell are prohibited.

PART 15

LEAK DETECTION AND AST SYSTEM MONITORING

- 15.1 A method of leak detection for the AST and piping shall be utilized and monitored at least monthly. An automatic sensing device, mechanical device or other appropriate method as approved by the Director may be used. The leak detection method, at a minimum, shall allow a visual examination of the AST system by the owner, operator, or designated representative.
 - 15.1.1 If a release is detected, it shall be reported and responded to as required by PART16 of these regulations.
 - 15.1.2 Results of monthly leak detection monitoring shall be recorded and maintained by the owner or operator.
 - (A) monthly monitoring shall occur at a no greater interval than a thirty (30) day period.
- 15.2 Existing ASTs without secondary containment under the bottom of the tank that are in contact with the soil, such as vertical flat bottom tanks, and do not have cathodic protection or internal lining shall be tested for tightness within 12 months from the effective date of these regulations. Records of the tightness testing shall be maintained on the premises the AST system. Such tanks shall be tested annually for tightness.

- 15.3 The owner or operator shall assure that a maintenance and general operations check of the AST system is performed and recorded at least monthly. Monthly monitoring shall occur at a no greater interval than a thirty (30) day period. Deficiencies noted during the check shall be corrected. The maintenance and operations check shall include:
- 15.3.1 Visual examination of the AST system for deterioration, including, but not limited to, the AST, piping, ancillary equipment and foundation; and
 - 15.3.2 A visual inspection of the containment areas for accumulation of water and removal of water as necessary; and
 - 15.3.3 Confirmation that containment drain valves are secured in the closed position when not in use; and
 - 15.3.4 Monitoring of the leak detection system; and
 - 15.3.5 A visual of AST system vents for restrictions; and
 - 15.3.6 Observation for evidence of a release of regulated substance from the AST system.

PART 16 RELEASE RESPONSE

16.1 Suspected Release

- 16.1.1 Should the AST system leak detection method, physical observation, inventory discrepancy, or other protocol indicate that a release of a regulated substance may have occurred, it shall be promptly investigated (within 24 hours) and a determination made if a release has occurred.
- (A) If a release is confirmed, DEQ shall be notified of such release within 24 hours of its confirmation.
 - (B) If, after the initial discovery of a suspected release, a determination cannot be made within 24 hours that a release has or has not occurred, then DEQ shall be notified immediately of the suspected release.

16.2 Confirmed Release

- 16.2.1 Upon confirmation of a release, the owner or operator shall take prompt action to prevent any further release of the regulated substance.
- 16.2.2 Upon confirmation of a release the owner or operator shall take prompt action to identify and mitigate any fire, explosion, and vapor hazards.

16.2.3 Release response to a confirmed release of a regulated substance must be promptly coordinated by the owner or operator with DEQ for evaluation of impacts to the environment.

(A) Release response activities to a release of regulated substance from an AST system may include the following as determined by the Director of DEQ:

- (1) Collection of environmental samples (air, soil, surface water, groundwater); and
- (2) Remediation of soil, groundwater, and surface water to conditions which are not harmful to human health and the environment as determined by the Director of DEQ; and
- (3) Other response actions as determined appropriate by the Director of DEQ.

PART 17 RECORDKEEPING

17.1 Owners and operators of AST systems shall retain information reports and records according to this Part. Upon DEQ request, AST system owners or operators shall make such data available to the agency for viewing and copying.

17.1.1 The owner and operator shall retain for the life of the AST system, and have available for DEQ inspection and review, the following records:

- (A) AST system repair and modification documentation; and
- (B) original AST system installation and design specifications; and
- (C) permits issued under PART 5 of these regulations.

17.1.2 The owner and operator shall retain for twelve (12) consecutive months, and have available for DEQ inspection and review, the following records

- (A) monthly leak detection records as required by Part 15.1 of these regulations; and
- (B) monthly maintenance and general operation checklists as required by Part 15.3 of these regulations; and
- (C) the most recent annual AST system tightness test result required by Part 15.2 of this regulation.

PART 18 SECURITY

- 18.1 Each owner or operator is responsible to assure that appropriate security measures and procedures are established and implemented to protect the AST system from unauthorized access and vandalism. The security measures and procedures may include, but are not limited to, fencing, lighting, access control, locked entrances, and securing of valves and dispensers.

PART 19 SIGNS AND LABELING

19.1 AST System Labeling

- 19.1.1 Each AST must be clearly labeled indicating the regulated substance stored and the AST's capacity.
- 19.1.2 If more than one AST is at a site, each AST must be labeled with a unique AST number.
- 19.1.3 Each AST with flammable or combustible regulated substances shall be labeled in accordance with NPFA 30 and 30A as appropriate.

19.2 Pipeline Labeling

- 19.2.1 Each AST system pipeline which contains regulated substances shall be clearly labeled with the substance being transported through it.
- 19.2.2 Each manually operated valve shall be clearly labeled as to its function to prevent the wrong valve from accidental opening or closure.

19.3 Signs

- 19.3.1 An AST System facility that does not have a person on site 24 hours a day must have a sign with the name, address, and telephone number of the facility owner, operator, or local emergency response contact. The sign must be posted in a conspicuous place and legible from outside any secondary containment area.

PART 20 REQUIREMENTS FOR ASTs IN VAULTS

- 20.1 There shall be no backfilling of material around an AST that has been installed in a vault.
- 20.2 The roof of any vault shall be constructed of noncombustible materials.
- 20.3 ASTs shall not share vaults. Each AST shall have its own vault. Adjacent vaults may share a common roof.
- 20.4 Vault openings should be liquid tight and lockable.

- 20.5 There must be sufficient space between the AST and the vault to allow for the inspection of the AST and ancillary equipment.
- 20.6 A continuous leak detection system must be installed, which is capable of detecting regulated substances and water.
- 20.6.1 The leak detection system should have an alarm which alerts the owner or operator when a leak is detected.
- 20.6.2 The leak detection system must be maintained and calibrated in accordance with the manufacturers requirements

PART 21 TEMPORARY OUT-OF-SERVICE AST SYSTEMS

- 21.1 If a regulated substance is not introduced to or removed from an AST system for one (1) year or more, the owner or operator shall:
- 21.1.1 Maintain the applicable operation and maintenance requirements of PART 7 to PART 20 of these regulations; or
- 21.1.2 Notify DEQ within thirty (30) calendar days, in writing, of the date the AST system has been taken out-of-service.
- 21.2 The owner or operator of an AST system taken temporarily out-of-service shall:
- 21.2.1 Secure the AST System to prevent unauthorized entrance or tampering, by:
- (A) Removal of all substances from the tank, connecting pipe and ancillary equipment; and
 - (B) Securing fill pipes, gauge openings, or pump pipelines.
- 21.2.2 Render the AST System sufficiently free of vapors to avoid formation of an explosive atmosphere and vent the tank.
- 21.2.3 Clearly label the exterior of the out-of-service AST with the words "Out of Service" and the date the AST System was taken out-of-service.
- 21.3 AST systems which are out of service for five (5) years or longer shall meet the requirements for permanent closure.

PART 22 PERMANENT CLOSURE

- 22.1 At least thirty (30) days prior to beginning a permanent closure the owner or operator shall notify DEQ of its intent to permanently close their AST system.

- 22.2 The owner or operator of an AST system that is permanently closed shall:
- 22.2.1 Remove all substances from the tank, connecting piping and ancillary equipment;
 - 22.2.2 Secure the AST system to prevent unauthorized entrance or tampering by:
 - (A) Securely bolting and locking all manways and valves; and
 - (B) Capping or plugging fill pipes, gauge openings, or pump pipelines.
 - 22.2.3 Thoroughly cleaning the interior of the tank and all associated piping of all sludges, solids and residuals.
 - 22.2.4 Dispose any AST system sludges in accordance with applicable CNMI and Federal requirements.
 - 22.2.5 Render the AST system sufficiently free of vapors, to avoid formation of an explosive atmosphere, and vent the tank.
 - 22.2.6 Legibly mark the AST systems to be permanently closed and left onsite with the date of permanent closure.
- 22.3 The owner or operator shall complete a site assessment, which to evaluates the presence of any release from the AST system, and prepare a closure report. The site assessment shall be made after notification to DEQ, pursuant to section 22.1 of these regulations. A copy of the closure report shall be submitted to DEQ.
- 22.3.1 DEQ will make an on-site inspection prior to the site assessment to evaluate environmental conditions and review AST system maintenance and leak detection records. DEQ will then inform the owner or operator by letter of the necessary information and environmental sampling required for the site assessment.
 - 22.3.2 If contamination of soil, groundwater, or surface water, or free product is discovered or confirmed by either direct observation or environmental sampling and analysis, the owner or operator shall proceed with corrective action as directed by DEQ.
- 22.4 When the Director of DEQ has determined, in writing, that an AST system has met the requirements of permanent closure, including completion of a site assessment and submittal to DEQ of a closure report, these regulations are no longer applicable to the closed AST system unless the AST system is put back into use.

SECTION 23

ENFORCEMENT AUTHORITY AND PROCEDURES

23.1 The Director of DEQ is authorized to impose the following penalties and remedies for violation of the CNMI Aboveground Storage Tank Regulations.

- 23.1.1 **Enforcement and Remedies:** The Director shall enforce the Act, these regulations, and any permit or order issued hereunder, pursuant to and in accordance with the authority in 2 CMC § 3131, as amended.
- 23.1.2 **Civil Penalties:** The Director may assess civil penalties in accordance with 2 CMC § 3131, as amended.
- 23.1.3 **Criminal Penalties:** Any person, who knowingly and willfully commits any act in violation of the Act, these regulations, or any permit issued thereunder, may be subject to criminal penalties as set forth in 2 CMC § 3131(d), as amended.
- 23.1.4 The Director may suspend, modify, or revoke any permit, license, registration or certification issued by DEQ for violation of the Acts, these regulations and any permit or license issued pursuant to these regulations.
- 23.1.5 The Director may request that the Attorney General institute a civil action in the Commonwealth Superior Court for a temporary restraining order, injunction, or other approaches to enforce any provision of the Act, these regulations, administrative order, or permit granted pursuant to these regulations.

23.2 Procedures for Issuance of Administrative Orders

- 23.2.1 In accordance with 2 CMC § 3131, if the Director has reason to believe a violation of the provisions of the Act, these regulations, and/or the terms of any permit issued pursuant to the Act and these regulations has occurred or is occurring, the Director may issue a Notice of Violation to enforce the Act, regulations and/or permit terms. Such Notice of Violation shall be signed by the Director or his authorized representative and shall provide notice of the facts constituting the violation, penalties that may be imposed, corrective actions and/or mitigating measures required, and time frame in which to take corrective action and/or mitigating measures.
- 23.2.2 If any person subject to a Notice of Violation issued pursuant to 23.2.1 fails to comply with the corrective action and/or mitigative measures, the Director may issue an Administrative Order or other such order imposing penalties as provided by 2 CMC § 3131(c). The Order shall state the facts constituting the violation, the sections of the Act, regulations or permit involved, the proposed penalty including any permit suspension, revocation, or modification, and monetary penalties including any penalty for cost of corrective action taken by the Division. The Order shall also provide notice of the opportunity to request a hearing. Such Order shall be personally served or served by certified mail, return receipt, on persons subject to the penalties in the Order.



Commonwealth of the Northern Mariana Islands
OFFICE OF THE GOVERNOR
Division of Environmental Quality



P.O. Box 501304 C.K., Saipan, MP 96950-1304
 Tels.: (670) 664-8500 /01
 Fax: (670) 664-8540

PUBLIC NOTICE

**PROPOSED AMENDMENT
 OF THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
 DRINKING WATER REGULATIONS**

The Director of the Division of Environmental Quality (DEQ), Office of the Governor, Commonwealth of the Northern Mariana Islands (CNMI), hereby notifies the public that DEQ proposes to adopt Drinking Water Regulations. The revisions included in the proposed amendment are proposed pursuant to the authority of the CNMI Environmental Protection Act, P.L. 2-32, 2 CMC §§ 3101 *et seq.* (as amended by P.L. 11-103).

The proposed revisions pertain to the requirement set forth in the Safe Drinking Water Act that States and Territories periodically review their Drinking Water Regulations, make any necessary changes, and provide for an opportunity for public comment. The revisions proposed include: replacing the existing drinking water regulations with a new format that matches the numbering system in the Federal Regulations; requiring all public water systems to be supervised and run by a certified water operator; requiring all public water systems to have a sanitary survey at least once every three years; requiring all public water systems to monitor for bacteriological contaminants monthly (a small subset is currently allowed to monitor quarterly); requiring all public water systems that get water from wells and/or rain to disinfect the water before it is distributed; and requiring public water systems serving more than 3,300 people to develop an Emergency Response Plan.

In accordance with 1 CMC § 9104(a), the public has the opportunity to comment on the proposed amendments. Copies of the proposed revisions are available at the office of the Division of Environmental Quality, located at Gualo Rai Center, Middle Road, Gualo Rai, Saipan. Written comments should be submitted to: Director, Division of Environmental Quality, P.O. Box 1304, Saipan, MP, 95950. Comments must be received by DEQ within thirty (30) days of the date this notice is published in the Commonwealth Register.


Issued by:

Date: MAY 09 2005

John I. Castro, Jr., Director
 Division of Environmental Quality

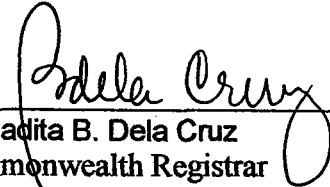
Pursuant to 1 CMC § 2153(e) (AG approval of regulations to be promulgated as to form) and 1 CMC § 9104(a)(3) (obtain AG approval) the proposed regulations attached hereto have been reviewed and approved as to form and legal sufficiency by the CNMI Attorney General and shall be published (1 CMC § 2153(f) (publication of rules and regulations)).

Dated the 12th day of May, 2005.

 James G. Lipton
PAMELA S. BROWN, *as Actg*
Attorney General


Filed by:

Date: 5-12-05


Bernadita B. Dela Cruz
Commonwealth Registrar

Received at the Governor's Office by:

Date: 5-13-05


Thomas I. Tebuteb
Special Assistant to the Governor for Administration

**DIVISION OF ENVIRONMENTAL QUALITY
PROPOSED AMENDMENT OF THE
CNMI WATER QUALITY STANDARDS**

- Citation of Statutory Authority:** The Director of the Division of Environmental Quality (DEQ) proposes to amend the CNMI Drinking Water Regulations pursuant to the CNMI Environmental Protection Act, P.L. 2-32, 2 CMC §§ 3101 *et seq.* (as amended by P.L. 11-103).
- Short Statement of Goals and Objectives:** The proposed revisions pertain to the requirement set forth in the Safe Drinking Water Act that States and Territories periodically review their Water Quality Standards, make any necessary changes, and provide for an opportunity for public comment.
- Brief Summary of the Proposed Regulations:** The revisions proposed include:
- replacing the existing drinking water regulations with a **new format** that matches the numbering system in the Federal Regulations;
 - requiring all public water systems to be supervised and run by a **certified water operator**;
 - requiring all public water systems to have a **sanitary survey** at least once every three years;
 - requiring all public water systems to **monitor for bacteriological contaminants monthly** (a small subset is currently allowed to monitor quarterly)
 - requiring all public water systems that get water from wells and/or rain to **disinfect** the water before it is distributed;
 - requiring public water systems serving more than 3,300 people to develop an **Emergency Response Plan**.
- For Further Information Contact:** John I. Castro, Jr., Director, Division of Environmental Quality
P.O. Box 501304, Saipan, MP 96950
Phone: (670) 664-8500/8501, fax (670) 664-8540
- Citation of Related and/or Affected Statutes, Regulations, and Orders:** Authorizing statutes are listed above. This action amends the CNMI's Drinking Water Regulations, at 04 Com. Reg. 1576 (Aug 15, 1982); as amended by 11 Com. Reg. 6111 (Mar. 15, 1989), 13 Com. Reg. 8340 (Nov. 15, 1983), 14 Com. Reg. 10212 (Dec. 15, 1992), 15 Com. Reg. 10807 (Aug 15, 1993), 16 Com. Reg. 12242 (July 15, 1994), 16 Com. Reg. 12445 (Sep. 15, 1994), 17 Com. Reg. 13823 (Nov. 15, 1995), and 24 Com. Reg. 19005 (Jan. 29, 2002).

Guiding Principles used to Develop the 2004 Revisions to the CNMI Drinking Water Regulations

Overall Structure

Part 1 – Regulations specific to the CNMI for which there is no Federal counterpart.

Part 2 – National Primary Drinking Water Regulations, 40 CFR Part 141.

Part 3 – National Secondary Drinking Water Regulations, 40 CFR Part 143.

Citations

When these regulations refer to and adopt a federal minimum standard, the Code of Federal Regulations is cited (e.g., 40 CFR § 141.21). The 2004 codification of these sections of the Code of Federal Regulations, many of which are adopted by reference, are attached to these regulations for ease of reference. This codification of any cited federal regulation may also be found at the Government Printing Office website: <http://www.gpoaccess.gov/cfr/index.html>.

When these regulations refer to and adopt a Commonwealth minimum standard, these regulations are cited (e.g., § 2141.21).

Modification of Federal Requirements

When a federal minimum standard is modified, the modified language appears under the applicable Commonwealth section. These modifications include additional regulatory standards that: (a) strengthen Commonwealth standards; (b) clarify the authority of the CNMI Department of Environmental Quality; or, (c) make these regulations more suitable for implementation in the CNMI.

Water System Scenarios Not Addressed In the Federal Regulations

There exist two types of public water systems in the CNMI that were not contemplated by the federal regulations, and which the federal regulations do not clearly address. These additional CNMI public water systems are: (1) bottled water companies; and (2) certain rain catchment systems. The requirements for these water systems have been written into Part 1 of the revised CNMI regulations, with citations provided so the reader can find the specific requirements for all water system types in Parts 2 and 3.

NOTISIAN PUPBLIKU

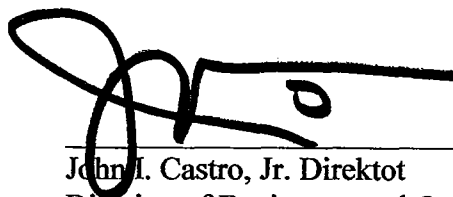
MAN MA PROPONE NA AMENDASION POT REGULASION HANOM MA GIMEN GI COMMONWEALTH I SANKATTAN SIHA NA ISLAS MARIANA

I Direktot i Dibision i Environmental Quality (DEQ), Ofisinan i Gobietno, Commonwealth I Sankattan Siha Na Islas Marianas (CNMI), ha infotoma i publiku na i DEQ ha propone para u ma adopta Regulasion Hanom Ma Gimén. I regulasion siha man ma propone sigun i aturidat i CNMI Environmental Protection Act, Lai Publiku 2-32, 2 CMC Seksiona 3101 et seq. (ni inamenda nu i Lai Publiku 11-103).

Este siha i man ma propone na tinilaika gi halom i Akton i Sáfú na Hånóm Ma Gimén, man ma i'ina kuándo-pot-kuándo i Regulasion Hånóm Ma Gimén nu i States/Territories ya ma fatinas i nisisario na tinilaika, ya ma prubeniya apottunidat para sinentin publiku. Iman ma propone na tinilaika ha enkusu: ma tulaikan i presente na regulasion Hånóm Ma Gimén ni guaha nuebo na fotma ni pumarehu yan i sisteman hånóm publiku para hu minaneha ni ma setifiko na petsona; ginagagao na todú i sesteman hånóm publiku para u guaha sanidat na senso potlumenos unbiáhe kada tres años; ginagagao na todú i sesteman hånóm publiku u ma adu i bacteriological na tatatmi kada mes (i didide na pátte' gi presente ma sedí para u adu kada tres mesisi); ginagagao na todú i sesteman hånóm publiku hu fan mañule' hånóm ginen i Tipu' pat u ma fakti i ichan ya u ma na gásgás ántes di u fan ma pátte'; yan ginagagao na todú i sesteman hånóm publiku ni ha sesetbe más de tres mit tres sientos (3,300) na taotao na para u na guahaye planu para i gotpe na inakude.

I Publiku guaha opotunidat-niha na u fan gai opinion pot i ma propone na amendasion, i Lai 1 CMC Seksiona 9104 (a). Guaha kopian i ma propone na tinilaika siha gi O fisinan i D.E.Q., ni gaige gi Gualo Rai Center Offie Building, giya Gualo Rai, Saipan. I tinige' opnion debi di u ma entrega guatto gi Direktot i D.E.Q., gi P.O. Box 501304 C.K., Saipan, MP 96950. Debi di u ma risibi i opinion siha ni D.E.Q. gi halom trenta (30) dias gi fechan este na notisia anai ma publiku gi Rehistran i Commonwealth.

Fecha: MAY 09 2005



John I. Castro, Jr. Direktot
Division of Environmental Quality

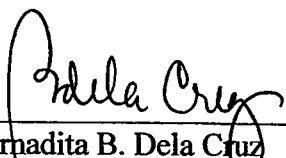
Sigun i lai 1 CMC Seksiona 2153 (e) (inaprueban i Abugao Henerat ni regulasion siha ni para u ma establesi pot para u fotma) yan 1 CMC Seksiona 9104 (a)(3) (u guaha inaprueban i Abugao Henerat) i ma propone na regulasion siha ni man che'che'ton guine esta man ma ina yan aprueba pot para u fotma yan ligat sifisiente ginen i Abugao Henerat i CNMI ya debi di u ma publika (1 CMC Seksiona 2153 (f) (publikasion i areklamento yan regulasion siha)).

Ma fecha este _____ na dia gi Mâyü, 2005.

Pamela S. Brown,
Abugao Henerât

Pine'lo as:


Fecha: 5-12-05



Bernadita B. Dela Cruz
Rehistran i Commonwealth

Ma risibe' gi Ofisinan i Gubietno as:

Fecha: 5-13-05



Thomas I. Tebuteb
Espesiât Na Ayudânte
Para i Atministrasion

ARONGOL TOULAP

POMWOL LLIWEL REEL ALLÉGHÚL SCHALÚL ÚÚL MELLÓL COMMONWEALTH FALÚWASCH MARIANAS

Samwoolul Bwulasiyool Limifischil Weleór (DEQ) Bwulasiyool Sów Lemelem, mellól Commonwealth Falúwasch Marianas (CNMI), ekke arongaar toulap bwe DEQ ekke pomwoli bwe ebwe fillóoy alléghúl schalúl úúl kkaal. Ebwal toolong ssiwel kkaal llól pomwol lliwel ikka raa fasúl pomwoli bwelle bwángil Alléghúl Ammwelil Weleór mellól CNMI, P.L. 2-32, 2 CMC táilil 3101 et seq. (iye a lliwel mereel Alléghúl Toulap 11-103).

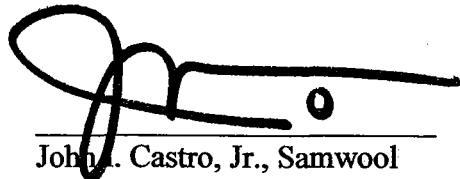
Pomwol ssiwel yeel ye ghil ngáli Ammwelil yááyál schaal igha State me Territories re lool me amweri fischiy alléghúl yááyál schaal kkaal. Rebwe siweli ngáre e welepakk (nisorio), me ayooya bwángiir toulap reel mángemáng. Pomwol ssiwel yeel ebwal atoolongow: alullusul alléghúl yááyál schaal kka ighila ngáli format ye e ffé iye fil ngáli Alléghúl numerool federóód kkaal; mweiti ngáli alongal mwóghútúl yaar schaal toulap igha ebwe yoor asóssótol ghasaghal fáál eew llól eew ráágh; mweiti ngáli alongal yaar schaal toulap igha rebwe ammwela fischiy reel fillongol bacteriological ótol maram (eghús ye emmwel bwe rebwe ammweri llól eluuw maram); mweiti ngáli alongal mwóghútúl yaar schaal toulap ikka re bweibwogh sáangi schaal kkel me/ ngáre schalúl uschow igha rebwe aghatchúwuló mmwal igha ebwe atotowow; me mweiti ngáli alongal mwóghútúl yaar schaal toulap ye ekke isisiwow reer toulap 3,300 igha ebwe fféer Emergency Response Plan.

Sáangi allégh ye 1 CMC talil 9104 (a) nge eyoor bwángiir toulap reel rebwe aghiyeghiy pomwol lliwel kkaal. Tilighial pomwol ssiwel kkaal nge eyoor mereel Bwulasiyool Limifischil Weleór, iye elo AmaiRaaw, Middle Road, AmaiRaaw, Seipél. Ischil mángemáng nge ebwe atoolong reel: Samwoolul Limifischil Weleór, P.O. Box 1304, Seipél, MP, 96950, Mángemáng reel pomwol kkaal nge DEQ ebwe bwughil llól eliigh (30) ráálil sáangi ráálil yaar arongowow ammataf yeel mellól Commonwealth Register.

Isaliyallewow:

MAY 09 2005

Rál



John A. Castro, Jr., Samwool
Bwulasiyool Limifischil
Weleór (DEQ)

Sáangi allégh ye 1 CMC talil 2153 (e) (alúghúlúghúl AG reel allégh kkaal igha ebwe akkatééló) me 1CMC táilil 9104 (a)(3) (bwughil alúghúlúghúl AG) reel pomwol allégh kkaal ikka e appasch me raa takkal amweri fischiy mereel CNMI Sów Bwungúl Allegh Lapalap me rebwe ayoorallong llól (1 CMC táilil 2153 (f) (akkatéél allégh kkaal me ammwel kkaal)).

Rááilil ye _____ llól Ghúúw, 2005.

PAMELA S. BROWN
Sów Bwungúl Allégh Lapalap

Aísis me Ammwel

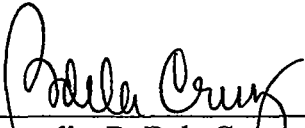
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Mwir sáangi Sów alillisil Sów Lemelem:

5-13-05

Rál



Bernadita B. Deia Cruz
Commonwealth Register



Thomas I. Tebuteb
Sów alillisil Sów Lemelem

Commonwealth of the Northern Mariana Islands
DRINKING WATER REGULATIONS
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PART 1 - CNMI PUBLIC WATER SYSTEM REGULATIONS

Subpart A – Authority/General Provisions

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- 1100.2 Purpose
- 1100.3 Definitions
- 1100.4 Right of Entry
- 1100.5 Drinking Water Quality Control and Prohibition of Uncontrolled Cross Connections
- 1100.6 Certified Laboratories
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1100.1 Authority

These regulations have been promulgated by the Commonwealth Division of Environmental Quality in accordance with 1 CMC §§ 2646 to 2649, Public Law 11-108, and the Commonwealth Environmental Protection Act, P.L. 3-23, 2 CMC §§ 3101 et seq. (as amended by P.L. 11-103). The regulations, technical provisions, and specifications to be adopted by the Division from time to time, shall have the full force and effect of law and shall be binding on all persons and other legal entities subject to the jurisdiction of the Commonwealth of the Northern Mariana Islands. The Division shall apply these regulations and standards to all public water systems in the Commonwealth.

1100.2 Purpose

The purpose of these regulations, technical provisions and specifications is to establish certain minimum standards and requirements, as determined by the Division, that are necessary to protect public health and safety, and to insure that public water systems are protected from contamination and provide water that is safe for human consumption.

1100.3 Definitions

In addition to the definitions provided at §§ 2141.2 and 3143.2 of these regulations, the words and terms listed below have the following definitions.

- (a) “Act”, for the purpose of Part 1 of these regulations only, means the Commonwealth Environmental Protection Act, 2 CMC §§ 3101 to 3134 (Public Law 3-23).
- (b) “Administrator” means the Administrator of the U.S. Environmental Protection Agency.
- (c) “Agency” means the U. S. Environmental Protection Agency, unless otherwise specified.
- (d) “Available,” as used in § 1300, means that based on system size, complexity, and source water quality, a certified operator must be on site or able to be contacted as needed to initiate the appropriate action in a timely manner.

(e) "Backflow" means the flow of water or other liquids, mixtures, or substances into a public water supply from any source or sources other than its intended source. Back-siphonage resulting from negative pressure in the distribution system is one type of backflow.

(f) "Bottled water company" means a business that produces drinking water in bulk or bottles for retail or wholesale sale to the public. For the purposes of these regulations, bottled water companies are public water systems.

(g) "Certified operator" means an individual who has passed an examination that tests their knowledge, skills, ability, and judgment as a water operator for a particular classification level of water treatment facility or water distribution system, and has been issued a certificate pursuant to § 1300 of these regulations.

(h) "Commonwealth" means the Commonwealth of the Northern Mariana Islands (CNMI).

(i) "Commonwealth Drinking Water Regulations" means these regulations in their totality (Parts 1, 2, and 3) and all regulations that are adopted by reference, herein.

(j) "Cross connection" means any actual or potential connection or structural arrangement between a public water system and any other source or system through which it is possible to introduce into any part of the public water system any used water, industrial fluid, gas or other substance not meeting the Drinking Water Quality Standards of these regulations. By-pass arrangements, jumper connections, removable sections, swivel or change over devices and other temporary or permanent devices through which "backflow" can or may occur are considered to be cross connections. A submerged inlet from a public water system into a water storage tank that may also store water from an untreated source, such as a rain water catchment, is another example of a cross connection.

(k) "Director" means the Director of the Division of Environmental Quality or duly authorized representative.

(l) "Distribution system" means any combination of pipes, tanks, tanker trucks, pumps, bottled water, etc. which delivers water from the source(s) and/or treatment facility(ies) to the consumer.

(m) "Division" means the Commonwealth Division of Environmental Quality.

(n) "Drinking Water Quality Standards" or Standards means those primary or secondary drinking water regulations as promulgated by either the Commonwealth Division of Environmental Quality or the U.S. Environmental Protection Agency.

(o) "Human consumption" means using water for any of the following purposes: drinking, bathing or showering, hand washing, food preparation, cooking, dishwashing, or oral hygiene.

(p) "Maximum contaminant level" means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

(q) "Operating shift" means that period of time during which operator decisions that affect public health are necessary for proper operation of the system.

(r) "Person" means an individual, corporation, company, association, partnership, municipality, or an agency of the Commonwealth or federal government.

(s) "Potable" water means water that is of a quality that meets the requirements of these regulations.

(t) "Primacy agency" means the agency of the Commonwealth that has been delegated the national drinking water program by the U.S. Environmental Protection Agency. The primacy agency in the Commonwealth is the Division of Environmental Quality within the Office of the Governor.

(u) "Public Water System" means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily in connection with such system; or any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

(v) "Rainwater catchment" means a structure for the collection of rainwater. Rainwater catchment systems may be subject to surface water runoff, as in the case of ground-level reservoirs that collect rainwater that has traveled over the surface of the land, or may not be subject to surface water runoff, as in the case of rainwater roof catchments. A rainwater catchment may be a public water system or a part of a public water system if the water system meets the definition of public water system at § 1100.3(s) above.

(w) "Responsible charge" – The operator(s) in responsible charge is defined as the person(s) designated by the owner to be the certified operator(s) who makes decisions regarding the daily operational activities of a public water system, water treatment facility and/or distribution system that will directly impact the quality and/or quantity of drinking water.

(x) "Sample point" means the location from which a water sample is collected. Such locations include source waters, between or after individual treatment process, storage tanks, entry points to the distribution system, or any location within a distribution system. Each sample point is designated by a unique identification number and a descriptive location name.

(y) "Significant deficiency" means any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration, that the Division determines may result in or have the potential to result in production of finished drinking water that poses an unacceptable risk to the health or welfare of the public served by the water system.

(z) "Tamper" means to introduce a contaminant into a public water system or into drinking water, or to otherwise interfere with drinking water or the operation of a public water system, with the intention of harming persons, water system facilities or water system operations. It does not include the standardized accepted treatment procedures performed by a supplier of water in preparing water for human consumption.

(aa) "Treatment facility" means any place(s) where a public water system alters the physical or chemical characteristics of the drinking water. Chlorination is considered as a function of the distribution system.

1100.4 Right of Entry

(a) As a condition for the issuance or continuation of any permit, certification, approval, or authorization granted under these regulations, authorized representatives of the Division may enter and inspect, at any reasonable time unless an emergency dictates otherwise, any establishment, facility, or any other property or premises under the control of a public water system.

(b) Such inspection may include inspection of records, files, papers, processes, controls and facilities, and testing of any feature of a public water system, including its raw water source.

(c) As a condition for the issuance or continuation of any permit, certification, approval, or authorization granted under these regulations, authorized representatives of the Division may collect water samples, as there is an inherent threat that the delay in obtaining a court order or warrant would prolong or increase the threat, or would prevent, hinder, or delay the discovery of evidence of a violation or the taking of any necessary mitigating or remedial measures. Any sample collected may be used as evidence in an enforcement action.

1100.5 Drinking Water Quality Control and Prohibition of Uncontrolled Cross Connections

(a) The Division may mandate that a public water system use a specific water treatment technology in order to comply with these regulations or to protect public health.

(b) It is the responsibility of the public water system to assure a quality of water supply that equals or surpasses Drinking Water Quality Standards of the Division as set forth in these regulations. This includes assurance by the public water system that users do not contaminate the public water supply by the use of faulty plumbing that allows infiltration or backflow of any sort into the drinking water distribution system.

(c) A public water system shall have no uncontrolled cross connections to a pipe, fixture, or supply, any of which contain water or other substances not meeting all applicable provisions of these regulations.

(d) Any cross connection existing in a public water system must be equipped with an appropriate backflow prevention device or assembly, as determined by the Division. The type of protection required to prevent backflow into the public water system must be commensurate with the degree of hazard that exists to the water supply.

(e) Backflow prevention devices and assemblies must be maintained in good working condition and periodically tested in accordance with the manufacturer's recommendations.

(f) A public water system shall notify the Division of any uncontrolled cross connection within five calendar days of its discovery. The cross connection shall be corrected within 10 days of its discovery. Failure to do so may result in an enforcement order.

1100.6 Certified Laboratories

(a) To perform drinking water analyses for determining compliance with these regulations, laboratories must be certified by the Division in accordance with the Division's Drinking Water Laboratory Certification Plan.

(b) Laboratories certified by the Division to perform drinking water analyses must report analytical results to public water systems in a format (information and layout) that is acceptable to the Division.

(c) The Division shall charge reasonable fees for laboratory analyses performed by its Environmental Surveillance Laboratory. Fees shall be set by the Director and revised as necessary, but not more frequently than semi-annually, to reflect changes in costs, new analysis methods, and the operational expenses of the laboratory. The schedule of laboratory fees will be available to the public upon request.

1100.7 Monitoring Requirements and Performance Testing

(a) Monitoring Requirements

(1) The Division may require any public water system to collect water samples and have them analyzed at a certified laboratory in order to evaluate:

(i) The concentration of suspected or potential contamination that may be the result of anthropogenic or natural sources, including natural disasters such as typhoons and volcanic eruptions;

(ii) The need to install water treatment equipment so as to comply with existing or future CNMI Drinking Water Regulations, or to protect public health; or

(iii) The proficiency of existing water treatment equipment, and verification of its effectiveness in removing physical, biological, chemical, or radiological contaminants.

(2) The Division shall prescribe the collection procedures, frequency of sampling, analytical methods, and reporting for any monitoring requirements not specified elsewhere in these regulations.

(i) The Division may stipulate a period of time within a compliance period during which samples must be collected. Samples collected by a water system outside of the stipulated time period shall not be used in determining compliance for that compliance period.

(ii) All samples collected to comply with these Commonwealth Drinking Water Regulations must be collected from a sample point that has been approved by the Division, and must be identified as having come from that sample point.

(iii) Analytical results must be reported in a format (information and layout) that is acceptable to the Division.

(3) When multiple sources of water are combined (i.e., mixture of surface water, groundwater under the direct influence of surface water, groundwater, rainwater or purchased water), the monitoring requirements that are most protective of public health must be performed.

(b) Performance Testing

(1) The Division may require public water systems to install, use and maintain instrumentation to monitor, analyze, and record water quality and water quantity data.

(2) Monitoring equipment must be maintained and calibrated in accordance with the manufacturer's recommendations. Maintenance and calibration records must be retained on premises and available for inspection by Division personnel.

Subpart B – Design, Construction, and Operation of Public Water Systems

Section

1200.1	Design and Construction Requirements
1200.2	Design and Construction Standards
1200.3	Design Review Process
1200.4	Drinking Water Materials and Additives
1200.5	Operational Requirements
1200.6	Sanitary Surveys

1200.1 Design and Construction Requirements

(a) No person shall (1) commence construction of any new public water system, (2) make improvements to or modify the treatment process of an existing public water system, or (3) initiate the use of a new source, storage facility, or significant distribution system component (i.e. booster pump station, pressure reducing station) until plans and specifications for such construction, improvements, modification or use have been submitted to, and approved by, the Director. The Director shall grant such approval when he finds that the proposed facilities are capable of complying, on a continuous basis, with appropriate design criteria, and with all applicable laws, standards, rules and regulations.

(b) No public water system may physically split its pumping or distribution facilities in order to avoid the requirements of these Commonwealth Drinking Water Regulations. The Director of the Division shall identify a public water system based on legal ownership and contiguous facilities, regardless of independent hydraulic systems.

1200.2 Design and Construction Standards

(a) Design Standards. Suppliers of water shall ensure that accepted engineering criteria and practices are used in the design and construction of all public water systems, such as those set

out in the most recent editions of the following documents, or the edition required by Public Law.

- (1) Approved Backflow Prevention Assemblies for Service Isolation, Department of Health Services, State of California, <http://www.dhs.ca.gov>
 - (2) AWWA Manuals of Water Supply Practices (M1-M51), American Water Works Association (AWWA), Denver, CO, <http://www.awwa.org>
 - (3) AWWA Standards, American Water Works Association (AWWA), Denver, CO, <http://www.awwa.org>
 - (4) Drinking Water System Components – Health Effects (ANSI/NSF 61), National Sanitation Foundation (NSF) International, Ann Arbor, MI, <http://www.nsf.org>
 - (5) Drinking Water Treatment Chemicals – Health Effects (ANSI/NSF 60), National Sanitation Foundation (NSF) International, Ann Arbor, MI, <http://www.nsf.org>
 - (6) Health Effects from Rainwater Catchment System Components (NSF P151), National Sanitation Foundation (NSF) International, Ann Arbor, MI, <http://www.nsf.org>
 - (7) Recommended Practice for Backflow Prevention and Cross-Connection Control, American Water Works Association (AWWA), Denver, CO
 - (8) Recommended Standards for Water Works – Policies for the Review and Approval of Plans and Specifications for Public Water Supplies (10 States Standards), Health Education Services, Albany, NY, <http://www.hes.org>
 - (9) Uniform Plumbing Code (UPC), International Association of Plumbing and Mechanical Officials (IAPMO), Ontario, CA., <http://www.iapmo.org>
- (b) Prohibition on use of Lead Pipes, Solders, and Flux. Any pipe, pipe fittings, fixtures, solder, or flux used in the installation or repair of any public water system, or any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system, shall be “lead free” as defined at § 2141.43(d) of these regulations.

1200.3 Design Review Process

The design review process consists of four steps: (a) the applicant submits a Notice of Intent; (b) the Division reviews and takes action on the Notice of Intent; (c) the applicant prepares final drawings and specifications; (d) the Division reviews and takes action on the final drawings and specifications.

(a) Applicant’s Notice of Intent

- (1) Before a person may enter into a financial commitment for, or initiate construction of, a new public water system, or modification of an existing public water system, that person must submit in writing a Notice of Intent to the Division. For the purposes of this subpart,

modification to an existing water system does not include routine maintenance and service of hydrants and valves, or replacement of equipment, pipe, and appurtenances with equivalent equipment, pipe, and appurtenances. The Notice of Intent shall contain all of the information required in the Division's standardized form.

(2) The siting requirements specified in § 2141.5 of these regulations must be considered and addressed in the Notice of Intent.

(3) For new water systems and for systems that are modifying or installing new treatment technology, the Notice of Intent must also include a description of the technical, managerial, and financial capacity of the water system to plan, achieve, and maintain compliance with all applicable Drinking Water Quality Standards. Technical, managerial, and financial capacity are defined as follows:

(i) Technical capacity refers to the physical infrastructure of the public water system, including but not limited to the adequacy of the source water, infrastructure (source, treatment, storage, and distributions), and the ability of system personnel to implement the requisite technical knowledge.

(ii) Managerial capacity refers to the management structure of the public water system, including but not limited to ownership accountability, staffing and organization, and effective linkages to customers and regulatory agencies.

(iii) Financial capacity refers to the financial resources of the public water system, including but not limited to revenue sufficiency, credit worthiness, and fiscal controls.

(b) Division Review and Action on the Notice of Intent. The Division shall review a Notice of Intent to construct or modify a public water supply system for completeness and either:

(1) Fully or conditionally approve the Notice for the preparation of final plans and specifications for the proposed facility;

(2) Notify the applicant that additional information is required;

(3) Deny the proposal to construct giving written appropriate reasons for the denial.

(c) Preparation of Final Drawings and Specifications by the Applicant

(1) Preparation of final drawings and specifications for a public water system shall be based upon accepted engineering practice and must be submitted in a format acceptable to the Division.

(2) The final plans and specifications shall follow the intent expressed in the approved Notice of Intent.

(3) A person experienced in the construction and operation and maintenance of water supply systems shall supervise preparation of final drawings and specifications.

(4) A Professional Engineer must design any treatment system included in any public water system.

(d) Division Review and Approval of Final Drawings and Specifications

(1) Final drawings and specifications shall be submitted to the Division for review.

(2) The Division shall either:

(i) Approve the drawings and specifications for construction; or

(ii) Request changes be made to the drawings and specifications to make the design conform to these Regulations or for the protection of the public health and the environment. Once changes are made to the final drawings and specifications, they must be submitted to the Division for review.

1200.4 Drinking Water Materials and Additives

(a) Each product, with the exception of commercially retailed hypochlorite compounds such as unscented Clorox, Purex, etc., added to water intended for human consumption, shall conform to ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by ANSI/NSF Standard 60 shall not be exceeded in practice. Products covered by this paragraph include, but are not limited to: coagulation and flocculation chemicals; chemicals for corrosion and scale control; chemicals for softening, precipitation, sequestering and pH adjustment, disinfection and oxidation chemicals; chemicals for fluoridation, defluoridation, algae control, and dechlorination; dyes and tracers; antifoamers, regenerants, and separation process scale inhibitors and cleaners; and water well drilling and rehabilitation aids.

(b) Except as identified in §§ 1200.4(g)-(h) of these regulations, a material or product that comes in significant contact with water intended for human consumption shall conform to ANSI/NSF Standard 61. For the purposes of this section, "substantial contact" means the elevated degree that a material in contact with water may release leachable contaminants into the water that such levels of these contaminants may be unacceptable with respect to either public health or aesthetic concerns. The Division shall take into consideration the total material/water interface area of exposure, volume of water exposed, length of time water is in contact with the material, and level of public health risk. Examples of water system components that would be considered to be in "substantial contact" with drinking water are filter media, storage tank interiors or liners, distribution piping, membranes, exchange or adsorption media, or other similar components that would have high potential for contacting water intended for human consumption. Materials associated with components such as valves, pipe fittings, debris screens, gaskets, or similar appurtenances would not be considered to be in substantial contact.

(c) Materials or additives in use prior to the effective date of these regulations that have not been listed under ANSI/NSF Standard 60 or 61 may be used for their current applications until the materials are scheduled for replacement, or until stocks of existing additives are depleted and scheduled for reorder.

(d) Any products used to coat, line, seal, or patch water contact surfaces, or that have substantial water contact within the collection, treatment, or distribution systems must comply with the appropriate ANSI/NSF Standard 60 or 61. Application of these products must comply with recommendations contained in the product certification.

(e) Evidence that a product conforms to the requirements of this section shall be the appearance on the product or product package of a seal of a certifying entity that is accredited by the American National Standards Institute to provide the certification.

(f) Any treatment chemical or additive used in a public water system must come from and be stored in containers that are clearly labeled in English, and must display the manufacture's name and address.

(g) The Director shall consider standards for chemicals, materials, or equipment that have been certified by NSF International as complying with the standards required by this section. In those instances where chemicals, materials, and equipment that come into contact with water intended for human consumption are essential to the design, construction, or operation of the drinking water system and have not been certified by NSF International or have NSF certification but are not available from more than one source, the standards shall provide for the use of alternatives which include:

(1) Products composed entirely of ingredients determined by the Environmental Protection Agency, the Food and Drug Administration, or other federal agencies as appropriate for addition to potable water or aqueous food.

(2) Products consistent with the specifications of the American Water Works Association.

(3) Products that are designed for use in drinking water systems and that are consistent with the specifications of the American Society for Testing and Materials.

(h) The following materials and products are exempt from the requirement to conform to ANSI/NSF Standard 61:

(1) A concrete structure, tank, or treatment tank basin constructed onsite that is not normally coated or sealed if the construction materials used in the concrete are consistent with paragraph (g). If a coating or sealant is specified by the design engineer, the coating or sealant shall comply with ANSI/NSF Standard 61;

(2) An earthen reservoir or canal located upstream of water treatment;

(3) A synthetic tank constructed of material that meets Food and Drug Administration standards for a material that comes into contact with drinking water or aqueous food that is less than 15,000 gallons in capacity; or

(4) A pipe, treatment plant component, or water distribution system component made of lead-free stainless steel.

1200.5 Operational Requirements

(a) Prior to the initial operation of any newly constructed public water system, or the operation of any public water system that has modified its source water, treatment, storage or distribution facilities, the public water system must be inspected by Division personnel.

(b) Newly Constructed Water Systems. Prior to serving water to the public, a newly constructed public water system must undergo a full sanitary survey performed by Division personnel. If, as a result that survey, significant deficiencies are identified, the water system is prohibited from distributing water until those deficiencies have been corrected to the satisfaction of the Director.

(c) New Facilities of Existing Water Systems. Prior to distributing water, Division personnel must inspect newly constructed or modified public water system facilities. If, as a result that of inspection, significant deficiencies are identified, the public water system is prohibited from distributing water from those treatment facilities until all deficiencies have been corrected to the satisfaction of the Director.

(d) No later than 45 calendar days after any public water system receives written notice from the Division that one or more significant deficiencies has been identified, the water system must respond in writing to the Division indicating the steps it will take to correct the deficiencies, and the schedule for those corrections.

(e) A new public water system, or a new water source to be used by an existing public water system, shall not distribute water until all three of the following conditions are met.

(1) All initial monitoring required at entry points to the distribution system, as specified in Part 2 of these regulations, has been performed.

(2) All analytical results have been reported to the Division.

(3) All analytical results indicate there is no exceedance of any applicable maximum contaminant level.

1200.6 Sanitary Surveys

(a) It is the responsibility of every public water system, including community water systems and non-community water systems, to have a sanitary survey of all of their public water system facilities conducted at least once every three years. Owners of public water systems shall submit a completed sanitary survey to the Division within 36 months of the effective date of these regulations.

(1) At a minimum the sanitary survey shall address these elements: water source; treatment; distribution system; finished water storage; pumps, pump facilities and controls; monitoring, reporting and data verification; water system management and operations; and operator compliance with Commonwealth requirements.

(2) The sanitary survey shall be documented in a report to the Division.

- (3) Significant deficiencies identified in the report shall be addressed by the water system within 30 days of being notified of the deficiency.
- (b) The sanitary survey shall be performed by a person approved by the Division. Such persons include:
- (1) Division personnel trained to perform sanitary surveys;
 - (2) Bureau of Environmental Health personnel trained to perform sanitary surveys;
 - (3) Registered professional engineers trained to perform sanitary surveys and approved by the Division;
 - (4) Registered environmental health specialists trained to perform sanitary surveys and approved by the Division; or
 - (5) Other personnel trained to perform sanitary surveys and approved by the Division;
- (c) The Division may assess reasonable fees for a sanitary survey if Division personnel perform the survey.

Subpart C – Certification of Public Water System Operators

Section	
1300.1	General Provisions
1300.2	Certification Requirements
1300.3	Classification of Public Water Systems

1300.1 General Provisions

- (a) The purpose of this subpart is to assure that public water system operators are trained and certified, and that they have knowledge and understanding of the public health reasons for drinking water standards.
- (b) No later than January 1, 2006, owners of all public water systems must place the direct supervision of their water system, including each treatment facility and/or distribution system, under the responsible charge of an operator holding a valid certification equal to or greater than the classification of the treatment facility and/or distribution system.
- (c) All operating personnel making process control/system integrity decisions about water quality or quantity that affect public health must be certified.
- (d) A designated certified operator must be available for each operating shift.
- (e) The Division may charge reasonable fees to cover the expense of bringing guest certifying authorities to the Commonwealth in order to administer operator certification examinations. These fees may be in addition to those fees charged by the certifying authority.

1300.2 Certification Requirements

(a) A person seeking certification under this regulation shall submit an application to the Division on a form approved by the Division.

(b) The Division will certify an applicant who has met the examination requirements of § 1300.2(c) of these regulations and the experience and education requirements of § 1300.2(d) of these regulations; or the comity requirements of § 1300.2(e) of these regulations; and has submitted the appropriate fees.

(c) Examination requirements [reserved].

(d) Education and experience requirements

(1) Every classification level of water treatment plant operator or water distribution operator must have at least a high school diploma or the equivalent thereof.

(2) Experience requirements for each classification level of operator are outlined in the following Table 1 – Years of Experience for Certification at each Classification Level.

Table 1 - Years of Experience Required for Certification at each Classification Level					
Classification Level	OIT*	Class 1	Class 2	Class 3	Class 4
Water Treatment	0	1	3	4	4
Water Distribution	0	1	4	6	8

*OIT means Operator-In-Training. An operator certified at the OIT level is a certified operator, but can not be the supervising operator having responsible charge over a public water system because the certification level is not at the classification level of the public water system.

(e) Comity requirements

(1) The Division will recognize the certification of operators who have current drinking water operator certifications in good standing from any U.S. State, territory, or possession, or from the Association of Boards of Certification. Such recognition is termed comity certification.

(2) The Division will determine the classification level that the operator qualifies to be recognized at based on the operator's experience and education.

(3) Until such time as the Commonwealth develops a full and complete operator certification program, an operator must be certified by comity by the Division in order to serve as a certified operator for any public water system located within the Commonwealth.

(4) In order to be certified by comity in the Commonwealth, a certified operator must provide the Division with the following.

(i) A current and valid certificate documenting that the individual is a certified operator in any jurisdiction described in §1300.2(e)(1) of these regulations.

(ii) All support documents required by the original certifying authority to authenticate the qualifications of the operator.

(iii) The appropriate fees.

(f) Certificate term and renewal

(1) A certificate and renewal issued under the conditions of §§ 1300.2(c)-(d) of these regulations, examination, experience and education requirements, is valid for a three-year period beginning January 1 of the year of issuance.

(2) A certificate issued under the conditions of § 1300.2(e) of these regulations, comity certification, is valid for the term of the original certificate or three years, whichever is less.

(3) The Division will renew a certificate only if an operator has completed 10 contact hours of Division approved continuing education for every year that the certificate was valid (30 hours for a three year certificate); has paid the required fee; and is otherwise in compliance with these regulations.

(g) Lapsed certificates

(1) An operator who seeks renewal of a lapsed certificate shall submit a request for renewal within 180 days after the certificate lapses. Upon receipt of a valid request for renewal, including proof of compliance with §1300.2(f)(3) of these regulations and payment of the appropriate fee, the Division shall renew a certificate.

(2) The Division will require reexamination of an operator whose renewal application is received more than 180 days after the certificate lapses.

(h) Revocation of operator certification

(1) After an investigation and review of the facts, and in accordance with all applicable Commonwealth laws and regulations, the Director may revoke the certification of an operator for any of the following reasons:

(i) The operator has practiced fraud or deception, has tampered with water samples, falsified analytical data, or falsified other operating records. A person committing such actions is liable for civil or criminal penalties in accordance with 2 CMC §3131(d).

(ii) Reasonable care, judgment, or the application of knowledge was not used in the performance of the operator's duties.

(iii) The operator does not perform duties in a manner that meets drinking water compliance requirements of Commonwealth laws and regulations.

(iv) The certification of the operator has expired or is no longer valid in the original jurisdiction from which their certification was issued.

(2) An operator whose certificate is revoked may not apply for certification for 365 days after revocation. An application received under this subsection will be treated as an initial application.

(i) Temporary certification: The Director may, in his discretion, issue a temporary certificate for good cause shown. The temporary certificate is valid until the earliest date when the operator may be examined and certified under this regulation. A temporary certificate applies only to the system which the applicant is operating at the time of application, and will not be renewed. The fees required must be paid before a certificate will be issued.

1300.3 Classification of Public Water System

The treatment facility(ies) and the distribution system(s) of a public water system are classified separately as follows:

(a) A drinking water treatment facility is classified as a Class 1, Class 2, Class 3, or Class 4 treatment facility in accordance with Table 1 (Classification of Treatment Facilities).

Table 1 – Classification of Treatment Facilities	
Type of Treatment	Class of Treatment Facility
Groundwater sources using disinfection on a continuous basis.	Class 1
Membrane filtration, cartridge filtration, or desalination (including distillation, ion exchange, and reverse osmosis) of groundwater, purchased water, or water from rainwater roof catchments.	Class 2
Any filtration (except conventional or direct filtration) of surface water or groundwater under the direct influence of surface water.	Class 3
Conventional filtration or direct filtration of surface water.	Class 4

(b) A drinking water distribution system is classified as a Class 1, Class 2, Class 3, or Class 4 distribution system in accordance with Table 2 (Classification of Distribution Systems).

Table 2 - Classification of Distribution Systems	
Population Served by Water System	Class of Distribution System
1,500 and less	Class 1
1,501 to 15,000	Class 2
15,001 to 50,000	Class 3
50,001 and greater	Class 4

Subpart D – Bottled Water Companies

Section

1400.1 Basis for Regulation

1400.2 Requirements of Bottled Water Companies

1400.1 Basis for Regulation

Bottled water companies play a vital role in providing drinking water in the Commonwealth. They are, however, generally not regulated as public water systems under the federal Safe Drinking Water Act (in certain circumstances, they may be federally regulated as non-community water systems). In addition, regulations promulgated under the federal Safe Drinking Water Act do not take into consideration the unique characteristics of bottled water plants.

In order to assure the provision of safe drinking water and protect public health, the Division regulates bottled water companies as public water systems within the Commonwealth under the jurisdiction granted by 2 CMC §§ 3111 (a)(1) and 3122 (b). The requirements in this Subpart assure that the customers of bottled water companies are provided at least an equal level of protection afforded the customers of other public water systems.

1400.2 Requirements of Bottled Water Companies

(a) Bottled water companies are regulated as community water systems and, except as specified in paragraphs (b) through (d) of this section, must follow all CNMI National Primary and Secondary Drinking Water Regulations as specified in Parts 2 and 3 of these regulations.

(b) Special Monitoring Requirements for Coliform Sampling. For the purpose of complying with the coliform sampling requirements of §2141.21(a)(2) of these regulations, the minimum number of samples required per month is based on system configuration, not population served. A bottled water company must collect a minimum of:

(1) Two routine samples every month from every tap at the facility that provides finished water.

(i) Finished water taps include taps, faucets, and spouts that provide water to bottles, bulk storage, retail faucets and ice machines.

(ii) A row of taps at a single sink that has only one source of water is counted as one tap. In this situation, a sample can be collected at any individual tap.

(2) Two routine samples every month from the tank on each vehicle that hauls water intended for human consumption; and

(3) One routine sample every month from each bulk retail water storage the bottled water company delivers water to.

(c) Special Monitoring Requirements for Chemical Samples

(1) A bottled water company that collects water from a well, spring, rainwater catchment or other source must monitor that water for chemical contaminants as specified in §§ 2141.23, 2141.24, and 2141.26 of these regulations.

(2) A bottled water company that is a consecutive water system (as described at § 2141.29 of these regulations) and that purchases water from another public water system, must monitor that purchased water as described below.

(i) Volatile organic chemicals listed at § 2141.61(a) of these regulations must be monitored every three years.

(ii) Inorganic chemicals listed at § 2141.62(b) of these regulations, with the exception of asbestos, must be monitored every three years.

(iii) Synthetic organic chemicals listed at § 2141.61(c) of these regulations, with the exception of diquat, endothall, glyphosate and dioxin, must be monitored every three years.

(iv) Radionuclide contaminants listed at § 2141.66 of these regulations, with the exception of beta particle and photon radioactivity, must be monitored every three years.

(v) If the public water system from which the water is purchased fails to perform the chemical monitoring required of it, then the purchaser of that water (e.g., the bottled water company) must monitor according to the requirements at paragraph 1400.3(c)(1) of this section.

(vi) The requirement for quarterly monitoring in any initial compliance period specified in §§ 2141.23, 2141.24, and 2141.26 of these regulations is waived if the public water system from which the water is purchased has performed the required monitoring.

(vii) All other monitoring requirements specified in §§ 2141.23, 2141.24, and 2141.26 of these regulations are applicable if any contaminant is detected as a concentration that triggers additional requirements on the part of the bottled water company.

(d) Special Monitoring Requirements for Control of Lead and Copper. For the purpose of complying with the lead and copper sampling requirements of §§ 2141.86(c) and 2141.87(a) of these regulations, all bottled water companies must, at a minimum, collect samples from the number of sample sites required under the "101 to 500" system size category.

(e) Special Monitoring Requirements for Disinfectants/Disinfection By-Products. For the purpose of complying with the disinfectants/disinfection by-products monitoring requirements of § 2141.132 of these regulations, bottled water companies must designate one or more sample locations reflecting maximum residence time of product water within the public water system's distribution system. Allowable sample locations are as follows.

(1) A finished water product tank containing water that has remained undisturbed in the tank for a minimum of 24 hours.

(2) A five-gallon bottle of finished water that was produced and retained for a minimum of 24 hours.

(3) Any other location approved by the Director.

(f) Every bottled water company must abide by the operator certification requirements of sections §§ 1300.1, 1300.2 and 1300.3 of these regulations.

(g) In addition to the requirements imposed under this section, the processing of bottled water shall be subject to regulation by the Commonwealth Department of Public Health and the U.S. Food and Drug Administration.

Subpart E – Rainwater Catchment Systems

Section

1500.1 Basis for Regulation

1500.2 Requirements of Rainwater Catchment Systems

1500.1 Basis for Regulation

Rainwater catchment systems play a significant role in supplementing the quantity of water available in the Commonwealth. Generally, however, they are not considered as a source of water when regulations were developed under the federal Safe Drinking Water Act. Accordingly, the federal regulations are silent as to how water intended for human consumption that comes from rainwater sources should be monitored.

In order to assure the provision of safe drinking water, the Division regulates rainwater catchment systems as it does other sources used by public water systems. The requirements of this Subpart assure that public water systems relying in whole or in part on water from rainwater catchment systems monitor at an appropriate level to protect public health.

1500.2 Requirements of Rainwater Catchment Systems

(a) Rainwater that has traveled over the surface of the land before it is collected in a rainwater catchment system is considered surface water under these regulations. Accordingly, it is subject to the same treatment and monitoring requirements as other surface water sources described in Part 2 of these regulations.

(b) Rainwater that has not traveled over the surface of the land and, instead, has been collected in a rainwater roof catchment system, is not considered surface water under these regulations. It is considered groundwater, and is subject to the same monitoring and treatment requirements as other groundwater sources as described in these regulations.

(c) Special Monitoring Requirements for Rainwater Roof Catchment Systems. If an entry point to a distribution system is supplied solely by water collected in a rainwater roof catchment system (i.e., it is not mixed with water from any other source), the following chemical monitoring requirements at that entry point shall apply.

(1) Monitoring for nitrate must be performed once during the initial compliance period.

(i) If nitrates are not detected during the initial compliance period then no additional monitoring for nitrate is required during repeat compliance periods.

(ii) If nitrates are detected during the initial compliance period, then the Division may require additional monitoring for nitrate.

(2) The requirement to monitor for the synthetic organic chemicals listed at § 2141.61(c), and as required in § 2141.24(h) of these regulations, is waived.

(3) The requirement to monitor for the radionuclide chemicals listed at § 2141.66, and as required in § 2141.26 of these regulations, is waived.

(4) If the roofing material is replaced or a new protective coating is applied to the roof, then the rainwater roof catchment system is considered to be a new water source, and the monitoring cycle for chemical contaminants will start again with an initial compliance period.

Subpart F - Disinfection of Groundwater and Rainwater

Section

1600.1 Basis for Regulation

1600.2 Requirements for the Disinfection of Groundwater and Rainwater Sources

1600.1 Basis for Regulation

Many of the wells used to supply groundwater in the Commonwealth are shallow wells drilled into high-permeability limestone aquifers. These wells, especially if poorly constructed, are subject to microbiological contamination. Rainwater roof catchment systems, if not properly and frequently maintained, are also susceptible to contamination from microbes, plant debris and animals.

For these reasons, it is important for public water systems that produce drinking water from these sources to effectively treat the source water before the water is provided to their consumers. This section sets forth disinfection requirements for sources of water obtained from groundwater and rainwater roof catchments.

The requirements for the treatment of surface water and groundwater under the direct influence of surface water are specified in Part 2, Subpart H of these regulations.

1600.2 Requirements for the Disinfection of Groundwater and Rainwater Sources

(a) All water obtained from groundwater sources or rainwater roof catchment systems shall be continuously disinfected by means or methods that are approved by the Director and are effective in the inactivation of pathogenic organisms. Disinfection may include physical as well as chemical treatment.

(b) **Systems Using Chlorination.** When chlorination methods are employed, a sufficient amount of chlorine shall be continuously added to the source water to inactivate any pathogenic organisms potentially present and to maintain a residual in the distribution system.

(1) The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or free chlorine, cannot be less than 0.10 mg/l in more than five percent of the samples taken each month, for any two consecutive months that the system serves water to the public.

(2) The residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliform are sampled.

(3) The residual disinfectant concentration measured at sample points in the distribution system must be reported to the Division on the same form used to report total coliform results.

(c) Systems that Use a Disinfectant Other than Chlorine. When methods of disinfection are employed that do not leave a measurable disinfectant residual in the product water, the public water system must adhere to the requirements specified below. Failure to comply with these requirements is a violation of these regulations and may result in an enforcement action.

(1) Design and installation of the treatment unit shall ensure that the manufacturer's maximum rated flow and pressure cannot be exceeded;

(2) All treatment equipment (including recommended pretreatment equipment) must be installed, operated, and maintained in accordance with the manufacturer's recommendations;

(3) The manufacturer's manuals and documentation must be maintained on-site;

(4) Complete and accurate records of operation and maintenance must be maintained and kept on-site;

(5) At least one set of spare parts for components that must be periodically replaced must be on-site or readily available; and,

(6) The Director may require additional monitoring or challenge testing of any disinfection treatment equipment in order to determine its effectiveness.

(d) The methods of disinfection described in paragraph (c) of this section may only be used by bottled water companies and, as determined by the Director, in situations where a point-of-entry treatment device or a point-of-use treatment device is deemed appropriate.

(e) Public water systems must measure residual disinfectant concentration with one of the analytical methods listed at 40 CFR §141.74(a)(2).

Subpart G – Drinking Water Emergencies and Tampering with Public Water Systems

Section

- 1700.1 Supply of Drinking Water during Emergencies
- 1700.2 Emergency Disinfection of Drinking Water
- 1700.3 Emergency Powers of the Director
- 1700.4 Tampering with Public Water Systems

1700.5 Emergency Response Plan for systems serving 3,300 or more people

1700.1 Supply of Drinking Water during Emergencies

Two types of potential emergency situations outside the normal scope of operations are recognized with respect to public water systems: (a) toxic contamination of the water supply; and, (b) mechanical failure and/or major natural disaster. Under these situations, the following requirements apply.

(a) **Toxic Contamination.** A potential emergency may exist when drinking water quality is impacted due to the presence of toxic or other substances in the water supply that cannot be removed by existing treatment methods and which, if ingested, may cause an immediate risk to the health of consumers. The presence of such substances may be identified by such parameters as odor, taste, color, microbiological or chemical analysis, or by other evidence. Under these circumstances, the affected public water system shall do the following.

- (1) Immediately close off the water supply to the distribution system.
- (2) Notify the Director of the Division within one hour of the discovery of the contamination.
- (3) Notify water consumers by the quickest available means of communication. At a minimum, the guidelines for a Tier 1 Public Notice, as described in §2141.202, should be followed.
- (4) Deliver potable water from an alternative suitable water source to such public consumers as hospitals, clinics, and similar institutions that are normally supplied water from the contaminated water supply. The water so delivered shall be disinfected to the satisfaction of the Director. The deliveries shall continue until the time the Director declares the contaminated public water supply potable.
- (5) Provide potable water from an alternative suitable water source at a location convenient for the consumers normally supplied water from the contaminated water supply. The water shall be disinfected to the satisfaction of the Director. The alternative water supply must be made available until such time as the Director declares the contaminated public water supply potable.
- (6) If potable water is provided by hauling the water in a tanker truck or trailer, the water container on the vehicle shall be sanitized before use. The public water system responsible for providing the alternative water supply shall monitor the alternative water supply for coliform bacteria at the point where the consumers collect the water at a frequency determined by the Director.

(b) **Mechanical Failure and/or Major Disaster.** A potential emergency may exist when water quality or quantity is impacted due to mechanical failure of water treatment facilities due to insufficient operation and maintenance, vandalism, or natural disasters such as typhoons or earthquakes. In such situations, the affected public water system shall do the following.

- (1) Take preventative measures to ensure that the water supply does not become contaminated, such as isolating tanks or distribution mains, if needed.
- (2) Notify the Director of the Division within one hour of the discovery of the mechanical failure.
- (3) Notify water consumers by the quickest available means of communication. At a minimum, the guidelines for a Tier 1 Public Notice, as described in §2141.202, should be followed.
- (4) Deliver potable water from an alternative suitable water source to such public consumers as hospitals, clinics, and similar institutions that are normally supplied water from the affected water supply. The water so delivered shall be disinfected to the satisfaction of the Director. The deliveries shall continue until the time the Director declares the mechanical failure has been corrected.
- (5) Supply of alternative water for residents.
 - (i) Limited service area mechanical failures. If the mechanical failure is limited to only one village, then provide potable water from an alternative suitable water source at a location convenient for the consumers normally supplied water from the affected water supply. The water shall be disinfected to the satisfaction of the Director. The alternative water supply must be made available until such time as the Director declares that the mechanical failure has been corrected.
 - (ii) Large service area mechanical failures. If the mechanical failure affects more than one village, then the public water system must advise consumers as to the locations where potable water may be obtained if such water is available. If potable water is not available, the public water system will advise consumers where other water sources may be found in the immediate vicinity. The public water system will also recommend disinfection of drinking water as prescribed at §1700.2.
- (6) If potable water is provided by hauling the water in a tanker truck or trailer, the water container on the vehicle shall be sanitized before use. The public water system responsible for providing the alternative water supply shall monitor the alternative water supply for coliform bacteria at the point where the consumers collect the water at a frequency determined by the Director.

1700.2 Emergency Disinfection of Drinking Water

- (a) A public water system shall provide to its customers and users the information required by paragraphs (b) and (c) of this section when, due to natural disasters or other circumstances, it is necessary for individual consumers to disinfect their own drinking water. The form, manner and frequency of providing the information shall be in accordance with a Tier 1 public notice, as described at §2141.202 of these regulations.
- (b) When emergency disinfection is necessary, examine the physical condition of the water. Disinfectants are less effective in cloudy water. Filter murky or colored water through clean

cloths or allow it to settle, and draw off the clean water for disinfection. Water prepared for disinfection should be stored only in clean, tightly covered, containers, not subject to corrosion. Water to be used for drinking, cooking, making any prepared drink, or brushing teeth should be properly disinfected.

(c) Disinfection Methods. To disinfect small quantities of water (5 gallons or less) the following procedures are recommended:

(1) Boiling. Vigorous boiling for one minute will kill any disease-causing microorganisms present in water. The flat taste of boiled water can be improved by pouring it back and forth from one container to another (called aeration), by allowing it to stand for a few hours, or by adding a small pinch of salt for each quart of water boiled.

(2) Chlorine Bleach. When boiling is not practical, chemical disinfection should be used. Common liquid household bleach (5.25% sodium hypochlorite) contains a chlorine compound that will disinfect water. To achieve a concentration of at least 1 part per million (ppm) residual chlorine, add bleach in accordance with the table below.

Emergency Disinfection Using Chlorine Bleach		
Amount of Water	For Clear Water use this much chlorine	For Cloudy Water use this much chlorine
1 Quart	2 drops	4 drops
1 Gallon	8 drops	16 drops
5 Gallons	1/2 teaspoon	1 teaspoon

The treated water should be mixed thoroughly and allowed to stand, preferably covered, for 30 minutes. The water should have a slight chlorine odor; if not, repeat the dosage and allow the water to stand for an additional 15 minutes. If the treated water has too strong a chlorine taste, it can be made more pleasing by allowing the water to stand exposed to the air for a few hours or by pouring it from one clean container to another several times.

1700.3 Emergency Powers of the Director

(a) Notwithstanding any other provision of these regulations, the Director, upon receipt of information that a contaminant which is present or is likely to enter a public water system or a source of drinking water and may present an imminent endangerment to the health of persons, may take such actions as he deems necessary in order to protect the health of such persons.

(b) The action which the Director may take may include (but shall not be limited to):

(1) Issuing such orders as may be necessary to protect the health of persons who are or may be users of such system, including orders requiring the provision of alternative water supplies by persons or public water systems who caused or contributed to the endangerment.

(2) Requesting that the CNMI Attorney General commence a civil or criminal action for appropriate relief, including a restraining order or permanent or temporary injunction.

(c) Any person who violates or fails or refuses to comply with any order issued by the Director under paragraph (b)(1) may be subject to a civil penalty for each day in which the violation occurs or failure to comply continues, in accordance with 2 CMC § 3131(c).

1700.4 Tampering with Public Water Systems

(a) Prohibition against Tampering with Public Water Systems

(1) A person may not tamper, attempt to tamper, or make a threat to tamper with a public water system.

(2) Any person who violates paragraph (a)(1) of this section may be subject to a civil or criminal penalty in accordance with 2 CMC § 3131(d) for each day in which the tampering incident results in the disruption of normal public water system operations.

(b) Water System Responsibilities

(1) A public water system must minimize the potential for tampering of its water system facilities by, at a minimum, assuring the following:

(i) Direct access to water storage tanks via manholes and other openings are securely locked;

(ii) All drinking water treatment facilities are enclosed and securely locked, or at a minimum, fenced and securely locked;

(iii) All other vulnerable areas (e.g., wellheads, storage tanks, pump stations, etc.) are fenced and securely locked;

(iv) All active and inactive wells have adequate and properly maintained sanitary seals. Monitoring wells must be securely locked;

(v) All abandoned wells are abandoned and sealed in accordance with Section 22 of the Commonwealth Well Drilling and Well Operations Regulations; and,

(vi) All water system operation, maintenance, and administrative records are adequately stored and secured.

(2) A public water system must notify the Division and any other appropriate government authorities as soon as possible, but no later than 24 hours, following any tampering, suspected tampering, or receipt of a tampering threat by the public water system.

1700.5 Emergency Response Plan for systems serving 3,300 or more people

(a) Community water systems serving 3,300 or more people shall prepare or revise, where necessary, an emergency response plan. The emergency response plan shall include, but is not limited to, plans, procedures, and identification of equipment that can be implemented or utilized in the event of a natural or manmade disaster that may impact the water system.

(b) Community water systems shall to the extent possible, coordinate with existing Local Emergency Planning Committees when preparing or revising an emergency response plan.

(c) Community water systems may use the following publication as guidance on how to prepare their emergency response plan: Large Water System Emergency Response Plan Outline: Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, Environmental Protection Agency, Office of Water, July 2003; which can be obtained at www.epa.gov/safewater.

(d) Each community water system required under part (a) of this section to prepare or revise an emergency response plan, shall certify to the Director the completion of the plan by January 1, 2006. Each such community water system shall then revise and update their emergency response plans, and certify to the Director the completion of the revision, at least once every five years thereafter.

Subpart H - Enforcement of Regulations and Penalties for Violations

Section

1800.1 Enforcement of Regulations

1800.2 Penalties for Violation of Regulations

1800.1 Enforcement of Regulations

The Director may enforce these regulations by initiation of administrative actions, and/or causing the initiation of civil or criminal actions in the Commonwealth or federal courts, pursuant to 2 CMC § 3131 and 42 USC § 300h-2 (a)(1).

(a) The Director shall have the responsibility to prepare, issue, modify, revoke and enforce orders for compliance with any of the provisions of these regulations, and require the taking of such remedial measures as may be necessary or appropriate to implement or effectuate the provisions and purposes of these regulations.

(b) The Division shall provide for public participation in the enforcement of these regulations.

(1) Public participation shall include providing notice and opportunity for public comment on all proposed settlements of civil enforcement actions (except where immediate action is necessary to adequately protect human health and the environment).

(2) The Division shall investigate and provide responses to citizen complaints about violations of these regulations, except where the disclosure of such information may interfere with an active administrative, civil, or criminal enforcement action.

(c) The Division shall make information obtained available, upon request, to the U.S. Environmental Protection Agency or any duly authorized committee of Congress without restriction.

(d) Nothing in this section shall prevent enforcement by the U.S. Environmental Protection Agency of either the Federal or Commonwealth Drinking Water Regulations.

1800.2 Penalties for Violation of Regulations

Any person who violates, or who refuses or neglects to comply with any provision of these regulations, or any certification, standard, notification, or order issued by the Director, the Division, or the Attorney General, shall be subject to the penalties specified at 2 CMC § 3131.

Subpart I – Severability and Supersedure

Section

- 1900.1 Severability
- 1900.2 Supersedure

1900.1 Severability

Should any part, section, paragraph, sentence, clause, phrase, or application of these rules and regulations be declared invalid or unconstitutional by a court of competent jurisdiction, the remainder or any other application of these rules and regulations shall not be affected in any way thereby, and shall remain in full force and effect.

1900.2 Supersedure

These rules and regulations supersede all all CNMI Division of Environmental Quality Drinking Water Regulations in effect prior to the effective date of these rules and regulations.

PART 2 – CNMI NATIONAL PRIMARY DRINKING WATER REGULATIONS

Subpart A – General

Section

- 2141.1 Applicability
- 2141.2 Definitions
- 2141.3 Coverage
- 2141.4 [Reserved]
- 2141.5 Siting requirements
- 2141.6 Effective dates

2141.1 Applicability

The provisions of 40 CFR §141.1 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.2 Definitions

The provisions of 40 CFR §141.2 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following modification.

(a) The text of the first sentence for the definition of "State" found within 40 CFR §141.2 is replaced with, "State means the agency within the Commonwealth of the Northern Mariana Islands which has jurisdiction over public water systems. That agency is the Division of Environmental Quality within the Office of the Governor."

2141.3 Coverage

The provisions of 40 CFR §141.3 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following addition.

(a) Systems with only distribution and storage facilities. The Director may require any public water system to comply with all requirements of the Commonwealth Drinking Water Regulations, including those systems that meet all four conditions of 40 CFR §141.3, if the Director determines that the water provided by the system may present a potential risk to public health. The Director will make such a determination based on an evaluation that may include the following factors:

- (1) The distribution system size and condition.
- (2) The maintenance of storage facilities.
- (3) The potential for contamination and cross connections.
- (4) The results of available microbiological, chemical, or disinfectant residual analyses of the water provided by the system.

2141.4 [Reserved]

2141.5 Siting requirements

The provisions of 40 CFR §141.5 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.6 Effective dates

The provisions of 40 CFR §141.6 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference. The effective dates listed in the Code of Federal Regulations only pertain to federal standards and requirements.

Subpart B – Maximum Contaminant Levels

Section

2141.11 Maximum contaminant levels for inorganic chemicals

- 2141.12 Maximum contaminant levels for total trihalomethanes
- 2141.13 Maximum contaminant levels for turbidity
- 2141.15 Maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity in community water systems
- 2141.16 Maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in community water systems

2141.11 Maximum contaminant levels for inorganic chemicals

The provisions of 40 CFR §141.11 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.12 Maximum contaminant levels for total trihalomethanes

The provisions of 40 CFR §141.12 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.13 Maximum contaminant levels for turbidity

The provisions of 40 CFR §141.13 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.15 Maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity in community water systems

The provisions of 40 CFR §141.15 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.16 Maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in community water systems

The provisions of 40 CFR §141.16 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart C – Monitoring and Analytical Requirements

- Section
- 2141.21 Coliform sampling
 - 2141.22 Turbidity sampling and analytical requirements
 - 2141.23 Inorganic chemical sampling and analytical requirements
 - 2141.24 Organic chemicals, sampling and analytical requirements
 - 2141.25 Analytical methods for radioactivity
 - 2141.26 Monitoring frequency for radioactivity in community water systems
 - 2141.27 Alternate analytical techniques
 - 2141.28 Certified laboratories
 - 2141.29 Monitoring of consecutive public water systems
 - 2141.30 Total trihalomethanes sampling, analytical and other requirements

2141.53 Maximum contaminant level goals for disinfection byproducts

The provisions of 40 CFR §141.53 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.54 Maximum residual disinfectant level goals for disinfectants

The provisions of 40 CFR §141.54 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.55 Maximum contaminant level goals for radionuclides

The provisions of 40 CFR §141.55 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

**Subpart G – National Revised Primary Drinking Water Regulations:
Maximum Contaminant Levels and Maximum Residual Disinfectant Levels**

Section

- 2141.60 Effective dates
- 2141.61 Maximum contaminant levels for organic contaminants
- 2141.62 Maximum contaminant levels for inorganic contaminants
- 2141.63 Maximum contaminant levels (MCLs) for microbiological contaminants
- 2141.64 Maximum contaminant levels for disinfection byproducts
- 2141.65 Maximum residual disinfectant levels
- 2141.66 Maximum contaminant levels for radionuclides

2141.60 Effective dates

The provisions of 40 CFR §141.60 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference. The effective dates listed in the Code of Federal Regulations only pertain to federal standards and requirements

2141.61 Maximum contaminant levels for organic contaminants

The provisions of 40 CFR §141.61 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.62 Maximum contaminant levels for inorganic contaminants

The provisions of 40 CFR §141.62 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.63 Maximum contaminant levels (MCLs) for microbiological contaminants

The provisions of 40 CFR §141.63 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.43 Prohibition on use of lead pipes, solder, and flux

2141.40 Monitoring requirements for unregulated contaminants

The provisions of 40 CFR §141.40 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.41 Special monitoring for sodium

The provisions of 40 CFR §141.41 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.42 Special monitoring for corrosivity characteristics

The provisions of 40 CFR §141.42 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.43 Prohibition on use of lead pipes, solder, and flux

The provisions of 40 CFR §141.43 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

**Subpart F – Maximum Contaminant Level Goals and
Maximum Residual Disinfectant Level Goals**

Section

- 2141.50 Maximum contaminant level goals for organic contaminants
- 2141.51 Maximum contaminant level goals for inorganic contaminants
- 2141.52 Maximum contaminant level goals for microbiological contaminants
- 2141.53 Maximum contaminant level goals for disinfection byproducts
- 2141.54 Maximum residual disinfectant level goals for disinfectants
- 2141.55 Maximum contaminant level goals for radionuclides

2141.50 Maximum contaminant level goals for organic contaminants

The provisions of 40 CFR §141.50 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.51 Maximum contaminant level goals for inorganic contaminants

The provisions of 40 CFR §141.51 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.52 Maximum contaminant level goals for microbiological contaminants

The provisions of 40 CFR §141.52 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

- 2141.32 [Reserved]
- 2141.33 Record maintenance
- 2141.34 [Reserved]
- 2141.35 Reporting of unregulated contaminant monitoring results

2141.31 Reporting requirements

The provisions of 40 CFR §141.31 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.32 [Reserved]

2141.33 Record maintenance

The provisions of 40 CFR §141.33 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following additions.

(a) In addition to the data, records and reports specified in 40 CFR 141.33, a public water system must maintain on its premises or at a convenient location near its premises the following information:

- (1) Current as-built engineering and schematic diagrams for all source water, treatment, storage and distribution facilities.
- (2) Current construction materials survey, as referenced at 40 CFR 141.42(a).
- (3) Current Coliform Monitoring Plan, as referenced at 40 CFR 141.21(a).
- (4) All other records required by these regulations

(b) All records must be readily available for review by Division personnel or their representatives during inspections and sanitary surveys.

2141.34 [Reserved]

2141.35 Reporting of unregulated contaminant monitoring results

The provisions of 40 CFR §141.35 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart E – Special Regulations, Including Monitoring Regulations and Prohibition on Lead Use

Section

- 2141.40 Monitoring requirements for unregulated contaminants
- 2141.41 Special monitoring for sodium
- 2141.42 Special monitoring for corrosivity characteristics

The provisions of 40 CFR §141.23 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference with the following addition.

(a) If a public water system does not collect a confirmation nitrate or nitrite sample within two weeks of being notified of the analytical result of the first sample (as required at 40 CFR 141.23(f)(2)), compliance with the maximum contaminant level for nitrate or nitrite shall be based solely on the analytical result of the single sample.

2141.24 Organic chemicals, sampling and analytical requirements

The provisions of 40 CFR §141.24 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.25 Analytical methods for radioactivity

The provisions of 40 CFR §141.25 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.26 Monitoring frequency for radioactivity in community water systems

The provisions of 40 CFR §141.26 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.27 Alternate analytical techniques

The provisions of 40 CFR §141.27 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.28 Certified laboratories

The provisions of 40 CFR §141.28 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.29 Monitoring of consecutive public water systems

The provisions of 40 CFR §141.29 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.30 Total trihalomethanes sampling, analytical and other requirements

The provisions of 40 CFR §141.30 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart D – Reporting and Recordkeeping

Section
2141.31 Reporting requirements

2141.21 Coliform sampling

The provisions of 40 CFR §141.21 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following modifications and additions.

(a) The written sample siting plan specified at 40 CFR 141.21(a)(1) must be written in accordance with Division guidance and submitted to the Director for approval. The plan must be revised and resubmitted to the Director within 30 days of any modification to the distribution system(s) that adds, deletes or changes the location of any coliform sample point.

(b) The text found within 40 CFR 141.21(a)(3) is replaced with, "A non-community water system must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section."

(c) The routine monitoring requirements specified at 40 CFR 141.21(a) and the repeat monitoring requirements specified at 40 CFR 141.21(b) are applicable to every hydraulically independent distribution system within a public water system. For example, some public water systems have separate distribution systems for the water from each of the sources that they obtain water, be it rainwater, ground water, or from another public water system. Each of these independent distribution systems is subject to the monitoring and repeat monitoring requirements.

(d) A public water system may cease to collect repeat samples when it determines that the maximum contaminant level for total coliforms in § 2141.63 has been exceeded and it notifies the Division. This applies even if a complete set of repeat samples, as specified at 40 CFR 141.21(b)(1), has not been collected for each total coliform positive sample found.

(e) No public water system shall increase the disinfectant residual present in its distribution system or other facilities, under any circumstance described below, without written permission from the Director.

(1) Within 48 hours prior to the collection of a routine coliform sample.

(2) Prior to the collection of a repeat coliform sample when, due to knowledge or suspicion that the original routine sample may be coliform positive, a repeat sample is necessary.

(f) A consecutive public water system must perform monthly coliform monitoring of the water from their distribution system if, at any point in the receiving system's distribution system, the water flows through a storage facility.

2141.22 Turbidity sampling and analytical requirements

The provisions of 40 CFR §141.22 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.23 Inorganic chemical sampling and analytical requirements

2141.64 Maximum contaminant levels for disinfection byproducts

The provisions of 40 CFR §141.64 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.65 Maximum residual disinfectant levels

The provisions of 40 CFR §141.65 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.66 Maximum contaminant levels for radionuclides

The provisions of 40 CFR §141.66 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart H – Filtration and Disinfection

Section

- 2141.70 General requirements
- 2141.71 Criteria for avoiding filtration
- 2141.72 Disinfection
- 2141.73 Filtration
- 2141.74 Analytical and monitoring requirements
- 2141.75 Reporting and recordkeeping requirements
- 2141.76 Recycle provisions

2141.70 General requirements

The provisions of 40 CFR §141.70 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.71 Criteria for avoiding filtration

The provisions of 40 CFR §141.71 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.72 Disinfection

The provisions of 40 CFR §141.72 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.73 Filtration

The provisions of 40 CFR §141.73 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.74 Analytical and monitoring requirements

The provisions of 40 CFR §141.74 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.75 Reporting and recordkeeping requirements

The provisions of 40 CFR §141.75 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.76 Recycle provisions

The provisions of 40 CFR §141.76 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart I – Control of Lead and Copper

Section

- 2141.80 General requirements
- 2141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems
- 2141.82 Description of corrosion control treatment requirements
- 2141.83 Source water treatment requirements
- 2141.84 Lead service line replacement requirements
- 2141.85 Public education and supplemental monitoring requirements
- 2141.86 Monitoring requirements for lead and copper in tap water
- 2141.87 Monitoring requirements for water quality parameters
- 2141.88 Monitoring requirements for lead and copper in source water
- 2141.89 Analytical methods
- 2141.90 Reporting requirements
- 2141.91 Recordkeeping requirements

2141.80 General requirements

The provisions of 40 CFR §141.80 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the exception of 40 CFR §141.80(a)(2). The requirements set forth in Subpart I of Part 2 of the CNMI Drinking Water Regulations took effect on July 15, 1994.

2141.81 Applicability of corrosion control treatment steps to small, medium-sized and large water systems

The provisions of 40 CFR §141.81 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.82 Description of corrosion control treatment requirements

The provisions of 40 CFR §141.82 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.83 Source water treatment requirements

The provisions of 40 CFR §141.83 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.84 Lead service line replacement requirements

The provisions of 40 CFR §141.84 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.85 Public education and supplemental monitoring requirements

The provisions of 40 CFR §141.85 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following modifications and additions.

(a) Content of written public education materials for community water systems addressing steps to reduce lead exposure. The text in the following citations shall be replaced as indicated.

(1) The text found within 40 CFR §141.85(a)(1)(iv)(B)(I) that states “Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually 15-30 seconds” shall be replaced with: “Flushing the tap means running the cold water for about 15-30 seconds.”

(2) The text found in 40 CFR §141.85(a)(1)(iv)(D)(I) that states, “... a list of local laboratories ...,” shall be replaced with, “... a list of laboratories”

(3) The text of 40 CFR 141.85(a)(1)(iv)(E) that states, “... in your area ...,” shall be deleted.

(b) Delivery of a public education program for non-English speaking users.

(1) Garment manufacturing facilities. Public water systems regulated under §2141.80 that are garment manufacturing facilities with foreign contract workers must provide fully translated public education materials in the appropriate language for the majority of their workers, in addition to an English language version.

(2) Other public water systems regulated under §2141.80 serving non-English speaking populations.

(i) Any public water system serving water to non-English speaking users must insert the following mandatory translation text into their public education materials, in all appropriate languages: “This document contains important information about the chemical lead, which has been found in your drinking water. It discusses the health effects of lead, how lead gets into your drinking water, and actions you can take to reduce your exposure to lead. If you cannot read or understand this document, have someone translate it for you.”

(ii) If the public water system can sufficiently document to the Director that any non-English speaking population comprises ten percent (10%) or less of the total population served by the water system, then the requirements of §2141.85(b)(2)(i) do not apply and the water system does not need to insert the translation text in that particular language into its public education material. The Director may require an affidavit certifying that the particular non-English population comprises ten percent or less of the total population served, or may require additional documentation that supports such claim.

2141.86 Monitoring requirements for lead and copper in tap water

The provisions of 40 CFR §141.86 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following modifications and additions.

(a) Tier 1 sample sites for community water systems. The text found within 40 CFR §141.86(a)(3)(i) is replaced with, "Contain copper pipes with lead solder installed after 1997 or contain lead pipes or are provided with either centrally-treated reverse osmosis water or pure rainwater; and/or"

(b) Tier 2 sample sites for community water systems. The text found within 40 CFR §141.86(a)(4)(i) is replaced with, "Contain copper pipes with lead solder installed after 1997 or contain lead pipes or are provided with either centrally-treated reverse osmosis water or pure rainwater; and/or"

(c) Tier 3 sample sites for community water systems. The first sentence of the text found in 40 CFR §141.86(a)(5) is replaced with, "Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool from 'tier 3 sampling sites,' consisting of single family structures that contain copper pipes with lead solder installed before 1998 or are provided with rainwater that is mixed with water from another source."

(d) Tier 1 sample sites for non-transient non-community water systems. (1) The text found within 40 CFR §141.86(a)(6)(i) is replaced with, "Contain copper pipes with lead solder installed after 1997 or contain lead pipes or are provided with either centrally-treated reverse osmosis water or pure rainwater; and/or"

(e) Tier 2 sample sites for non-transient non-community water systems. The first sentence of the text found in 40 CFR §141.86(a)(7) is replaced with, "A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sample sites that contain copper pipes with lead solder installed before 1998 or that are provided with rainwater that is mixed with water from another source."

(f) Water systems providing reverse osmosis water or rainwater. Any public water system that provides centrally treated reverse osmosis water or pure rainwater (rainwater that is not mixed with water from another water source) must collect at least 50% of their lead and copper samples from sample sites served with that water.

2141.87 Monitoring requirements for water quality parameters

The provisions of 40 CFR §141.87 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.88 Monitoring requirements for lead and copper in source water

The provisions of 40 CFR §141.88 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.89 Analytical methods

The provisions of 40 CFR §141.89 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.90 Reporting requirements

The provisions of 40 CFR §141.90 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.91 Recordkeeping requirements

The provisions of 40 CFR §141.91 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart J – Use of Non-Centralized Treatment Devices

Section

2141.100 Criteria and procedures for public water systems using point-of-entry devices

2141.101 Use of bottled water

2141.100 Criteria and procedures for public water systems using point-of-entry devices

The provisions of 40 CFR §141.100 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.101 Use of bottled water

The provisions of 40 CFR §141.101 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart K – Treatment Techniques

Section

2141.110 General requirements

2141.111 Treatment techniques for acrylamide and epichlorohydrin

2141.110 General requirements

The provisions of 40 CFR §141.110 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.111 Treatment techniques for acrylamide and epichlorohydrin

The provisions of 40 CFR §141.111 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

**Subpart L – Disinfectant Residuals, Disinfection Byproducts, and
Disinfection Byproduct Precursors**

Section

2141.130 General requirements

2141.131 Analytical requirements

2141.132 Monitoring requirements

2141.133 Compliance requirements

2141.134 Reporting and recordkeeping requirements

2141.135 Treatment technique for control of disinfection byproduct (DBP) precursors

2141.130 General requirements

The provisions of 40 CFR §141.130 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.131 Analytical requirements

The provisions of 40 CFR §141.131 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.132 Monitoring requirements

The provisions of 40 CFR §141.132 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.133 Compliance requirements

The provisions of 40 CFR §141.133 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.134 Reporting and recordkeeping requirements

The provisions of 40 CFR §141.134 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.135 Treatment technique for control of disinfection byproduct (DBP) precursors

The provisions of 40 CFR §141.135 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart O – Consumer Confidence Reports

Section

2141.151 Purpose and applicability of this subpart

2141.152 Effective dates

2141.153 Content of the reports

2141.154 Required additional health information

2141.155 Report delivery and recordkeeping

Appendix A to Subpart O of Part 2141 – Regulated Contaminants

2141.151 Purpose and applicability of this subpart

The provisions of 40 CFR §141.151 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.152 Effective dates

The provisions of 40 CFR §141.152 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference. The effective dates listed in the Code of Federal Regulations only pertain to federal standards and requirements

2141.153 Content of the reports

The provisions of 40 CFR §141.153 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following additions.

(a) Garment manufacturing facilities. Public water systems that are regulated under §2141.151 that are garment manufacturing facilities with foreign contract workers must produce fully translated consumer confidence reports in the appropriate language for the majority of their workers, in addition to an English language version.

(b) Other public water systems regulated under §2141.151 serving non-English speaking populations.

(1) Any other public water system serving water to non-English speaking users must insert the following or similar translation text into their consumer confidence report in all appropriate languages: “This document contains important information about your drinking water. If you cannot read or understand this document, have someone translate it for you, or speak with someone who understands it.”

(2) If the public water system can sufficiently document to the Director that any non-English speaking population comprises ten percent (10%) or less of the total population served by the water system, then the requirements of §2141.153(b)(i) do not apply and

the water system does not need to insert the translation text in that particular language into its consumer confidence report. The Director may require an affidavit certifying that the particular non-English population comprises ten percent or less of the total population served, or may require additional documentation that supports such a claim.

2141.154 Required additional health information

The provisions of 40 CFR §141.154 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.155 Report delivery and recordkeeping

The provisions of 40 CFR §141.155 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Appendix A to Subpart O of Part 2 – Regulated Contaminants

The provisions of Appendix A to Subpart O of 40 CFR Part 141 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

**Subpart P – Enhanced Filtration and Disinfection –
Systems Serving 10,000 or More People**

Section

- 2141.170 General requirements
- 2141.171 Criteria for avoiding filtration
- 2141.172 Disinfection profiling and benchmarking
- 2141.173 Filtration
- 2141.174 Filtration sampling requirements
- 2141.175 Reporting and recordkeeping requirements

2141.170 General requirements

The provisions of 40 CFR §141.170 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.171 Criteria for avoiding filtration

The provisions of 40 CFR §141.171 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.172 Disinfection profiling and benchmarking

The provisions of 40 CFR §141.172 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.173 Filtration

The provisions of 40 CFR §141.173 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.174 Filtration sampling requirements

The provisions of 40 CFR §141.174 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.175 Reporting and recordkeeping requirements

The provisions of 40 CFR §141.175 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Subpart Q – Public Notification of Drinking Water Violations

Section

- 2141.201 General public notification requirements
- 2141.202 Tier 1 Public Notice--Form, manner, and frequency of notice
- 2141.203 Tier 2 Public Notice--Form, manner, and frequency of notice
- 2141.204 Tier 3 Public Notice--Form, manner, and frequency of notice
- 2141.205 Content of the public notice
- 2141.206 Notice to new billing units or new customers
- 2141.207 Special notice of the availability of unregulated contaminant monitoring results
- 2141.208 Special notice for exceedance of the SMCL for fluoride
- 2141.209 Special notice for nitrate exceedances above MCL by non-community water systems (NCWS), where granted permission by the primacy agency under Section 2141.11(d)
- 2141.210 Notice by primacy agency on behalf of the public water system

Appendix A to Subpart Q of Part 2 – NPDWR Violations and Situations Requiring Public Notice

Appendix B to Subpart Q of Part 2 – Standard Health Effects Language for Public Notification

Appendix C to Subpart Q of Part 2 – List of Acronyms Used in Public Notification Regulation

2141.201 General public notification requirements

The provisions of 40 CFR §141.201 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.202 Tier 1 Public Notice--Form, manner, and frequency of notice

The provisions of 40 CFR §141.202 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.203 Tier 2 Public Notice--Form, manner, and frequency of notice

The provisions of 40 CFR §141.203 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.204 Tier 3 Public Notice--Form, manner, and frequency of notice

The provisions of 40 CFR §141.204 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.205 Content of the public notice

The provisions of 40 CFR §141.205 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following additions.

(a) Garment manufacturing facilities. Public water systems regulated under §2141.201 that are garment manufacturing facilities with foreign contract workers must produce a fully translated public notice in the appropriate language for the majority of their workers, in addition to an English language version.

(b) Other public water systems regulated under §2141.201 serving non-English speaking populations.

(1) Any other public water system serving water to non-English speaking users must either translate the document or insert the following or similar translation text into their public notice in all appropriate languages: "This notice contains important information about your drinking water. If you cannot read or understand it, contact <person's name> at <location or phone number>."

(2) If the public water system can sufficiently document to the Director that any non-English speaking population comprises ten percent (10%) or less of the total population served by the water system, then the requirements of §2141.205(b)(i) do not apply and the water system does not need to insert the translation text in that particular language into its public notice. The Director may require an affidavit certifying that the particular non-English population comprises ten percent or less of the total population served, or may require additional documentation that supports such a claim.

2141.206 Notice to new billing units or new customers

The provisions of 40 CFR §141.206 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.207 Special notice of the availability of unregulated contaminant monitoring results

The provisions of 40 CFR §141.207 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.208 Special notice for exceedance of the SMCL for fluoride

The provisions of 40 CFR §141.208 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.209 Special notice for nitrate exceedances above MCL by non-community water systems (NCWS), where granted permission by the primacy agency under Section 2141.11(d)

The provisions of 40 CFR §141.209 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.210 Notice by primacy agency on behalf of the public water system

The provisions of 40 CFR §141.210 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Appendix A to Subpart Q of Part 2 – NPDWR Violations and Situations Requiring Public Notice

The provisions of Appendix A to Subpart Q of 40 CFR Part 141 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Appendix B to Subpart Q of Part 2 – Standard Health Effects Language for Public Notification

The provisions of Appendix B to Subpart Q of 40 CFR Part 141 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Appendix C to Subpart Q of Part 2 – List of Acronyms Used in Public Notification Regulation

The provisions of Appendix C to Subpart Q of 40 CFR Part 141 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

**Subpart T – Enhanced Filtration and Disinfection –
Systems Serving Fewer Than 10,000 People**

Section

- 2141.500 General Requirements
- 2141.510 Finished Water Reservoirs
- 2141.520 Additional Watershed Control Requirements for Unfiltered Systems
- 2141.530 Disinfection Profile
- 2141.540 Disinfection Benchmark
- 2141.550 Combined Filter Effluent Requirements

2141.560 Individual Filter Turbidity Requirements
2141.570 Reporting and Recordkeeping Requirements

2141.500 General Requirements

The provisions of 40 CFR §§141.500-503 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.510 Finished Water Reservoirs

The provisions of 40 CFR §§141.510-511 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.520 Additional Watershed Control Requirements for Unfiltered Systems

The provisions of 40 CFR §§141.520-522 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.530 Disinfection Profile

The provisions of 40 CFR §§141.530-536 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.540 Disinfection Benchmark

The provisions of 40 CFR §§141.540-544 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.550 Combined Filter Effluent Requirements

The provisions of 40 CFR §§141.550-553 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.560 Individual Filter Turbidity Requirements

The provisions of 40 CFR §§141.560-564 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

2141.570 Reporting and Recordkeeping Requirements

The provisions of 40 CFR §§141.570-571 of the National Primary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

PART 3 – CNMI NATIONAL SECONDARY DRINKING WATER REGULATIONS

Subpart A – National Secondary Drinking Water Regulations

Section

- 3143.1 Purpose
- 3143.2 Definitions
- 3143.3 Secondary maximum contaminant levels
- 3143.4 Monitoring

3143.1 Purpose

The provisions of 40 CFR §143.1 of the National Secondary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference, with the following addition.

(a) Public water systems are not required to monitor for or comply with the secondary maximum contaminant levels. The National Secondary Drinking Water Regulations are provided only as guidelines for public water systems.

3143.2 Definitions

The provisions of 40 CFR §143.2 of the National Secondary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

3143.3 Secondary maximum contaminant levels

The provisions of 40 CFR §143.3 of the National Secondary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

3143.4 Monitoring

The provisions of 40 CFR §143.4 of the National Secondary Drinking Water Regulations, as revised and codified as of July 1, 2004, are hereby adopted by reference.

Excerpts from the U.S. Code of Federal Regulations (CFR)

The following excerpts from the CFR have been adopted by reference into the CNMI Drinking Water Regulations (Parts 2 and Parts 3)

40 CFR 141 July 1, 2004 National Primary Drinking Water Regulations

40 CFR 143 July 1, 2004 National Secondary Drinking Water Regulations

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contained in 40 CFR part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants," or subsequent revisions or amendments thereto, shall be employed.

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

Subpart A—General

Sec.

- 141.1 Applicability.
- 141.2 Definitions.
- 141.3 Coverage.
- 141.4 Variances and exemptions.
- 141.5 Siting requirements.
- 141.6 Effective dates.

Subpart B—Maximum Contaminant Levels

- 141.11 Maximum contaminant levels for inorganic chemicals.
- 141.12 Maximum contaminant levels for total trihalomethanes.
- 141.13 Maximum contaminant levels for turbidity.

Subpart C—Monitoring and Analytical Requirements

- 141.21 Coliform sampling.
- 141.22 Turbidity sampling and analytical requirements.
- 141.23 Inorganic chemical sampling and analytical requirements.
- 141.24 Organic chemicals, sampling and analytical requirements.
- 141.25 Analytical methods for radioactivity.
- 141.26 Monitoring frequency and compliance requirements for radionuclides in community water systems.
- 141.27 Alternate analytical techniques.
- 141.28 Certified laboratories.
- 141.29 Monitoring of consecutive public water systems.
- 141.30 Total trihalomethanes sampling, analytical and other requirements.

Subpart D—Reporting and Recordkeeping

- 141.31 Reporting requirements.
- 141.32 Public notification.
- 141.33 Record maintenance.
- 141.34 [Reserved]
- 141.35 Reporting of unregulated contaminant monitoring results.

Subpart E—Special Regulations, Including Monitoring Regulations and Prohibition on Lead Use

- 141.40 Monitoring requirements for unregulated contaminants.
- 141.41 Special monitoring for sodium.

- 141.42 Special monitoring for corrosivity characteristics.
- 141.43 Prohibition on use of lead pipes, solder, and flux.

Subpart F—Maximum Contaminant Level Goals and Maximum Residual Disinfectant Level Goals

- 141.50 Maximum contaminant level goals for organic contaminants.
- 141.51 Maximum contaminant level goals for inorganic contaminants.
- 141.52 Maximum contaminant level goals for microbiological contaminants.
- 141.53 Maximum contaminant level goals for disinfection byproducts.
- 141.54 Maximum residual disinfectant level goals for disinfectants.
- 141.55 Maximum contaminant level goals for radionuclides.

Subpart G—National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

- 141.60 Effective dates.
- 141.61 Maximum contaminant levels for organic contaminants.
- 141.62 Maximum contaminant levels for inorganic contaminants.
- 141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.
- 141.64 Maximum contaminant levels for disinfection byproducts.
- 141.65 Maximum residual disinfectant levels.
- 141.66 Maximum contaminant levels for radionuclides.

Subpart H—Filtration and Disinfection

- 141.70 General requirements.
- 141.71 Criteria for avoiding filtration.
- 141.72 Disinfection.
- 141.73 Filtration.
- 141.74 Analytical and monitoring requirements.
- 141.75 Reporting and recordkeeping requirements.
- 141.76 Recycle provisions.

Subpart I—Control of Lead and Copper

- 141.80 General requirements.
- 141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems.
- 141.82 Description of corrosion control treatment requirements.
- 141.83 Source water treatment requirements.
- 141.84 Lead service line replacement requirements.
- 141.85 Public education and supplemental monitoring requirements.

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- 141.86 Monitoring requirements for lead and copper in tap water.
- 141.87 Monitoring requirements for water quality parameters.
- 141.88 Monitoring requirements for lead and copper in source water.
- 141.89 Analytical methods.
- 141.90 Reporting requirements.
- 141.91 Recordkeeping requirements.

Subpart J—Use of Non-Centralized Treatment Devices

- 141.100 Criteria and procedures for public water systems using point-of-entry devices.
- 141.101 Use of bottled water.

Subpart K—Treatment Techniques

- 141.110 General requirements.
- 141.111 Treatment techniques for acrylamide and epichlorohydrin.

Subpart L—Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors

- 141.130 General requirements.
- 141.131 Analytical requirements.
- 141.132 Monitoring requirements.
- 141.133 Compliance requirements.
- 141.134 Reporting and recordkeeping requirements.
- 141.135 Treatment technique for control of disinfection byproduct (DBP) precursors.

Subparts M–N [Reserved]

Subpart O—Consumer Confidence Reports

- 141.151 Purpose and applicability of this subpart.
- 141.152 Effective dates.
- 141.153 Content of the reports.
- 141.154 Required additional health information.
- 141.155 Report delivery and recordkeeping.

APPENDIX A TO SUBPART O OF PART 141—REGULATED CONTAMINANTS

Subpart P—Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People

- 141.170 General requirements.
- 141.171 Criteria for avoiding filtration.
- 141.172 Disinfection profiling and benchmarking.
- 141.173 Filtration.
- 141.174 Filtration sampling requirements.
- 141.175 Reporting and recordkeeping requirements.

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Subpart Q—Public Notification of Drinking Water Violations

- 141.201 General public notification requirements.
- 141.202 *Tier 1 Public Notice*—Form, manner, and frequency of notice.
- 141.203 *Tier 2 Public Notice*—Form, manner, and frequency of notice.
- 141.204 *Tier 3 Public Notice*—Form, manner, and frequency of notice.
- 141.205 Content of the public notice.
- 141.206 Notice to new billing units or new customers.
- 141.207 Special notice of the availability of unregulated contaminant monitoring results.
- 141.208 Special notice for exceedance of the SMCL for fluoride.
- 141.209 Special notice for nitrate exceedances above MCL by non-community water systems (NCWS), where granted permission by the primacy agency under §141.11(d).
- 141.210 Notice by primacy agency on behalf of the public water system.

APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND SITUATIONS REQUIRING PUBLIC NOTICE

APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

APPENDIX C TO SUBPART Q OF PART 141—LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATION

Subparts R–S [Reserved]

Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People

GENERAL REQUIREMENTS

- 141.500 General requirements.
- 141.501 Who is subject to the requirements of subpart T?
- 141.502 When must my system comply with these requirements?
- 141.503 What does subpart T require?

FINISHED WATER RESERVOIRS

- 141.510 Is my system subject to the new finished water reservoir requirements?
- 141.511 What is required of new finished water reservoirs?

ADDITIONAL WATERSHED CONTROL REQUIREMENTS FOR UNFILTERED SYSTEMS

- 141.520 Is my system subject to the updated watershed control requirements?
- 141.521 What updated watershed control requirements must my unfiltered system implement to continue to avoid filtration?

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- 141.522 How does the State determine whether my system's watershed control requirements are adequate?

DISINFECTION PROFILE

- 141.530 What is a disinfection profile and who must develop one?
141.531 What criteria must a State use to determine that a profile is unnecessary?
141.532 How does my system develop a disinfection profile and when must it begin?
141.533 What data must my system collect to calculate a disinfection profile?
141.534 How does my system use this data to calculate an inactivation ratio?
141.535 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?
141.536 My system has developed an inactivation ratio; what must we do now?

DISINFECTION BENCHMARK

- 141.540 Who has to develop a disinfection benchmark?
141.541 What are significant changes to disinfection practice?
141.542 What must my system do if we are considering a significant change to disinfection practices?
141.543 How is the disinfection benchmark calculated?
141.544 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

COMBINED FILTER EFFLUENT REQUIREMENTS

- 141.550 Is my system required to meet subpart T combined filter effluent turbidity limits?
141.551 What strengthened combined filter effluent turbidity limits must my system meet?
141.552 My system consists of "alternative filtration" and is required to conduct a demonstration—what is required of my system and how does the State establish my turbidity limits?
141.553 My system practices lime softening—is there any special provision regarding my combined filter effluent?

INDIVIDUAL FILTER TURBIDITY REQUIREMENTS

- 141.560 Is my system subject to individual filter turbidity requirements?
141.561 What happens if my system's turbidity monitoring equipment fails?
141.562 My system only has two or fewer filters—is there any special provision regarding individual filter turbidity monitoring?
141.563 What follow-up action is my system required to take based on continuous turbidity monitoring?
141.564 My system practices lime softening—is there any special provision re-

- garding my individual filter turbidity monitoring?

REPORTING AND RECORDKEEPING REQUIREMENTS

- 141.570 What does subpart T require that my system report to the State?
141.571 What records does subpart T require my system to keep?

AUTHORITY: 42 U.S.C. 300f, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-4, 300j-9, and 300j-11.

SOURCE: 40 FR 59570, Dec. 24, 1975, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 141 appear at 69 FR 18803, Apr. 9, 2004.

NOTE: For community water systems serving 75,000 or more persons, monitoring must begin 1 year following promulgation and the effective date of the MCL is 2 years following promulgation. For community water systems serving 10,000 to 75,000 persons, monitoring must begin within 3 years from the date of promulgation and the effective date of the MCL is 4 years from the date of promulgation. Effective immediately, systems that plan to make significant modifications to their treatment processes for the purpose of complying with the TTHM MCL are required to seek and obtain State approval of their treatment modification plans. This note affects §§141.2, 141.6, 141.12, 141.24 and 141.30. For additional information see 44 FR 68641, Nov. 29, 1979.

Subpart A—General

§ 141.1 Applicability.

This part establishes primary drinking water regulations pursuant to section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act (Pub. L. 93-523); and related regulations applicable to public water systems.

§ 141.2 Definitions.

As used in this part, the term:

Act means the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93-523.

Action level, is the concentration of lead or copper in water specified in §141.80(c) which determines, in some cases, the treatment requirements contained in subpart I of this part that a water system is required to complete.

Best available technology or *BAT* means the best technology, treatment techniques, or other means which the Administrator finds, after examination

for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon.

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

Community water system means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

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

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

Comprehensive performance evaluation (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. For purpose of compliance with subparts P and T of this part, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability

of comprehensive technical assistance; and preparation of a CPE report.

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

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

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

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.

CT or *CT_{calc}* is the product of "residual disinfectant concentration" (C) in mg/l determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes, i.e., "C" x "T". If a public water system applies disinfectants at more than one point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or "total inactivation ratio." In determining the total inactivation ratio, the public water system must determine the residual disinfectant concentration of each disinfection sequence and corresponding contact time before any subsequent disinfection application point(s). "CT_{99.9}" is the CT value required for 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts. CT_{99.9} for a variety of disinfectants and conditions appear in tables 1.1-1.6, 2.1, and 3.1 of § 141.74(b)(3).

$$\frac{CT_{calc}}{CT_{99.9}}$$

is the inactivation ratio. The sum of the inactivation ratios, or total inactivation ratio shown as

$$\sum \frac{(CT_{calc})}{(CT_{99.9})}$$

is calculated by adding together the inactivation ratio for each disinfection

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

Diatomaceous earth filtration means a process resulting in substantial particulate removal in which (1) a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum), and (2) while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

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

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

Disinfectant contact time ("T" in CT calculations) means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration ("C") is measured. Where only one "C" is measured, "T" is the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at where residual disinfectant concentration ("C") is measured. Where more than one "C" is measured, "T" is (a) for the first measurement of "C", the time in minutes that it takes for water to move from the first or only point of disinfectant application to a point before or at the point where the first "C" is measured and (b) for subsequent measurements of "C", the time in minutes that it takes for water to move from the previous "C" measurement point to the "C" measurement point for which the particular "T" is being calculated. Disinfectant contact time in pipelines must be calculated based on "plug flow" by dividing the internal volume of the pipe by the maximum hourly flow rate through that

pipe. Disinfectant contact time within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

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

Disinfection profile is a summary of *Giardia lamblia* inactivation through the treatment plant. The procedure for developing a disinfection profile is contained in §141.172 (Disinfection profiling and benchmarking) in subpart P and §§141.530-141.536 (Disinfection profile) in subpart T of this part.

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

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

Effective corrosion inhibitor residual, for the purpose of subpart I of this part only, means a concentration sufficient to form a passivating film on the interior walls of a pipe.

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

Enhanced softening means the improved removal of disinfection byproduct precursors by precipitative softening.

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

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

First draw sample means a one-liter sample of tap water, collected in accordance with § 141.86(b)(2), that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

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

GAC10 means granular activated carbon 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.

Ground water under the direct influence of surface water (GWUDI) 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 which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the State. The State determination of direct influence may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation.

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.

Haloacetic acids (five) (HAA5) mean the sum of the concentrations in milligrams per liter of the 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.

Initial compliance period means the first full three-year compliance period which begins at least 18 months after

promulgation, except for contaminants listed at § 141.61(a) (19)-(21), (c) (19)-(33), and § 141.62(b) (11)-(15), initial compliance period means the first full three-year compliance period after promulgation for systems with 150 or more service connections (January 1993-December 1995), and first full three-year compliance period after the effective date of the regulation (January 1996-December 1998) for systems having fewer than 150 service connections.

Large water system, for the purpose of subpart I of this part only, means a water system that serves more than 50,000 persons.

Lead service line means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

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

Man-made beta particle and photon emitters means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

Maximum contaminant level means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

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

Maximum residual disinfectant level (MRDL) means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a PWS is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than

or equal to the MRDL. For chlorine dioxide, a PWS is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL. MRDLs are enforceable in the same manner as maximum contaminant levels under Section 1412 of the Safe Drinking Water Act. There is convincing evidence that addition of a disinfectant is necessary for control of waterborne microbial contaminants. Notwithstanding the MRDLs listed in § 141.65, operators may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm runoff events, source water contamination, or cross-connections.

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

Maximum Total Trihalomethane Potential (MTP) means the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after 7 days at a temperature of 25 °C or above.

Medium-size water system, for the purpose of subpart I of this part only, means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

Near the first service connection means at one of the 20 percent of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system.

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

or a "non-transient non-community water system (NTNCWS)."

Non-transient non-community water system or *NTNCWS* means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year.

Optimal corrosion control treatment, for the purpose of subpart I of this part only, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

Performance evaluation sample means a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the Agency. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.

Person means an individual; corporation; company; association; partnership; municipality; or State, Federal, or tribal agency.

Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.

Point of disinfectant application is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

Point-of-entry treatment device (POE) is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

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

Public water system means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at

least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "noncommunity water system."

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

Repeat compliance period means any subsequent compliance period after the initial compliance period.

Residual disinfectant concentration ("C" in CT calculations) means the concentration of disinfectant measured in mg/l in a representative sample of water.

Sanitary survey means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

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

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

- (1) The water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, and cooking, or other similar uses);
- (2) The State determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or
- (3) The State determines that the water provided for residential 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.

Service line sample means a one-liter sample of water collected in accordance with §141.86(b)(3), that has been standing for at least 6 hours in a service line.

Single family structure, for the purpose of subpart I of this part only, means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

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

Small water system, for the purpose of subpart I of this part only, means a water system that serves 3,300 persons or fewer.

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 or similar use where the system or the residential or similar users of the system comply with the exclusion provisions in section 1401(4)(B)(i)(II) or (III).

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

State means the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State or Tribal government does not have primary enforcement responsibility pursuant to section 1413 of the Act, the term "State" means the Regional Administrator, U.S. Environmental Protection Agency.

Subpart H systems means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to the requirements of subpart H of this part.

Supplier of water means any person who owns or operates a public water system.

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

SUVA means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV₂₅₄) (in m⁻¹) by its concentration of dissolved organic carbon (DOC) (in mg/L).

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

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

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

Total trihalomethanes (TTHM) means the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane and tribromomethane [bromoform]), rounded to two significant figures.

Transient non-community water system or *TWS* means a non-community water system that does not regularly serve at least 25 of the same persons over six months per year.

Trihalomethane (THM) means one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

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

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

Waterborne disease outbreak means the significant occurrence of acute infec-

tious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or State agency.

[40 FR 59570, Dec. 24, 1975, as amended at 41 FR 28403, July 9, 1976; 44 FR 68641, Nov. 29, 1979; 51 FR 11410, Apr. 2, 1986; 52 FR 20674, June 2, 1987; 52 FR 25712, July 8, 1987; 53 FR 37410, Sept. 26, 1988; 54 FR 27526, 27562, June 29, 1989; 56 FR 3578, Jan. 30, 1991; 56 FR 26547, June 7, 1991; 57 FR 31838, July 17, 1992; 59 FR 34322, July 1, 1994; 61 FR 24368, May 14, 1996; 63 FR 23366, Apr. 28, 1998; 63 FR 69463, 69515, Dec. 16, 1998; 66 FR 7061, Jan. 22, 2001; 67 FR 1835, Jan. 14, 2002]

§ 141.3 Coverage.

This part shall apply to each public water system, unless the public water system meets all of the following conditions:

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

(b) Obtains all of its water from, but is not owned or operated by, a public water system to which such regulations apply;

(c) Does not sell water to any person; and

(d) Is not a carrier which conveys passengers in interstate commerce.

§ 141.4 Variances and exemptions.

(a) Variances or exemptions from certain provisions of these regulations may be granted pursuant to sections 1415 and 1416 of the Act and subpart K of part 142 of this chapter (for small system variances) by the entity with primary enforcement responsibility, except that variances or exemptions from the MCL for total coliforms and variances from any of the treatment technique requirements of subpart H of this part may not be granted.

(b) EPA has stayed the effective date of this section relating to the total coliform MCL of § 141.63(a) for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency,

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or a problem in the operation or maintenance of the distribution system.

[54 FR 27562, June 29, 1989, as amended at 56 FR 1557, Jan. 15, 1991; 63 FR 43846, Aug. 14, 1998]

§ 141.5 Siting requirements.

Before a person may enter into a financial commitment for or initiate construction of a new public water system or increase the capacity of an existing public water system, he shall notify the State and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site which:

(a) Is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof; or

(b) Except for intake structures, is within the floodplain of a 100-year flood or is lower than any recorded high tide where appropriate records exist. The U.S. Environmental Protection Agency will not seek to override land use decisions affecting public water systems siting which are made at the State or local government levels.

§ 141.6 Effective dates.

(a) Except as provided in paragraphs (b) through (k) of this section, and in § 141.80(a)(2), the regulations set forth in this part shall take effect on June 24, 1977.

(b) The regulations for total trihalomethanes set forth in § 141.12(c) shall take effect 2 years after the date of promulgation of these regulations for community water systems serving 75,000 or more individuals, and 4 years after the date of promulgation for communities serving 10,000 to 74,999 individuals.

(c) The regulations set forth in §§ 141.11(d); 141.21(a), (c) and (i); 141.22(a) and (e); 141.23(a)(3) and (a)(4); 141.23(f); 141.24(e) and (f); 141.25(e); 141.27(a); 141.28(a) and (b); 141.31(a), (d) and (e); 141.32(b)(3); and 141.32(d) shall take effect immediately upon promulgation.

(d) The regulations set forth in § 141.41 shall take effect 18 months from the date of promulgation. Suppliers must complete the first round of sam-

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pling and reporting within 12 months following the effective date.

(e) The regulations set forth in § 141.42 shall take effect 18 months from the date of promulgation. All requirements in § 141.42 must be completed within 12 months following the effective date.

(f) The regulations set forth in § 141.11(c) and § 141.23(g) are effective May 2, 1986. Section 141.23(g)(4) is effective October 2, 1987.

(g) The regulations contained in § 141.6, paragraph (c) of the table in 141.12, and 141.62(b)(1) are effective July 1, 1991. The regulations contained in §§ 141.11(b), 141.23, 141.24, 142.57(b), 143.4(b)(12) and (b)(13), are effective July 30, 1992. The regulations contained in the revisions to §§ 141.32(e) (16), (25) through (27) and (46); 141.61(c)(16); and 141.62(b)(3) are effective January 1, 1993. The effective date of regulations contained in § 141.61(c) (2), (3), and (4) is postponed.

(h) Regulations for the analytic methods listed at § 141.23(k)(4) for measuring antimony, beryllium, cyanide, nickel, and thallium are effective August 17, 1992. Regulations for the analytic methods listed at § 141.24(f)(16) for dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane are effective August 17, 1992. Regulations for the analytic methods listed at § 141.24(h)(12) for measuring dalapon, dinoseb, diquat, endothal, endrin, glyphosate, oxamyl, picloram, simazine, benzo(a)pyrene, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, hexachlorobenzene, hexachlorocyclopentadiene, and 2,3,7,8-TCDD are effective August 17, 1992. The revision to § 141.12(a) promulgated on July 17, 1992 is effective on August 17, 1992.

(i) [Reserved]

(j) The arsenic maximum contaminant levels (MCL) listed in § 141.62 is effective for the purpose of compliance on January 23, 2006. Requirements relating to arsenic set forth in §§ 141.23(i)(4), 141.23(k)(3) introductory text, 141.23(k)(3)(ii), 141.51(b), 141.62(b), 141.62(b)(16), 141.62(c), 141.62(d), and 142.62(b) revisions in Appendix A of subpart O for the consumer confidence rule, and Appendices A and B of subpart Q for the public notification rule

are effective for the purpose of compliance on January 23, 2006. However, the consumer confidence rule reporting requirements relating to arsenic listed in § 141.154(b) and (f) are effective for the purpose of compliance on February 22, 2002.

(k) Regulations set forth in §§ 141.23(i)(1), 141.23(i)(2), 141.24(f)(15), 141.24(f)(22), 141.24(h)(11), 141.24(h)(20), 142.16(e), 142.16(j), and 142.16(k) are effective for the purpose of compliance on January 22, 2004.

[44 FR 68641, Nov. 29, 1979, as amended at 45 FR 57342, Aug. 27, 1980; 47 FR 10998, Mar. 12, 1982; 51 FR 11410, Apr. 2, 1986; 56 FR 30274, July 1, 1991; 57 FR 22178, May 27, 1992; 57 FR 31838, July 17, 1992; 59 FR 34322, July 1, 1994; 61 FR 24368, May 14, 1996; 66 FR 7061, Jan. 22, 2001; 66 FR 28350, May 22, 2001]

Subpart B—Maximum Contaminant Levels

§ 141.11 Maximum contaminant levels for inorganic chemicals.

(a) The maximum contaminant level for arsenic applies only to community water systems. The analyses and determination of compliance with the 0.05 milligrams per liter maximum contaminant level for arsenic use the requirements of § 141.23.

(b) The maximum contaminant level for arsenic is 0.05 milligrams per liter for community water systems until January 23, 2006.

(c) [Reserved]

(d) At the discretion of the State, nitrate levels not to exceed 20 mg/l may be allowed in a non-community water system if the supplier of water demonstrates to the satisfaction of the State that:

(1) Such water will not be available to children under 6 months of age; and

(2) The non-community water system is meeting the public notification requirements under § 141.209, including continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure; and

(3) Local and State public health authorities will be notified annually of nitrate levels that exceed 10 mg/l; and

(4) No adverse health effects shall result.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57342, Aug. 27, 1980; 47 FR 10998, Mar. 12, 1982; 51 FR 11410, Apr. 2, 1986; 56 FR 3578, Jan. 30, 1991; 56 FR 26548, June 7, 1991; 56 FR 30274, July 1, 1991; 56 FR 32113, July 15, 1991; 60 FR 33932, June 29, 1995; 65 FR 26022, May 4, 2000; 66 FR 7061, Jan. 22, 2001]

§ 141.12 Maximum contaminant levels for total trihalomethanes.

The maximum contaminant level of 0.10 mg/L for total trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)) applies to subpart H community water systems which serve a population of 10,000 people or more until December 31, 2001. This level applies to community water systems that use only ground water not under the direct influence of surface water and serve a population of 10,000 people or more until December 31, 2003. Compliance with the maximum contaminant level for total trihalomethanes is calculated pursuant to § 141.30. After December 31, 2003, this section is no longer applicable.

[63 FR 69463, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§ 141.13 Maximum contaminant levels for turbidity.

The maximum contaminant levels for turbidity are applicable to both community water systems and non-community water systems using surface water sources in whole or in part. The maximum contaminant levels for turbidity in drinking water, measured at a representative entry point(s) to the distribution system, are:

EDITORIAL NOTE: At 54 FR 27527, June 29, 1989, § 141.13 was amended by adding introductory text, effective December 31, 1990. However, introductory text already exists. The added text follows.

The requirements in this section apply to unfiltered systems until December 30, 1991, unless the State has determined prior to that date, in writing pursuant to § 1412(b)(7)(C)(iii), that filtration is required. The requirements

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in this section apply to filtered systems until June 29, 1993. The requirements in this section apply to unfiltered systems that the State has determined, in writing pursuant to § 1412(b)(7)(C)(iii), must install filtration, until June 29, 1993, or until filtration is installed, whichever is later.

(a) One turbidity unit (TU), as determined by a monthly average pursuant to § 141.22, except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the State that the higher turbidity does not do any of the following:

- (1) Interfere with disinfection;
- (2) Prevent maintenance of an effective disinfectant throughout the distribution system; or
- (3) Interfere with microbiological determinations.

(b) Five turbidity units based on an average for two consecutive days pursuant to § 141.22.

[40 FR 59570, Dec. 24, 1975]

Subpart C—Monitoring and Analytical Requirements

§ 141.21 Coliform sampling.

(a) *Routine monitoring.* (1) Public water systems must collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan. These plans are subject to State review and revision.

(2) The monitoring frequency for total coliforms for community water systems is based on the population served by the system, as follows:

TOTAL COLIFORM MONITORING FREQUENCY FOR COMMUNITY WATER SYSTEMS

Population served	Minimum number of samples per month
25 to 1,000 ¹	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15

TOTAL COLIFORM MONITORING FREQUENCY FOR COMMUNITY WATER SYSTEMS—Continued

Population served	Minimum number of samples per month
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

¹Includes public water systems which have at least 15 service connections, but serve fewer than 25 persons.

If a community water system serving 25 to 1,000 persons has no history of total coliform contamination in its current configuration and a sanitary survey conducted in the past five years shows that the system is supplied solely by a protected groundwater source and is free of sanitary defects, the State may reduce the monitoring frequency specified above, except that in no case may the State reduce the monitoring frequency to less than one sample per quarter. The State must approve the reduced monitoring frequency in writing.

(3) The monitoring frequency for total coliforms for non-community water systems is as follows:

(i) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in § 141.2) and serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the State may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. Beginning June 29, 1994, the State cannot reduce the monitoring frequency for a non-community water

system using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 persons or fewer to less than once/year.

(ii) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving more than 1,000 persons during any month must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section, except the State may reduce this monitoring frequency, in writing, for any month the system serves 1,000 persons or fewer. The State cannot reduce the monitoring frequency to less than once/year. For systems using ground water under the direct influence of surface water, paragraph (a)(3)(iv) of this section applies.

(iii) A non-community water system using surface water, in total or in part, must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section, regardless of the number of persons it serves.

(iv) A non-community water system using ground water under the direct influence of surface water, as defined in §141.2, must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section. The system must begin monitoring at this frequency beginning six months after the State determines that the ground water is under the direct influence of surface water.

(4) The public water system must collect samples at regular time intervals throughout the month, except that a system which uses only ground water (except ground water under the direct influence of surface water, as defined in §141.2), and serves 4,900 persons or fewer, may collect all required samples on a single day if they are taken from different sites.

(5) A public water system that uses surface water or ground water under the direct influence of surface water, as defined in §141.2, and does not practice filtration in compliance with Subpart H must collect at least one sample near the first service connection each day

the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. This sample must be analyzed for the presence of total coliforms. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection. Sample results from this coliform monitoring must be included in determining compliance with the MCL for total coliforms in §141.63.

(6) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, shall not be used to determine compliance with the MCL for total coliforms in §141.63. Repeat samples taken pursuant to paragraph (b) of this section are not considered special purpose samples, and must be used to determine compliance with the MCL for total coliforms in §141.63.

(b) *Repeat monitoring.* (1) If a routine sample is total coliform-positive, the public water system must collect a set of repeat samples within 24 hours of being notified of the positive result. A system which collects more than one routine sample/month must collect no fewer than three repeat samples for each total coliform-positive sample found. A system which collects one routine sample/month or fewer must collect no fewer than four repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the State must specify how much time the system has to collect the repeat samples.

(2) The system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of

the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one away from the end of the distribution system, the State may waive the requirement to collect at least one repeat sample upstream or downstream of the original sampling site.

(3) The system must collect all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a four-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 400 ml (300 ml for systems which collect more than one routine sample/month).

(4) If one or more repeat samples in the set is total coliform-positive, the public water system must collect an additional set of repeat samples in the manner specified in paragraphs (b) (1)-(3) of this section. The additional samples must be collected within 24 hours of being notified of the positive result, unless the State extends the limit as provided in paragraph (b)(1) of this section. The system must repeat this process until either total coliforms are not detected in one complete set of repeat samples or the system determines that the MCL for total coliforms in § 141.63 has been exceeded and notifies the State.

(5) If a system collecting fewer than five routine samples/month has one or more total coliform-positive samples and the State does not invalidate the sample(s) under paragraph (c) of this section, it must collect at least five routine samples during the next month the system provides water to the public, except that the State may waive this requirement if the conditions of paragraph (b)(5) (i) or (ii) of this section are met. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (b) (1)-(4) of this section.

(i) The State may waive the requirement to collect five routine samples the next month the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month the system provides water to

the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(ii) The State may waive the requirement to collect five routine samples the next month the system provides water to the public if the State has determined why the sample was total coliform-positive and establishes that the system has corrected the problem or will correct the problem before the end of the next month the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem. The State cannot waive the requirement to collect five routine samples the next month the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. Under this paragraph, a system must still take at least one routine sample before the end of the next month it serves water to the public and use it to determine compliance with the MCL for total coliforms in § 141.63, unless the State has determined that the system has corrected the contamination problem before the system took the set of repeat samples required in paragraphs (b) (1)-(4) of this section, and all repeat samples were total coliform-negative.

(6) After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to

contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(7) Results of all routine and repeat samples not invalidated by the State must be included in determining compliance with the MCL for total coliforms in § 141.63.

(c) *Invalidation of total coliform samples.* A total coliform-positive sample invalidated under this paragraph (c) does not count towards meeting the minimum monitoring requirements of this section.

(1) The State may invalidate a total coliform-positive sample only if the conditions of paragraph (c)(1) (i), (ii), or (iii) of this section are met.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The State, on the basis of the results of repeat samples collected as required by paragraphs (b) (1) through (4) of this section, determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The State cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected within five service connections of the original tap are total coliform-negative (e.g., a State cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the public water system has only one service connection).

(iii) The State has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition which does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under paragraphs (b) (1)-(4) of this section, and use them to determine compliance with the MCL for total coliforms in § 141.63. To invalidate a total coliform-positive sample under this paragraph, the decision with the rationale for the decision must be documented in writing, and approved and

signed by the supervisor of the State official who recommended the decision. The State must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The State may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(2) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P-A) Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The State may waive the 24-hour time limit on a case-by-case basis.

(d) *Sanitary surveys.* (1)(i) Public water systems which do not collect five or more routine samples/month must undergo an initial sanitary survey by June 29, 1994, for community public water systems and June 29, 1999, for non-community water systems. Thereafter, systems must undergo another sanitary survey every five years, except that non-community water systems using only protected and disinfected ground water, as defined by the State, must undergo subsequent sanitary surveys at least every ten years after the initial sanitary survey. The State must review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what additional

measures, if any, the system needs to undertake to improve drinking water quality.

(ii) In conducting a sanitary survey of a system using ground water in a State having an EPA-approved wellhead protection program under section 1428 of the Safe Drinking Water Act, information on sources of contamination within the delineated wellhead protection area that was collected in the course of developing and implementing the program should be considered instead of collecting new information, if the information was collected since the last time the system was subject to a sanitary survey.

(2) Sanitary surveys must be performed by the State or an agent approved by the State. The system is responsible for ensuring the survey takes place.

(e) *Fecal coliforms/Escherichia coli (E. coli) testing.* (1) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if fecal coliforms are present, except that the system may test for *E. coli* in lieu of fecal coliforms. If fecal coliforms or *E. coli* are present, the sys-

tem must notify the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed, in which case the system must notify the State before the end of the next business day.

(2) The State has the discretion to allow a public water system, on a case-by-case basis, to forgo fecal coliform or *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is fecal coliform-positive or *E. coli*-positive. Accordingly, the system must notify the State as specified in paragraph (e)(1) of this section and the provisions of §141.63(b) apply.

(f) *Analytical methodology.* (1) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 ml.

(2) Public water systems need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.

(3) Public water systems must conduct total coliform analyses in accordance with one of the analytical methods in the following table.

Organism	Methodology ¹²	Citation ¹
Total Coliforms ²	Total Coliform Fermentation Technique ^{3,4,5}	9221A, B.
	Total Coliform Membrane Filter Technique ⁶	9222A, B, C.
	Presence-Absence (P-A) Coliform Test ^{3,7}	9221D.
	ONPG-MUG Test ⁸	9223.
	Colisure Test ⁹	
	E*Colite [®] Test ¹⁰	
	m-CollBlue24 [®] Test ¹¹	
	ReadyCult [®] Coliforms 100 Presence/Absence Test ¹³	
	Membrane Filter Technique using Chromocult [®] Coliform Agar ¹⁴	
	Collitag [®] Test ¹⁵	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1, 6, 8, 9, 10, 11, 13, 14 and 15 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, EPA West, Room B102, Washington DC 20460 (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/fbr_locations.html.

¹ *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992), 19th edition (1995), or 20th edition (1998). American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used.

² The time from sample collection to initiation of analysis may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 deg. C during transit.

³ Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent.

⁴ If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added.

⁵ No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

⁶ MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and *Escherichia coli* in water" by Brenner, K.P., et. al., 1993, *Appl. Environ. Microbiol.* 59:3534-3544. Also available from the Office of Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460, EPA/600/J-99/225. Verification of colonies is not required.

⁷ Six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.

⁸ The ONPG-MUG Test is also known as the Autoanalysis Collect System.

⁹ A description of the Colisure Test, Feb 28, 1994, may be obtained from IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092. The Colisure Test may be read after an incubation time of 24 hours.

¹⁰ A description of the E*Colite® Test, "Presence/Absence for Coliforms and *E. Coli* in Water," Dec 21, 1997, is available from Charm Sciences, Inc., 36 Franklin Street, Malden, MA 02148-4120.

¹¹ A description of the m-ColiBlue24® Test, Aug 17, 1999, is available from the Hach Company, 100 Dayton Avenue, Ames, IA 50010.

¹² EPA strongly recommends that laboratories evaluate the false-positive and negative rates for the method(s) they use for monitoring total coliforms. EPA also encourages laboratories to establish false-positive and false-negative rates within their own laboratory and sample matrix (drinking water or source water) with the intent that if the method they choose has an unacceptable false-positive or negative rate, another method can be used. The Agency suggests that laboratories perform these studies on a minimum of 5% of all total coliform-positive samples, except for those methods where verification/confirmation is already required, e.g., the M-Endo and LES Endo Membrane Filter Tests, Standard Total Coliform Fermentation Technique, and Presence-Absence Coliform Test. Methods for establishing false-positive and negative-rates may be based on lactose fermentation, the rapid test for β -galactosidase and cytochrome oxidase, multi-test identification systems, or equivalent confirmation tests. False-positive and false-negative information is often available in published studies and/or from the manufacturer(s).

¹³ The ReadyCult® Coliforms 100 Presence/Absence Test is described in the document, "ReadyCult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters", November 2000, Version 1.0, available from EM Science (an affiliate of Merck KGaA, Darmstadt Germany), 480 S. Democrat Road, Gibbstown, NJ 08027-1297. Telephone number is (800) 222-0342, e-mail address is: adelenbusch@ems-science.com.

¹⁴ Membrane Filter Technique using Chromocult® Coliform Agar is described in the document, "Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters", November 2000, Version 1.0, available from EM Science (an affiliate of Merck KGaA, Darmstadt Germany), 480 S. Democrat Road, Gibbstown, NJ 08027-1297. Telephone number is (800) 222-0342, e-mail address is: adelenbusch@ems-science.com.

¹⁵ Colitag® product for the determination of the presence/absence of total coliforms and *E. coli* is described in "Colitag® Product as a Test for Detection and Identification of Coliforms and *E. coli* Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations," August 2001, available from CPI International, Inc., 5580 Skyline Blvd., Santa Rosa, CA, 95403, telephone (800) 878-7654, Fax (707) 545-7901, Internet address <http://www.cpiinternational.com>.

(4) [Reserved]

(5) Public water systems must conduct fecal coliform analysis in accordance with the following procedure. When the MTF Technique or Presence-Absence (PA) 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 to determine the presence of total and fecal coliforms, respectively. For EPA-approved analytical methods which use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with a sterile forceps and carefully curl and insert the membrane into a tube of EC medium (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. The preparation of EC medium is described in Method 9221E (paragraph 1a) in Standard Methods for

the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), and 20th edition (1998); the cited method in any one of these three editions may be used. Public water systems need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

(6) Public water systems must conduct analysis of *Escherichia coli* in accordance with one of the following analytical methods:

(i) EC medium supplemented with 50 $\mu\text{g/mL}$ of 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration), as described in Method 9222G in Standard Methods for the Examination of Water and Wastewater, 19th edition (1995) and 20th edition (1998). Either edition may be used. Alternatively, the 18th edition (1992) may be used if at least 10 mL of EC medium, as described in paragraph (f)(5) of this section, is supplemented with 50 $\mu\text{g/mL}$ of MUG before autoclaving. The inner inverted fermentation tube may be omitted. If the 18th edition is used, apply the procedure in paragraph (f)(5) of this section for transferring a total coliform-positive culture to EC medium supplemented with MUG, incubate the tube at 44.5 ± 0.2 °C for 24 ± 2 hours, and then observe fluorescence with an ultraviolet light (366 nm) in the dark. If fluorescence is visible, *E. coli* are present.

(ii) Nutrient agar supplemented with 100 $\mu\text{g/mL}$ of 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration), as described in Method

9222G in Standard Methods for the Examination of Water and Wastewater, 19th edition (1995) and 20th edition (1998). Either edition may be used for determining if a total coliform-positive sample, as determined by a membrane filter technique, contains *E. coli*. Alternatively, the 18th edition (1992) may be used if the membrane filter containing a total coliform-positive colony(ies) is transferred to nutrient agar, as described in Method 9221B (paragraph 3) of Standard Methods (18th edition), supplemented with 100 µg/mL of MUG. If the 18th edition is used, incubate the agar plate at 35 °C for 4 hours and then observe the colony(ies) under ultraviolet light (366 nm) in the dark for fluorescence. If fluorescence is visible, *E. coli* are present.

(iii) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Detection of Total Coliforms and *Escherichia coli* from Drinking Water: Comparison with Presence-Absence Techniques" (Edberg et al.), Applied and Environmental Microbiology, Volume 55, pp. 1003-1008, April 1989. (Note: The Autoanalysis Colilert System is an MMO-MUG test). If the MMO-MUG test is total coliform-positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a 6-watt lamp) in the dark. If fluorescence is observed, the sample is *E. coli*-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG Test with hepes buffer in lieu of phosphate buffer is the only approved formulation for the detection of *E. coli*.

(iv) The Colisure Test. A description of the Colisure Test may be obtained from the Millipore Corporation, Technical Services Department, 80 Ashby Road, Bedford, MA 01730.

(v) The membrane filter method with MI agar, a description of which is cited in footnote 6 to the table in paragraph (f)(3) of this section.

(vi) E*Colite® Test, a description of which is cited in footnote 10 to the table at paragraph (f)(3) of this section.

(vii) m-ColiBlue24® Test, a description of which is cited in footnote 11 to the table in paragraph (f)(3) of this section.

(viii) ReadyCult® Coliforms 100 Presence/Absence Test, a description of which is cited in footnote 13 to the table at paragraph (f)(3) of this section.

(ix) Membrane Filter Technique using Chromocult® Coliform Agar, a description of which is cited in footnote 14 to the table at paragraph (f)(3) of this section.

(x) Colitag®, a description of which is cited in footnote 15 to the table at paragraph (f)(3) of this section.

(7) As an option to paragraph (f)(6)(iii) of this section, a system with a total coliform-positive, MUG-negative, MMO-MUG test may further analyze the culture for the presence of *E. coli* by transferring a 0.1 ml, 28-hour MMO-MUG culture to EC Medium + MUG with a pipet. The formulation and incubation conditions of EC Medium + MUG, and observation of the results are described in paragraph (f)(6)(i) of this section.

(8) The following materials are incorporated by reference in this section with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the analytical methods cited in Standard Methods for the Examination of Water and Wastewater (18th, 19th, and 20th editions) may be obtained from the American Public Health Association et al.; 1015 Fifteenth Street, NW., Washington, DC 20005-2605. Copies of the MMO-MUG Test, as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and *Escherichia coli* from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Edberg et al.) may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, CO 80235. Copies of the MMO-MUG Test as set forth in the article "National Field Evaluation of a Defined Substrate

Method for the Simultaneous Enumeration of Total Coliforms and *Escherichia coli* from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Eldberg *et al.*) may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, CO 80235. A description of the Colisure Test may be obtained from the Millipore Corp., Technical Services Department, 80 Ashby Road, Bedford, MA 01730. Copies may be inspected at EPA's Drinking Water Docket; 401 M St., SW.; Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(g) *Response to violation.* (1) A public water system which has exceeded the MCL for total coliforms in §141.63 must report the violation to the State no later than the end of the next business day after it learns of the violation, and notify the public in accordance with subpart Q.

(2) A public water system which has failed to comply with a coliform monitoring requirement, including the sanitary survey requirement, must report the monitoring violation to the State within ten days after the system discovers the violation, and notify the public in accordance with subpart Q.

[54 FR 27562, June 29, 1989, as amended at 54 FR 30001, July 17, 1989; 55 FR 25064, June 19, 1990; 56 FR 642, Jan. 8, 1991; 57 FR 1852, Jan. 15, 1992; 57 FR 24747, June 10, 1992; 59 FR 62466, Dec. 5, 1994; 60 FR 34085, June 29, 1995; 64 FR 67461, Dec. 1, 1999; 65 FR 26022, May 4, 2000; 67 FR 65246, Oct. 23, 2002; 67 FR 65896, Oct. 29, 2002; 69 FR 7160, Feb. 13, 2004]

§ 141.22 Turbidity sampling and analytical requirements.

The requirements in this section apply to unfiltered systems until December 30, 1991, unless the State has determined prior to that date, in writing pursuant to section 1412(b)(7)(iii), that filtration is required. The requirements in this section apply to filtered systems until June 29, 1993. The requirements in this section apply to unfiltered systems that the State has

determined, in writing pursuant to section 1412(b)(7)(C)(iii), must install filtration, until June 29, 1993, or until filtration is installed, whichever is later.

(a) Samples shall be taken by suppliers of water for both community and non-community water systems at a representative entry point(s) to the water distribution system at least once per day, for the purposes of making turbidity measurements to determine compliance with §141.13. If the State determines that a reduced sampling frequency in a non-community will not pose a risk to public health, it can reduce the required sampling frequency. The option of reducing the turbidity frequency shall be permitted only in those public water systems that practice disinfection and which maintain an active residual disinfectant in the distribution system, and in those cases where the State has indicated in writing that no unreasonable risk to health existed under the circumstances of this option. Turbidity measurements shall be made as directed in §141.74(a)(1).

(b) If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement shall be confirmed by resampling as soon as practicable and preferably within one hour. If the repeat sample confirms that the maximum allowable limit has been exceeded, the supplier of water shall report to the State within 48 hours. The repeat sample shall be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 TU, the supplier of water shall report to the State and notify the public as directed in §§141.31 and subpart Q.

(c) Sampling for non-community water systems shall begin within two years after the effective date of this part.

(d) The requirements of this §141.22 shall apply only to public water systems which use water obtained in whole or in part from surface sources.

(e) The State has the authority to determine compliance or initiate enforcement action based upon analytical results or other information compiled by

their sanctioned representatives and agencies.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57344, Aug. 27, 1980; 47 FR 8998, Mar. 3, 1982; 47 FR 10998, Mar. 12, 1982; 54 FR 27527, June 29, 1989; 59 FR 62466, Dec. 5, 1994; 65 FR 26022, May 4, 2000]

§ 141.23 Inorganic chemical sampling and analytical requirements.

Community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in §141.62 in accordance with this section. Non-transient, non-community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in §141.62 in accordance with this section. Transient, non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in §§141.11 and 141.62 (as appropriate) in accordance with this section.

(a) Monitoring shall be conducted as follows:

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point) beginning in the initial compliance period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point

which is representative of each source after treatment (hereafter called a sampling point) beginning in the initial compliance period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(3) If a system draws water from more than one source and the sources are combined before distribution, the system 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).

(4) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Composite samples from a maximum of five samples are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory.

(i) If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, then a follow-up sample must be taken within 14 days at each sampling point included in the composite. These samples must be analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample. Detection limits for each analytical method and MCLs for each inorganic contaminant are the following:

DETECTION LIMITS FOR INORGANIC CONTAMINANTS

Contaminant	MCL (mg/l)	Methodology	Detection limit (mg/l)
Antimony	0.006	Atomic Absorption; Furnace	0.003
		Atomic Absorption; Platform	0.0008 ⁵
		ICP-Mass Spectrometry	0.0004
		Hydride-Atomic Absorption	0.001
Arsenic	0.010 ⁶	Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform—Stabilized Temperature	0.0005 ⁷
		Atomic Absorption; Gaseous Hydride	0.001
		ICP-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	0.1
		Inductively Coupled Plasma	0.002 (0.001)
Beryllium	0.004	Atomic Absorption; Furnace	0.0002
		Atomic Absorption; Platform	0.00002 ⁵

DETECTION LIMITS FOR INORGANIC CONTAMINANTS—Continued

Contaminant	MCL (mg/l)	Methodology	Detection limit (mg/l)
Cadmium	0.005	Inductively Coupled Plasma ²	0.0003
		ICP-Mass Spectrometry	0.0003
		Atomic Absorption; furnace technique	0.0001
Chromium	0.1	Inductively Coupled Plasma	0.001
		Atomic Absorption; furnace technique	0.001
Cyanide	0.2	Inductively Coupled Plasma	0.007 (0.001)
		Distillation, Spectrophotometric ³	0.02
		Distillation, Automated, Spectrophotometric ³	0.005
		Distillation, Amenable, Spectrophotometric ⁴	0.02
		Distillation, Selective Electrode ³	0.05
Mercury	0.002	UV, Distillation, Spectrophotometric	0.0005
		Distillation, Spectrophotometric	0.0006
		Manual Cold Vapor Technique	0.0002
Nickel	xi	Automated Cold Vapor Technique	0.0002
		Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform	0.0006 ⁵
Nitrate	10 (as N)	Inductively Coupled Plasma ²	0.005
		ICP-Mass Spectrometry	0.0005
		Manual Cadmium Reduction	0.01
		Automated Hydrazine Reduction	0.01
		Automated Cadmium Reduction	0.05
Nitrite	1 (as N)	Ion Selective Electrode	1
		Ion Chromatography	0.01
		Spectrophotometric	0.01
		Automated Cadmium Reduction	0.05
Selenium	0.05	Manual Cadmium Reduction	0.01
		Ion Chromatography	0.004
		Atomic Absorption; furnace	0.002
Thallium	0.002	Atomic Absorption; gaseous hydride	0.002
		Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform	0.0007 ⁵
		ICP-Mass Spectrometry	0.0003

¹ MFL = million fibers per liter >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.
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 EPA method 200.9 (Atomic Absorption; Platform—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, EPA 200.9 is capable of obtaining MDL of 0.0001 mg/L.
⁸ Using selective ion monitoring, EPA Method 200.8 (ICP-MS) is capable of obtaining a MDL of 0.0001 mg/L.

(ii) If the population served by the system is >3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤3,300 persons, the State may permit compositing among different systems provided the 5-sample limit is maintained.

(iii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completing analysis of the composite sample, provided the holding time of the sample is not exceeded.

(5) The frequency of monitoring for asbestos shall be in accordance with paragraph (b) of this section: the frequency of monitoring for antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be in accordance with paragraph (c) of this section; the frequency of monitoring for nitrate shall be in accordance with paragraph (d) of this section; and the frequency of monitoring for nitrite shall be in accordance with paragraph (e) of this section.

(b) The frequency of monitoring conducted to determine compliance with the maximum contaminant level for asbestos specified in §141.62(b) shall be conducted as follows:

(1) Each community and non-transient, non-community water system is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

(2) If the system believes it is not vulnerable to either asbestos contamination in its source water or due to corrosion of asbestos-cement pipe, or both, it may apply to the State for a waiver of the monitoring requirement in paragraph (b)(1) of this section. If the State grants the waiver, the system is not required to monitor.

(3) The State may grant a waiver based on a consideration of the following factors:

(i) Potential asbestos contamination of the water source, and

(ii) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

(4) A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with the provisions of paragraph (b)(1) of this section.

(5) A system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(6) A system vulnerable to asbestos contamination due solely to source water shall monitor in accordance with the provision of paragraph (a) of this section.

(7) A system vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(8) A system which exceeds the maximum contaminant levels as determined in §141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(9) The State may decrease the quarterly monitoring requirement to the frequency specified in paragraph (b)(1) of this section provided the State has

determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface (or combined surface/ground) water system takes a minimum of four quarterly samples.

(10) If monitoring data collected after January 1, 1990 are generally consistent with the requirements of §141.23(b), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(c) The frequency of monitoring conducted to determine compliance with the maximum contaminant levels in §141.62 for antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be as follows:

(1) Groundwater systems shall take one sample at each sampling point during each compliance period. Surface water systems (or combined surface/ground) shall take one sample annually at each sampling point.

(2) The system may apply to the State for a waiver from the monitoring frequencies specified in paragraph (c)(1) of this section. States may grant a public water system a waiver for monitoring of cyanide, provided that the State determines that the system is not vulnerable due to lack of any industrial source of cyanide.

(3) A condition of the waiver shall require that a system shall take a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (i.e., nine years).

(4) The State may grant a waiver provided surface water systems have monitored annually for at least three years and groundwater systems have conducted a minimum of three rounds of monitoring. (At least one sample shall have been taken since January 1, 1990). Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the maximum contaminant level. Systems that use a new water source are not eligible

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for a waiver until three rounds of monitoring from the new source have been completed.

(5) In determining the appropriate reduced monitoring frequency, the State shall consider:

(i) Reported concentrations from all previous monitoring;

(ii) The degree of variation in reported concentrations; and

(iii) Other factors which may affect contaminant concentrations such as changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, or changes in stream flows or characteristics.

(6) A decision by the State to grant a waiver shall be made in writing and shall set forth the basis for the determination. The determination may be initiated by the State or upon an application by the public water system. The public water system shall specify the basis for its request. The State shall review and, where appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency become available.

(7) Systems which exceed the maximum contaminant levels as calculated in §141.23(1) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(8) The State may decrease the quarterly monitoring requirement to the frequencies specified in paragraphs (c)(1) and (c)(2) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(9) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with

the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(d) All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrate in §141.62.

(1) Community and non-transient, non-community water systems served by groundwater systems shall monitor annually beginning January 1, 1993; systems served by surface water shall monitor quarterly beginning January 1, 1993.

(2) For community and non-transient, non-community water systems, the repeat monitoring frequency for groundwater systems shall be quarterly for at least one year following any one sample in which the concentration is ≥ 50 percent of the MCL. The State may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.

(3) For community and non-transient, non-community water systems, the State may allow a surface water system to reduce the sampling frequency to annually if all analytical results from four consecutive quarters are < 50 percent of the MCL. A surface water system shall return to quarterly monitoring if any one sample is ≥ 50 percent of the MCL.

(4) Each transient non-community water system shall monitor annually beginning January 1, 1993.

(5) After the initial round of quarterly sampling is completed, each community and non-transient non-community system which is monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

(e) All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrite in §141.62(b).

(1) All public water systems shall take one sample at each sampling

point in the compliance period beginning January 1, 1993 and ending December 31, 1995.

(2) After the initial sample, systems where an analytical result for nitrite is <50 percent of the MCL shall monitor at the frequency specified by the State.

(3) For community, non-transient, non-community, and transient non-community water systems, the repeat monitoring frequency for any water system shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than the MCL.

(4) Systems which are monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

(f) Confirmation samples:

(1) Where the results of sampling for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium indicate an exceedance of the maximum contaminant level, the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

(2) Where nitrate or nitrite sampling results indicate an exceedance of the maximum contaminant level, the system shall take a confirmation sample within 24 hours of the system's receipt of notification of the analytical results of the first sample. Systems unable to comply with the 24-hour sampling requirement must immediately notify persons served by the public water system in accordance with §141.202 and meet other Tier 1 public notification requirements under Subpart Q of this part. Systems exercising this option must take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.

(3) If a State-required confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to

determine the system's compliance in accordance with paragraph (i) of this section. States have the discretion to delete results of obvious sampling errors.

(g) The State may require more frequent monitoring than specified in paragraphs (b), (c), (d) and (e) of this section or may require confirmation samples for positive and negative results at its discretion.

(h) Systems may apply to the State to conduct more frequent monitoring than the minimum monitoring frequencies specified in this section.

(i) Compliance with §§141.11 or 141.62(b) (as appropriate) shall be determined based on the analytical result(s) obtained at each sampling point.

(1) For systems which are conducting monitoring at a frequency greater than annual, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium is determined by a running annual average at any sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

(2) For systems which are monitoring annually, or less frequently, the system is out of compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium if the level of a contaminant is greater than the MCL. If confirmation samples are required by the State, the determination of compliance will be based on the annual average of the initial MCL exceedance and any State-required confirmation samples. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

(3) Compliance with the maximum contaminant levels for nitrate and nitrate is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate and/or nitrite exceed the MCLs in the initial sample, a confirmation sample is required in accordance with paragraph (f)(2) of this section, and compliance shall be determined based on the average of the initial and confirmation samples.

(4) Arsenic sampling results will be reported to the nearest 0.001 mg/L.

(j) Each public water system shall monitor at the time designated by the State during each compliance period.

(k) Inorganic analysis:

(1) Analysis for the following contaminants shall be conducted in accordance with the methods in the following table, or their equivalent as determined by EPA. Criteria for analyzing arsenic, barium, beryllium, cadmium, calcium, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical test procedures are contained in *Technical Notes on Drinking Water Methods*, EPA-600/R-94-173, October 1994. This document also contains approved analytical test methods which remain available for compliance monitoring until July 1, 1996. These methods will not be available for use after July 1, 1996. This document is available from the National Technical Information Service, NTIS PB95-104766, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847.

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Contaminant and methodology ¹³	EPA	ASTM ³	SM ⁴ (18th, 19th ed.)	SM ⁴ (20th ed.)	Other
1. Alkalinity:					
Titrimetric		D1067-92B.	2320 B	2320 B	
Electrometric titration					I-1030-85 ⁵
2. Antimony:					
Inductively Coupled Plasma (ICP)—Mass Spectrometry	200.8 ² .				
Hydride-Atomic Absorption		D3697-92			
Atomic Absorption; Platform	200.9 ²		3113 B		
Atomic Absorption; Furnace					
3. Arsenic: ¹⁴					
Inductively Coupled Plasma ¹⁵	200.7 ²		3120 B	3120 B	
ICP-Mass Spectrometry	200.8 ²				
Atomic Absorption; Platform	200.9 ²		3113 B		
Atomic Absorption; Furnace		D2972-97C.	3114 B		
Hydride Atomic Absorption		D2972-97B.			
4. Asbestos:					
Transmission Electron Microscopy	100.1 ⁹ .				
Transmission Electron Microscopy	100.2 ¹⁰ .				
5. Barium:					
Inductively Coupled Plasma	200.7 ²		3120 B	3120 B	
ICP-Mass Spectrometry	200.8 ²				
Atomic Absorption; Direct			3111 D		
Atomic Absorption; Furnace			3113 B		
6. Beryllium:					
Inductively Coupled Plasma	200.7 ²		3120 B	3120 B	
ICP-Mass Spectrometry	200.8 ²				
Atomic Absorption; Platform	200.9 ²				
Atomic Absorption; Furnace		D3645-97B.	3113 B		
7. Cadmium:					
Inductively Coupled Plasma	200.7 ²				
ICP-Mass Spectrometry	200.8 ²				
Atomic Absorption; Platform	200.9 ²				
Atomic Absorption; Furnace			3113 B.		
8. Calcium:					
EDTA titrimetric		D511-93A.	3500-Ca D.	3500-Ca B.	
Atomic Absorption; Direct Aspiration		D511-93B.	3111 B.		
Inductively Coupled Plasma	200.7 ²		3120 B	3120 B.	
9. Chromium:					

Contaminant and methodology ¹³	EPA	ASTM ³	SM ⁴ (18th, 19th ed.)	SM ⁴ (20th ed.)	Other
Inductively Coupled Plasma	200.7 ² .....	.....	3120 B	3120 B.	
ICP-Mass Spectrometry	200.8 ² .....	.....	.....	.....
Atomic Absorption; Platform	200.9 ² .....	.....	.....	.....
Atomic Absorption; Furnace .....	.....	.....	3113 B.	.....
10. Copper:					
Atomic Absorption; Furnace .....	.....	D1688-95C.	3113 B.	.....
Atomic Absorption; Direct Aspiration .....	.....	D1688-95A.	3111 B.	.....
Inductively Coupled Plasma	200.7 ² .....	.....	3120 B	3120 B.	
ICP-Mass spectrometry	200.8 ² .....	.....	.....	.....
Atomic Absorption; Platform	200.9 ² .....	.....	.....	.....
11. Conductivity:					
Conductance .....	.....	D1125-95A.	2510 B	2510 B.	
12. Cyanide:					
Manual Distillation followed by .....	.....	D2036-98A.	4500-CN-C.	4500-CN-C.	
Spectrophotometric Manual .....	.....	D2036-98A.	4500-CN-E.	4500-CN-E.	I-3300-85 ⁵
Spectrophotometric Semi-automated	335.4 ⁶	D2036-98B.	4500-CN-G.	4500-CN-G.	
Spectrophotometric, Amenable .....	.....	.....	4500-CN-F.	4500-CN-F.	
Selective Electrode .....	.....	.....	.....	.....
UV/Distillation/Spectrophotometric .....	.....	.....	.....	.....	Kelada 01 ¹⁷
Distillation/Spectrophotometric .....	.....	.....	.....	.....	QuikChem 10-204-00-1-X ¹⁸
13. Fluoride:					
Ion Chromatography	300.0 ⁶	D4327-97	4110 B	4110 B.	
Manual Distill.; Color. SPADNS .....	.....	.....	4500-F-B,D.	4500-F-B,D.	
Manual Electrode .....	.....	D1179-93B.	4500-F-C.	4500-F-C.	
Automated Electrode .....	.....	.....	.....	.....	380-75WE ¹¹
Automated Alizarin .....	.....	.....	4500-F-E.	4500-F-E.	29-71W ¹¹
14. Lead:					
Atomic Absorption; Furnace .....	.....	D3559-96D.	3113 B.	.....
ICP-Mass spectrometry	200.8 ² .....	.....	.....	.....
Atomic Absorption; Platform	200.9 ² .....	.....	.....	.....
Differential Pulse Anodic Stripping Voltammetry .....	.....	.....	.....	.....	Method 1001 ¹⁶
15. Magnesium:					
Atomic Absorption .....	.....	D511-93 B	3111 B.	.....
ICP	200.7 ² .....	.....	3120 B	3120 B.	
Complexation Titrimetric Methods .....	.....	D511-93 A	3500-Mg E.	3500-Mg B.	
16. Mercury:					
Manual, Cold Vapor	245.1 ²	D3223-97	3112 B.	.....
Automated, Cold Vapor	245.2 ¹ .....	.....	.....	.....
ICP-Mass Spectrometry	200.8 ² .....	.....	.....	.....
17. Nickel:					
Inductively Coupled Plasma	200.7 ² .....	.....	3120 B	3120 B.	
ICP-Mass Spectrometry	200.8 ² .....	.....	.....	.....
Atomic Absorption; Platform	200.9 ² .....	.....	.....	.....
Atomic Absorption; Direct .....	.....	.....	3111 B.	.....
Atomic Absorption; Furnace .....	.....	.....	3113 B.	.....
18. Nitrate:					
Ion Chromatography	300.0 ⁶	D4327-97	4110 B	4110 B	B-1011 ⁶
Automated Cadmium Reduction	353.2 ⁶	D3867-90A.	4500-NO ₃ -F.	4500-NO ₃ -F.	
Ion Selective Electrode	4500-NO ₃ -D.	4500-NO ₃ -D.	601 ⁷
Manual Cadmium Reduction	D3867-90B.	4500-NO ₃ -E.	4500-NO ₃ -E.	
19. Nitrite:					

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Contaminant and methodology ^{1a}	EPA	ASTM ^a	SM ⁴ (18th, 19th ed.)	SM ⁴ (20th ed.)	Other
Ion Chromatography	300.0 ⁶	D4327-97	4110 B	4110 B	B-1011 ⁶
Automated Cadmium Reduction	353.2 ⁶	D3867-90A.	4500-NO ₃ ⁻	4500-NO ₃ ⁻ F.	
Manual Cadmium Reduction		D3867-90B.	4500-NO ₃ ⁻ E.	4500-NO ₃ ⁻ E.	
Spectrophotometric			4500-NO ₂ ⁻ B.	4500-NO ₂ ⁻ B.	
20. Ortho-phosphate: ¹²					
Colorimetric, Automated, Ascorbic Acid	365.1 ⁶		4500-P F	4500-P F.	I-1601-85 ⁵ I-2601-90 ⁵ I-2598-85 ⁵
Colorimetric, ascorbic acid, single reagent		D515-88A	4500-P E	4500-P E.	
Colorimetric Phosphomolybdate;					
Automated-segmented Flow;					
Automated Discrete					
21. pH:					
Ion Chromatography	300.0 ⁶	D4327-97	4110 B	4110 B.	
Electrometric	150.1 ¹	D1293-95	4500-H ⁺ B.	4500-H ⁺ B.	
	150.2 ¹ .				
22. Selenium:					
Hydride-Atomic Absorption		D3859-98A.	3114 B.		
ICP-Mass Spectrometry	200.8 ² .				
Atomic Absorption; Platform	200.9 ² .				
Atomic Absorption; Furnace		D3859-98B.	3113 B.		
23. Silica:					
Colorimetric, Molybdate Blue;					I-1700-85 ⁵ I-2700-85 ⁵
Automated-segmented Flow					
Colorimetric		D859-95.			
Molybdosilicate			4500-Si D	4500-SiO ₂ C.	
Heteropoly Blue			4500-Si E	4500-SiO ₂ D.	
Automated for Molybdate-reactive Silica			4500-Si F	4500-SiO ₂ E.	
Inductively Coupled Plasma	200.7 ²		3120 B	3120 B.	
24. Sodium:					
Inductively Coupled Plasma	200.7 ² .				
Atomic Absorption; Direct Aspiration			3111 B.		
25. Temperature:					
Thermometric			2550	2550.	
26. Thallium:					
ICP-Mass Spectrometry	200.8 ² .				
Atomic Absorption; Platform	200.9 ² .				

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1-11 and 16 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, Room B135, Washington, DC (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/fbr_locations.html.

^{1a}Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79/020, March 1983. Available at NTIS, PB84-128677.
²Methods for the Determination of Metals in Environmental Samples—Supplement I", EPA/600/R-94/111, May 1994. Available at NTIS, PB95-125472.

³Annual Book of ASTM Standards, 1994, 1996, or 1999, Vols. 11.01 and 11.02, ASTM International; any year containing the cited version of the method may be used. The previous versions of D1688-95A, D1688-95C (copper), D3559-95D (lead), D1293-95 (pH), D1125-91A (conductivity) and D859-94 (silica) are also approved. These previous versions D1688-90A, C; D3559-90D, D1293-84, D1125-91A and D859-88, respectively are located in the Annual Book of ASTM Standards, 1994, Vol. 11.01. Copies may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19380.

⁴Standard Methods for the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), or 20th edition (1998), American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005. The cited methods published in any of these three editions may be used, except that the versions of 3111 B, 3111 D, 3113 B and 3114 B in the 20th edition may not be used.

⁵Method I-2601-90, Methods for Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediment, Open File Report 93-125, 1993; For Methods I-1030-85; I-1601-85; I-1700-85; I-2598-85; I-2700-85; and I-3300-85 See Techniques of Water Resources Investigation of the U.S. Geological Survey, Book 5, Chapter A-1, 3rd ed., 1989; Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

⁶Methods for the Determination of Inorganic Substances in Environmental Samples", EPA/600/R-93/100, August 1993. Available at NTIS, PB94-120821.

⁷The procedure shall be done in accordance with the Technical Bulletin 601 "Standard Method of Test for Nitrate in Drinking Water", July 1994, PN 221890-001, Analytical Technology, Inc. Copies may be obtained from ATI Orion, 529 Main Street, Boston, MA 02129.

⁸Method B-1011, "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," August 1987. Copies may be obtained from Waters Corporation, Technical Services Division, 34 Maple Street, Milford, MA 01757.

⁹Method 100.1, "Analytical Method For Determination of Asbestos Fibers in Water", EPA/600/4-83/043, EPA, September 1983. Available at NTIS, PB83-260471.

¹⁰Method 100.2, "Determination of Asbestos Structure Over 10µm In Length In Drinking Water", EPA/600/R-94/134, June 1994. Available at NTIS, PB94-201902.

¹¹Industrial Method No. 129-71W, "Fluoride in Water and Wastewater", December 1972, and Method No. 380-75WE, "Fluoride in Water and Wastewater", February 1976, Technicon Industrial Systems. Copies may be obtained from Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

¹²Unfiltered, no digestion or hydrolysis.

¹³Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium and arsenic by Method 200.7, and arsenic by Method 3120 B sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by Method 200.9; antimony and lead by Method 3113 B; and lead by Method D3559-90D unless multiple in-furnace depositions are made.

¹⁴If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or SM 3120 B, the arsenic must be in the pentavalent state to provide uniform signal response. For methods 200.7 and 3120 B, both samples and standards must be diluted in the same mixed acid matrix concentration of nitric and hydrochloric acid with the addition of 100 µL of 30% hydrogen peroxide per 100ml 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.

¹⁵Starting January 23, 2006, analytical methods using the ICP-AES technology, may not be used because the detection limits for these methods are 0.008 mg/L or higher. This restriction means that the two ICP-AES methods (EPA Method 200.7 and SM 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 January 23, 2006, systems may have compliance samples analyzed with these less sensitive methods.

¹⁶The description for Method Number 1001 for lead is available from Palintest, LTD, 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 41018. Or from the Hach Company, P.O. Box 389, Loveland, CO 80539.

¹⁷The description for the Kelada 01 Method, "Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, and Thiocyanate", Revision 1.2, August 2001, EPA # 821-B-01-009 for cyanide is available from the National Technical Information Service (NTIS), PB 2001-108275, 5285 Port Royal Road, Springfield, VA 22161. The toll free telephone number is 800-553-6847.

¹⁸The description for the QuikChem Method 10-204-00-1-X, "Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis", Revision 2.1, November 30, 2000 for cyanide is available from Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218, USA. Phone: 414-358-4200.

(2) Sample collection for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under this section shall be conducted using the sample preservation, container, and maximum holding time procedures specified in the table below:

Contaminant	Preservative ¹	Container ²	Time ³
Antimony	HNO ³	P or G	6 months
Arsenic	Conc HNO ₃ to pH <2.	P or G	6 months
Asbestos	4 °C	P or G	48 hours ⁴
Barium	HNO ³	P or G	6 months
Beryllium	HNO ³	P or G	6 months
Cadmium	HNO ³	P or G	6 months
Chromium	HNO ³	P or G	6 months
Cyanide	4 °C, NaOH	P or G	14 days
Fluoride	None	P or G	1 month
Mercury	HNO ³	P or G	28 days
Nickel	HNO ³	P or G	6 months
Nitrate	4 °C	P or G	48 hours ⁵
Nitrate-Nitrite ⁶	H ₂ SO ⁴	P or G	28 days
Nitrite	4°C	P or G	48 hours
Selenium	HNO ³	P or G	6 months

Contaminant	Preservative ¹	Container ²	Time ³
Thallium	HNO ³	P or G	6 months

¹For cyanide determinations samples must be adjusted with sodium hydroxide to pH 12 at the time of collection. When chilling is indicated the sample must be shipped and stored at 4 °C or less. Acidification of nitrate or metals samples may be with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. Acidification of samples for metals analysis is encouraged and allowed at the laboratory rather than at the time of sampling provided the shipping time and other instructions in Section 8.3 of EPA Methods 200.7 or 200.8 or 200.9 are followed.

²P-plastic, hard or soft, G-glass, hard or soft.

³In all cases samples should be analyzed as soon after collection as possible. Follow additional (if any) information on preservation, containers or holding times that is specified in method.

⁴Instructions for containers, preservation procedures and holding times as specified in Method 100.2 must be adhered to for all compliance analyses including those conducted with Method 100.1.

⁵If the sample is chlorinated, the holding time for an unacidified sample kept at 4 °C is extended to 14 days.

⁶Nitrate-Nitrite refers to a measurement of total nitrate.

(3) Analysis under this section shall only be conducted by laboratories that have been certified by EPA or the State. Laboratories may conduct sample analysis under provisional certification until January 1, 1996. To receive certification to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite and selenium and thallium, the laboratory must:

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(i) Analyze Performance Evaluation (PE) samples provided by EPA, the State or by a third party (with the approval of the State or EPA) at least once a year.

(ii) For each contaminant that has been included in the PE sample and for each method for which the laboratory desires certification achieve quantitative results on the analyses that are within the following acceptance limits:

Contaminant	Acceptance limit
Antimony	±30 at ≥0.006 mg/l
Arsenic	±30 at ≥0.003 mg/l
Asbestos	2 standard deviations based on study statistics.
Barium	±15% at ≥0.15 mg/l
Beryllium	±15% at ≥0.001 mg/l
Cadmium	±20% at ≥0.002 mg/l
Chromium	±15% at ≥0.01 mg/l
Cyanide	±25% at ≥0.1 mg/l
Fluoride	±10% at ≥1 to 10 mg/l
Mercury	±30% at ≥0.0005 mg/l
Nickel	±15% at ≥0.01 mg/l
Nitrate	±10% at ≥0.4 mg/l
Nitrite	±15% at ≥0.4 mg/l
Selenium	±20% at ≥0.01 mg/l
Thallium	±30% at ≥0.002 mg/l

(1) Analyses for the purpose of determining compliance with §141.11 shall be conducted using the requirements specified in paragraphs (1) through (q) of this section.

(1) Analyses for all community water systems utilizing surface water sources shall be completed by June 24, 1978. These analyses shall be repeated at yearly intervals.

(2) Analyses for all community water systems utilizing only ground water sources shall be completed by June 24, 1979. These analyses shall be repeated at three-year intervals.

(3) For non-community water systems, whether supplied by surface or ground sources, analyses for nitrate shall be completed by December 24, 1980. These analyses shall be repeated at intervals determined by the State.

(4) The State has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

(m) If the result of an analysis made under paragraph (1) of this section indicates that the level of any contaminant listed in §141.11 exceeds the maximum contaminant level, the supplier

of the water shall report to the State within 7 days and initiate three additional analyses at the same sampling point within one month.

(n) When the average of four analyses made pursuant to paragraph (m) of this section, rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the supplier of water shall notify the State pursuant to §141.31 and give notice to the public pursuant to subpart Q. Monitoring after public notification shall be at a frequency designated by the State and shall continue until the maximum contaminant level has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(o) The provisions of paragraphs (m) and (n) of this section notwithstanding, compliance with the maximum contaminant level for nitrate shall be determined on the basis of the mean of two analyses. When a level exceeding the maximum contaminant level for nitrate is found, a second analysis shall be initiated within 24 hours, and if the mean of the two analyses exceeds the maximum contaminant level, the supplier of water shall report his findings to the State pursuant to §141.31 and shall notify the public pursuant to subpart Q.

(p) For the initial analyses required by paragraph (1) (1), (2) or (3) of this section, data for surface waters acquired within one year prior to the effective date and data for ground waters acquired within 3 years prior to the effective date of this part may be substituted at the discretion of the State.

(q) [Reserved]

[56 FR 3579, Jan. 30, 1991, as amended at 56 FR 30274, July 1, 1991; 57 FR 31838, July 17, 1992; 59 FR 34322, July 1, 1994; 59 FR 62466, Dec. 5, 1994; 60 FR 33932, 34085, June 29, 1995; 64 FR 67461, Dec. 1, 1999; 65 FR 26022, May 4, 2000; 66 FR 7061, Jan. 22, 2001; 67 FR 65246, Oct. 23, 2002; 67 FR 65897, Oct. 29, 2002; 67 FR 68911, Nov. 13, 2002; 68 FR 14506, Mar. 25, 2003]

§ 141.24 Organic chemicals, sampling and analytical requirements.

(a)-(d) [Reserved]

(e) Analyses for the contaminants in this section shall be conducted using

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Contaminant	EPA method ¹	Standard methods	ASTM	Other
2. Carbon tetrachloride	502.2, 524.2, 551.1.			
3. Chlorobenzene	502.2, 524.2.			
4. 1,2-Dichlorobenzene	502.2, 524.2.			
5. 1,4-Dichlorobenzene	502.2, 524.2.			
6. 1,2-Dichloroethane	502.2, 524.2.			
7. cis-Dichloroethylene	502.2, 524.2.			
8. trans-Dichloroethylene	502.2, 524.2.			
9. Dichloromethane	502.2, 524.2.			
10. 1,2-Dichloropropane	502.2, 524.2.			
11. Ethylbenzene	502.2, 524.2.			
12. Styrene	502.2, 524.2.			
13. Tetrachloroethylene	502.2, 524.2, 551.1.			
14. 1,1,1-Trichloroethane	502.2, 524.2, 551.1.			
15. Trichloroethylene	502.2, 524.2, 551.1.			
16. Toluene	502.2, 524.2.			
17. 1,2,4-Trichlorobenzene	502.2, 524.2.			
18. 1,1-Dichloroethylene	502.2, 524.2.			
19. 1,1,2-Trichloroethane	502.2, 524.2, 551.1.			
20. Vinyl chloride	502.2, 524.2.			
21. Xylenes (total)	502.2, 524.2.			
22. 2,3,7,8-TCDD (dioxin)	1613.			
23. 2,4-D ⁴ (as acid, salts and esters)	515.2, 555, 515.1, 515.3, 515.4.		D5317-93.	
24. 2,4,5-TP ⁴ (Silvex)	515.2, 555, 515.1, 515.3, 515.4.		D5317-93.	
25. Alachlor ²	507, 525.2, 508.1, 505, 551.1.			
26. Atrazine ²	507, 525.2, 508.1, 505, 551.1.			Syngenta AG-625.
27. Benzo(a)pyrene	525.2, 550, 550.1.			
28. Carbofuran	531.1, 531.2.	6610.		
29. Chlordane	508, 525.2, 508.1, 505.			

Contaminant	EPA method ¹	Standard methods	ASTM	Other
30. Dalapon	552.1, 515.1, 552.2, 515.3, 515.4.			
31. Di(2-ethylhexyl)adipate	506, 525.2.			
32. Di(2-ethylhexyl)phthalate	506, 525.2.			
33. Dibromochloropropane (DBCP)	504.1, 551.1.			
34. Dinoseb ⁴	515.2, 555, 515.1, 515.3, 515.4.			
35. Diquat	549.2.			
36. Endothall	548.1.			
37. Endrin	508, 525.2, 508.1, 505, 551.1.			
38. Ethylene dibromide (EDB)	504.1, 551.1.			
39. Glyphosate	547	6651.		
40. Heptachlor	508, 525.2, 508.1, 505, 551.1.			
41. Heptachlor Epoxide	508, 525.2, 508.1, 505, 551.1.			
42. Hexachlorobenzene	508, 525.2, 508.1, 505, 551.1.			
43. Hexachlorocyclopentadiene	508, 525.2, 508.1, 505, 551.1.			
44. Lindane	508, 525.2, 508.1, 505, 551.1.			
45. Methoxychlor	508, 525.2, 508.1, 505, 551.1.			
46. Oxamyl	531.1, 531.2.	6610.		
47. PCBs ³ (as decachlorobiphenyl)	508A.			
48. PCBs ³ (as Aroclors)	508.1, 508, 525.2, 505.			
49. Pentachlorophenol	515.2, 525.2, 555, 515.1, 515.3, 515.4.		D5317-93.	
50. Picloram ⁴	515.2, 555, 515.1, 515.3, 515.4.		D5317-93.	
51. Simazine ²	507, 525.2, 508.1, 505, 551.1.			
52. Toxaphene	508, 508.1, 525.2, 505.			

Contaminant	EPA meth- od ¹	Standard methods	ASTM	Other
53. Total Trihalomethanes	502.2, 524.2, 551.1.			

¹For previously approved EPA methods which remain available for compliance monitoring until June 1, 2001, see paragraph (e)(2) of this section.

²Substitution of the detector specified in Method 505, 507, 508 or 508.1 for the purpose of achieving lower detection limits is allowed as follows. Either an electron capture or nitrogen phosphorous detector may be used provided all regulatory requirements and quality control criteria are met.

³PCBs are qualitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl. Users of Method 505 may have more difficulty in achieving the required detection limits than users of Methods 508.1, 525.2 or 508.

⁴Accurate determination of the chlorinated esters requires hydrolysis of the sample as described in EPA Methods 515.1, 515.2, 515.3, 515.4 and 555 and ASTM Method D5317-93.

(2) The following EPA methods will remain available for compliance monitoring until June 1, 2001. The following documents are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be inspected at EPA's Drinking Water Docket, 401 M St., SW., Washington, DC 20460; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. EPA methods 502.2 Rev. 2.0, 505 Rev. 2.0, 507 Rev. 2.0, 508 Rev. 3.0, 531.1 Rev. 3.0 are in "Methods for the Determination of Organic Compounds in Drinking Water", December 1988, revised July 1991; methods 506 and 551 are in "Methods for the Determination of Organic Compounds in Drinking Water—Supplement I", July 1990; methods 515.2 Rev. 1.0 and 524.2 Rev. 4.0 are in "Methods for the Determination of Organic Compounds in Drinking Water—Supplement II," August 1992; and methods 504.1 Rev. 1.0, 508.1 Rev. 1.0, 525.2 Rev.1.0 are available from US EPA NERL, Cincinnati, OH 45268

(f) Beginning with the initial compliance period, analysis of the contaminants listed in §141.61(a) (1) through (21) for the purpose of determining compliance with the maximum contaminant level shall be conducted as follows:

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at

the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(2) Surface water systems (or combined surface/ground) shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(3) If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

(4) Each community and non-transient non-community water system shall take four consecutive quarterly samples for each contaminant listed in §141.61(a) (2) through (21) during each compliance period, beginning in the initial compliance period.

(5) If the initial monitoring for contaminants listed in §141.61(a) (1) through (8) and the monitoring for the contaminants listed in §141.61(a) (9) through (21) as allowed in paragraph (f)(18) has been completed by December 31, 1992, and the system did not detect any contaminant listed in §141.61(a) (1) through (21), then each ground and surface water system shall take one sample annually beginning with the initial compliance period.

(6) After a minimum of three years of annual sampling, the State may allow groundwater systems with no previous detection of any contaminant listed in §141.61(a) to take one sample during each compliance period.

(7) Each community and non-transient non-community ground water system which does not detect a contaminant listed in §141.61(a) (1) through (21) may apply to the State for a waiver from the requirements of paragraphs (f)(5) and (f)(6) of this section after completing the initial monitoring. (For purposes of this section, detection is defined as ≥ 0.0005 mg/l.) A waiver shall be effective for no more than six years (two compliance periods). States may also issue waivers to small systems for the initial round of monitoring for 1,2,4-trichlorobenzene.

(8) A State may grant a waiver after evaluating the following factor(s):

(i) Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted.

(ii) If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(A) Previous analytical results.

(B) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities.

(C) The environmental persistence and transport of the contaminants.

(D) The number of persons served by the public water system and the proximity of a smaller system to a larger system.

(E) How well the water source is protected against contamination, such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead pro-

tection. Surface water systems must consider watershed protection.

(9) As a condition of the waiver a groundwater system must take one sample at each sampling point during the time the waiver is effective (i.e., one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in paragraph (f)(8) of this section. Based on this vulnerability assessment the State must reconfirm that the system is non-vulnerable. If the State does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually as specified in paragraph (5) of this section.

(10) Each community and non-transient non-community surface water system which does not detect a contaminant listed in §141.61(a) (1) through (21) may apply to the State for a waiver from the requirements of (f)(5) of this section after completing the initial monitoring. Composite samples from a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Systems meeting this criterion must be determined by the State to be non-vulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the frequency specified by the State (if any).

(11) If a contaminant listed in §141.61(a) (2) through (21) is detected at a level exceeding 0.0005 mg/l in any sample, then:

(i) The system must monitor quarterly at each sampling point which resulted in a detection.

(ii) The State may decrease the quarterly monitoring requirement specified in paragraph (f)(11)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(iii) If the State determines that the system is reliably and consistently

below the MCL, the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter(s) which previously yielded the highest analytical result.

(iv) Systems which have three consecutive annual samples with no detection of a contaminant may apply to the State for a waiver as specified in paragraph (f)(7) of this section.

(v) Groundwater systems which have detected one or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl chloride sample shall be taken at each sampling point at which one or more of the two-carbon organic compounds was detected. If the results of the first analysis do not detect vinyl chloride, the State may reduce the quarterly monitoring frequency of vinyl chloride monitoring to one sample during each compliance period. Surface water systems are required to monitor for vinyl chloride as specified by the State.

(12) Systems which violate the requirements of § 141.61(a) (1) through (21), as determined by paragraph (f)(15) of this section, must monitor quarterly. After a minimum of four consecutive quarterly samples which show the system is in compliance as specified in paragraph (f)(15) of this section the system and the State determines that the system is reliably and consistently below the maximum contaminant level, the system may monitor at the frequency and times specified in paragraph (f)(11)(iii) of this section.

(13) The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average is used for the compliance determination as specified by paragraph (f)(15). States have discretion to delete results of obvious sampling errors from this calculation.

(14) The State may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from

a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within 14 days of sample collection.

(i) If the concentration in the composite sample is greater than or equal to 0.0005 mg/l for any contaminant listed in § 141.61(a), then a follow-up sample must be taken within 14 days at each sampling point included in the composite, and be analyzed for that contaminant.

(ii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completing analysis of the composite sample, provided the holding time of the sample is not exceeded.

(iii) If the population served by the system is > 3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤ 3,300 persons, the State may permit compositing among different systems provided the 5-sample limit is maintained.

(iv) Compositing samples prior to GC analysis.

(A) Add 5 ml or equal larger amounts of each sample (up to 5 samples are allowed) to a 25 ml glass syringe. Special precautions must be made to maintain zero headspace in the syringe.

(B) The samples must be cooled at 4 °C during this step to minimize volatilization losses.

(C) Mix well and draw out a 5-ml aliquot for analysis.

(D) Follow sample introduction, purging, and desorption steps described in the method.

(E) If less than five samples are used for compositing, a proportionately small syringe may be used.

(v) Compositing samples prior to GC/MS analysis.

(A) Inject 5-ml or equal larger amounts of each aqueous sample (up to 5 samples are allowed) into a 25-ml

purging device using the sample introduction technique described in the method.

(B) The total volume of the sample in the purging device must be 25 ml.

(C) Purge and desorb as described in the method.

(15) Compliance with §141.61(a) (1) through (21) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(ii) Systems monitoring annually or less frequently whose sample result exceeds the MCL must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

(iii) If any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

(iv) If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average.

(16) [Reserved]

(17) Analysis under this section shall only be conducted by laboratories that are certified by EPA or the State according to the following conditions (laboratories may conduct sample analysis under provisional certification until January 1, 1996):

(i) To receive certification to conduct analyses for the contaminants in §141.61(a) (2) through (21) the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) Achieve the quantitative acceptance limits under paragraphs (f)(17)(i)(C) and (D) of this section for at least 80 percent of the regulated or-

ganic contaminants included in the PE sample.

(C) Achieve quantitative results on the analyses performed under paragraph (f)(17)(i)(A) of this section that are within $\pm 20\%$ of the actual amount of the substances in the Performance Evaluation sample when the actual amount is greater than or equal to 0.010 mg/l.

(D) Achieve quantitative results on the analyses performed under paragraph (f)(17)(i)(A) of this section that are within ± 40 percent of the actual amount of the substances in the Performance Evaluation sample when the actual amount is less than 0.010 mg/l.

(E) Achieve a method detection limit of 0.0005 mg/l, according to the procedures in appendix B of part 136.

(ii) To receive certification to conduct analyses for vinyl chloride, the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) Achieve quantitative results on the analyses performed under paragraph (f)(17)(ii)(A) of this section that are within ± 40 percent of the actual amount of vinyl chloride in the Performance Evaluation sample.

(C) Achieve a method detection limit of 0.0005 mg/l, according to the procedures in appendix B of part 136.

(D) Obtain certification for the contaminants listed in §141.61(a)(2) through (21).

(18) States may allow the use of monitoring data collected after January 1, 1988, required under section 1445 of the Act for purposes of initial monitoring compliance. If the data are generally consistent with the other requirements of this section, the State may use these data (i.e., a single sample rather than four quarterly samples) to satisfy the initial monitoring requirement of paragraph (f)(4) of this section. Systems which use grandfathered samples and did not detect any contaminant listed §141.61(a)(2) through (21) shall begin monitoring annually in accordance with paragraph (f)(5) of this section beginning with the initial compliance period.

(19) States may increase required monitoring where necessary to detect variations within the system.

(20) Each certified laboratory must determine the method detection limit (MDL), as defined in appendix B to part 136, at which it is capable of detecting VOCs. The acceptable MDL is 0.0005 mg/l. This concentration is the detection concentration for purposes of this section.

(21) Each public water system shall monitor at the time designated by the State within each compliance period.

(22) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(g) [Reserved]

(h) Analysis of the contaminants listed in §141.61(c) for the purposes of determining compliance with the maximum contaminant level shall be conducted as follows:⁷

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) Surface water systems shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

⁷Monitoring for the contaminants aldicarb, aldicarb sulfoxide, and aldicarb sulfone shall be conducted in accordance with §141.40.

NOTE: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(3) If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

(4) Monitoring frequency:

(i) Each community and non-transient non-community water system shall take four consecutive quarterly samples for each contaminant listed in §141.61(c) during each compliance period beginning with the initial compliance period.

(ii) Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period.

(iii) Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

(5) Each community and non-transient water system may apply to the State for a waiver from the requirement of paragraph (h)(4) of this section. A system must reapply for a waiver for each compliance period.

(6) A State may grant a waiver after evaluating the following factor(s): Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(i) Previous analytical results.

(ii) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near

a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.

(iii) The environmental persistence and transport of the pesticide or PCBs.

(iv) How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.

(v) Elevated nitrate levels at the water supply source.

(vi) Use of PCBs in equipment used in the production, storage, or distribution of water (i.e., PCBs used in pumps, transformers, etc.).

(7) If an organic contaminant listed in §141.61(c) is detected (as defined by paragraph (h)(18) of this section) in any sample, then:

(i) Each system must monitor quarterly at each sampling point which resulted in a detection.

(ii) The State may decrease the quarterly monitoring requirement specified in paragraph (h)(7)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(iii) After the State determines the system is reliably and consistently below the maximum contaminant level the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result.

(iv) Systems which have 3 consecutive annual samples with no detection of a contaminant may apply to the State for a waiver as specified in paragraph (h)(6) of this section.

(v) If monitoring results in detection of one or more of certain related contaminants (aldicarb, aldicarb sulfone, aldicarb sulfoxide and heptachlor, heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

(8) Systems which violate the requirements of §141.61(c) as determined by paragraph (h)(11) of this section must monitor quarterly. After a minimum of four quarterly samples show the system is in compliance and the State determines the system is reliably and consistently below the MCL, as specified in paragraph (h)(11) of this section, the system shall monitor at the frequency specified in paragraph (h)(7)(iii) of this section.

(9) The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average used for the compliance determination as specified by paragraph (h)(11) of this section. States have discretion to delete results of obvious sampling errors from this calculation.

(10) The State may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within 14 days of sample collection.

(i) If the concentration in the composite sample detects one or more contaminants listed in §141.61(c), then a follow-up sample must be taken within 14 days at each sampling point included in the composite, and be analyzed for that contaminant.

(ii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completion of the composite analysis or before the holding time for the initial sample is exceeded whichever is sooner.

(iii) If the population served by the system is >3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤

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3,300 persons, the State may permit composting among different systems provided the 5-sample limit is maintained.

(11) Compliance with §141.61(c) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(ii) Systems monitoring annually or less frequently whose sample result exceeds the regulatory detection level as defined by paragraph (h)(18) of this section must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

(iii) If any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

(iv) If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average.

(12) [Reserved]

(13) Analysis for PCBs shall be conducted as follows using the methods in paragraph (e) of this section:

(i) Each system which monitors for PCBs shall analyze each sample using either Method 508.1, 525.2, 508 or 505. Users of Method 505 may have more difficulty in achieving the required Aroclor detection limits than users of Methods 508.1, 525.2 or 508.

(ii) If PCBs (as one of seven Aroclors) are detected (as designated in this paragraph) in any sample analyzed using Method 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs (as decachlorobiphenyl).

Aroclor	Detection limit (mg/l)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001

Aroclor	Detection limit (mg/l)
1260	0.0002

(11) Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

(14) If monitoring data collected after January 1, 1990, are generally consistent with the requirements of §141.24(h), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(15) The State may increase the required monitoring frequency, where necessary, to detect variations within the system (e.g., fluctuations in concentration due to seasonal use, changes in water source).

(16) The State has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

(17) Each public water system shall monitor at the time designated by the State within each compliance period.

(18) Detection as used in this paragraph shall be defined as greater than or equal to the following concentrations for each contaminant.

Contaminant	Detection limit (mg/l)
Atachlor .....	.0002
Aldicarb .....	.0005
Aldicarb sulfoxide .....	.0005
Aldicarb sulfone .....	.0008
Atrazine .....	.0001
Benzo[a]pyrene .....	.00002
Carbofuran .....	.0009
Chlordane .....	.0002
Dalapon .....	.001
1,2-Dibromo-3-chloropropane (DBCP) .....	.00002
Di (2-ethylhexyl) adipate .....	.0006
Di (2-ethylhexyl) phthalate .....	.0006
Dinoseb .....	.0002
Diquat .....	.0004
2,4-D .....	.0001
Endothall .....	.009
Endrin .....	.00001
Ethylene dibromide (EDB) .....	.00001
Glyphosate .....	.006
Heptachlor .....	.00004
Heptachlor epoxide .....	.00002
Hexachlorobenzene .....	.0001
Hexachlorocyclopentadiene0001
Lindane00002
Methoxychlor0001
Oxamyl002
Picloram0001

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Contaminant	Detection limit (mg/l)
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)0001
Pentachlorophenol .....	.00004
Simazine .....	.00007
Toxaphene .....	.001
2,3,7,8-TCDD (Dioxin) .....	.000000005
2,4,5-TP (Silvex) .....	.0002

(19) Analysis under this section shall only be conducted by laboratories that have received certification by EPA or the State and have met the following conditions:

(i) To receive certification to conduct analyses for the contaminants in §141.61(c) the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) For each contaminant that has been included in the PE sample achieve quantitative results on the analyses that are within the following acceptance limits:

Contaminant	Acceptance limits (percent)
DBCP	±40
EDB	±40
Alachlor	±45
Atrazine	±45
Benzo[a]pyrene	2 standard deviations.
Carbofuran	±45
Chlordane	±45
Dalapon	2 standard deviations.
Di(2-ethylhexyl)adipate	2 standard deviations.
Di(2-ethylhexyl)phthalate	2 standard deviations.
Dihoseb	2 standard deviations.
Diquat	2 standard deviations.
Endothall	2 standard deviations.
Endrin	±30
Glyphosate	2 standard deviations.
Heptachlor	±45
Heptachlor epoxide	±45
Hexachlorobenzene	2 standard deviations.
Hexachloro- cyclopentadiene	2 standard deviations.
Lindane	±45
Methoxychlor	±45
Oxamyl	2 standard deviations.
PCBs (as Decachlorobiphenyl)	0-200.

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Contaminant	Acceptance limits (percent)
Picloram	2 standard deviations.
Simazine	2 standard deviations.
Toxaphene	±45.
Aldicarb	2 standard deviations.
Aldicarb sulfoxide	2 standard deviations.
Aldicarb sulfone	2 standard deviations.
Pentachlorophenol	±50.
2,3,7,8-TCDD (Dioxin)	2 standard deviations.
2,4-D	±50.
2,4,5-TP (Silvex)	±50.

(ii) [Reserved]

(20) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(Approved by the Office of Management and Budget under control number 2040-0090)

[40 FR 59570, Dec. 24, 1975, as amended at 44 FR 68641, Nov. 29, 1979; 45 FR 57345, Aug. 27, 1980; 47 FR 10998, Mar. 12, 1982; 52 FR 25712, July 8, 1987; 53 FR 5147, Feb. 19, 1988; 53 FR 25110, July 1, 1988; 56 FR 3583, Jan. 30, 1991; 56 FR 30277, July 1, 1991; 57 FR 22178, May 27, 1992; 57 FR 31841, July 17, 1992; 59 FR 34323, July 1, 1994; 59 FR 62468, Dec. 5, 1994; 60 FR 34085, June 29, 1995; 64 FR 67464, Dec. 1, 1999; 65 FR 26022, May 4, 2000; 66 FR 7063, Jan. 22, 2001; 67 FR 65250, Oct. 23, 2002; 67 FR 65898, Oct. 29, 2002]

§ 141.25 Analytical methods for radioactivity.

(a) Analysis for the following contaminants shall be conducted to determine compliance with §141.66 (radioactivity) in accordance with the methods in the following table, or their equivalent determined by EPA in accordance with §141.27.

Contaminant	Methodology	References (method or page number)										Other
		EPA ¹	EPA ²	EPA ³	EPA ⁴	SM ⁵	ASTM ⁶	USGS ⁷	DOE ⁸			
Naturally occurring: Gross alpha ¹¹ and beta.	Evaporation	900.0	p 1	00-01	p 1	302, 7110 B		R-1120-76				
Gross alpha ¹¹	Co-precipitation	903.1	p 16	00-02	p 19	7110 C		R-1141-76				N.Y. ⁹
Radium 226	Radon emanation	903.0	p 13	Ra-04		305;7500-Ra C		R-1140-76				N.Y. ⁹
Radium 228	Radiochemi-cal	904.0	p 24	Ra-03	p 19	304;7500-Ra B		R-1142-76				N.J. ¹⁰
Uranium ¹²	Radiochemi-cal	908.0		Ra-05		7500-Ra D						
	Fluorometric	908.1				7500-U B						
	Alpha spectrometry				p 33	7500-U C (17th Ed.)						
	Lasar			00-07		7500-U C (18th, 19th or 20th Ed.)						
	Phosphorimetry											
Man-made: Radioact- ive cesium	Radiochemi-cal	901.0	p 4		p 92	7500-CsB						
	Gamma ray spec-trometry	901.1				7120						
	Radiochemi-cal	902.0	p 6, p 9		p 92	7500-I B, 7500-I C, 7500-I D, 7120						
Radioact- ive iodine	Gamma ray spec-trometry	901.1			p 65	303, 7500-Sr B						
Radioact- ive Strontium 89, 90.	Radiochemi-cal	905.0	p 29	Sr-04								
	Liquid scintillation	906.0	p 34	H-02	p 87	306, 7500-3H B						
Tritium	Gamma ray	901.1			p 92	7120						
Gamma emitters	Spectrometry	902.0				7500-Cs B, 7500-I B						

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of documents 1 through 10 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. In cases where the source is not listed, the documents may be obtained from the State Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Document, EPA West, 1301 Constitution Avenue, NW, Room 5135, Washington, DC (Telephone: 202-566-2426), or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

¹Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, EPA 600/4-80-032, August 1980. Available at the U.S. Department of Commerce, National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161 (Telephone 800-553-6847), PB 80-224744.

²Interim Radiochemical Methodology for Drinking Water, EPA 600/4-79-008 (revised), March 1979. Available at NTIS, ibid. PB 84-215581.

³Radiochemical Analytical Procedures for Analysis of Environmental Samples, March 1979. Available at NTIS, ibid. EMSL LV 053917.

⁴Standard Methods for the Examination of Water and Wastewater, 13th Edition, 1980. Available at the 13th edition, 1971, 1989, 1992, 1995, 1998. Available at American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005. Methods 302, 303, 304, 305 and 306 are only in the 13th edition. Methods 7110B, 7500-Ra B, 7500-Ra C, 7500-Ra D, 7500-U B, 7500-Cs B, 7500-I B, 7500-I C, 7500-I D, 7500-3H B are in the 17th, 18th, 19th and 20th editions. Method 7110 C is in the 18th, 19th and 20th editions. Method 7110 C is in the 18th, 19th and 20th editions. Method 7120 is only in the 19th and 20th editions.

⁵Annual Book of ASTM Standards, Method 1.01 and 11.02, 1989. ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

⁷"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, 1977. Available at U.S. Geological Survey (USGS) Information Services, Box 25286, Federal Center, Denver, CO 80225-0425.

⁸"EML Procedures Manual", 28th (1997) or 27th (1990) Editions, Volumes 1 and 2; either edition may be used. In the 27th Edition Method Ra-04 is listed as Ra-05 and Method Ga-01-R is listed as Sect. 4.5.2.3. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 378 Hudson Street, New York, NY 10014-3621.

⁹"Determination of Ra-226 and Ra-228 (Ra-02)", January 1980, Revised June 1982. Available at Radiological Sciences Institute for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, NY 12201.

¹⁰"Determination of Radium 228 in Drinking Water", August 1980. Available at State of New Jersey, Department of Environmental Protection, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625.

¹¹Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

¹²In uranium (U) is determined by mass, a 0.67 pCi/μg of uranium conversion factor must be used. This conversion factor is based on the 1:1 activity ratio of U-234 and U-238 that is characteristic of naturally occurring uranium.

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(b) When the identification and measurement of radionuclides other than those listed in paragraph (a) of this section is required, the following references are to be used, except in cases where alternative methods have been approved in accordance with §141.27.

(1) *Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions*, H. L. Krieger and S. Gold, EPA-R4-73-014. USEPA, Cincinnati, Ohio, May 1973.

(2) *HASL Procedure Manual*, Edited by John H. Harley. HASL 300, ERDA Health and Safety Laboratory, New York, NY., 1973.

(c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit shall be that concentration which can be counted with a precision of plus or minus 100 percent at the 95 percent confidence level (1.96σ where σ is the standard deviation of the net counting rate of the sample).

(1) To determine compliance with §141.66(b), (c), and (e) the detection limit shall not exceed the concentrations in Table B to this paragraph.

TABLE B.—DETECTION LIMITS FOR GROSS ALPHA PARTICLE ACTIVITY, RADIUM 226, RADIUM 228, AND URANIUM

Contaminant	Detection limit
Gross alpha particle activity	3 pCi/L.
Radium 226	1 pCi/L.
Radium 228	1 pCi/L.
Uranium	Reserve

(2) To determine compliance with §141.66(d) the detection limits shall not exceed the concentrations listed in Table C to this paragraph.

TABLE C.—DETECTION LIMITS FOR MAN-MADE BETA PARTICLE AND PHOTON EMITTERS

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 the applicable limit.

(d) To judge compliance with the maximum contaminant levels listed in §141.66, averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substance in question.

(e) The State has the authority to determine compliance or initiate enforcement action based upon analytical results or other information compiled by their sanctioned representatives and agencies.

[41 FR 28404, July 9, 1976, as amended at 45 FR 57345, Aug. 27, 1980; 62 FR 10173, Mar. 5, 1997; 65 FR 76745, Dec. 7, 2000; 67 FR 65250, Oct. 23, 2002]

EFFECTIVE DATE NOTE 1: At 69 FR 31012, June 2, 2004, §141.25 was amended in the table in paragraph (a) by revising the entry for uranium, revising footnotes 1, 2, 3, 5, 6, 8, and 12, and adding footnote 13, effective Aug. 31, 2004. For the convenience of the user, the revised and added text is set forth as follows:

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(a) * * *

Contaminant	Methodology	Reference (method or page number)							
		EPA ¹	EPA ²	EPA ³	EPA ⁴	SM ⁵	ASTM ⁶	USGS ⁷	DOE ⁸
Uranium ¹²	Radiochemical	908.0				7500-U B			
	Fluorometric	908.1				7500-U C (17th Ed.)	D 2907-97	R-1180-76, R-1181-76	U-04
	ICP-MS	13200.8				3125	D5673-03		
	Alpha spectrometry			00-07	p-33	7500-U C (18th, 19th or 20th Ed.)	D3972-97	R-1182-76	U-02
	Laser Phosphorimetry						D5174-97		

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of documents 1 through 10 and 13 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, Room B135, Washington, DC (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

¹"Prescribed Procedures for the Measurement of Radioactivity in Drinking Water", EPA 600/4-80-032, August 1980. Available at the U.S. Department of Commerce, National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161 (Telephone 800-553-6847), PB 60-224744, except Method 200.8, "Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry," Revision 5.4, which is published in "Methods for the Determination of Metals in Environmental Samples—Supplement 1," EPA 600-R-94-111, May 1994. Available at NTIS, PB95-125472.

²"Interim Radiochemical Methodology for Drinking Water", EPA 600/4-75-008(revised), March 1976. Available at NTIS, ibid. PB 253258.

³"Radiochemistry Procedures Manual", EPA 520/5-84-006, December, 1987. Available at NTIS, ibid. PB 84-215581.

⁴"Radiochemical Analytical Procedures for Analysis of Environmental Samples", March 1979. Available at NTIS, ibid. EMSL LV 053917.

⁵"Standard Methods for the Examination of Water and Wastewater", 13th, 17th, 18th, 19th Editions, or 20th edition, 1971, 1986, 1992, 1995, 1998. Available at American Public Health Association, 1015 Fifteenth Street NW., Washington, DC 20005. Methods 302, 303, 304, 305 and 306 are only in the 13th edition. Methods 7110B, 7500-Ra B, 7500-Ra C, 7500-Ra D, 7500-U B, 7500-Cs B, 7500-I B, 7500-I C, 7500-I D, 7500-Sr B, 7500-3H B are in the 17th, 18th, 19th and 20th editions. Method 7110 C is in the 18th, 19th and 20th editions. Method 7500-U C Fluorometric Uranium is only in the 17th Edition, and 7500-U C Alpha spectrometry is only in the 18th, 19th and 20th editions. Method 7120 is only in the 19th and 20th editions. Methods 302, 303, 304, 305 and 306 are only in the 13th edition. Method 3125 is only in the 20th edition.

⁶Annual Book of ASTM Standards, Vol. 11.01 and 11.02, 1999; ASTM International any year containing the cited version of the method may be used. Copies of these two volumes and the 2003 version of D 5673-03 may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959.

⁷"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*, 1977. Available at U.S. Geological Survey (USGS) Information Services, Box 25286, Federal Center, Denver, CO 80225-0425.

⁸"EML Procedures Manual", 28th (1997) or 27th (1990) Editions, Volumes 1 and 2; either edition may be used. In the 27th Edition Method Ra-04 is listed as Ra-05 and Method Ga-01-R is listed as Sect. 4.5.2.3. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 376 Hudson Street, New York, NY 10014-3621.

¹²If uranium (U) is determined by mass, a 0.67 pCi/μg of uranium conversion factor must be used. This conversion factor is based on the 1:1 activity ratio of U-234 and U-238 that is characteristic of naturally occurring uranium.

¹³"Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry," Revision 5.4, which is published in "Methods for the Determination of Metals in Environmental Samples—Supplement 1," EPA 600-R-94-111, May 1994. Available at NTIS, PB 95-125472.

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EFFECTIVE DATE NOTE 2: At 69 FR 38855, June 29, 2004, §141.25 was amended in paragraph (c)(1) in the entry for uranium in the second column of Table B by removing the word "reserve" and adding in its place "1 µg/L", effective July 29, 2004.

§141.26 Monitoring frequency and compliance requirements for radionuclides in community water systems.

(a) Monitoring and compliance requirements for gross alpha particle activity, radium-226, radium-228, and uranium. (1) Community water systems (CWSs) must conduct initial monitoring to determine compliance with §141.66(b), (c), and (e) by December 31, 2007. For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, "detection limit" is defined as in §141.25(c).

(i) Applicability and sampling location for existing community water systems or sources. All existing CWSs using ground water, surface water or systems using both ground and surface water (for the purpose of this section hereafter referred to as systems) must sample at every entry point to the distribution system that is representative of all sources being used (hereafter called a sampling point) under normal operating conditions. The system must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or the State has designated a distribution system location, in accordance with paragraph (a)(2)(i)(C) of this section.

(ii) Applicability and sampling location for new community water systems or sources. All new CWSs or CWSs that use a new source of water must begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. CWSs must conduct more frequent monitoring when ordered by the State in the event of possible contamination or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.

(2) Initial monitoring: Systems must conduct initial monitoring for gross

alpha particle activity, radium-226, radium-228, and uranium as follows:

(i) Systems without acceptable historical data, as defined below, must collect four consecutive quarterly samples at all sampling points before December 31, 2007.

(ii) Grandfathering of data: States may allow historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point, for the following situations.

(A) To satisfy initial monitoring requirements, a community water system having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

(B) To satisfy initial monitoring requirements, a community water system with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

(C) To satisfy initial monitoring requirements, a community water system with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the State finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The State must make a written finding indicating how the data conforms to the these requirements.

(iii) For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the State may waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.

(iv) If the average of the initial monitoring results for a sampling point is above the MCL, the system must collect and analyze quarterly samples at

that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.

(3) *Reduced monitoring:* States may allow community water systems to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on the following criteria.

(i) If the average of the initial monitoring results for each contaminant (*i.e.*, gross alpha particle activity, uranium, radium-226, or radium-228) is below the detection limit specified in Table B, in §141.25(c)(1), the system must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.

(ii) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below $\frac{1}{2}$ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below $\frac{1}{2}$ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years.

(iii) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above $\frac{1}{2}$ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is above $\frac{1}{2}$ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years.

(iv) Systems must use the samples collected during the reduced monitoring period to determine the moni-

toring frequency for subsequent monitoring periods (e.g., if a system's sampling point is on a nine year monitoring period, and the sample result is above $\frac{1}{2}$ MCL, then the next monitoring period for that sampling point is three years).

(v) If a system has a monitoring result that exceeds the MCL while on reduced monitoring, the system must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.

(4) *Compositing:* To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year of the first sample. States will treat analytical results from the composited as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than $\frac{1}{2}$ MCL, the State may direct the system to take additional quarterly samples before allowing the system to sample under a reduced monitoring schedule.

(5) A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% (1.65σ , where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium. When a system uses a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, $\frac{1}{2}$ the detection limit will be

used to determine compliance and the future monitoring frequency.

(b) *Monitoring and compliance requirements for beta particle and photon radioactivity.* To determine compliance with the maximum contaminant levels in §141.66(d) for beta particle and photon radioactivity, a system must monitor at a frequency as follows:

(1) Community water systems (both surface and ground water) designated by the State as vulnerable must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State must continue to sample until the State reviews and either reaffirms or removes the designation.

(i) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 years. Systems must collect all samples required in paragraph (b)(1) of this section during the reduced monitoring period.

(ii) For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(1) of this section.

(2) Community water systems (both surface and ground water) designated by the State as utilizing waters contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90

at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the State reviews and either reaffirms or removes the designation.

(1) Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. The former is recommended.

(i) For iodine-131, a composite of five consecutive daily samples shall be analyzed once each quarter. As ordered by the State, more frequent monitoring shall be conducted when iodine-131 is identified in the finished water.

(ii) Annual monitoring for strontium-90 and tritium shall be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. The latter procedure is recommended.

(iv) If the gross beta particle activity beta minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L, the State may reduce the frequency of monitoring at that sampling point to every 3 years. Systems must collect all samples required in paragraph (b)(2) of this section during the reduced monitoring period.

(v) For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(2) of this section.

(3) Community water systems designated by the State to monitor for beta particle and photon radioactivity can not apply to the State for a waiver

from the monitoring frequencies specified in paragraph (b)(1) or (b)(2) of this section.

(4) Community water systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(5) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with §141.66(d)(1), using the formula in §141.66(d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(6) Systems must monitor monthly at the sampling point(s) which exceed the maximum contaminant level in §141.66(d) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until the system has established, by a rolling average of 3 monthly samples, that the MCL is being met. Systems who establish that the MCL is being met must return to quarterly monitoring until they meet the requirements set forth in paragraph (b)(1)(ii) or (b)(2)(i) of this section.

(c) *General monitoring and compliance requirements for radionuclides.* (1) The State may require more frequent monitoring than specified in paragraphs (a) and (b) of this section, or may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

(2) Each public water systems shall monitor at the time designated by the State during each compliance period.

(3) *Compliance.* Compliance with §141.66 (b) through (e) will be deter-

mined based on the analytical result(s) obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the system is out of compliance with the MCL.

(ii) For systems monitoring more than once per year, if any sample result will cause the running average to exceed the MCL at any sample point, the system is out of compliance with the MCL immediately.

(iii) Systems must include all samples taken and analyzed under the provisions of this section in determining compliance, even if that number is greater than the minimum required.

(iv) If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit will be used to calculate the annual average.

(4) States have the discretion to delete results of obvious sampling or analytic errors.

(5) If the MCL for radioactivity set forth in §141.66 (b) through (e) is exceeded, the operator of a community water system must give notice to the State pursuant to §141.31 and to the public as required by subpart Q of this part.

[65 FR 76745, Dec. 7, 2000]

EFFECTIVE DATE NOTE: At 69 FR 38855, June 29, 2004, §141.26 was amended by revising paragraphs (b)(2)(iv) and (b)(5) and in paragraph (b)(6) by removing the citation "(b)(1)(ii)" and adding in its place "(b)(1)(i)" and by removing the citation "(b)(2)(i)" and adding in its place "(b)(2)(iv)", effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

Environmental Protection Agency

§ 141.30

§ 141.26 Monitoring frequency and compliance requirements for radionuclides in community water systems.

* * * * *

(b)***

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(iv) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to every 3 years. Systems must collect the same type of samples required in paragraph (b)(2) of this section during the reduced monitoring period.

* * * * *

(5) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with §141.66(d)(1), using the formula in §141.66(d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

* * * * *

§ 141.27 Alternate analytical techniques.

(a) With the written permission of the State, concurred in by the Administrator of the U.S. EPA, an alternate analytical technique may be employed. An alternate technique shall be accepted only if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any MCL. The use of the alternate analytical technique shall not decrease the frequency of monitoring required by this part.

[45 FR 57345, Aug. 27, 1980]

§ 141.28 Certified laboratories.

(a) For the purpose of determining compliance with §§141.21 through 141.27, 141.30, 141.40, 141.74 and 141.89, samples may be considered only if they have been analyzed by a laboratory certified by the State except that measurements for alkalinity, calcium,

conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by any person acceptable to the State.

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

[45 FR 57345, Aug. 27, 1980; 47 FR 10999, Mar. 12, 1982, as amended at 59 FR 34323, July 1, 1994; 64 FR 67465, Dec. 1, 1999]

§ 141.29 Monitoring of consecutive public water systems.

When a public water system supplies water to one or more other public water systems, the State may modify the monitoring requirements imposed by this part to the extent that the interconnection of the systems justifies treating them as a single system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the State and concurred in by the Administrator of the U.S. Environmental Protection Agency.

§ 141.30 Total trihalomethanes sampling, analytical and other requirements.

(a) Community water system which serve a population of 10,000 or more individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process shall analyze for total trihalomethanes in accordance with this section. For systems serving 75,000 or more individuals, sampling and analyses shall begin not later than 1 year after the date of promulgation of this regulation. For systems serving 10,000 to 74,999 individuals, sampling and analyses shall begin not later than 3 years after the date of promulgation of this regulation. For the purpose of this section, the minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with the State approval, be considered one treatment plant for determining the minimum number of

samples. All samples taken within an established frequency shall be collected within a 24-hour period.

(b)(1) For all community water systems utilizing surface water sources in whole or in part, and for all community water systems utilizing only ground water sources that have not been determined by the State to qualify for the monitoring requirements of paragraph (c) of this section, analyses for total trihalomethanes shall be performed at quarterly intervals on at least four water samples for each treatment plant used by the system. At least 25 percent of the samples shall be taken at locations within the distribution system reflecting the maximum residence time of the water in the system. The remaining 75 percent shall be taken at representative locations in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed. The results of all analyses per quarter shall be arithmetically averaged and reported to the State within 30 days of the system's receipt of such results. Results shall also be reported to EPA until such monitoring requirements have been adopted by the State. All samples collected shall be used in the computation of the average, unless the analytical results are invalidated for technical reasons. Sampling and analyses shall be conducted in accordance with the methods listed in paragraph (e) of this section.

(2) Upon the written request of a community water system, the monitoring frequency required by paragraph (b)(1) of this section may be reduced by the State to a minimum of one sample analyzed for TTHMs per quarter taken at a point in the distribution system reflecting the maximum residence time of the water in the system, upon a written determination by the State that the data from at least 1 year of monitoring in accordance with paragraph (b)(1) of this section and local conditions demonstrate that total trihalomethane concentrations will be consistently below the maximum contaminant level.

(3) If at any time during which the reduced monitoring frequency prescribed under this paragraph applies,

the results from any analysis exceed 0.10 mg/l of TTHMs and such results are confirmed by at least one check sample taken promptly after such results are received, or if the system makes any significant change to its source of water or treatment program, the system shall immediately begin monitoring in accordance with the requirements of paragraph (b)(1) of this section, which monitoring shall continue for at least 1 year before the frequency may be reduced again. At the option of the State, a system's monitoring frequency may and should be increased above the minimum in those cases where it is necessary to detect variations of TTHM levels within the distribution system.

(c)(1) Upon written request to the State, a community water system utilizing only ground water sources may seek to have the monitoring frequency required by paragraph (b)(1) of this section reduced to a minimum of one sample for maximum TTHM potential per year for each treatment plant used by the system taken at a point in the distribution system reflecting maximum residence time of the water in the system. The system shall submit the results of at least one sample for maximum TTHM potential using the procedure specified in paragraph (g) of this section. A sample must be analyzed from each treatment plant used by the system and be taken at a point in the distribution system reflecting the maximum residence time of the water in the system. The system's monitoring frequency may only be reduced upon a written determination by the State that, based upon the data submitted by the system, the system has a maximum TTHM potential of less than 0.10 mg/l and that, based upon an assessment of the local conditions of the system, the system is not likely to approach or exceed the maximum contaminant level for total TTHMs. The results of all analyses shall be reported to the State within 30 days of the system's receipt of such results. Results shall also be reported to EPA until such monitoring requirements have been adopted by the State. All samples collected shall be used for determining whether the system must comply with the monitoring requirements of paragraph (b) of this

section, unless the analytical results are invalidated for technical reasons. Sampling and analyses shall be conducted in accordance with the methods listed in paragraph (e) of this section.

(2) If at any time during which the reduced monitoring frequency prescribed under paragraph (c)(1) of this section applies, the results from any analysis taken by the system for maximum TTHM potential are equal to or greater than 0.10 mg/l, and such results are confirmed by at least one check sample taken promptly after such results are received, the system shall immediately begin monitoring in accordance with the requirements of paragraph (b) of this section and such monitoring shall continue for at least one year before the frequency may be reduced again. In the event of any significant change to the system's raw water or treatment program, the system shall immediately analyze an additional sample for maximum TTHM potential taken at a point in the distribution system reflecting maximum residence time of the water in the system for the purpose of determining whether the system must comply with the monitoring requirements of paragraph (b) of this section. At the option of the State, monitoring frequencies may and should be increased above the minimum in those cases where this is necessary to detect variation of TTHM levels within the distribution system.

(d) Compliance with §141.12 shall be determined based on a running annual average of quarterly samples collected by the system as prescribed in paragraph (b)(1) or (2) of this section. If the average of samples covering any 12 month period exceeds the Maximum Contaminant Level, the supplier of water shall report to the State pursuant to §141.31 and notify the public pursuant to subpart Q. Monitoring after public notification shall be at a frequency designated by the State and shall continue until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(e) Sampling and analyses made pursuant to this section shall be conducted by one of the total trihalomethanes methods as directed in §141.24(e), and the *Technical Notes on*

Drinking Water Methods, EPA-600/R-94-173, October 1994, which is available from NTIS, PB-104766, or in §141.131(b). Samples for TTHM shall be dechlorinated upon collection to prevent further production of trihalomethanes, according to the procedures described in the methods, except acidification is not required if only THMs or TTHMs are to be determined. Samples for maximum TTHM potential should not be dechlorinated or acidified, and should be held for seven days at 25 °C (or above) prior to analysis.

(f) Before a community water system makes any significant modifications to its existing treatment process for the purposes of achieving compliance with §141.12, such system must submit and obtain State approval of a detailed plan setting forth its proposed modification and those safeguards that it will implement to ensure that the bacteriological quality of the drinking water served by such system will not be adversely affected by such modification. Each system shall comply with the provisions set forth in the State-approved plan. At a minimum, a State approved plan shall require the system modifying its disinfection practice to:

(1) Evaluate the water system for sanitary defects and evaluate the source water for biological quality;

(2) Evaluate its existing treatment practices and consider improvements that will minimize disinfectant demand and optimize finished water quality throughout the distribution system;

(3) Provide baseline water quality survey data of the distribution system. Such data should include the results from monitoring for coliform and fecal coliform bacteria, fecal streptococci, standard plate counts at 35 °C and 20 °C, phosphate, ammonia nitrogen and total organic carbon. Virus studies should be required where source waters are heavily contaminated with sewage effluent;

(4) Conduct additional monitoring to assure continued maintenance of optimal biological quality in finished water, for example, when chloramines are introduced as disinfectants or when pre-chlorination is being discontinued. Additional monitoring should also be

required by the State for chlorate, chlorite and chlorine dioxide when chlorine dioxide is used. Standard plate count analyses should also be required by the State as appropriate before and after any modifications;

(5) Consider inclusion in the plan of provisions to maintain an active disinfectant residual throughout the distribution system at all times during and after the modification.

(g) The water sample for determination of maximum total trihalomethane potential is taken from a point in the distribution system that reflects maximum residence time. Procedures for sample collection and handling are given in the methods. No reducing agent is added to "quench" the chemical reaction producing THMs at the time of sample collection. The intent is to permit the level of THM precursors to be depleted and the concentration of THMs to be maximized for the supply being tested. Four experimental parameters affecting maximum THM production are pH, temperature, reaction time and the presence of a disinfectant residual. These parameters are dealt with as follows: Measure the disinfectant residual at the selected sampling point. Proceed only if a measurable disinfectant residual is present. Collect triplicate 40 ml water samples at the pH prevailing at the time of sampling, and prepare a method blank according to the methods. Seal and store these samples together for seven days at 25 °C or above. After this time period, open one of the sample containers and check for disinfectant residual. Absence of a disinfectant residual invalidates the sample for further analysis. Once a disinfectant residual has been demonstrated, open another of the sealed samples and determine total THM concentration using an approved analytical method.

(h) The requirements in paragraphs (a) through (g) of this section apply to subpart H community water systems which serve a population of 10,000 or more until December 31, 2001. The requirements in paragraphs (a) through (g) of this section apply to community water systems which use only ground water not under the direct influence of surface water that add a disinfectant (oxidant) in any part of the treatment

process and serve a population of 10,000 or more until December 31, 2003. After December 31, 2003, this section is no longer applicable.

[44 FR 68641, Nov. 29, 1979, as amended at 45 FR 15545, 15547, Mar. 11, 1980; 58 FR 41345, Aug. 3, 1993; 59 FR 62469, Dec. 5, 1994; 60 FR 34085, June 29, 1995; 63 FR 69464, Dec. 16, 1998; 65 FR 26022, May 4, 2000; 66 FR 3776, Jan. 16, 2001]

Subpart D—Reporting and Recordkeeping

§ 141.31 Reporting requirements.

(a) Except where a shorter period is specified in this part, the supplier of water shall report to the State the results of any test measurement or analysis required by this part within (1) The first ten days following the month in which the result is received, or (2) the first ten days following the end of the required monitoring period as stipulated by the State, whichever of these is shortest.

(b) Except where a different reporting period is specified in this part, the supplier of water must report to the State within 48 hours the failure to comply with any national primary drinking water regulation (including failure to comply with monitoring requirements) set forth in this part.

(c) The supplier of water is not required to report analytical results to the State in cases where a State laboratory performs the analysis and reports the results to the State office which would normally receive such notification from the supplier.

(d) The public water system, within 10 days of completing the public notification requirements under Subpart Q of this part for the initial public notice and any repeat notices, must submit to the primacy agency a certification that it has fully complied with the public notification regulations. The public water system must include with this certification a representative copy of each type of notice distributed, published, posted, and made available to the persons served by the system and to the media.

(e) The water supply system shall submit to the State within the time stated in the request copies of any records required to be maintained

under § 141.33 hereof or copies of any documents then in existence which the State or the Administrator is entitled to inspect pursuant to the authority of section 1445 of the Safe Drinking Water Act or the equivalent provisions of State law.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57345, Aug. 27, 1980; 65 FR 26022, May 4, 2000]

§ 141.32 Public notification.

The requirements in this section apply until the requirements of Subpart Q of this part are applicable. Public water systems where EPA directly implements the public water system supervision program must comply with the requirements in Subpart Q of this part on October 31, 2000. All other public water systems must comply with the requirements in Subpart Q of this part on May 6, 2002 or on the date the State-adopted rule becomes effective, whichever comes first.

(a) *Maximum contaminant levels (MCLs), maximum residual disinfectant levels (MRDLs).* The owner or operator of a public water system which fails to comply with an applicable MCL or treatment technique established by this part or which fails to comply with the requirements of any schedule prescribed pursuant to a variance or exemption, shall notify persons served by the system as follows:

(1) Except as provided in paragraph (a)(3) of this section, the owner or operator of a public water system must give notice:

(i) By publication in a daily newspaper of general circulation in the area served by the system as soon as possible, but in no case later than 14 days after the violation or failure. If the area served by a public water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area; and

(ii) By mail delivery (by direct mail or with the water bill), or by hand delivery, not later than 45 days after the violation or failure. The State may waive mail or hand delivery if it determines that the owner or operator of the public water system in violation has corrected the violation or failure

within the 45-day period. The State must make the waiver in writing and within the 45-day period; and

(iii) For violations of the MCLs of contaminants or MRDLs of disinfectants that may pose an acute risk to human health, by furnishing a copy of the notice to the radio and television stations serving the area served by the public water system as soon as possible but in no case later than 72 hours after the violation. The following violations are acute violations:

(A) Any violations specified by the State as posing an acute risk to human health.

(B) Violation of the MCL for nitrate or nitrite as defined in § 141.62 and determined according to § 141.23(i)(3).

(C) Violation of the MCL for total coliforms, when fecal coliforms or *E. coli* are present in the water distribution system, as specified in § 141.63(b).

(D) Occurrence of a waterborne disease outbreak, as defined in § 141.2, in an unfiltered system subject to the requirements of subpart H of this part, after December 30, 1991 (see § 141.71(b)(4)).

(E) Violation of the MRDL for chlorine dioxide as defined in § 141.65 and determined according to § 141.133(c)(2).

(2) Except as provided in paragraph (a)(3) of this section, following the initial notice given under paragraph (a)(1) of this section, the owner or operator of the public water system must give notice at least once every three months by mail delivery (by direct mail or with the water bill) or by hand delivery, for as long as the violation or failure exists.

(3)(i) In lieu of the requirements of paragraphs (a)(1) and (2) of this section, the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation must give notice by hand delivery or by continuous posting in conspicuous places within the area served by the system. Notice by hand delivery or posting must begin as soon as possible, but no later than 72 hours after the violation or failure for acute violations (as defined in paragraph (a)(1)(iii) of this section), or 14 days after the violation or failure (for any other violation). Posting must continue for as long as the

violation or failure exists. Notice by hand delivery must be repeated at least every three months for as long as the violation or failure exists.

(ii) In lieu of the requirements of paragraphs (a) (1) and (2) of this section, the owner or operator of a non-community water system may give notice by hand delivery or by continuous posting in conspicuous places within the area served by the system. Notice by hand delivery or posting must begin as soon as possible, but no later than 72 hours after the violation or failure for acute violations (as defined in paragraph (a)(1)(iii) of this section), or 14 days after the violation or failure (for any other violation). Posting must continue for as long as the violation or failure exists. Notice by hand delivery must be repeated at least every three months for as long as the violation or failure exists.

(b) *Other violations, variances, exemptions.* The owner or operator of a public water system which fails to perform monitoring required by section 1445(a) of the Act (including monitoring required by the National Primary Drinking Water Regulations (NPDWRs) of this part), fails to comply with a testing procedure established by this part, is subject to a variance granted under section 1415(a)(1)(A) or 1415(a)(2) of the Act, or is subject to an exemption under section 1416 of the Act, shall notify persons served by the system as follows:

(1) Except as provided in paragraph (b)(3) or (b)(4) of this section, the owner or operator of a public water system must give notice within three months of the violation or granting of a variance or exemption by publication in a daily newspaper of general circulation in the area served by the system. If the area served by a public water system is not served by a daily newspaper of general circulation, notice shall instead be given by publication in a weekly newspaper of general circulation serving the area.

(2) Except as provided in paragraph (b)(3) or (b)(4) of this section, following the initial notice given under paragraph (b)(1) of this section, the owner or operator of the public water system must give notice at least once every three months by mail delivery (by di-

rect mail or with the water bill) or by hand delivery, for as long as the violation exists. Repeat notice of the existence of a variance or exemption must be given every three months for as long as the variance or exemption remains in effect.

(3)(i) In lieu of the requirements of paragraphs (b)(1) and (b)(2) of this section, the owner or operator of a community water system in an area that is not served by a daily or weekly newspaper of general circulation must give notice, within three months of the violation or granting of the variance or exemption, by hand delivery or by continuous posting in conspicuous places with the area served by the system. Posting must continue for as long as the violation exists or a variance or exemption remains in effect. Notice by hand delivery must be repeated at least every three months for as long as the violation exists or a variance or exemption remains in effect.

(ii) In lieu of the requirements of paragraphs (b)(1) and (b)(2) of this section, the owner or operator of a non-community water system may give notice, within three months of the violation or the granting of the variance or exemption, by hand delivery or by continuous posting in conspicuous places within the area served by the system. Posting must continue for as long as the violation exists, or a variance or exemption remains in effect. Notice by hand delivery must be repeated at least every three months for as long as the violation exists or a variance or exemption remains in effect.

(4) In lieu of the requirements of paragraphs (b)(1), (b)(2), and (b)(3) of this section, the owner or operator of a public water system, at the discretion of the State, may provide less frequent notice for minor monitoring violations as defined by the State, if EPA has approved the State's application for a program revision under § 142.16. Notice of such violations must be given no less frequently than annually.

(c) *Notice to new billing units.* The owner or operator of a community water system must give a copy of the most recent public notice for any outstanding violation of any maximum contaminant level, or any maximum residual disinfectant level, or any

treatment technique requirement, or any variance or exemption schedule to all new billing units or new hookups prior to or at the time service begins.

(d) *General content of public notice.* Each notice required by this section must provide a clear and readily understandable explanation of the violation, any potential adverse health effects, the population at risk, the steps that the public water system is taking to correct such violation, the necessity for seeking alternative water supplies, if any, and any preventive measures the consumer should take until the violation is corrected. Each notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of the notice. Each notice shall include the telephone number of the owner, operator, or designee of the public water system as a source of additional information concerning the notice. Where appropriate, the notice shall be multi-lingual.

(e) *Mandatory health effects language.* When providing the information on potential adverse health effects required by paragraph (d) of this section in notices of violations of maximum contaminant levels or treatment technique requirements, or notices of the granting or the continued existence of exemptions or variances, or notices of failure to comply with a variance or exemption schedule, the owner or operator of a public water system shall include the language specified below for each contaminant. (If language for a particular contaminant is not specified below at the time notice is required, this paragraph does not apply.)

(1) *Trichloroethylene.* The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans

who are exposed at lower levels over long periods of time. EPA has set forth the enforceable drinking water standard for trichloroethylene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(2) *Carbon tetrachloride.* The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for carbon tetrachloride at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(3) *1,2-Dichloroethane.* The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes, and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,2-dichloroethane at 0.005 parts per million (ppm) to reduce the

risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(4) *Vinyl chloride*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for vinyl chloride at 0.002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(5) *Benzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical

has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for benzene at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(6) *1,1-Dichloroethylene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.007 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(7) *Para-dichlorobenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical

has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for para-dichlorobenzene at 0.075 parts per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(8) *1,1,1-Trichloroethane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. EPA has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

(9) *Fluoride*.

[NOTE: EPA is not specifying language that must be included in a public notice for a violation of the fluoride maximum contaminant level in this section because § 143.5 of this part includes the necessary information. See paragraph (f) of this section.]

(10) *Microbiological contaminants* (for use when there is a violation of the treatment technique requirements for filtration and disinfection in subpart H or subpart P of this part). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water which is treated to meet EPA requirements is associated with little to none of this risk and should be considered safe.

(11) *Total coliforms* (To be used when there is a violation of § 141.63(a), and not a violation of § 141.63(b)). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this

standard, no more than 5.0 percent of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have one total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.

(12) *Fecal Coliforms/E. coli* (To be used when there is a violation of §141.63(b) or both §141.63 (a) and (b)). The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of fecal coliforms or *E. coli* is a serious health concern. Fecal coliforms and *E. coli* are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and *E. coli* to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. State and local health authorities recommend that consumers take the following precautions: [To be inserted by the public water system, according to instructions from State or local authorities].

(13) *Lead*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water sup-

ply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. EPA's national primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than 90% of tap water samples (the EPA "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment must eventually replace all lead service lines contributing in excess of 15 (ppb) of lead to drinking water. Any water system that exceeds the action level must also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water.

(14) *Copper*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion byproduct occurs as the result of the corrosion of copper pipes that remain

in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. EPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than 90% of tap water samples (the EPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level must also monitor their source water to determine whether treatment to remove copper in source water is needed.

(15) *Asbestos*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysotile asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over

long periods of time. EPA has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to asbestos.

(16) *Barium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of ground water. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and cardiovascular system, and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, EPA believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. EPA has set the drinking water standard for barium at 2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to barium.

(17) *Cadmium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water by corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage

to the kidney. EPA has set the drinking water standard for cadmium at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cadmium.

(18) *Chromium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis and respiratory problems. EPA has set the drinking water standard for chromium at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chromium.

(19) *Mercury*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for mercury at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to mercury.

(20) *Nitrate*. The United States Environmental Protection Agency (EPA)

sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 10 parts per million (ppm) for nitrate to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive, EPA has also established a standard for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrate.

(21) *Nitrite*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that nitrite poses an acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under six months of age. The

serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best source for information concerning alternate sources of drinking water for infants. EPA has set the drinking water standard at 1 part per million (ppm) for nitrite to protect against the risk of these adverse effects. EPA has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to nitrite.

(22) *Selenium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. EPA has set the drinking water standard for selenium at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to selenium.

(23) *Acrylamide*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that acrylamide is a health concern at certain levels of

exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. EPA has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to acrylamide.

(24) *Alachlor*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for alachlor at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor.

(25) *Aldicarb*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb is a health

concern at certain levels of exposure. Aldicarb is a widely used pesticide. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb at 0.003 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to aldicarb.

(26) *Aldicarb sulfoxide*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb sulfoxide is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfoxide in ground water is primarily a breakdown product of aldicarb. Under certain soil and climatic conditions (e.g., sandy soil and high rainfall), aldicarb sulfoxide may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb sulfoxide at 0.004 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to aldicarb sulfoxide.

(27) *Aldicarb sulfone*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that aldicarb sulfone is a health concern at certain levels of exposure. Aldicarb is a widely used pesticide. Aldicarb sulfone is formed from the breakdown of aldicarb and is considered for registration as a pesticide under the name aldoxycarb. Under certain soil and cli-

matic conditions (e.g., sandy soil and high rainfall), aldicarb sulfone may leach into ground water after normal agricultural applications to crops such as potatoes or peanuts or may enter drinking water supplies as a result of surface runoff. This chemical has been shown to damage the nervous system in laboratory animals such as rats and dogs exposed to high levels. EPA has set the drinking water standard for aldicarb sulfone at 0.002 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to aldicarb sulfone.

(28) *Atrazine*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that atrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to affect offspring of rats and the heart of dogs. EPA has set the drinking water standard for atrazine at 0.003 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to atrazine.

(29) *Carbofuran*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. EPA has set the

drinking water standard for carbofuran at 0.04 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to carbofuran.

(30) *Chlordane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for chlordane at 0.002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to chlordane.

(31) *Dibromochloropropane (DBCP)*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, dibromochloropropane may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for DBCP at 0.0002 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory

animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to DBCP.

(32) *o-Dichlorobenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that o-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. EPA has set the drinking water standard for o-dichlorobenzene at 0.6 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to o-dichlorobenzene.

(33) *cis-1,2-Dichloroethylene*. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that cis-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for cis-1,2-dichloroethylene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene.

(34) *trans-1,2-Dichloroethylene*. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that *trans-1,2-dichloroethylene* is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and the circulatory system of laboratory animals such as rats and mice when exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set drinking water standard for *trans-1,2-dichloroethylene* at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to *trans-1,2-dichloroethylene*.

(35) *1,2-Dichloropropane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that *1,2-dichloropropane* is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climatic conditions are favorable, *1,2-dichloropropane* may get into drinking water by runoff into surface water or by leaching into ground water. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for *1,2-dichloropropane* at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to *1,2-dichloropropane*.

(36) *2,4-D*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that *2,4-D* is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, *2,4-D* may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for *2,4-D* at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to *2,4-D*.

(37) *Epichlorohydrin*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that *epichlorohydrin* is a health concern at certain levels of exposure. Polymers made from *epichlorohydrin* are sometimes used in the treatment of water supplies as a flocculent to remove particulates. *Epichlorohydrin* generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for *epichlorohydrin* using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of *epichlorohydrin* in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique

have little to no risk and are considered safe with respect to epichlorohydrin.

(38) *Ethylbenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for ethylbenzene at 0.7 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to ethylbenzene.

(39) *Ethylene dibromide (EDB)*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for EDB at 0.00005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB.

(40) *Heptachlor*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and

climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor at 0.0004 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor.

(41) *Heptachlor epoxide*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that heptachlor epoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor epoxide may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standards for heptachlor epoxide at 0.0002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide.

(42) *Lindane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get

into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system and circulatory system. EPA has established the drinking water standard for lindane at 0.0002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to lindane.

(43) *Methoxychlor*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. EPA has set the drinking water standard for methoxychlor at 0.04 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to methoxychlor.

(44) *Monochlorobenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. EPA has set the drinking water standard for monochlorobenzene at 0.1 part per mil-

lion (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene.

(45) *Polychlorinated biphenyls (PCBs)*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for PCBs at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs.

(46) *Pentachlorophenol*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause

cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for pentachlorophenol at 0.001 parts per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol.

(47) *Styrene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. EPA has set the drinking water standard for styrene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to styrene.

(48) *Tetrachloroethylene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for tetrachloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little

to none of this risk and is considered safe with respect to tetrachloroethylene.

(49) *Toluene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, kidney and nervous system. EPA has set the drinking water standard for toluene at 1 part per million (ppm) to protect against the risk of adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to toluene.

(50) *Toxaphene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for toxaphene at 0.003 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to toxaphene.

(51) *2,4,5-TP*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. EPA has set the drinking water standard for 2,4,5-TP at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP.

(52) *Xylenes*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. EPA has set the drinking water standard for xylene at 10 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the EPA standard is associated with little to none of this risk and is considered safe with respect to xylene.

(53) *Antimony*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, ground water and surface

waters and is often used in the flame retardant industry. It is also used in ceramics, glass, batteries, fireworks and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal or manufacturing processes. This chemical has been shown to decrease longevity, and altered blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for antimony at 0.006 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to antimony.

(54) *Beryllium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, ground water and surface waters and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants and improper waste disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, EPA based the health assessment on noncancer effects with an extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for beryllium at 0.004 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to beryllium.

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(55) *Cyanide*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel processing, plastics, synthetic fabrics and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain and liver of humans fatally poisoned with cyanide. EPA has set the drinking water standard for cyanide at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to cyanide.

(56) [Reserved]

(57) *Thallium*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic metal is found naturally in soils and is used in electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain and intestines of laboratory animals when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for thallium at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to thallium.

(58) *Benzo[a]pyrene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that benzo[a]pyrene is a health concern at certain levels of exposure. Cigarette smoke and charbroiled meats are common source of general exposure. The major source of benzo[a]pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed at high levels. EPA has set the

drinking water standard for benzo[a]pyrene at 0.0002 parts per million (ppm) to protect against the risk of cancer. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to benzo[a]pyrene.

(59) *Dalapon*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches and along railroads. This chemical has been shown to cause damage to the kidney and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. EPA has set the drinking water standard for dalapon at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dalapon.

(60) *Dichloromethane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dichloromethane at 0.005 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk

and should be considered safe with respect to dichloromethane.

(61) *Di (2-ethylhexyl)adipate*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage liver and testes in laboratory animals such as rats and mice exposed to high levels. EPA has set the drinking water standard for di(2-ethylhexyl)adipate at 0.4 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standards is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)adipate.

(62) *Di(2-ethylhexyl)phthalate*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. Di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice exposed to high levels over their lifetimes. EPA has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.006 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)phthalate.

(63) *Dinoseb*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into drinking water after application on orchards, vineyards and other crops. This chemical

has been shown to damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. EPA has set the drinking water standard for dinoseb at 0.007 parts per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to dinoseb.

(64) *Diquat*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. EPA has set the drinking water standard for diquat at 0.02 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to diquat.

(65) *Endothall*. The United States Environmental Protection Agency (EPA) has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. EPA has set the drinking water standard for endothall at 0.1 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endothall.

(66) *Endrin*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This

organic chemical is a pesticide no longer registered for use in the United States. However, this chemical is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the liver, kidney and heart in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for endrin at 0.002 parts per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to endrin.

(67) *Glyphosate*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for glyphosate at 0.7 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to glyphosate.

(68) *Hexachlorobenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the

drinking water standard for hexachlorobenzene at 0.001 parts per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorobenzene.

(69) *Hexachlorocyclopentadiene*. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed at high levels over their lifetimes. EPA has set the drinking water standard for hexachlorocyclopentadiene at 0.05 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to hexachlorocyclopentadiene.

(70) *Oxamyl*. The United States Environmental Protection Agency (EPA) establishes drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels over their lifetimes. EPA has set the drinking water standard for oxamyl at 0.2 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to oxamyl.

(71) *Picloram*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure.

This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into ground water as a result of pesticide application and improper waste disposal. This chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. EPA has set the drinking water standard for picloram at 0.5 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to picloram.

(72) *Simazine*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into ground water or runs off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice exposed at high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for simazine at 0.004 parts per million (ppm) to reduce the risk of cancer or other adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to simazine.

(73) *1,2,4-Trichlorobenzene*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. EPA has set the drinking water standard for 1,2,4-trichlorobenzene at 0.07

parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene.

(74) *1,1,2-Trichloroethane*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharge of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. EPA has set the drinking water standard for 1,1,2-trichloroethane at 0.005 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the EPA standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2-trichloroethane.

(75) *2,3,7,8-TCDD (Dioxin)*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. EPA has set the drinking water standard for dioxin at 0.00000003 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dioxin.

(76) *Chlorine*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlorine is a health

concern at certain levels of exposure. Chlorine is added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and is also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chlorine has been shown to affect blood and the liver in laboratory animals. EPA has set a drinking water standard for chlorine to protect against the risk of these adverse effects. Drinking water which meets this EPA standard is associated with little to none of this risk and should be considered safe with respect to chlorine.

(77) *Chloramines*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chloramines are a health concern at certain levels of exposure. Chloramines are added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and are also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chloramines have been shown to affect blood and the liver in laboratory animals. EPA has set a drinking water standard for chloramines to protect against the risk of these adverse effects. Drinking water which meets this EPA standard is associated with little to none of this risk and should be considered safe with respect to chloramines.

(78) *Chlorine dioxide*. The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlorine dioxide is a health concern at certain levels of exposure. Chlorine dioxide is used in water treatment to kill bacteria and other disease-causing microorganisms and can be used to control tastes and odors. Disinfection is required for surface water systems. However, at high doses, chlorine dioxide-treated drinking water has been shown to affect blood in laboratory animals. Also, high levels of chlorine dioxide given to laboratory animals in drinking water have been shown to

cause neurological effects on the developing nervous system. These neurodevelopmental effects may occur as a result of a short-term excessive chlorine dioxide exposure. To protect against such potentially harmful exposures, EPA requires chlorine dioxide monitoring at the treatment plant, where disinfection occurs, and at representative points in the distribution system serving water users. EPA has set a drinking water standard for chlorine dioxide to protect against the risk of these adverse effects.

NOTE: In addition to the language in this introductory text of paragraph (e)(78), systems must include either the language in paragraph (e)(78)(i) or (e)(78)(ii) of this section. Systems with a violation at the treatment plant, but not in the distribution system, are required to use the language in paragraph (e)(78)(i) of this section and treat the violation as a nonacute violation. Systems with a violation in the distribution system are required to use the language in paragraph (e)(78)(ii) of this section and treat the violation as an acute violation.

(i) The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, and do not include violations within the distribution system serving users of this water supply. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to present consumers.

(ii) The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system serving water users. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including pregnant women, infants, and young children, may be especially susceptible to adverse effects of excessive exposure to chlorine dioxide-treated water. The purpose of this notice is to advise that such persons should consider reducing their risk of adverse effects from these chlorine dioxide violations by seeking alternate sources of water for human consumption until such exceedances are rectified. Local and State health authorities are the best sources for information concerning alternate drinking water.

(79) *Disinfection byproducts and treatment technique for DBPs.* The United States Environmental Protection Agency (EPA) sets drinking water standards and requires the disinfection of drinking water. However, when used in the treatment of drinking water, disinfectants react with naturally-occurring organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA has determined that a number of DBPs are a health concern at certain levels of exposure. Certain DBPs, including some trihalomethanes (THMs) and some haloacetic acids (HAAs), have been shown to cause cancer in laboratory animals. Other DBPs have been shown to affect the liver and the nervous system, and cause reproductive or developmental effects in laboratory animals. Exposure to certain DBPs may produce similar effects in people. EPA has set standards to limit exposure to THMs, HAAs, and other DBPs.

(80) *Bromate.* The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that bromate is a health concern at certain levels of exposure. Bromate is formed as a byproduct of ozone disinfection of drinking water. Ozone reacts with naturally occurring bromide in the water to form bromate. Bromate has been shown to produce cancer in rats. EPA has set a drinking water standard to limit exposure to bromate.

(81) *Chlorite.* The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that chlorite is a health concern at certain levels of exposure. Chlorite is formed from the breakdown of chlorine dioxide, a drinking water disinfectant. Chlorite in drinking water has been shown to affect blood and the developing nervous system. EPA has set a drinking water standard for chlorite to protect against these effects. Drinking water which meets this standard is associated with little to none of these risks and should be considered safe with respect to chlorite.

(f) *Public notices for fluoride.* Notice of violations of the maximum contaminant level for fluoride, notices of variances and exemptions from the maximum contaminant level for fluo-

ride, and notices of failure to comply with variance and exemption schedules for the maximum contaminant level for fluoride shall consist of the public notice prescribed in § 143.5(b), plus a description of any steps which the system is taking to come into compliance.

(g) *Public notification by the State.* The State may give notice to the public required by this section on behalf of the owner or operator of the public water system if the State complies with the requirements of this section. However, the owner or operator of the public water system remains legally responsible for ensuring that the requirements of this section are met.

[52 FR 41546, Oct. 28, 1987, as amended at 54 FR 15188, Apr. 17, 1989; 54 FR 27527, 27566, June 29, 1989; 55 FR 25064, June 19, 1990; 56 FR 3587, Jan. 30, 1991; 56 FR 26548, June 7, 1991; 56 FR 30279, July 1, 1991; 57 FR 31843, July 17, 1992; 59 FR 34323, July 1, 1994; 60 FR 33932, June 29, 1995; 63 FR 69464, 69515, Dec. 16, 1998; 65 FR 26022, May 4, 2000]

§ 141.33 Record maintenance.

Any owner or operator of a public water system subject to the provisions of this part shall retain on its premises or at a convenient location near its premises the following records:

(a) Records of bacteriological analyses made pursuant to this part shall be kept for not less than 5 years. Records of chemical analyses made pursuant to this part shall be kept for not less than 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

- (1) The date, place, and time of sampling, and the name of the person who collected the sample;
- (2) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample;
- (3) Date of analysis;
- (4) Laboratory and person responsible for performing analysis;
- (5) The analytical technique/method used; and
- (6) The results of the analysis.

(b) Records of action taken by the system to correct violations of primary drinking water regulations shall be kept for a period not less than 3 years

after the last action taken with respect to the particular violation involved.

(c) Copies of any written reports, summaries or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local, State or Federal agency, shall be kept for a period not less than 10 years after completion of the sanitary survey involved.

(d) Records concerning a variance or exemption granted to the system shall be kept for a period ending not less than 5 years following the expiration of such variance or exemption.

(e) Copies of public notices issued pursuant to Subpart Q of this part and certifications made to the primacy agency pursuant to §141.31 must be kept for three years after issuance.

[40 FR 59570, Dec. 24, 1975, as amended at 65 FR 26022, May 4, 2000]

§ 141.34 [Reserved]

§ 141.35 Reporting of unregulated contaminant monitoring results.

(a) *Does this reporting apply to me?* (1) This section applies to any owner or operator of a public water system required to monitor for unregulated contaminants under §141.40. This section requires you to report the results of this monitoring.

(2) *Exception.* You do not need to report results if you are a system serving a population of 10,000 or less, since EPA will arrange for testing and reporting of the results. However, you will still need to comply with consumer confidence reporting and public notification requirements for these results.

(b) *To whom must I report?* You must report the results of unregulated contaminant monitoring to EPA and provide a copy to the State. You must also notify the public of the monitoring re-

sults as provided in Subpart O (Consumer Confidence Reports) and Subpart Q (Public Notification) of this part.

(c) *When must I report monitoring results?* You must report the results of unregulated contaminant monitoring within thirty (30) days following the month in which you received the results from the laboratory. EPA will conduct its quality control review of the data for sixty (60) days after you report the data, which will also allow for quality control review by systems and States. After the quality control review, EPA will place the data in the national drinking water contaminant occurrence database at the time of the next database update. Exception: Reporting to EPA of monitoring results received by public water systems prior to May 13, 2002, must occur by August 9, 2002.

(d) *What information must I report?* (1) You must provide the following "point of contact" information: name, mailing address, phone number, and e-mail address for:

(i) PWS Technical Contact, the person at your PWS that is responsible for the technical aspects of your unregulated contaminant monitoring regulation (UCMR) activities, such as details concerning sampling and reporting;

(ii) PWS Official, the person at your PWS that is able to function as the official spokesperson for your UCMR activities; and

(iii) Laboratory Contact Person, the person at your laboratory that is able to address questions concerning the analysis that they provided for you.

(2) You must update this information if it changes during the course of UCMR implementation.

(3) You must report the information specified for data elements 1 through 16 in the following table for each sample.

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS

Data Element	Definition
1. Public Water System (PWS) Identification Number.	The code used to identify each PWS. The code begins with the standard two-character postal State abbreviation; the remaining seven characters are unique to each PWS.
2. Public Water System Facility Identification Number—Sampling Point Identification Number and Sampling Point Type Identification.	The Sampling point identification number and sampling point type identification must either be static or traceable to previous numbers and type identifications throughout the period of unregulated contaminant monitoring. The Sampling point identification number is a three-part alphanumeric designation, made up of:

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data Element	Definition
	<p>a. The Public Water System Facility Identification Number is an identification number established by the State, or at the State's discretion the PWS, that is unique to the PWS for an intake for each source of water, a treatment plant, a distribution system, or any other facility associated with water treatment or delivery and provides for the relationship of facilities to each other to be maintained;</p> <p>b. The Sampling Point Identification Number is an identification number established by the State, or at the State's discretion the PWS, that is unique to each PWS facility that identifies the specific sampling point and allows the relationship of the sampling point to other facilities to be maintained; and</p> <p>c. Sampling Point Type Identification is one of following: SP—Untreated water collected at the source of the water system facility. EP—Entry point to the distribution system. MD—midpoint in the distribution system where the disinfectant residual would be expected to be typical for the system such as the location for sampling coliform indicator bacteria as described in 40 CFR 141.21. MR—point of maximum retention is the point located the furthest from the entry point to the distribution system which is approved by the State for trihalomethane (THM) (disinfectant byproducts (DBP)) and/or total coliform sampling. LD—location in the distribution system where the disinfectant residual is the lowest which is approved by the State for THM (DBP) and/or total coliform sampling.</p>
3. Sample Collection Date	The date the sample is collected reported as 4-digit year, 2-digit month, and 2-digit day.
4. Sample Identification Number	An alphanumeric value of up to 15 characters assigned by the laboratory to uniquely identify containers or groups of containers containing water samples collected at the same time and sampling point.
5. Contaminant/Parameter	The unregulated contaminant or water quality parameter for which the sample is being analyzed.
6. Analytical Results—Sign	<p>An alphanumeric value indicating whether the sample analysis result was:</p> <p>a. (<) "less than" means the contaminant was not detected or was detected at a level "less than" the MRL.</p> <p>b. (=) "equal to" means the contaminant was detected at a level "equal to" the value reported in "Analytical Result—Value."</p>
7. Analytical Result—Value	The actual numeric value of the analysis for chemical and microbiological results, or the minimum reporting level (MRL) if the analytical result is less than the contaminant's MRL.
8. Analytical Result—Unit of Measure	The unit of measurement for the analytical results reported. (e.g., micrograms per liter, (µg/L); colony-forming units per 100 milliliters, (CFU/100 mL), etc.)
9. Analytical Method Number	The identification number of the analytical method used.
10. Sample Analysis Type	<p>The type of sample collected. Permitted values include:</p> <p>a. RFS—Raw field sample—untreated sample collected and submitted for analysis under this rule.</p> <p>b. RDS—Raw duplicate field sample—untreated field sample duplicate collected at the same time and place as the raw field sample and submitted for analysis under this rule.</p> <p>c. TFS—Treated field sample—treated sample collected and submitted for analysis under this rule.</p> <p>d. TDS—Treated duplicate field sample—treated field sample duplicate collected at the same time and place as the treated field sample and submitted for analysis under this rule.</p>
11. Sample Batch Identification Number	<p>The sample batch identification number consists of three parts:</p> <p>a. Up to a 10-character laboratory identification code assigned by EPA.</p> <p>b. Up to a 15-character code assigned by the laboratory to uniquely identify each extraction or analysis batch.</p> <p>c. The date that the samples contained in each extraction batch extracted or in an analysis batch were analyzed, reported as an 8-digit number in the form 4-digit year, 2-digit month, and 2-digit day.</p>
12. Minimum Reporting Level	Minimum Reporting Level (MRL) refers to the lowest concentration of an analyte that may be reported. Unregulated contaminant monitoring (UCM) MRLs are established in § 141.40 monitoring requirements for unregulated contaminants.
13. Minimum Reporting Level Unit of Measure.	The unit of measure to express the concentration, count, or other value of a contaminant level for the Minimum Reporting Level reported. (e.g., µg/L, colony forming units/100 mL (CFU/100 mL), etc.).
14. Analytical Precision	<p>Precision is the degree of agreement between two repeated measurements and is monitored through the use of duplicate spiked samples. For purposes of the Unregulated Contaminant Monitoring Regulation (UCMR), Analytical Precision is defined as the relative percent difference (RPD) between spiked matrix duplicates. The RPD for the spiked matrix duplicates analyzed in the same batch of samples as the analytical result being reported is to be entered in this field. Precision is calculated as Relative Percent Difference (RPD) of spiked matrix duplicates from the mean using:</p> $RPD = \text{absolute value of } [(X_1 - X_2) / (X_1 + X_2) / 2] \times 100\%$ <p>where:</p>

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data Element	Definition
15. Analytical Accuracy	<p>X_1 is the concentration observed in spiked field sample minus the concentration observed in unspiked field sample.</p> <p>X_2 is the concentration observed in duplicate spiked field sample minus the concentration observed in unspiked field sample.</p> <p>Accuracy describes how close a result is to the true value measured through the use of spiked field samples. For purposes of unregulated contaminant monitoring, accuracy is defined as the percent recovery of the contaminant in the spiked matrix sample analyzed in the same analytical batch as the sample result being reported and calculated using:</p> <p>$\% \text{ recovery} = \frac{(\text{amt. found in spiked sample} - \text{amt. found in sample})}{\text{amt. spiked}} \times 100\%$</p>
16. Spiking Concentration	The concentration of method analyte(s) added to a sample to be analyzed for calculating analytical precision and accuracy where the value reported use the same unit of measure reported for Analytical Results.
17. Presence/Absence	Reserved.

(e) *How must I report this information?*
 (1) You must report results from monitoring under this rule using EPA's electronic reporting system. For quality control purposes, you must instruct the organization(s) responsible for the analysis of unregulated contaminant samples taken under §141.40 to enter the results into the reporting system, in the format specified by EPA. You are responsible for reviewing those results and approving the reporting (via the electronic system) of the results to EPA. You must also provide a copy of the results to the State, as directed by the State.

(2) If you report more than one set of valid results for the same sampling point and the same sampling event (for example, because you have had more than one organization (e.g., a laboratory) analyze replicate samples collected under §141.40, or because you have collected multiple samples during a single monitoring event at the same sampling point), EPA will use the highest of the reported values as the official result.

(f) *Does the laboratory to which I send samples report the results for me?* While you must instruct the organization conducting unregulated contaminant analysis (e.g., a laboratory) to enter the results into EPA's electronic reporting system, you are responsible for reviewing and approving the submission of the results to EPA. If the analytical organization or laboratory cannot enter these data for you using EPA's electronic reporting system, then you may explain to EPA in writing the reasons why alternate report-

ing is necessary and must receive EPA's approval to use an alternate reporting procedure.

(g) *Can I report previously collected data to meet the testing and reporting requirements for the contaminants listed in §141.40(a)(3)?* Yes, as long as the data meet the specific requirements of §141.40(a)(3), (4), (5), and Appendix A of §141.40 and you report the data with the information specified in paragraph (d) of this section.

[64 FR 50611, Sept. 17, 1999, as amended at 66 FR 2300, Jan. 11, 2001; 66 FR 27215, May 16, 2001; 67 FR 11046, Mar. 12, 2002]

Subpart E—Special Regulations, Including Monitoring Regulations and Prohibition on Lead Use

§141.40 Monitoring requirements for unregulated contaminants.

(a) *Requirements for owners and operators of public water systems.* (1) *Do I have to monitor for unregulated contaminants?*

(i) *Transient systems.* If you own or operate a transient non-community water system, you do not have to monitor for unregulated contaminants.

(ii) *Large systems not purchasing their entire water supply from another system.* If you own or operate a wholesale or retail public water system (other than a transient system) that serves more than 10,000 persons, as determined by the State, and do not purchase your entire water supply from another public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section.

(B) You must monitor for the unregulated contaminants on List 2 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the Screening Surveys.

(C) You must monitor for the unregulated contaminants on List 3 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the Pre-Screen Testing.

(iii) *Large systems purchasing their entire water supply from another system.* If you own or operate a public water system (other than a transient system) that serves more than 10,000 persons and purchase your entire water supply from a wholesale or retail public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system".

(B) You must monitor for the unregulated contaminants on List 2 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system" if notified by your State or EPA that you are part of the Screening Surveys.

(C) You must monitor for the unregulated contaminants on List 3 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system" if notified by your State or EPA that you are part of the Pre-Screen Testing.

(iv) *Small systems not purchasing their entire water supply from another system.* If you own or operate a public water system (other than a transient system) that serves 10,000 or fewer persons and do not purchase your entire water sup-

ply from another public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the State Monitoring Plan for small systems.

(B) You must monitor for the unregulated contaminants on List 2 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the Screening Surveys.

(C) You must monitor for the unregulated contaminants on List 3 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the Pre-Screen Testing.

(v) *Small systems purchasing their entire water supply from another system.* If you own or operate a public water system (other than a transient system) that serves 10,000 or fewer persons and purchase your entire water supply from another public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system" if you are notified by your State or EPA that you are part of the State Monitoring Plan for small systems.

(B) You must monitor for the unregulated contaminants on List 2 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system" if you are notified by your State or EPA that you are part of the Screening Surveys.

(C) You must monitor for the unregulated contaminants on List 3 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, that have a "sampling location" indicated as "distribution system" if you are notified by

your State or EPA that you are part of the Pre-Screen Testing.

(2) *How would I be selected for the monitoring under the State Monitoring Plan, the Screening Surveys, or the Pre-Screen Testing?* (i) *State Monitoring Plan.* Only a representative sample of small systems must monitor for unregulated contaminants. EPA will select a national representative sample of small public water systems in each State through the use of a random number generator. Selection will be weighted by population served within each system water source type (surface or ground water) and system size category (systems serving 25-500, 501-3,300, and 3,301-10,000 persons). EPA may allocate additional systems to water source types or system size categories to increase the statistical inferential ability for those categories. EPA will also select a small group of systems to be "Index systems." Systems selected as Index systems are required to provide information about their site and operation that will serve to allow extrapolation of their results to other systems of similar size, rather than collecting detailed information at every small system. Each State will have the opportunity to make some modifications to the list of small systems that EPA selects. You will be notified by the

State or EPA if your system is part of the final State Monitoring Plan.

(ii) *Screening Surveys.* The purpose of the Screening Surveys is to determine the occurrence of contaminants in drinking water or sources of drinking water for which analytical methods have recently been developed for unregulated contaminant monitoring. EPA will select up to 300 systems to participate in each survey by using a random number generator. You will be notified by the State or EPA if your system is selected for monitoring under the Screening Surveys.

(iii) *Pre-screen Testing.* The purpose of Pre-Screen Testing is to determine the occurrence of contaminants for which EPA needs to evaluate new analytical methods in locations where the contaminants are most likely to be found. EPA will select up to 200 systems to participate in this testing after considering the characteristics of the contaminants, precipitation, system operation, and environmental conditions. You will be notified by the State or EPA that your system has been selected for monitoring under the Pre-Screen Testing program.

(3) *For which contaminants must I monitor?* Lists 1, 2 and 3 of unregulated contaminants are listed in the following table:

TABLE 1—UNREGULATED CONTAMINANT MONITORING REGULATION (1999) LIST

List 1—Assessment Monitoring Chemical Contaminants					
1-Contaminant	2-CAS registry number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
2, 4-dinitrotoluene	121-14-2	EPA Method 525.2 ^a	2 µg/L ^c	EPTDS ^f	2001-2003
2, 6 dinitrotoluene	606-20-2	EPA Method 525.2 ^a	2 µg/L ^c	EPTDS ^f	2001-2003
Acetochlor	34256-82-1	EPA Method 525.2 ^a	2 µg/L ^c	EPTDS ^f	2001-2003
DCPA mono-acid degradate ^b	887-54-7	EPA Method 515.1 ^a , EPA Method 515.2 ^a , EPA Method 515.3 ^u , EPA Method 515.4 ^u , D5317-93 ^b , AOAC 992.32 ^c	1 µg/L ^c	EPTDS ^f	2001-2003

TABLE 1—UNREGULATED CONTAMINANT MONITORING REGULATION (1999) LIST—Continued

List 1—Assessment Monitoring Chemical Contaminants					
1-Contaminant	2-CAS registry number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
DCPA di-acid degradate ^a	2136-79-0	EPA Method 515.1 ^a , EPA Method 515.2 ^a , EPA Method 515.3 ⁴ , EPA Method 515.4 ⁴ , D5317-93 ^b , AOAC 992.32 ^c	1 µg/L ^e	EPTDS ^f	2001-2003
4,4'-DDE	72-55-9	EPA Method 508 ^a , EPA Method 508.1 ^a , EPA Method 525.2 ^a , D5812-96 ^b , AOAC 990.06 ^c	0.8 µg/L ^e	EPTDS ^f	2001-2003
EPTC	759-94-4	EPA Method 507 ^a , EPA Method 525.2 ^a , D5475-93 ^b , AOAC 991.07 ^c	1 µg/L ^e	EPTDS ^f	2001-2003
Molinate	2212-67-1	EPA Method 507 ^a , EPA Method 525.2 ^a , D5475-93 ^b , AOAC 991.07 ^c	0.9 µg/L ^e	EPTDS ^f	2001-2003
MTBE	1634-04-4	EPA Method 502.2 ^a , SM 6200C ^{4a} , EPA Method 524.2 ^a , D5790-95 ^b , SM 6210D ⁴ , SM 6200B ^d	5 µg/L ^e	EPTDS ^f	2001-2003
Nitrobenzene	98-95-3	EPA Method 524.2 ^a , D5790-95 ^b , SM6210D ⁴ , SM6200B ^d	10 µg/L ^e	EPTDS ^f	2001-2003
Perchlorate	14797-73-0	EPA Method 314.0 ¹	4 µg/L ^e	EPTDS ^f	2001-2003
Terbacil	5902-51-2	EPA Method 507 ^a , EPA Method 525.2 ^a , D5475-93 ^b , AOAC 991.07 ^c	2 µg/L ^e	EPTDS ^f	2001-2003

Column headings are:

- ¹—Chemical or microbiological contaminant: the name of the contaminants to be analyzed.
- ²—CAS (Chemical Abstract Service Number) Registry No. or Identification Number: a unique number identifying the chemical contaminants.
- ³—Analytical Methods: method numbers identifying the methods that must be used to test the contaminants.
- ⁴—Minimum Reporting Level: the value and unit of measure at or above which the concentration or density of the contaminant must be measured using the Approved Analytical Methods.
- ⁵—Sampling Location: the locations within a PWS at which samples must be collected.
- ⁶—Years During Which Monitoring to be Completed: The years during which the sampling and testing are to occur for the indicated contaminant.

The procedures shall be done in accordance with the documents listed next in these footnotes. The incorporation by reference of the following documents listed in footnotes b-d, l, k and l was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the following sources. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460 (Telephone: 202-260-3027); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

^aThe version of the EPA methods which you must follow for this Rule are listed at § 141.24 (e).

^aAnnual Book of ASTM Standards, 1996, 1998 and 1999, Vol. 11.02, American Society for Testing and Materials. Method D5812-96, "Standard Test Method for Determination of Organochlorine Pesticides in Water by Capillary Column Gas Chromatography", is located in the Annual Book of ASTM Standards, 1998 and 1999, Vol. 11.02. Methods D5790-95, "Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry"; D5475-93, "Standard Test Method for Nitrogen- and Phosphorus-Containing Pesticides in Water by Gas Chromatography with a Nitrogen-Phosphorus Detector"; and D5317-93, "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography with an Electron Capture Detector" are located in the Annual Book of ASTM Standards, 1996 and 1998, Vol 11.02. Copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

^cOfficial Methods of Analysis of AOAC (Association of Official Analytical Chemist) International, Sixteenth Edition, 4th Revision, 1998, Volume I, AOAC International, First Union National Bank Lockbox, PO Box 75198, Baltimore, MD 21275-5198. 800-379-2622.

^dSM 6210 D is only found in the 18th and 19th editions of Standard Methods for the Examination of Water and Wastewater, 1992 and 1995, American Public Health Association; other edition may be used. SM 6200 B and 6200 C are only found in the 20th edition of Standard Methods for the Examination of Water and Wastewater, 1998. Copies may be obtained from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005.

^eMinimum Reporting Level determined by multiplying by 10 the least sensitive method's detection limit (detection limit = standard deviation times the Student's t value for 99% confidence level with n-1 degrees of freedom), or when available, multiplying by 5 the least sensitive method's estimated detection limit (where the estimated detection limit equals the concentration of compound yielding approximately a 5 to 1 signal to noise ratio or the calculated detection limit, whichever is greater).

^fEntry Points to the Distribution System (EPTDS), after treatment, representing each non-emergency water source in use over the twelve-month period of monitoring; this only includes entry points for sources in operation during the months in which sampling is to occur. Sampling must occur at the EPTDS, unless the State has specified other sampling points that are used for compliance monitoring under 40 CFR 141.24 (f)(1), (2), and (3). See 40 CFR 141.40(a)(5)(ii)(C) for a complete explanation of requirements, including the use of source (raw) water sampling points.

^gMinimum Reporting Levels (MRL) for Volatile Organic Compounds (VOC) determined by multiplying either the published detection limit or 0.5 µg/L, times 10, whichever is greater. The detection limit of 0.5 µg/L (0.0005 mg/L) was selected to conform to VOC detection limit requirements of 40 CFR 141.24(f)(17)(E).

^hThe approved methods do not allow for the identification and quantitation of the individual acids. The single analytical result obtained should be reported as total DCPA mono- and di-acid degradates.

ⁱEPA Method 515.3, "Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Extraction, Derivatization and Gas Chromatography with Electron Capture Detection," Revision 1.0 July 1996. EPA 815-R-00-014, "Methods for the Determination of Organic and Inorganic compounds in Drinking Water, Volume 1," August 2000. Available from the National Technical Information Service, NTIS PB2000-106981, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/safewater/methods/sourcalt.html.

^jSince EPA Method 515.3 does not include a solvent wash step following hydrolysis, the parent DCPA is not removed prior to analysis, therefore, only non-detect data may be reported using EPA Method 515.3. All samples with results above the MRL must be analyzed by one of the other approved methods.

^kEPA Method 515.4, "Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection," Revision 1.0, April 2000, EPA #815/B-00/001. Available by requesting a copy from the EPA Safe Drinking Water Hotline within the United States at 800-426-4791 (Hours are Monday through Friday, excluding federal holidays, from 9 a.m. to 5:30 p.m. Eastern Time). Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/safewater/methods/sourcalt.html.

^lEPA Method 314.0, "Determination of Perchlorate in Drinking Water Using Ion Chromatography," Revision 1.0, EPA 815-B-99-003, November 1999. EPA 815-R-00-014, "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," August 2000. Available from the National Technical Information Service, NTIS PB2000-106981, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/safewater/methods/sourcalt.html.

^mMRL was established at a concentration, which is at least 1/4th the lowest known adverse health concentration, at which acceptable precision and accuracy has been demonstrated in spiked matrix samples.

ⁿSample preservation techniques and holding times specified in EPA Method 524.2 must be used by laboratories using either EPA Method 502.2 or Standard Methods 6200C.

List 2—Screening Survey Chemical Contaminants

1-Contaminant	2-CAS registry number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
1,2-diphenylhydrazine.	122-66-7	EPA Method 526 ^a	0.5 µg/L	EPTDS ^e	2001—Selected Systems serving ≤10,000 persons; 2002—Selected systems serving > 10,000 persons.
2-methyl-phenol	95-48-7	EPA Method 528 ^b	1 µg/L ^f	EPTDS ^e	Same as above.
2,4-dichlorophenol	120-83-2	EPA Method 528 ^b	1 µg/L ^f	EPTDS ^e	Same as above.
2,4-dinitrophenol	51-28-5	EPA Method 528 ^b	5 µg/L ^f	EPTDS ^e	Same as above.
2,4,6-trichlorophenol.	88-06-2	EPA Method 528 ^b	1 µg/L ^f	EPTDS ^e	Same as above.
Alachlor ESA	Reserved ^d	Reserved ^d	Reserved ^d	Reserved ^d	Reserved ^d
Diazinon	333-41-5	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	2001—Selected Systems serving ≤10,000 persons; 2002—Selected systems serving > 10,000 persons.
Disulfoton	298-04-4	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	Same as above.

List 2—Screening Survey Chemical Contaminants

1-Contaminant	2-CAS registry number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
Diuron	330-54-1	EPA Method 532 ^c	1 µg/L ^f	EPTDS ^e	Same as above.
Fonofos	944-22-9	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	Same as above.
Linuron	330-55-2	EPA Method 532 ^c	1 µg/L ^f	EPTDS ^e	Same as above.
Nitrobenzene	98-95-3	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	Same as above.
Prometon	1610-18-0	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	Same as above.
RDX	121-82-4	Reserved ^d	Reserved ^d	Reserved ^d	Reserved ^d .
Terbufos	13071-79-9	EPA Method 526 ^a	0.5 µg/L ^f	EPTDS ^e	2001—Selected Systems serving ≤10,000 persons; 2002—Selected systems serving > 10,000 persons.

LIST 2—SCREENING SURVEY MICROBIOLOGICAL CONTAMINANTS TO BE SAMPLED

1-Contaminant	2-Identification number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
Aeromonas	NA	EPA Method 1605 ^a	0.2—CFU/100mL ^f	Distribution Systems.	2003

Column headings are:

¹—Chemical or microbiological contaminant; the name of the contaminants to be analyzed.
²—CAS (Chemical Abstract Service Number) Registry No. or Identification Number; a unique number identifying the chemical contaminants.

³—Analytical Methods; method numbers identifying the methods that must be used to test the contaminants.

⁴—Minimum Reporting Level; the value and unit of measure at or above which the concentration or density of the contaminant must be measured using the Approved Analytical Methods.

⁵—Sampling Location; the locations within a PWS at which samples must be collected.

⁶—Years During Which Monitoring to be Completed; the years during which the sampling and testing are to occur for the indicated contaminant.

The procedures shall be done in accordance with the documents listed next in these footnotes. The incorporation by reference of the following documents listed in footnotes a-c, was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the following sources. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Copies of the documents may be obtained from the sources listed in these footnotes. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW, Washington, DC 20460 (Telephone: 202-260-3027); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/lbr_locations.html.

^aEPA Method 526, "Determination of Selected Semivolatile Organic Compounds in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)," Revision 1.0, June 2000. EPA 815-R-00-014, "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," August 2000. Available from the National Technical Information Service, NTIS PB2000-106981, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/safewater/methods/sourcalt.html.

^bEPA Method 528, "Determination of Phenols in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)," Revision 1.0, April 2000. EPA 815-R-00-014, "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," August 2000. Available from the National Technical Information Service, NTIS PB2000-106981, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/nerfwww/ordmeth.htm.

^cEPA Method 532, "Determination of Phenylurea Compounds in Drinking Water by Solid Phase Extraction and High Performance Liquid Chromatography with UV Detection," Revision 1.0, June 2000. EPA 815-R-00-014, "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," August 2000. Available from the National Technical Information Service, NTIS PB2000-106981, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Alternatively, the method can be assessed and downloaded directly on-line at www.epa.gov/safewater/methods/sourcalt.html.

^dTo be specified at a later time.

^eEntry Points to the Distribution System (EPTDS), after treatment, representing each non-emergency water source in use over the twelve-month period of monitoring; this only includes entry points for sources in operation during the months in which sampling is to occur. Sampling must occur at the EPTDS, source water sampling points are not permitted for List 2 contaminant monitoring.

^fMinimum Reporting Level represents the value of the lowest concentration precision and accuracy determination made during methods development and documented in the method. If method options are permitted, the concentration used was for the least sensitive option.

* Three samples must be taken from the distribution system, which is owned or controlled by the selected PWS. The sample locations must include one sample from a point (MD from § 141.35(d)(3), Table 1) where the disinfectant residual is representative of the distribution system. This sample location may be selected from sample locations which have been previously identified for samples to be analyzed for coliform indicator bacteria. Coliform sample locations encompass a variety of sites including mid-point samples which may contain a disinfectant residual that is typical of the system. Coliform sample locations are described in 40 CFR 141.21. This same approach must be used for the *Aeromonas* midpoint sample where the disinfectant residual would not have declined and would be typical for the distribution system. Additionally, two samples must be taken from two different locations: the distal or dead-end location in the distribution system (MR from § 141.35(d)(3), Table 1), avoiding disinfectant booster stations, and from a location where previous determinations have indicated the lowest disinfectant residual in the distribution system (LD from § 141.35(d)(3), Table 1). If these two locations of distal and low disinfectant residual sites coincide, then the second sample must be taken at a location between the MD and MR sites. Locations in the distribution system where the disinfectant residual is expected to be low are similar to TTHM sampling points. Sampling locations for TTHMs are described in 63 FR 69468.

^aEPA Method 1605 "*Aeromonas* in Finished Water by Membrane Filtration using Ampicillin-Dextrin Agar with Vancomycin (ADA-V)", October 2001, EPA # 821-R-01-034. The method can be accessed and downloaded directly on-line at www.epa.gov/microbas.

List 3—Pre-screen Testing Radionuclides To Be Sampled After Notice of Analytical Methods Availability

1-Contaminant	2-CAS registry number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
Lead-210	14255-04-0	Reserved*	Reserved*	Reserved*	Reserved.*
Polonium-210	13981-52-7	Reserved*	Reserved*	Reserved*	Reserved.*

List 3—Pre-screen Testing Microorganisms To Be Sampled After Notice of Analytical Methods Availability

1-Contaminant	2-Identification number	3-Analytical methods	4-Minimum reporting level	5-Sampling location	6-Period during which monitoring to be completed
Cyanobacteria (blue-green algae, other freshwater algae and their toxins).	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Echoviruses	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Coxsackieviruses ..	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Helicobacter pylori	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Microsporidia	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Caliciviruses	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*
Adenoviruses	Reserved*	Reserved*	Reserved*	Reserved*	Reserved.*

Column headings are:
 1-Chemical or microbiological contaminant: the name of the contaminants to be analyzed.
 2-CAS (Chemical Abstract Service Number) Registry No. or Identification Number: a unique number identifying the chemical contaminants.
 3-Analytical Methods: method numbers identifying the methods that must be used to test the contaminants.
 4-Minimum Reporting Level: the value and unit of measure at or above which the concentration or density of the contaminant must be measured using the Approved Analytical Methods.
 5-Sampling Location: the locations within a PWS at which samples must be collected.
 6-Years During Which Monitoring to be Completed: the years during which the sampling and testing are to occur for the indicated contaminant.
 * To be determined at a later time.

(4) *What general requirements must I follow for monitoring List 1 contaminants?*

- (i) *All systems.* You must:
 (A) Collect samples of the listed contaminants in accordance with paragraph (a)(5) of this section and Appendix A of this section and any other specific instructions provided to you by the State or EPA,
 (B) Analyze the additional parameters specified below in Table 2. "Water Quality Parameters to be Monitored with UCMR Contaminants" for each

relevant contaminant type. You must analyze the parameters for each sampling event of each sampling point, using the method indicated, and report using the data elements 1 through 10 in Table 1, §141.35(d), Unregulated Contaminant Monitoring Reporting Requirements;
 (C) Review the laboratory testing results to ensure reliability; and
 (D) Report the results as specified in §141.35.

TABLE 2—WATER QUALITY PARAMETERS TO BE MONITORED WITH UCMR CONTAMINANTS

Parameter	Contaminant type	Analytical methods		
		EPA method	Standard methods ¹	Other
pH	Microbiological	EPA Method 150.1 ² , EPA Method 150.2 ²	4500-H ⁺ B	ASTM D1293-84 ³ , ASTM D1293-95 ³ , GLI Method 2 ^{4,5}
Turbidity	Microbiological	EPA Method 180.1 ^{4,5}	2130 B ⁴	
Temperature	Microbiological		2550	
Free Disinfectant Residual	Microbiological		4500-Cl D, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-ClO ₂ D, 4500-ClO ₂ E, 4500-O ₃ B	ASTM 1253-86 ³
Total Disinfectant Residual	Microbiological		4500-Cl D, 4500-Cl E, ⁴ 4500-Cl F, 4500-Cl G ⁴ , 4500-Cl I	ASTM D 1253-86 ³

The procedures shall be done in accordance with the documents listed in these footnotes. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed in these footnotes. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460 (Telephone: 202-260-3027); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

¹The 18th and 19th Editions of *Standard Methods for the Examination of Water and Wastewater*, 1992 and 1995. Methods 2130 B; 2550; 4500-Cl D, E, F, G, H, I; 4500-ClO₂ D, E; 4500-H⁺ B; and 4500-O₃ B in the 20th edition *Standard Methods for the Examination of Water and Wastewater*, 1998, American Public Health Association, 1015 Fifteenth St. NW, Washington D.C., 20005.

²EPA Methods 150.1 and 150.2 are available from US EPA, NERL, 26 W. Martin Luther King Dr., Cincinnati, Ohio 45268. The identical methods are also in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983, available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, Virginia 22161, PB84-128677. (Note: NTIS toll-free number is 800-553-6847.)

³*Annual Book of ASTM Standards*, Editions 1994, 1996, 1998 and 1999, Volumes 11.01, American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428. Version D1293-84, "Standard Test Methods for pH of Water" is located in the *Annual Book of ASTM Standards*, 1994, Volumes 11.01. Version D1293-95, "Standard Test Methods for pH of Water" is located in the *Annual Book of ASTM Standards*, 1996, 1998 and 1999, Volumes 11.01.

⁴"Technical Notes on Drinking Water," EPA-600/R-94-173, October 1994, Available at NTIS, PB95-104766.

⁵"Methods for the Determination of Inorganic Substances in Environmental Samples," EPA-600/R-93-100, August 1993. Available at NTIS, PB94-121811.

⁶GLI Method 2, "Turbidity," November 2, 1992, Great Lakes Instruments Inc., 8855 North 55th St., Milwaukee, Wisconsin 53223.

(ii) *Large systems.* In addition to paragraph (a)(4)(i) of this section, you must arrange for testing of the samples according to the methods specified for each contaminant in Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, and in Appendix A of this section.

(iii) *Small systems.* Unless directed otherwise by the State or EPA, in addition to paragraph (a)(4)(i) of this section, you must:

(A) Properly receive, store, maintain and use the sampling equipment sent to you from the laboratory designated by EPA;

(B) Sample at the times specified by the State or the EPA;

(C) Collect and pack samples in accordance with the instructions sent to you by the laboratory designated by EPA; and

(D) Send the samples to the laboratory designated by EPA.

(5) What specific sampling and quality control requirements must I follow for monitoring of List 1 contaminants?

(i) *All systems.* Unless the State or EPA informs you of other sampling arrangements, you must comply with the following requirements:

(A) *Sample collection and shipping time.* If you must ship the samples for testing, you must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory since some samples must be processed at the laboratory within 30 hours of collection. You must not collect samples on Friday, Saturday or Sunday because sampling on these days would not allow samples to be shipped and received at the laboratory within 30 hours.

(B) *No compositing of samples.* You must not composite (that is, combine, mix or blend) the samples. You must collect, preserve and test each sample separately.

(C) *Review and reporting of results.* After you have received the laboratory results, you must review and confirm the system information and data regarding sample collection and test results. You must report the results as provided in §141.35.

(ii) *Large systems.* In addition to paragraph (a)(5)(i) of this section, you must comply with the following:

(A) *Timeframe.* You must collect the samples in one twelve-month period during the years indicated in column 6 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List.

(B) *Frequency.* You must collect the samples within the timeframe and according to the following frequency specified by contaminant type and water source type:

TABLE 3—MONITORING FREQUENCY BY CONTAMINANT AND WATER SOURCE TYPES

Contaminant type	Water source type	Timeframe	Frequency
Chemical	Surface water	Twelve (12) months	Four quarterly samples taken as follows: Select either the first, second, or third month of a quarter and sample in that same month of each of four (4) consecutive quarters ^a to ensure that one of those sampling events occurs during the vulnerable time. ^b
	Ground water	Twelve (12) months	Two (2) times in a year taken as follows: Sample during one (1) month of the vulnerable time ^b and during one (1) month five (5) to seven (7) months earlier or later. ^c
Microbiological	Surface and ground water.	Twelve (12) months	Six (6) times in a year taken as follows: Select either the first, second, or third month of a quarter and sample in that same month of each of four (4) consecutive quarters, and sample an additional 2 months during the warmest (vulnerable) quarter of the year. ^d

^a"Select either the first, second, or third month of a quarter and sample in that same month of each of four (4) consecutive quarters" means that you must monitor during each of the four (4) months of either: January, April, July, October; or February, May, August, November; or March, June, September, December.

^b"Vulnerable time" means May 1 through July 31, unless the State or EPA informs you that it has selected a different time period for sampling as your system's vulnerable time.

^c"Sample during one (1) month of the vulnerable time and during one (1) month five (5) to seven (7) months earlier or later" means, for example, that if you select May as your "vulnerable time" month to sample, then one (1) month five (5) to seven (7) months earlier would be either October, November or December of the preceding year, and one (1) month five (5) to seven (7) months later would be either, October, November, or December of the same year.

^dThis means that you must monitor during each of the six (6) months of either: January, April, July, August, September, October; or February, May, July, August, September, November; or March, June, July, August, September, December; unless the State or EPA informs you that a different vulnerable quarter has been selected for your system.

(C) *Location.* You must collect samples at the location specified for each listed contaminant in column 5 of the Table 1, UCMR (1999) List, in paragraph (a)(3) of this section. The sampling location for chemical contaminants must be the entry point to the distribution system or the compliance monitoring point specified by the State or EPA under 40 CFR 141.24 (f)(1), (2), and (3). Except as provided in this paragraph (a)(5)(ii)(C), if the compliance monitoring point as specified by the State is for source (raw) water and any of the contaminants in paragraph (a)(3) of this section are detected, then you must complete the source water monitoring for the indicated timeframe and also sample at the entry point to the distribution system representative of the affected source water only for the contaminant(s) found in the source

water over the next twelve month timeframe, beginning in the next required monitoring period as indicated in paragraph (a)(5)(ii)(B), Table 3 of this section, even though monitoring might extend beyond the last year indicated in column 6, Period during which monitoring to be completed, in Table 1 of paragraph (a)(3). Exception: If the State or EPA determines that sampling at the entry point to the distribution system is unnecessary because no treatment was instituted between the source water and the distribution system that would affect measurement of the contaminants listed in paragraph (a)(3) of this section, then you do not have to sample at the entry point to the distribution system. Note: The sampling for List 2 chemical contaminants must be at the entry point to the

distribution system, as specified in Table 1, List 2.

(D) *Sampling instructions.* You must follow the sampling procedure for the method specified in column 3 of List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, for each contaminant.

(E) *Testing and analytical methods.* For each listed contaminant, you must use the analytical method specified in column 3 of List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, the minimum reporting levels in column 4 of List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, and the quality control procedures specified in Appendix A of this section.

(F) *Sampling deviations.* If you do not collect a sample according to the procedures specified for a listed contaminant, you must resample within 14 days of observing the occurrence of the error (which may include notification from the laboratory that you must resample) following the procedures specified for the method. (This resampling is not for confirmation sampling but to correct the sampling error.)

(G) *Testing.* (1) Except as provided in paragraph (a)(5)(ii)(G)(2) and (3) of this section, you must arrange for the testing of the contaminants identified in List 1 of Table 1 by a laboratory certified under §141.28 for compliance analysis using any of the analytical methods listed in column 3 for each contaminant in List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, whether you use the EPA analytical methods or non-EPA methods listed in List 1 of Table 1. Laboratories are automatically certified for the analysis of UCMR contaminants in List 1 of Table 1 if they are already certified to conduct compliance monitoring for a contaminant included in the same method being approved for UCMR analysis. Laboratories certified under §141.28 for compliance analysis using EPA Method 515.3 are automatically approved to conduct UCMR analysis using EPA Method 515.4.

(2) You must arrange for the testing of Perchlorate as identified in List 1 of Table 1 by a laboratory certified under §141.28 for compliance analysis using an approved ion chromatographic method as listed in §141.28 and that has analyzed and successfully passed the Performance Testing (PT) Program administered by EPA.

(3) You must arrange for the testing of the chemical contaminants identified in List 2 of Table 1 by a laboratory certified under §141.28 for compliance analysis using EPA Method 525.2 if performing UCMR analysis using EPA Methods 526 or 528, or a laboratory certified under §141.28 for compliance analysis using EPA Methods 549.1 or 549.2 if performing UCMR analysis using EPA Method 532. You must arrange for the testing for *Aeromonas* using the approved method as identified in List 2 of Table 1 by a laboratory which is both certified under §141.28 for compliance analysis for coliform indicator bacteria using an EPA approved membrane filtration procedure and which also has been granted approval for UCMR monitoring of *Aeromonas* by successfully passing the *Aeromonas* Performance Testing (PT) Program administered by EPA.

(iii) *Small systems that are part of the State Monitoring Plan.* Unless directed otherwise by the State or EPA, in addition to paragraph (a)(5)(i) of this section, you must comply with the following:

(A) *Timeframe and frequency.* You must collect samples at the times specified for you by the State or EPA, within the timeframe specified in paragraph (a)(5)(ii)(A) of this section and according to the frequency specified in paragraph (a)(5)(ii)(B) of this section for the contaminant type and water source type.

(B) *Location.* You must collect samples at the locations specified for you by the State or EPA.

(C) *Sampling deviations.* If you do not collect a sample according to the instructions provided to you for a listed contaminant, then you must report the deviation on the sample reporting form that you send to the laboratory with the samples. You must resample following instructions that you will be

sent from EPA's designated laboratory or the State.

(D) *Sample kits.* You must store and maintain the sample collection kits sent to you by EPA's designated laboratory in a secure place until used for sampling. You should read the instructions for each kit when you receive it. If indicated in the kit's instructions, you must freeze the cold packs. The sample kit will include all necessary containers, packing materials and cold packs, instructions for collecting the sample and sample treatment (such as dechlorination or preservation), report forms for each sample, contact name and telephone number for the laboratory, and a prepaid return shipping docket and return address label. If any of the materials listed in the kit's instructions are not included or arrive damaged, you must notify EPA's designated laboratory which sent you the sample collection kits.

(E) *Sampling instructions.* You must comply with the instructions sent to you by the State or EPA concerning the use of containers, collection (how to fill the sample bottle), dechlorination and/or preservation, and sealing and preparing the sample and shipping containers for shipment. You must also comply with the instructions sent to you by EPA's designated laboratory concerning the handling of sample containers for specific contaminants.

(F) *Duplicate samples.* EPA will select systems in the State Monitoring Plan that must collect duplicate samples for quality control. If your system is selected, you will receive two sample kits that you must use. You must use the same sampling protocols for both sets of samples, following the instructions in the duplicate sample kit.

(G) *Sampling forms.* You must completely fill out the sampling forms sent to you by the laboratory, including the data elements 1 through 4 listed in §141.35(d) for each sample. If EPA requests that you conduct field analysis of water quality parameters specified in paragraph (a)(4)(i)(B) of this section, you must also complete the sampling form to include the information for data elements 5 through 10 listed in §141.35(d) for each sample. You must sign and date the sampling forms.

(H) *Sample submission.* Once you have collected the samples and completely filled in the sampling forms, you must send the samples and the sampling forms to the laboratory designated in your instructions.

(6) *What additional requirements must I follow if my system is selected as an Index system?* If your system is selected as an Index system in the State Monitoring Plan, you must assist the State or EPA in identifying appropriate sampling locations and provide information on which wells and intakes are in use at the time of sampling, well casing and screen depths (if known) for those wells, and the pumping rate of each well or intake at the time of sampling.

(7) *What must I do if my system is selected for the Screening Surveys or Pre-Screen Testing?* (i) *All systems.* You must:

(A) Analyze the additional parameters specified in paragraph §141.40(a)(4)(i), Table 2, "Water Quality Parameters to be Monitored with UCMR Contaminants" for each relevant contaminant type. You must analyze the parameters for each sampling event of each sampling point, using the method indicated, and report the results using the data elements 1 through 10 in Table 1, §141.35(d), Unregulated Contaminant Monitoring Reporting requirements;

(B) Review the laboratory results to ensure reliability; and

(C) Report the results as specified in §141.35.

(ii) *Large systems.* If your system serves over 10,000 persons, you must collect and arrange for testing of the contaminants in List 2 and List 3 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, in accordance with the requirements set out in paragraphs (a)(4) and (5) of this section, with one exception: you must sample only at sampling locations specified in Table 1. You must send the samples to one of the laboratories approved under paragraph (G), this section. You are also responsible for reporting these results as required in §141.35.

(iii) *Small systems.* If your system serves 10,000 or fewer persons, you must collect samples in accordance with the

instructions sent to you by the EPA or State, or, if informed by the EPA or State that the EPA or State will collect the sample, you must assist the State or EPA in identifying the appropriate sampling locations and in taking the samples. EPA will report the results to you and the State.

(8) *What is a violation of this Rule?* (i) Any failure to monitor in accordance with § 141.40(a)(3) through (7) and Appendix A is a monitoring violation. (ii) Any failure to report in accordance with § 141.35 is a reporting violation.

(b) *Requirements for State and Tribal Participation.* (1) How can I, as the director of a State or Tribal drinking water program, participate in unregulated contaminant monitoring, including Assessment Monitoring (which includes the State Monitoring Plan for small systems), the Screening Surveys, and Pre-Screen Testing of all systems? You can enter into a Memorandum of Agreement (MOA) with the EPA that describes your State's or Tribe's activities to:

(i) *Accept or modify the initial plan.* EPA will first specify the systems serving 10,000 or fewer persons by water source and size in an initial State Monitoring Plan for each State using a random number generator. EPA will also generate a replacement list of systems for systems that may not have been correctly specified on the initial plan. This initial State Monitoring Plan will also indicate the year and day, plus or minus two (2) weeks from the day, that each system must monitor for the contaminants in List 1 of Table 1 of this section, Unregulated Contaminant Monitoring Regulation (1999) List. EPA will provide you with the initial monitoring plan for your State or Tribe, including systems to be Index systems and those systems to be part of the Screening Surveys. Within sixty (60) days of receiving your State's initial plan, you may notify EPA that you either accept it as your State Monitoring Plan or request to modify the initial plan by removing systems that have closed, merged or are purchasing water from another system and replacing them with other systems. Any purchased water system associated with a non-purchased water system must be added to the State Monitoring Plan if

the State determines that its distribution system is the location of the maximum residence time or lowest disinfectant residual of the combined distribution system. In this case, the purchased water system must monitor for the contaminants for which the "distribution system" is identified as the point of "maximum residence time" or "lowest disinfectant residual," depending on the contaminant, and not the community water system selling water to it. You must replace any systems you removed from the initial plan with systems from the replacement list in the order they are listed. Your request to modify the initial plan must include the modified plan and the reasons for the removal and replacement of systems. If you believe that there are reasons other than those previously listed for removing and replacing one or more other systems from the initial plan, you may include those systems and their replacement systems in your request to modify the initial plan. EPA will review your request to modify your State's initial plan. Please note that information about the actual or potential occurrence or non-occurrence of contaminants at a system or a system's vulnerability to contamination is not a basis for removal from or addition to the plan.

(ii) *Determine an alternate vulnerable time.* Within 60 days of receiving the initial State Monitoring Plan, you may also determine that the most vulnerable time of the year for any or all of the systems in the plan, and for any of the large systems that must monitor, is some period other than May 1 through July 31. If you make this determination, you must modify the initial plan to indicate the alternate vulnerable time and to which systems the alternate vulnerable time applies. EPA will review these determinations when you submit your request to modify your State's initial monitoring plan to the EPA. You must notify the small system(s) in your final State Monitoring Plan and the large system(s) of the most vulnerable time(s) of the year that you have specified for them to sample for one of their sampling events. You must notify them at least 90 days before their first unregulated contaminant sampling is to occur. You

may need to consider the timing of monitoring in paragraph (b)(1)(iii) of this section.

(iii) *Modify the timing of monitoring.* Within sixty (60) days of receiving the initial plan, you may also modify the plan by selecting an alternative year and day, plus or minus two (2) weeks, within the years specified in column 6, List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, for monitoring for each system in the initial plan as long as approximately one-third of the systems in the State Plan monitor in each of the three (3) years listed. This monitoring may be coordinated with regulated contaminant compliance monitoring at your discretion. You must send the modified plan to EPA.

(iv) *Identify alternate sampling points for small systems in the State Monitoring Plan.* All systems are required to monitor for the contaminants at the sampling locations specified in column 5, List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, unless the State specifies an alternate compliance sampling point as the sampling location. If the compliance sampling points for the small systems in the State Monitoring Plan are different than those specified in paragraph (a)(3) of this section, then you must indicate these sampling points in the plan. These alternative sampling points must allow proper sampling and testing for the unregulated contaminants.

(v) *Notify small and large systems of their monitoring responsibilities.* You must provide notification to systems in the plan and, where appropriate, the large systems, at least ninety (90) days before sampling must occur.

(vi) *Provide instructions to systems that are part of the final State Monitoring Plan.* You must send a monitoring schedule to each system listed in the State Monitoring Plan and instructions on location, frequency, timing of sampling, use of sampling equipment, and handling and shipment of samples based on these regulations. EPA will provide you with guidance for these instructions. If you perform the sampling or make alternative arrangements for the sampling at the systems in the

plan, you must inform EPA at least six (6) months before the first monitoring is to occur and address the alternative monitoring arrangements in the MOA.

(vii) *Participate in monitoring for the Screening Surveys for small and large systems.* Within 120 days prior to sampling, EPA will notify you which systems have been selected to participate in the Screening Surveys, the sampling dates, the designated laboratory for testing, and instructions for sampling. You must review the small systems that EPA selected for the State Monitoring Plan to ensure that the systems are not closed, merged or purchasing water from another system (unless the system is to conduct monitoring for a contaminant with the sampling location specified as "distribution system"), and then make any replacements in the plan, as described in paragraph (b)(1)(i) of this section. You must notify the selected systems in your State of these Screening Surveys requirements. You must provide the necessary Screening Surveys information to the selected systems at least ninety (90) days prior to the sampling date.

(viii) *Participate in monitoring for Pre-Screen Testing for small and large systems.* You can participate in Pre-Screen Testing in two ways.

(A) First, within ninety (90) days of EPA's letter to you concerning initiation of Pre-Screen Testing for specific contaminants, you can identify from five (5) up to twenty-five (25) systems in your State that you determine to be representative of the most vulnerable systems to these contaminants, modify your State Monitoring Plan to include these most vulnerable systems if any serve 10,000 or fewer persons, and notify EPA of the addition of these systems to the State Plan. These systems must be selected from all community and non-transient noncommunity water systems. EPA will use the State-identified vulnerable systems to select up to 200 systems nationally to be monitored considering the characteristics of the contaminants, precipitation, system operation, and environmental conditions.

(B) Second, within 120 days prior to sampling, EPA will notify you which systems have been selected, sampling dates, the designated laboratory for

testing of samples for systems serving 10,000 or fewer persons and approved laboratories for systems serving more than 10,000 persons, and instructions for sampling. You must notify the owners or operators of the selected systems in your State of these Pre-Screen Testing requirements. At least ninety (90) days prior to the sampling date, you must provide the necessary Pre-Screen Testing information to the owners or operators of the selected systems and then inform EPA that you took this action to allow sufficient time for EPA to ensure laboratory readiness.

(ix) *Revise system's treatment plant location(s) to include latitude and longitude.* For reporting to the Safe Drinking Water Information System, EPA already requires reporting of either the latitude and longitude or the street address for the treatment plant location. If the State enters into an MOA, the State must report each system's treatment plant location(s) as latitude and longitude (in addition to street address, if previously reported) by the time of the system's reporting of Assessment Monitoring results to the National Drinking Water Contaminant Occurrence Database. The State may use the latitude and longitude of facilities related to the public water system on the same site, or closely adjacent to the same site as the treatment plant, such as the latitude and longitude of the intake or wellhead/field or the entry point to the distribution system, if such measurements are available.

(2) What if I decide not to participate in an MOA? If you decide not to enter into an MOA with EPA to develop the State Monitoring Plan for small systems, the initial monitoring plan that EPA sent you will become the final State Monitoring Plan for your State or Tribe. In that case, you may still notify each public water system of its selection for the plan and instructions for monitoring as long as you notify EPA that you will be undertaking this responsibility at least six (6) months prior to the first unregulated contaminant monitoring.

(3) Can I add contaminants to the Unregulated Contaminant Monitoring List? Yes, the SDWA allows Governors of seven (7) or more States to petition the EPA Administrator to add one or

more contaminants to the Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section. The petition must clearly identify the reason(s) for adding the contaminant(s) to the monitoring list in paragraph (a)(3) of this section, including the potential risk to public health, particularly any information that might be available regarding disproportional risks to the health and safety of children, the expected occurrence documented by any available data, any analytical methods known or proposed to be used to test for the contaminant(s), and any other information that could assist the Administrator in determining which contaminants present the greatest public health concern and should, therefore, be included on the Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section.

(4) Can I waive monitoring requirements? Only with EPA approval and under very limited conditions. Conditions and procedures for obtaining the only type of waiver available under these regulations are as follows:

(i) Application. You may apply to EPA for a State-wide waiver from the unregulated contaminant monitoring requirements for public water systems serving more than 10,000 persons. To apply for such a waiver, you must submit an application to EPA that includes the following information:

(A) the list of contaminants on the Unregulated Contaminant Monitoring List for which you request a waiver, and

(B) documentation for each contaminant in your request demonstrating that the contaminants have not been used, applied, stored, disposed of, released, naturally present or detected in the source waters or distribution systems in your State during the past 15 years, and that it does not occur naturally in your State.

(ii) Approval. EPA will notify you if EPA agrees to waive monitoring requirements.

APPENDIX A TO §141.40—QUALITY CONTROL REQUIREMENTS FOR TESTING ALL SAMPLES COLLECTED

Your system must ensure that the quality control requirements listed below for testing

of samples collected and submitted under §141.40 are followed:

(1) Sample Collection/Preservation. Follow the sample collection and preservation requirements for the specified method for each of the contaminants in Table 1, UCMR (1999) List, in paragraph (a)(3) of this section. These requirements specify sample containers, collection, dechlorination, preservation, storage, sample holding time, and extract storage and/or holding time that the laboratory must follow.

(2) Detection Limit. Calculate the laboratory detection limit for each contaminant in Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, of paragraph (a)(3) of this section using the appropriate procedure in the specified method with the exception that the contaminant concentration used to fortify reagent water must be less than or equal to the minimum reporting level (MRL) for the contaminants as specified in column 4, Table 1, UCMR (1999) List, in paragraph (a)(3) of this section. The calculated detection limit is equal to the standard deviation times the Student's *t* value for 99% confidence level with *n*-1 degrees of freedom. (The detection limit must be less than or equal to one-half of the MRL.)

(3) Calibration. Follow the initial calibration requirements as specified in the method utilized. Calibration must be verified initially with a low-level standard at a concentration at or below the MRL for each contaminant. Perform a continuing calibration verification following every 10th sample. The calibration verification must be performed by alternating low-level and mid-level calibration standards. The low-level standard is defined as a concentration at or below the MRL with an acceptance range of $\pm 40\%$. The mid-level standard is in the middle of the calibration range with an acceptance range of $\pm 20\%$.

(4) Reagent Blank Analysis. Analyze one laboratory reagent (method) blank per sample set/batch that is treated exactly as a sample. The maximum allowable background concentration is one-half of the MRL for all contaminants. A field reagent blank is required only for EPA Method 524.2 (or equivalent listed methods, D5790.95, SM6210D, and SM6200B).

(5) Quality Control Sample. Obtain a quality control sample from an external source to check laboratory performance at least once each quarter.

(6) Matrix Spike and Duplicate. Prepare and analyze the sample matrix spike (SMS) for accuracy and matrix spike duplicate (MSD) samples for precision to determine method accuracy and precision for all contaminants in Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section. SMS/MSD samples must be prepared and analyzed at a frequency of 5% (or one SMS/MSD set per

every 20 samples) or with each sample batch whichever is more frequent. In addition, the SMS/MSD spike concentrations must be alternated between a low-level spike and mid-level spike approximately 50% of the time. (For example: a set of 40 samples will require preparation and analysis of two SMS/MSD sets. The first set must be spiked at either the low-level or mid level, and the second set must be spiked with the other standard, either the low-level or mid-level, whichever was not used for the initial SMS/MSD set). The low-level SMS/MSD spike concentration must be within $\pm 20\%$ of the MRL for each contaminant. The mid-level SMS/MSD spike concentration must be within $\pm 20\%$ of the mid-level calibration standard for each contaminant, and should represent, where possible, an approximate average concentration observed in previous analyses of that analyte. The spiking concentrations must be reported in the same units of measure as the analytical results.

(7) Internal Standard Calibration. As appropriate to a method's requirements to be used, test and obtain an internal standard for the methods for each chemical contaminant in Table 1, Unregulated Contaminant Monitoring Regulation (1999) List, in paragraph (a)(3) of this section, a pure contaminant of known concentration, for calibration and quantitation purposes. The methods specify the percent recovery or response that you must obtain for acceptance.

(8) Method Performance Test. As appropriate to a method's requirements, test for surrogate compounds, a pure contaminant unlikely to be found in any sample, to be used to monitor method performance. The methods specify the percent recovery that you must obtain for acceptance.

(9) Detection Confirmation. Confirm any chemical contaminant analyzed using a gas chromatographic method and detected above the MRL, by gas chromatographic/mass spectrometric (GC/MS) methods. If testing resulted in first analyzing the sample extracts via specified gas chromatographic methods, an initial confirmation by a second column dissimilar to the primary column may be performed. If the contaminant detection is confirmed by the secondary column, then the contaminant must be reconfirmed by GC/MS using three (3) specified ion peaks for contaminant identification. Use one of the following confirming techniques: perform single point calibration of the GC/MS system for confirmation purposes only as long as the calibration standard is at a concentration within $\pm 50\%$ of the concentration determined by the initial analysis; or perform a three (3) point calibration with single point daily calibration verification of the GC/MS system regardless of whether that verification standard concentration is within $\pm 50\%$ of sample response. If GC/MS analysis confirms the initial contaminant detection,

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report results determined from the initial analysis.

(10) Reporting. Report the analytical results and other data, with the required data listed in 40 CFR 141.35, Table 1. Report this data electronically to EPA, unless EPA specifies otherwise, and provide a copy to the State. Systems must coordinate with their laboratories for electronic reporting to EPA to ensure proper formatting and timely data submission.

(11) Method Defined Quality Control. As appropriate to the method's requirements, perform analysis of Laboratory Fortified Blanks and Laboratory Performance Checks as specified in the method. Each method specifies acceptance criteria for these quality control checks.

[64 FR 50612, Sept. 17, 1999, as amended at 65 FR 11382, Mar. 2, 2000; 66 FR 2302, Jan. 11, 2001; 66 FR 27215, May 16, 2001; 66 FR 46225, Sept. 4, 2002; 67 FR 65900, Oct. 29, 2002]

§ 141.41 Special monitoring for sodium.

(a) Suppliers of water for community public water systems shall collect and analyze one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels; samples must be collected and analyzed annually for systems utilizing surface water sources in whole or in part, and at least every three years for systems utilizing solely ground water sources. The minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with the State approval, be considered one treatment plant for determining the minimum number of samples. The supplier of water may be required by the State to collect and analyze water samples for sodium more frequently in locations where the sodium content is variable.

(b) The supplier of water shall report to EPA and/or the State the results of the analyses for sodium within the first 10 days of the month following the month in which the sample results were received or within the first 10 days following the end of the required monitoring period as stipulated by the State, whichever of these is first. If more than annual sampling is required the supplier shall report the average sodium concentration within 10 days of

the month following the month in which the analytical results of the last sample used for the annual average was received. The supplier of water shall not be required to report the results to EPA where the State has adopted this regulation and results are reported to the State. The supplier shall report the results to EPA where the State has not adopted this regulation.

(c) The supplier of water shall notify appropriate local and State public health officials of the sodium levels by written notice by direct mail within three months. A copy of each notice required to be provided by this paragraph shall be sent to EPA and/or the State within 10 days of its issuance. The supplier of water is not required to notify appropriate local and State public health officials of the sodium levels where the State provides such notices in lieu of the supplier.

(d) Analyses for sodium shall be conducted as directed in § 141.23(k)(1).

[45 FR 57345, Aug. 27, 1980, as amended at 59 FR 62470, Dec. 5, 1994]

§ 141.42 Special monitoring for corrosivity characteristics.

(a)-(c) [Reserved]

(d) Community water supply systems shall identify whether the following construction materials are present in their distribution system and report to the State:

- Lead from piping, solder, caulking, interior lining of distribution mains, alloys and home plumbing.
- Copper from piping and alloys, service lines, and home plumbing.
- Galvanized piping, service lines, and home plumbing.
- Ferrous piping materials such as cast iron and steel.
- Asbestos cement pipe.

In addition, States may require identification and reporting of other materials of construction present in distribution systems that may contribute contaminants to the drinking water, such as:

- Vinyl lined asbestos cement pipe.
- Coal tar lined pipes and tanks.

[45 FR 57346, Aug. 27, 1980; 47 FR 10999, Mar. 12, 1982, as amended at 59 FR 62470, Dec. 5, 1994]

§ 141.43 Prohibition on use of lead pipes, solder, and flux.

(a) *In general*—(1) *Prohibition*. Any pipe, solder, or flux, which is used after June 19, 1986, in the installation or repair of—

- (i) Any public water system, or
- (ii) Any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system shall be lead free as defined by paragraph (d) of this section. This paragraph (a)(1) shall not apply to leaded joints necessary for the repair of cast iron pipes.

(2) [Reserved]

(b) *State enforcement*—(1) *Enforcement of prohibition*. The requirements of paragraph (a)(1) of this section shall be enforced in all States effective June 19, 1988. States shall enforce such requirements through State or local plumbing codes, or such other means of enforcement as the State may determine to be appropriate.

(2) [Reserved]

(c) *Penalties*. If the Administrator determines that a State is not enforcing the requirements of paragraph (a) of this section, as required pursuant to paragraph (b) of this section, the Administrator may withhold up to 5 percent of Federal funds available to that State for State program grants under section 1443(a) of the Act.

(d) *Definition of lead free*. For purposes of this section, the term lead free:

- (1) When used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead;
- (2) When used with respect to pipes and pipe fittings refers to pipes and pipe fittings containing not more than 8.0 percent lead; and
- (3) When used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300g-6(e).

[52 FR 20674, June 2, 1987, as amended at 65 FR 2003, Jan. 12, 2000]

Subpart F—Maximum Contaminant Level Goals and Maximum Residual Disinfectant Level Goals

§ 141.50 Maximum contaminant level goals for organic contaminants.

(a) MCLGs are zero for the following contaminants:

- (1) Benzene
- (2) Vinyl chloride
- (3) Carbon tetrachloride
- (4) 1,2-dichloroethane
- (5) Trichloroethylene
- (6) Acrylamide
- (7) Alachlor
- (8) Chlordane
- (9) Dibromochloropropane
- (10) 1,2-Dichloropropane
- (11) Epichlorohydrin
- (12) Ethylene dibromide
- (13) Heptachlor
- (14) Heptachlor epoxide
- (15) Pentachlorophenol
- (16) Polychlorinated biphenyls (PCBs)
- (17) Tetrachloroethylene
- (18) Toxaphene
- (19) Benzo[a]pyrene
- (20) Dichloromethane (methylene chloride)
- (21) Di(2-ethylhexyl)phthalate
- (22) Hexachlorobenzene
- (23) 2,3,7,8-TCDD (Dioxin)

(b) MCLGs for the following contaminants are as indicated:

Contaminant	MCLG in mg/l
(1) 1,1-Dichloroethylene	0.007
(2) 1,1,1-Trichloroethane	0.20
(3) para-Dichlorobenzene	0.075
(4) Aldicarb	0.001
(5) Aldicarb sulfoxide	0.001
(6) Aldicarb sulfone	0.001
(7) Atrazine	0.003
(8) Carbofuran	0.04
(9) o-Dichlorobenzene	0.6
(10) cis-1,2-Dichloroethylene	0.07
(11) trans-1,2-Dichloroethylene	0.1
(12) 2,4-D	0.07
(13) Ethylbenzene	0.7
(14) Lindane	0.0002
(15) Methoxychlor	0.04
(16) Monochlorobenzene	0.1
(17) Styrene	0.1
(18) Toluene	1
(19) 2,4,5-TP	0.05
(20) Xylenes (total)	10
(21) Dalapon	0.2
(22) Di(2-ethylhexyl)adipate	.4
(23) Dinoseb	.007
(24) Diquat	.02
(25) Endothall	.1

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Contaminant	MCLG in mg/l
(26) Endrin002
(27) Glyphosate7
(28) Hexachlorocyclopentadiene05
(29) Oxamyl (Vydate) .....	.2
(30) Picloram .....	.5
(31) Simazine .....	.004
(32) 1,2,4-Trichlorobenzene .....	.07
(33) 1,1,2-Trichloroethane .....	.003

[50 FR 46901, Nov. 13, 1985, as amended at 52 FR 20674, June 2, 1987; 52 FR 25716, July 8, 1987; 56 FR 3592, Jan. 30, 1991; 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992]

§ 141.51 Maximum contaminant level goals for inorganic contaminants.

- (a) [Reserved]
- (b) MCLGs for the following contaminants are as indicated:

Contaminant	MCLG (mg/l)
Antimony	0.006
Arsenic	zero ¹
Asbestos	7 Million fibers/liter (longer than 10 µm).
Barium	2
Beryllium .....	.004
Cadmium	0.005
Chromium	0.1
Copper	1.3
Cyanide (as free Cyanide) .....	.2
Fluoride	4.0
Lead	zero
Mercury	0.002
Nitrate	10 (as Nitrogen).
Nitrite	1 (as Nitrogen).
Total Nitrate+Nitrite	10 (as Nitrogen).
Selenium	0.05
Thallium .....	.0005

¹ This value for arsenic is effective January 23, 2006. Until then, there is no MCLG.

[50 FR 47155, Nov. 14, 1985, as amended at 52 FR 20674, June 2, 1987; 56 FR 3593, Jan. 30, 1991; 56 FR 26548, June 7, 1991; 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001]

§ 141.52 Maximum contaminant level goals for microbiological contaminants.

- MCLGs for the following contaminants are as indicated:

Contaminant	MCLG
(1) <i>Giardia lamblia</i>	zero
(2) Viruses	zero
(3) <i>Legionella</i>	zero
(4) Total coliforms (including fecal coliforms and <i>Escherichia coli</i>)	zero.
(5) <i>Cryptosporidium</i>	zero.

[54 FR 27527, 27566, June 29, 1989; 55 FR 25064, June 19, 1990; 63 FR 69515, Dec. 16, 1998]

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§ 141.53 Maximum contaminant level goals for disinfection byproducts.

- MCLGs for the following disinfection byproducts are as indicated:

Disinfection byproduct	MCLG (mg/L)
Bromodichloromethane	Zero
Bromoform	Zero
Bromate	Zero
Dichloroacetic acid	Zero
Trichloroacetic acid	0.3
Chlorite	0.8
Dibromochloromethane	0.06

[63 FR 69465, Dec. 16, 1998, as amended at 65 FR 34405, May 30, 2000]

§ 141.54 Maximum residual disinfectant level goals for disinfectants.

- MRDLGs for disinfectants are as follows:

Disinfectant residual	MRDLG(mg/L)
Chlorine	4 (as Cl ₂).
Chloramines	4 (as Cl ₂).
Chlorine dioxide	0.8 (as ClO ₂)

[63 FR 69465, Dec. 16, 1998]

§ 141.55 Maximum contaminant level goals for radionuclides.

- MCLGs for radionuclides are as indicated in the following table:

Contaminant	MCLG
1. Combined radium-226 and radium-228	Zero.
2. Gross alpha particle activity (excluding radon and uranium)	Zero.
3. Beta particle and photon radioactivity	Zero.
4. Uranium	Zero.

[65 FR 76748, Dec. 7, 2000]

Subpart G—National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

§ 141.60 Effective dates.

- (a) The effective dates for § 141.61 are as follows:

(1) The effective date for paragraphs (a)(1) through (a)(8) of § 141.61 is January 9, 1989.

(2) The effective date for paragraphs (a)(9) through (a)(18) and (c)(1) through (c)(18) of § 141.61 is July 30, 1992.

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(3) The effective date for paragraphs (a)(19) through (a)(21), (c)(19) through (c)(25), and (c)(27) through (c)(33) of § 141.61 is January 17, 1994. The effective date of § 141.61(c)(26) is August 17, 1992.

(b) The effective dates for § 141.62 are as follows:

(1) The effective date of paragraph (b)(1) of § 141.62 is October 2, 1987.

(2) The effective date for paragraphs (b)(2) and (b)(4) through (b)(10) of § 141.62 is July 30, 1992.

(3) The effective date for paragraphs (b)(11) through (b)(15) of § 141.62 is January 17, 1994.

(4) The effective date for § 141.62(b)(16) is January 23, 2006.

[56 FR 3593, Jan. 30, 1991, as amended at 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994; 66FR 7063, Jan. 22, 2001]

§ 141.61 Maximum contaminant levels for organic contaminants.

(a) The following maximum contaminant levels for organic contaminants apply to community and non-transient, non-community water systems.

CAS No.	Contaminant	MCL (mg/l)
(1) 75-01-4	Vinyl chloride	0.002
(2) 71-43-2	Benzene	0.005
(3) 56-23-5	Carbon tetrachloride	0.005
(4) 107-06-2	1,2-Dichloroethane	0.005
(5) 79-01-6	Trichloroethylene	0.005
(6) 106-46-7	para-Dichlorobenzene	0.075
(7) 75-35-4	1,1-Dichloroethylene	0.007
(8) 71-55-6	1,1,1-Trichloroethane	0.2
(9) 156-59-2	cis-1,2-Dichloroethylene	0.07
(10) 78-87-5	1,2-Dichloropropane	0.005
(11) 100-41-4	Ethylbenzene	0.7
(12) 108-90-7	Monochlorobenzene	0.1
(13) 95-50-1	o-Dichlorobenzene	0.6
(14) 100-42-5	Styrene	0.1
(15) 127-18-4	Tetrachloroethylene	0.005
(16) 108-88-3	Toluene	1
(17) 156-60-5	trans-1,2-Dichloroethylene	0.1
(18) 1330-20-7	Xylenes (total)	10
(19) 75-09-2	Dichloromethane	0.005
(20) 120-82-1	1,2,4-Trichloro-benzene	.07
(21) 79-00-5	1,1,2-Trichloro-ethane	.005

(b) The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the Table below granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as the best technology treat-

ment technique, or other means available for achieving compliance with the maximum contaminant level for organic contaminants identified in paragraphs (a) and (c) of this section:

BAT FOR ORGANIC CONTAMINANTS LISTED IN § 141.61 (a) AND (c)

CAS No.	Contaminant	GAC	PTA	OX
15972-60-8	Alachlor	X		
116-06-3	Aldicarb	X		
1646-88-4	Aldicarb sulfone	X		
1646-87-3	Aldicarb sulfoxide	X		
1912-24-9	Atrazine	X		
71-43-2	Benzene	X	X	
50-32-8	Benzo[a]pyrene	X		
1563-66-2	Carbofuran	X		
56-23-5	Carbon tetrachloride	X	X	
57-74-9	Chlordane	X		
75-99-0	Dalapon	X		
94-75-7	2,4-D	X		
103-23-1	Di (2-ethylhexyl) adipate	X	X	
117-81-7	Di (2-ethylhexyl) phthalate	X		
96-12-8	Dibromochloropropane (DBCP)	X	X	
95-50-1	o-Dichlorobenzene	X	X	
106-46-7	para-Dichlorobenzene	X	X	

BAT FOR ORGANIC CONTAMINANTS LISTED IN § 141.61 (a) AND (c)—Continued

CAS No.	Contaminant	GAC	PTA	OX
107-06-2	1,2-Dichloroethane	X	X	
75-35-4	1,1-Dichloroethylene	X	X	
156-59-2	cis-1,2-Dichloroethylene	X	X	
156-60-5	trans-1,2-Dichloroethylene	X	X	
75-09-2	Dichloromethane		X	
78-87-5	1,2-Dichloropropane	X	X	
88-85-7	Dinoseb	X		
85-00-7	Diquat	X		
145-73-3	Endothall	X		
72-20-8	Endrin	X		
100-41-4	Ethylbenzene	X	X	
106-93-4	Ethylene Dibromide (EDB)	X	X	
1071-83-6	Glyphosate			X
76-44-8	Heptachlor	X		
1024-57-3	Heptachlor epoxide	X		
116-74-1	Hexachlorobenzene	X		
77-47-3	Hexachlorocyclopentadiene	X	X	
58-89-9	Lindane	X		
72-43-5	Methoxychlor	X		
108-90-7	Monochlorobenzene	X	X	
23135-22-0	Oxamyl (Vydate)	X		
87-86-5	Pentachlorophenol	X		
1918-02-1	Picloram	X		
1336-36-3	Polychlorinated biphenyls (PCB)	X		
122-34-9	Simazine	X		
100-42-5	Styrene	X	X	
1746-01-6	2,3,7,8-TCDD (Dioxin)	X		
127-18-4	Tetrachloroethylene	X	X	
108-88-3	Toluene	X	X	
8001-35-2	Toxaphene	X		
93-72-1	2,4,5-TP (Silvex)	X		
120-82-1	1,2,4-Trichlorobenzene	X	X	
71-55-6	1,1,1-Trichloroethane	X	X	
79-00-5	1,1,2-Trichloroethane	X	X	
79-01-6	Trichloroethylene	X	X	
75-01-4	Vinyl chloride		X	
1330-20-7	Xylene	X	X	

(c) The following maximum contaminant levels for synthetic organic contaminants apply to community water systems and non-transient, non-community water systems:

CAS No.	Contaminant	MCL (mg/l)
(1) 15972-60-8	Alachlor	0.002
(2) 116-06-3	Aldicarb	0.003
(3) 1646-87-3	Aldicarb sulfoxide	0.004
(4) 1646-87-4	Aldicarb sulfone	0.002
(5) 1912-24-9	Atrazine	0.003
(6) 1563-66-2	Carbofuran	0.04
(7) 57-74-9	Chlordane	0.002
(8) 96-12-8	Dibromochloropropane	0.0002
(9) 94-75-7	2,4-D	0.07
(10) 106-93-4	Ethylene dibromide	0.0005
(11) 76-44-8	Heptachlor	0.0004
(12) 1024-57-3	Heptachlor epoxide	0.0002
(13) 58-89-9	Lindane	0.0002
(14) 72-43-5	Methoxychlor	0.04
(15) 1336-36-3	Polychlorinated biphenyls	0.0005
(16) 87-86-5	Pentachlorophenol	0.001
(17) 8001-35-2	Toxaphene	0.003
(18) 93-72-1	2,4,5-TP	0.05
(19) 50-32-8	Benzo[a]pyrene	0.0002
(20) 75-99-0	Dalapon	0.2
(21) 103-23-1	Di(2-ethylhexyl) adipate	0.4
(22) 117-81-7	Di(2-ethylhexyl) phthalate	0.006
(23) 88-85-7	Dinoseb	0.007
(24) 85-00-7	Diquat	0.02
(25) 145-73-3	Endothall	0.1

CAS No.	Contaminant	MCL (mg/l)
(26) 72-20-8	Endrin	0.002
(27) 1071-53-6	Glyphosate	0.7
(28) 118-74-1	Hexachlorobenzene	0.001
(29) 77-47-4	Hexachlorocyclopentadiene	0.05
(30) 23135-22-0	Oxamyl (Vydate)	0.2
(31) 1918-02-1	Picloram	0.5
(32) 122-34-9	Simazine	0.004
(33) 1746-01-6	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸

[56 FR 3593, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994]

§ 141.62 Maximum contaminant levels for inorganic contaminants.

(a) [Reserved]

(b) The maximum contaminant levels for inorganic contaminants specified in paragraphs (b) (2)-(6), (b)(10), and (b) (11)-(16) of this section apply to community water systems and non-transient, non-community water systems. The maximum contaminant level specified in paragraph (b)(1) of this section only applies to community water systems. The maximum contaminant levels specified in (b)(7), (b)(8), and (b)(9) of this section apply to community water systems; non-transient, non-community water systems; and transient non-community water systems.

Contaminant	MCL (mg/l)
(1) Fluoride	4.0
(2) Asbestos	7 Million Fibers/liter (longer than 10 µm).
(3) Barium	2
(4) Cadmium	0.005
(5) Chromium	0.1
(6) Mercury	0.002
(7) Nitrate	10 (as Nitrogen)
(8) Nitrite	1 (as Nitrogen)
(9) Total Nitrate and Nitrite	10 (as Nitrogen)
(10) Selenium	0.05
(11) Antimony	0.006
(12) Beryllium	0.004
(13) Cyanide (as free Cyanide).	0.2
(14) [Reserved].	
(15) Thallium	0.002
(16) Arsenic	0.010

(c) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment technique, or other means available for achieving compliance with the maximum contaminant levels for inorganic contaminants identified in paragraph (b) of this section, except fluoride:

BAT FOR INORGANIC COMPOUNDS LISTED IN SECTION 141.62(b)

Chemical Name	BAT(s)
Antimony	2,7
Arsenic ⁴	1, 2, 5, 6, 7, 9, 12 ⁵
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6,7
Cyanide	5,7,10
Mercury	2 ¹ ,4,6 ¹ ,7 ¹
Nickel	5,6,7
Nitrate	5,7,9
Nitrite	5,7
Selenium	1,2 ³ ,6,7,9
Thallium	1,5

¹BAT only if influent Hg concentrations ≤10µg/l.
²BAT for Chromium III only.
³BAT for Selenium IV only.
⁴BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
⁵To obtain high removals, iron to arsenic ratio must be at least 20:1.

Key to BATS in Table

- 1=Activated Alumina
- 2 = Coagulation/Filtration (not BAT for systems < 500 service connections)
- 2=Coagulation/Filtration
- 3=Direct and Diatomite Filtration
- 4=Granular Activated Carbon
- 5=Ion Exchange
- 6 = Lime Softening (not BAT for systems < 500 service connections)
- 7=Reverse Osmosis
- 8=Corrosion Control
- 9=Electrodialysis
- 10=Chlorine
- 11=Ultraviolet
- 12 = Oxidation/Filtration

(d) The Administrator, pursuant to section 1412 of the Act, hereby identifies in the following table the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the maximum contaminant level for arsenic:

SMALL SYSTEM COMPLIANCE TECHNOLOGIES (SSCTs) ¹ FOR ARSENIC ²

Small system compliance technology	Affordable for listed small system categories ³
Activated Alumina (centralized).	All size categories.
Activated Alumina (Point-of-Use) ⁴ .	All size categories.
Coagulation/Filtration ⁵	501-3,300, 3,301-10,000.
Coagulation-assisted Micro-filtration.	501-3,300, 3,301-10,000.
Electrodialysis reversal ⁶	501-3,300, 3,301-10,000.
Enhanced coagulation/filtration.	All size categories
Enhanced lime softening (pH > 10.5).	All size categories.
Ion Exchange	All size categories.
Lime Softening ⁵	501-3,300, 3,301-10,000.
Oxidation/Filtration ⁷	All size categories.
Reverse Osmosis (centralized) ⁶ .	501-3,300, 3,301-10,000.
Reverse Osmosis (Point-of-Use) ⁴ .	All size categories.

¹ Section 1412(b)(4)(E)(ii) of SDWA specifies that SSCTs must be affordable and technically feasible for small systems.

² SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

³ The Act (ibid.) specifies three categories of small systems: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.

⁴ When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance.

⁵ Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

⁶ Technologies reject a large volume of water—may not be appropriate for areas where water quantity may be an issue.

⁷ To obtain high removals, iron to arsenic ratio must be at least 20:1.

[56 FR 3594, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31847, July 17, 1992; 59 FR 34325, July 1, 1994; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003]

EFFECTIVE DATE NOTE: At 69 FR 38855, June 29, 2004, §141.62(c) was amended in the Table "BAT FOR INORGANIC COMPOUNDS LISTED IN SECTION 141.62(b)" in the entry for "cyanide" by replacing the "10" with "13"; and in the list "Key to BATS in Table", by adding to the end of the list, "13 = Alkaline Chlorination (pH ≥ 8.5)", effective July 29, 2004.

§141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.

(a) The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.

(1) For a system which collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

(2) For a system which collects fewer than 40 samples/month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) Any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q, this is a violation that may pose an acute risk to health.

(c) A public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms.

(d) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section:

(1) Protection of wells from contamination by coliforms by appropriate placement and construction;

(2) Maintenance of a disinfectant residual throughout the distribution system;

(3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system;

(4) Filtration and/or disinfection of surface water, as described in subpart H, or disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone; and

(5) For systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.

[54 FR 27566, June 29, 1989; 55 FR 25064, June 19, 1990, as amended at 65 FR 26022, May 4, 2000]

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§ 141.64 Maximum contaminant levels for disinfection byproducts.

(a) The maximum contaminant levels (MCLs) for disinfection byproducts are as follows:

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

(b) *Compliance dates.* (1) *CWSs and NTNCWSs.* Subpart H systems serving 10,000 or more persons must comply with this section beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this section beginning January 1, 2004.

(2) A system that is installing GAC or membrane technology to comply with this section may apply to the State for an extension of up to 24 months past the dates in paragraphs (b)(1) of this section, but not beyond December 31, 2003. In granting the extension, States must set a schedule for compliance and may specify any interim measures that the system must take. Failure to meet the schedule or interim treatment requirements constitutes a violation of a National Primary Drinking Water Regulation.

(c) The Administrator, pursuant to Section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts identified in paragraph (a) of this section:

Disinfection byproduct	Best available technology
TTHM	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
HAA5	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.
Bromate	Control of ozone treatment process to reduce production of bromate.
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

[63 FR 69465, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§ 141.65 Maximum residual disinfectant levels.

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

Disinfectant residual	MRDL (mg/L)
Chlorine	4.0 (as Cl ₂).
Chloramines	4.0 (as Cl ₂).
Chlorine dioxide	0.8 (as ClO ₂).

(b) *Compliance dates.* (1) *CWSs and NTNCWSs.* Subpart H systems serving 10,000 or more persons must comply with this section beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this subpart beginning January 1, 2004.

(2) *Transient NCWSs.* Subpart H systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

(c) The Administrator, pursuant to Section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels identified in paragraph (a) of this section: control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

[63 FR 69465, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§ 141.66 Maximum contaminant levels for radionuclides.

(a) [Reserved]

(b) *MCL for combined radium-226 and -228.* The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by

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the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(c) *MCL for gross alpha particle activity (excluding radon and uranium).* The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.

(d) *MCL for beta particle and photon radioactivity.* (1) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).

(2) Except for the radionuclides listed in table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake using the 168 hour data list in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847. Copies may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the National Archives and Records Administration (NARA). For information on the availability of this mate-

rial at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.

TABLE A—AVERAGE ANNUAL CONCENTRATIONS ASSUMED TO PRODUCE: A TOTAL BODY OR ORGAN DOSE OF 4 MREM/YR

1. Radionuclide	Critical organ	pCi per liter
2. Tritium	Total body	20,000
3. Strontium-90	Bone Marrow	8

(e) *MCL for uranium.* The maximum contaminant level for uranium is 30 µg/L.

(f) *Compliance dates.* (1) Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Community water systems must comply with the MCLs listed in paragraphs (b), (c), (d), and (e) of this section beginning December 8, 2003 and compliance shall be determined in accordance with the requirements of §§141.25 and 141.26. Compliance with reporting requirements for the radionuclides under appendix A to subpart O and appendices A and B to subpart Q is required on December 8, 2003.

(2) [Reserved]

(g) *Best available technologies (BATs) for radionuclides.* The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the following table the best technology available for achieving compliance with the maximum contaminant levels for combined radium-226 and -228, uranium, gross alpha particle activity, and beta particle and photon radioactivity.

TABLE B—BAT FOR COMBINED RADIUM-226 AND RADIUM-228, URANIUM, GROSS ALPHA PARTICLE ACTIVITY, AND BETA PARTICLE AND PHOTON RADIOACTIVITY

Contaminant	BAT
1. Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening.
2. Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
3. Gross alpha particle activity (excluding Radon and Uranium)	Reverse osmosis.
4. Beta particle and photon radioactivity	Ion exchange, reverse osmosis.

(h) *Small systems compliance technologies list for radionuclides.*

TABLE C—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE

Unit technologies	Limitations (see footnotes)	Operator skill level required ¹	Raw water quality range and considerations. ¹
1. Ion exchange (IE)	(*)	Intermediate	All ground waters.
2. Point of use (POU ²) IE	(*)	Basic	All ground waters.
3. Reverse osmosis (RO)	(*)	Advanced	Surface waters usually require pre-filtration.
4. POU ² RO	(*)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(*)	Advanced	All waters.
6. Green sand filtration	(*)	Basic	
7. Co-precipitation with Barium sulfate	(†)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous Manganese oxide filtration	(*)	Intermediate	All ground waters.
10. Activated alumina	(*), (†)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/filtration	(†)	Advanced	Can treat a wide range of water qualities.

¹ National Research Council (NRC). Safe Water from Every Tap: Improving Water Service to Small Communities. National Academy Press. Washington, D.C. 1997.

² A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. See the April 21, 2000 NODA for more details.

Limitations Footnotes: Technologies for Radionuclides:
 *The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.
 †When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.
 ‡Reject water disposal options should be carefully considered before choosing this technology. See other RO limitations described in the SWTR Compliance Technologies Table.
 §The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.
 ¶Removal efficiencies can vary depending on water quality.
 ††This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.
 †††This technology is most applicable to small systems that already have filtration in place.
 ††††Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.
 †††††Assumes modification to a coagulation/filtration process already in place.

TABLE D—COMPLIANCE TECHNOLOGIES BY SYSTEM SIZE CATEGORY FOR RADIONUCLIDE NPDWR'S

Contaminant	Compliance technologies ¹ for system size categories (population served)		3,300–10,000
	25–500	501–3,300	
1. Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9.
2. Gross alpha particle activity	3, 4	3, 4	3, 4.
3. Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4.
4. Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11.

Note: ¹ Numbers correspond to those technologies found listed in the table C of 141.66(h).

[65 FR 76748, Dec. 7, 2000]

Subpart H—Filtration and Disinfection

SOURCE: 54 FR 27527, June 29, 1989, unless otherwise noted.

§ 141.70 General requirements.

(a) The requirements of this subpart H constitute national primary drinking water regulations. These regulations establish criteria under which filtration is required as a treatment technique for public water systems supplied by a surface water source and public

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water systems supplied by a ground water source under the direct influence of surface water. In addition, these regulations establish treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, and turbidity. Each public water system with a surface water source or a ground water source under the direct influence of surface water must provide treatment of that source water that complies with these treatment technique requirements. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

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

(2) At least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

(b) A public water system using a surface water source or a ground water source under the direct influence of surface water is considered to be in compliance with the requirements of paragraph (a) of this section if:

(1) It meets the requirements for avoiding filtration in §141.71 and the disinfection requirements in §141.72(a); or

(2) It meets the filtration requirements in §141.73 and the disinfection requirements in §141.72(b).

(c) Each public water system using a surface water source or a ground water source under the direct influence of surface water must be operated by qualified personnel who meet the requirements specified by the State.

(d) *Additional requirements for systems serving at least 10,000 people.* In addition to complying with requirements in this subpart, systems serving at least 10,000 people must also comply with the requirements in subpart P of this part.

(e) *Additional requirements for systems serving fewer than 10,000 people.* In addi-

tion to complying with requirements in this subpart, systems serving fewer than 10,000 people must also comply with the requirements in subpart T of this part.

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 67 FR 1836, Jan. 14, 2002]

§ 141.71 Criteria for avoiding filtration.

A public water system that uses a surface water source must meet all of the conditions of paragraphs (a) and (b) of this section, and is subject to paragraph (c) of this section, beginning December 30, 1991, unless the State has determined, in writing pursuant to §1412(b)(7)(C)(iii), that filtration is required. A public water system that uses a ground water source under the direct influence of surface water must meet all of the conditions of paragraphs (a) and (b) of this section and is subject to paragraph (c) of this section, beginning 18 months after the State determines that it is under the direct influence of surface water, or December 30, 1991, whichever is later, unless the State has determined, in writing pursuant to §1412(b)(7)(C)(iii), that filtration is required. If the State determines in writing pursuant to §1412(b)(7)(C)(iii) before December 30, 1991, that filtration is required, the system must have installed filtration and meet the criteria for filtered systems specified in §§141.72(b) and 141.73 by June 29, 1993. Within 18 months of the failure of a system using surface water or a ground water source under the direct influence of surface water to meet any one of the requirements of paragraphs (a) and (b) of this section or after June 29, 1993, whichever is later, the system must have installed filtration and meet the criteria for filtered systems specified in §§141.72(b) and 141.73.

(a) *Source water quality conditions.* (1) The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in §141.74 (a) (1) and (2) and (b)(1)), in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made for the

6 previous months that the system served water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this paragraph must be met.

(2) The turbidity level cannot exceed 5 NTU (measured as specified in § 141.74 (a)(4) and (b)(2)) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless: (i) the State determines that any such event was caused by circumstances that were unusual and unpredictable; and (ii) as a result of any such event, there have not been more than two events in the past 12 months the system served water to the public, or more than five events in the past 120 months the system served water to the public, in which the turbidity level exceeded 5 NTU. An "event" is a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(b) *Site-specific conditions.* (1)(i) The public water system must meet the requirements of § 141.72(a)(1) at least 11 of the 12 previous months that the system served water to the public, on an ongoing basis, unless the system fails to meet the requirements during 2 of the 12 previous months that the system served water to the public, and the State determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.

(ii) The public water system must meet the requirements of § 141.72(a)(2) at all times the system serves water to the public.

(iii) The public water system must meet the requirements of § 141.72(a)(3) at all times the system serves water to the public unless the State determines that any such failure was caused by circumstances that were unusual and unpredictable.

(iv) The public water system must meet the requirements of § 141.72(a)(4) on an ongoing basis unless the State determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.

(2) The public water system must maintain a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts and viruses in the source water. The State must determine whether the watershed control program is adequate to meet this goal. The adequacy of a program to limit potential contamination by *Giardia lamblia* cysts and viruses must be based on: the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program must:

(i) Characterize the watershed hydrology and land ownership;

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

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

The public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water. The public water system must submit an annual report to the State that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the public water system expects to address them. For systems using a ground water source under the direct influence of surface water, an approved wellhead protection program developed under section 1428 of the Safe Drinking Water Act may be used, if the State deems it appropriate, to meet these requirements.

(3) The public water system must be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. Either the State or a party approved by the State must conduct the

on-site inspection. The inspection must be conducted by competent individuals such as sanitary and civil engineers, sanitarians, or technicians who have experience and knowledge about the operation and maintenance of a public water system, and who have a sound understanding of public health principles and waterborne diseases. A report of the on-site inspection summarizing all findings must be prepared every year. The on-site inspection must indicate to the State's satisfaction that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include:

- (i) A review of the effectiveness of the watershed control program;
- (ii) A review of the physical condition of the source intake and how well it is protected;
- (iii) A review of the system's equipment maintenance program to ensure there is low probability for failure of the disinfection process;
- (iv) An inspection of the disinfection equipment for physical deterioration;
- (v) A review of operating procedures;
- (vi) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and
- (vii) Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(4) The public water system must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence, as determined by the State.

(5) The public water system must comply with the maximum contaminant level (MCL) for total coliforms in §141.63 at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the State determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.

(6) The public water system must comply with the requirements for trihalomethanes in §§141.12 and 141.30 until December 31, 2001. After Decem-

ber 31, 2001, the system must comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide in subpart L of this part.

(c) *Treatment technique violations.* (1) A system that (i) fails to meet any one of the criteria in paragraphs (a) and (b) of this section and/or which the State has determined that filtration is required, in writing pursuant to §1412(b)(7)(C)(iii), and (ii) fails to install filtration by the date specified in the introductory paragraph of this section is in violation of a treatment technique requirement.

(2) A system that has not installed filtration is in violation of a treatment technique requirement if:

(i) The turbidity level (measured as specified in §141.74(a)(4) and (b)(2)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or

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

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 66 FR 3776, Jan. 16, 2001]

EFFECTIVE DATE NOTE: At 69 FR 38855, June 29, 2004, §141.71 was amended in paragraph (a)(2) introductory text by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)" and in paragraph (c)(2)(i) by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)", effective July 29, 2004.

§ 141.72 Disinfection.

A public water system that uses a surface water source and does not provide filtration treatment must provide the disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, unless the State determines that filtration is required in writing pursuant to §1412 (b)(7)(C)(iii). A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must provide disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, or 18 months after the State determines that the ground water source is under the influence of

surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to § 141.72(b)(7)(C)(iii). If the State has determined that filtration is required, the system must comply with any interim disinfection requirements the State deems necessary before filtration is installed. A system that uses a surface water source that provides filtration treatment must provide the disinfection treatment specified in paragraph (b) of this section beginning June 29, 1993, or beginning when filtration is installed, whichever is later. A system that uses a ground water source under the direct influence of surface water and provides filtration treatment must provide disinfection treatment as specified in paragraph (b) of this section by June 29, 1993, or beginning when filtration is installed, whichever is later. Failure to meet any requirement of this section after the applicable date specified in this introductory paragraph is a treatment technique violation.

(a) *Disinfection requirements for public water systems that do not provide filtration.* Each public water system that does not provide filtration treatment must provide disinfection treatment as follows:

(1) The disinfection treatment must be sufficient to ensure at least 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts and 99.99 percent (4-log) inactivation of viruses, every day the system serves water to the public, except any one day each month. Each day a system serves water to the public, the public water system must calculate the CT value(s) from the system's treatment parameters, using the procedure specified in § 141.74(b)(3), and determine whether this value(s) is sufficient to achieve the specified inactivation rates for *Giardia lamblia* cysts and viruses. If a system uses a disinfectant other than chlorine, the system may demonstrate to the State, through the use of a State-approved protocol for on-site disinfection challenge studies or other information satisfactory to the State, that CT_{99.9} values other than those specified in tables 2.1 and 3.1 in § 141.74(b)(3) or other operational parameters are adequate to demonstrate that the system is achieving minimum

inactivation rates required by paragraph (a)(1) of this section.

(2) The disinfection system must have either (i) redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system, or (ii) automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/l of residual disinfectant concentration in the water. If the State determines that automatic shut-off would cause unreasonable risk to health or interfere with fire protection, the system must comply with paragraph (a)(2)(i) of this section.

(3) The residual disinfectant concentration in the water entering the distribution system, measured as specified in § 141.74 (a)(5) and (b)(5), cannot be less than 0.2 mg/l for more than 4 hours.

(4)(i) The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in § 141.74 (a)(5) and (b)(6), cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in § 141.74(a)(3), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

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

where:

a=number of instances where the residual disinfectant concentration is measured;
 b=number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;
 c=number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;
 d=number of instances where the residual disinfectant concentration is measured but

not detected and where the HPC is >500/ml; and
 e=number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (a)(4)(i) of this section do not apply to that system.

(b) *Disinfection requirements for public water systems which provide filtration.* Each public water system that provides filtration treatment must provide disinfection treatment as follows.

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

(2) The residual disinfectant concentration in the water entering the distribution system, measured as specified in §141.74 (a)(5) and (c)(2), cannot be less than 0.2 mg/l for more than 4 hours.

(3)(i) The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in §141.74 (a)(5) and (c)(3), cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in §141.74(a)(3), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

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

where:

a=number of instances where the residual disinfectant concentration is measured;
 b=number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;
 c=number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;
 d=number of instances where no residual disinfectant concentration is detected and where the HPC is >500/ml; and
 e=number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(3)(i) of this section do not apply.

EFFECTIVE DATE NOTE: At 69 FR 38855, June 29, 2004, §141.72 was amended in paragraph (a)(3) by removing the citation "§141.74(a)(5)" and adding in its place "§141.74(a)(2)"; in paragraph (a)(4)(i) by removing the citation "§141.74(a)(5)" and adding in its place "§141.74(a)(2)" and by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)"; in paragraph (a)(4)(ii) by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)"; in paragraph (b)(2) by removing the citation "§141.74(a)(5)" and adding in its place "§141.74(a)(2)"; in paragraph (b)(3)(i) by removing the citation "§141.74(a)(5)" and adding in its place "§141.74(a)(2)" and by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)"; and in paragraph (b)(3)(ii) by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)", effective July 29, 2004.

§ 141.73 Filtration.

A public water system that uses a surface water source or a ground water source under the direct influence of surface water, and does not meet all of the criteria in §141.71 (a) and (b) for avoiding filtration, must provide treatment consisting of both disinfection, as specified in §141.72(b), and filtration treatment which complies with the requirements of paragraph (a), (b), (c), (d), or (e) of this section by June 29, 1993, or within 18 months of the failure to meet any one of the criteria for

avoiding filtration in §141.71 (a) and (b), whichever is later. Failure to meet any requirement of this section after the date specified in this introductory paragraph is a treatment technique violation.

(a) *Conventional filtration treatment or direct filtration.* (1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.5 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(4) and (c)(1), except that if the State determines that the system is capable of achieving at least 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts at some turbidity level higher than 0.5 NTU in at least 95 percent of the measurements taken each month, the State may substitute this higher turbidity limit for that system. However, in no case may the State approve a turbidity limit that allows more than 1 NTU in more than 5 percent of the samples taken each month, measured as specified in §141.74 (a)(4) and (c)(1).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU, measured as specified in §141.74 (a)(4) and (c)(1).

(3) Beginning January 1, 2002, systems serving at least 10,000 people must meet the turbidity requirements in §141.173(a).

(4) Beginning January 14, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in §§141.550 through 141.553.

(b) *Slow sand filtration.* (1) For systems using slow sand filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(4) and (c)(1), except that if the State determines there is no significant interference with disinfection at a higher turbidity level, the State may substitute this higher turbidity limit for that system.

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

measured as specified in §141.74 (a)(4) and (c)(1).

(c) *Diatomaceous earth filtration.* (1) For systems using diatomaceous earth filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(4) and (c)(1).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU, measured as specified in §141.74 (a)(4) and (c)(1).

(d) *Other filtration technologies.* A public water system may use a filtration technology not listed in paragraphs (a) through (c) of this section if it demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.72(b), consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses. For a system that makes this demonstration, the requirements of paragraph (b) of this section apply. Beginning January 1, 2002, systems serving at least 10,000 people must meet the requirements for other filtration technologies in §141.173(b). Beginning January 14, 2005, systems serving fewer than 10,000 people must meet the requirements for other filtration technologies in §141.550 through 141.553.

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 66 FR 3776, Jan. 16, 2001; 67 FR 1836, Jan. 14, 2002]

EFFECTIVE DATE NOTE: At 69 FR 38855, June 29, 2004, §141.73 was amended in paragraph (a)(1) by removing both citations "§141.74(a)(4)" and adding in their place "§141.74(a)(1)"; in paragraph (a)(2) by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)"; in paragraph (a)(4) by removing the date "January 14, 2005" and adding in its place "January 1, 2005"; in paragraph (b)(1) by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)"; in paragraph (b)(2) by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)"; in paragraph (c)(1) by removing the citation "§141.74(a)(4)" and adding in its place "§141.74(a)(1)"; and in paragraph (c)(2) by removing the citation

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"§141.74(a)(4)" and adding in its place "§141.74(a)(1)", effective July 29, 2004.

§ 141.74 Analytical and monitoring requirements.

(a) *Analytical requirements.* Only the analytical method(s) specified in this paragraph, or otherwise approved by EPA, may be used to demonstrate compliance with §§141.71, 141.72 and 141.73. Measurements for pH, turbidity, temperature and residual disinfectant concentrations must be conducted by a person approved by the State. Measurement for total coliforms, fecal coliforms and HPC must be conducted by a laboratory certified by the State or EPA to do such analysis. Until laboratory certification criteria are developed for the analysis of fecal coliforms and HPC, any laboratory certified for total coliforms analysis by the State or EPA is deemed certified for fecal coliforms and HPC analysis. The following procedures shall be conducted in accordance with the publications listed in the following section. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the methods published in *Standard Methods for the Examination of Water and Wastewater* may be obtained from the American Public Health Association et al., 1015 Fifteenth Street, NW., Washington, DC 20005; copies of the Minimal Medium ONPG-MUG Method as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and *Esherichia coli* from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Edberg et al.), *Applied and Environmental Microbiology*, Volume 54, pp. 1595-1601, June 1988 (as amended under Erratum, *Applied and Environmental Microbiology*, Volume 54, p. 3197, December, 1988), may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, Colorado, 80235; and copies of the Indigo Method as set forth in the article "Determination of Ozone in Water by the Indigo Method" (Bader and Hoigne), may be obtained from Ozone Science & Engineering, Pergamon Press Ltd., Fairview Park,

Elmsford, New York 10523. Copies may be inspected at the U.S. Environmental Protection Agency, Room EB15, 401 M St., SW., Washington, DC 20460 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(1) Public water systems must conduct analysis of pH and temperature in accordance with one of the methods listed at §141.23(k)(1). Public water systems must conduct analysis of total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity in accordance with one of the following analytical methods and by using analytical test procedures contained in *Technical Notes on Drinking Water Methods*, EPA-600/R-94-173, October 1994, which is available at NTIS PB95-104766.

Organism	Methodology	Citation ¹
Total Coliform ²	Total Coliform Fermentation Technique ^{3,4,5}	9221 A, B, C
	Total Coliform Membrane Filter Technique ⁶	9222 A, B, C
	ONPG-MUG Test ⁷	9223
Fecal Coliforms ² ...	Fecal Coliform Procedure ⁸	9221 E
	Fecal Coliform Filter Procedure.	9222 D
Heterotrophic bacteria ² .	Pour Plate Method	9215 B
	SimPlate ¹¹ .	
Turbidity	Nephelometric Method.	2130 B
	Nephelometric Method.	180.1 ⁹
	Great Lakes Instruments.	Method 2 ¹⁰
	Hach FilterTrak	10133 ¹²

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1, 6, 7 and 9-12 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the *Safe Drinking Water Hotline* at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington DC 20460 (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

¹Except where noted, all methods refer to *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992), 19th edition (1995), or 20th edition (1998), American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used.

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²The time from sample collection to initiation of analysis may not exceed 8 hours. Systems must hold samples below 10 deg. C during transit.

³Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent.

⁴Media should cover inverted tubes at least one-half to two-thirds after the sample is added.

⁵No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

⁶M1 agar also may be used. Preparation and use of M1 agar is set forth in the article, "New medium for the simultaneous detection of total coliform and *Escherichia coli* in water" by Brenner, K.P., et. al., 1993, Appl. Environ. Microbiol. 59:3534-3544. Also available from the Office of Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington DC 20460, EPA/600/J-99/225. Verification of colonies is not required.

⁷The ONPG-MUG Test is also known as the Autoanalysis Colilert System.

⁸A-1 Broth may be held up to three months in a tightly closed screw cap tube at 4 deg. C.

⁹"Methods for the Determination of Inorganic Substances in Environmental Samples", EPA/600/R-93/100, August 1993. Available at NTIS, PB94-121811.

¹⁰GLI Method 2, "Turbidity", November 2, 1992, Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, Wisconsin 53223.

¹¹A description of the SimPlate method, "IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water", November 2000, can be obtained from IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092, telephone (800) 321-0207.

¹²A description of the Hach FilterTrak Method 10133, "Determination of Turbidity by Laser Nephelometry", January 2000, Revision 2.0, can be obtained from; Hach Co., P.O. Box 389, Loveland, Colorado 80539-0389. Phone: 800-227-4224.

(2) Public water systems must measure residual disinfectant concentrations with one of the analytical methods in the following table. Except for the method for ozone residuals, the disinfectant residual methods are contained in the 18th, 19th, and 20th editions of Standard Methods for the Examination of Water and Wastewater, 1992, 1995, and 1998; the cited methods published in any of these three editions may be used. The ozone method, 4500-O₃ B, is contained in both the 18th and 19th editions of Standard Methods for the Examination of Water and Wastewater, 1992, 1995; either edition may be used. If approved by the State, residual disinfectant concentrations for free chlorine and combined chlorine also may be measured by using DPD colorimetric test kits. Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days, or with a protocol approved by the State.

Residual	Methodology	Methods
Free Chlorine.	Amperometric Titration	4500-CI D
	DPD Ferrous Titrimetric.	4500-CI F
	DPD Colorimetric	4500-CI G
	Syringaldazine (FACTS).	4500-CI H
Total Chlorine.	Amperometric Titration	4500-CI D
	Amperometric Titration (low level measurement).	4500-CI E
	DPD Ferrous Titrimetric.	4500-CI F
Chlorine Dioxide.	DPD Colorimetric	4500-CI G
	Iodometric Electrode ...	4500-CI I
	Amperometric Titration	4500-CI O ₂ C
Ozone	DPD Method	4500-CI O ₂ D
	Amperometric Titration	4500-CI O ₂ E
	Indigo Method	4500-O ₃ B

(b) *Monitoring requirements for systems that do not provide filtration.* A public water system that uses a surface water source and does not provide filtration treatment must begin monitoring, as specified in this paragraph (b), beginning December 31, 1990, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative monitoring requirements, as appropriate, until filtration is in place. A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must begin monitoring as specified in this paragraph (b) beginning December 31, 1990, or 6 months after the State determines that the ground water source is under the direct influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative monitoring requirements, as appropriate, until filtration is in place.

(1) Fecal coliform or total coliform density measurements as required by §141.71(a)(1) must be performed on representative source water samples immediately prior to the first or only point of disinfectant application. The system must sample for fecal or total coliforms at the following minimum frequency each week the system serves water to the public:

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System size (persons served)	Samples/ week ¹
≤500	1
501 to 3,300	2
3,301 to 10,000	3
10,001 to 25,000	4
>25,000	5

¹ Must be taken on separate days.

Also, one fecal or total coliform density measurement must be made every day the system serves water to the public and the turbidity of the source water exceeds 1 NTU (these samples count towards the weekly coliform sampling requirement) unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection.

(2) Turbidity measurements as required by §141.71(a)(2) must be performed on representative grab samples of source water immediately prior to the first or only point of disinfectant application every four hours (or more frequently) that the system serves water to the public. A public water system may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by the State.

(3) The total inactivation ratio for each day that the system is in operation must be determined based on the CT_{99.9} values in tables 1.1-1.6, 2.1, and 3.1 of this section, as appropriate. The parameters necessary to determine the total inactivation ratio must be monitored as follows:

(i) The temperature of the disinfected water must be measured at least once per day at each residual disinfectant concentration sampling point.

(ii) If the system uses chlorine, the pH of the disinfected water must be measured at least once per day at each chlorine residual disinfectant concentration sampling point.

(iii) The disinfectant contact time(s) ("T") must be determined for each day during peak hourly flow.

(iv) The residual disinfectant concentration(s) ("C") of the water before or at the first customer must be measured each day during peak hourly flow.

(v) If a system uses a disinfectant other than chlorine, the system may

demonstrate to the State, through the use of a State-approved protocol for on-site disinfection challenge studies or other information satisfactory to the State, that CT_{99.9} values other than those specified in tables 2.1 and 3.1 in this section other operational parameters are adequate to demonstrate that the system is achieving the minimum inactivation rates required by §141.72(a)(1).

TABLE 1.1—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 0.5 °C OR LOWER¹

Residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ..	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

¹ These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 1.2—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 5.0 °C¹

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ..	97	117	139	166	198	236	279
0.6 ..	100	120	143	171	204	244	291
0.8 ..	103	122	146	175	210	252	301
1.0 ..	105	125	149	179	216	260	312
1.2 ..	107	127	152	183	221	267	320
1.4 ..	109	130	155	187	227	274	329
1.6 ..	111	132	158	192	232	281	337
1.8 ..	114	135	162	196	236	287	345
2.0 ..	116	138	165	200	243	294	353
2.2 ..	118	140	169	204	248	300	361
2.4 ..	120	143	172	209	253	306	368
2.6 ..	122	146	175	213	258	312	375
2.8 ..	124	148	178	217	263	318	382
3.0 ..	126	151	182	221	268	324	389

¹ These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature, and at the higher pH.

TABLE 1.3—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 10.0 °C¹

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4 ..	73	88	104	125	149	177	209
0.6 ..	75	90	107	128	153	183	218
0.8 ..	78	92	110	131	158	189	226
1.0 ..	79	94	112	134	162	195	234
1.2 ..	80	95	114	137	166	200	240
1.4 ..	82	98	116	140	170	206	247
1.6 ..	83	99	119	144	174	211	253
1.8 ..	86	101	122	147	179	215	259
2.0 ..	87	104	124	150	182	221	265
2.2 ..	89	105	127	153	186	225	271
2.4 ..	90	107	129	157	190	230	276
2.6 ..	92	110	131	160	194	234	281
2.8 ..	93	111	134	163	197	239	287
3.0 ..	95	113	137	166	201	243	292

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature, and at the higher pH.

TABLE 1.4—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 15.0 °C¹

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≥9.0
≤0.4 ..	49	59	70	83	99	118	140
0.6 ..	50	60	72	86	102	122	146
0.8 ..	52	61	73	88	105	126	151
1.0 ..	53	63	75	90	108	130	156
1.2 ..	54	64	76	92	111	134	160
1.4 ..	55	65	78	94	114	137	165
1.6 ..	56	66	79	96	116	141	169
1.8 ..	57	68	81	98	119	144	173
2.0 ..	58	69	83	100	122	147	177
2.2 ..	59	70	85	102	124	150	181
2.4 ..	60	72	86	105	127	153	184
2.6 ..	61	73	88	107	129	156	188
2.8 ..	62	74	89	109	132	159	191
3.0 ..	63	76	91	111	134	162	195

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature, and at the higher pH.

TABLE 2.1—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORINE DIOXIDE AND OZONE¹

	Temperature					
	< 1 °C	5 °C	10 °C	15 °C	20 °C	≥ 25 °C
Chlorine dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

¹These CT values achieve greater than 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature for determining CT_{99.9} values between indicated temperatures.

TABLE 1.5—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 20 °C¹

Free residual (mg/l)	pH						
	≤ 6.0	6.5	7.0	7.5	8.0	8.5	≥ 9.0
≤ 0.4	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature, and at the higher pH.

TABLE 1.6—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 25 °C¹ AND HIGHER

Free residual (mg/l)	pH						
	≤ 6.0	6.5	7.0	7.5	8.0	8.5	≥ 9.0
≤ 0.4	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88
2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

¹These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature, and at the higher pH.

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TABLE 3.1—CT VALUES (CT_{99.9}) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORAMINES¹

Temperature					
< 1 °C	5 °C	10 °C	15 °C	20 °C	25 °C
3,800	2,200	1,850	1,500	1,100	750

¹ These values are for pH values of 6 to 9. These CT values may be assumed to achieve greater than 99.99 percent inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other information, as approved by the State, that the system is achieving at least 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature for determining CT_{99.9} values between indicated temperatures.

(4) The total inactivation ratio must be calculated as follows:

(i) If the system uses only one point of disinfectant application, the system

may determine the total inactivation ratio based on either of the following two methods:

(A) One inactivation ratio (CT_{calc}/CT_{99.9}) is determined before or at the first customer during peak hourly flow and if the CT_{calc}/CT_{99.9} ≥ 1.0, the 99.9 percent *Giardia lamblia* inactivation requirement has been achieved; or

(B) Successive CT_{calc}/CT_{99.9} values, representing sequential inactivation ratios, are determined between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the following method must be used to calculate the total inactivation ratio:

- (1) Determine $\frac{CT_{calc}}{CT_{99.9}}$ for each sequence.
- (2) Add the $\frac{CT_{calc}}{CT_{99.9}}$ values together $\left(\sum \frac{CT_{calc}}{CT_{99.9}} \right)$
- (3) If $\sum \left(\frac{CT_{calc}}{CT_{99.9}} \right) \geq 1.0$, the 99.9 percent *Giardia*

lamblia inactivation requirement has been achieved.

(ii) If the system uses more than one point of disinfectant application before or at the first customer, the system must determine the CT value of each disinfection sequence immediately prior to the next point of disinfectant application during peak hourly flow. The CT_{calc}/CT_{99.9} value of each sequence and

$$\sum \frac{CT_{calc}}{CT_{99.9}}$$

must be calculated using the method in paragraph (b)(4)(i)(B) of this section to determine if the system is in compliance with § 142.72(a).

(iii) Although not required, the total percent inactivation for a system with one or more points of residual disinfectant concentration monitoring

may be calculated by solving the following equation:

$$\text{Percent inactivation} = 100 - \frac{100}{10^z}$$

$$\text{where } z = 3 \times \sum \left(\frac{CT_{calc}}{CT_{99.9}} \right)$$

(5) The residual disinfectant concentration of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours may be conducted in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment, and systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing

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basis at the frequencies prescribed below:

System size by population	Samples/day ¹
<500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

¹ The day's samples cannot be taken at the same time. The sampling intervals are subject to State review and approval.

If at any time the residual disinfectant concentration falls below 0.2 mg/l in a system using grab sampling in lieu of continuous monitoring, the system must take a grab sample every 4 hours until the residual concentration is equal to or greater than 0.2 mg/l.

(6)(i) The residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §141.21, except that the State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(3) of this section, may be measured in lieu of residual disinfectant concentration.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by paragraph (a)(3) of this section and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(6)(i) of this section do not apply to that system.

(c) *Monitoring requirements for systems using filtration treatment.* A public water system that uses a surface water source or a ground water source under the influence of surface water and provides filtration treatment must monitor in accordance with this paragraph (c) beginning June 29, 1993, or when filtration is installed, whichever is later.

(1) Turbidity measurements as required by §141.73 must be performed on representative samples of the system's filtered water every four hours (or more frequently) that the system serves water to the public. A public water system may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by the State. For any systems using slow sand filtration or filtration treatment other than conventional treatment, direct filtration, or diatomaceous earth filtration, the State may reduce the sampling frequency to once per day if it determines that less frequent monitoring is sufficient to indicate effective filtration performance. For systems serving 500 or fewer persons, the State may reduce the turbidity sampling frequency to once per day, regardless of the type of filtration treatment used, if the State determines that less frequent monitoring is sufficient to indicate effective filtration performance.

(2) The residual disinfectant concentration of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours may be conducted in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment, and systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies each day prescribed below:

System size by population	Samples/day ¹
±500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

¹ The day's samples cannot be taken at the same time. The sampling intervals are subject to State review and approval.

If at any time the residual disinfectant concentration falls below 0.2 mg/l in a system using grab sampling in lieu of continuous monitoring, the system must take a grab sample every 4 hours

until the residual disinfectant concentration is equal to or greater than 0.2 mg/l.

(3)(i) The residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §141.21, except that the State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(3) of this section, may be measured in lieu of residual disinfectant concentration.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by paragraph (a)(3) of this section and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (c)(3)(i) of this section do not apply to that system.

[54 FR 27527, June 29, 1989, as amended at 59 FR 62470, Dec. 5, 1994; 60 FR 34086, June 29, 1995; 64 FR 67465, Dec. 1, 1999; 67 FR 65252, Oct. 23, 2002; 67 FR 65901, Oct. 29, 2002]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.74 was amended in paragraph (b)(4)(ii) by removing the citation “§142.72(a)” and adding in its place “§141.72(a)”; in paragraph (b)(6)(ii) by removing the citation “(a)(3)” and adding in its place “(a)(1)”; in paragraph (c)(3)(i) by removing the citation “(a)(3)” and adding in its place “(a)(1)”; and in paragraph (c)(3)(ii) by removing the citation “(a)(3)” and adding in its place “(a)(1)”, effective July 29, 2004.

§ 141.75 Reporting and recordkeeping requirements.

(a) A public water system that uses a surface water source and does not provide filtration treatment must report monthly to the State the information specified in this paragraph (a) beginning December 31, 1990, unless the

State has determined that filtration is required in writing pursuant to section 1412(b)(7)(C)(iii), in which case the State may specify alternative reporting requirements, as appropriate, until filtration is in place. A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must report monthly to the State the information specified in this paragraph (a) beginning December 31, 1990, or 6 months after the State determines that the ground water source is under the direct influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative reporting requirements, as appropriate, until filtration is in place.

(1) Source water quality information must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

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

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

(iii) The number of samples during the month that had equal to or less than 20/100 ml fecal coliforms and/or equal to or less than 100/100 ml total coliforms, whichever are analyzed.

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

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

(vi) The percentage of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous six

months the system served water to the public.

(vii) The maximum turbidity level measured during the month, the date(s) of occurrence for any measurement(s) which exceeded 5 NTU, and the date(s) the occurrence(s) was reported to the State.

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

(ix) For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after 10 years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months the system served water to the public.

(2) Disinfection information specified in §141.74(b) must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

(ii) The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the State was notified of the occurrence.

(iii) The daily residual disinfectant concentration(s) (in mg/l) and disinfectant contact time(s) (in minutes) used for calculating the CT value(s).

(iv) If chlorine is used, the daily measurement(s) of pH of disinfected water following each point of chlorine disinfection.

(v) The daily measurement(s) of water temperature in °C following each point of disinfection.

(vi) The daily CTcalc and CTcalc/CT_{99.9} values for each disinfectant measurement or sequence and the sum

of all CTcalc/CT_{99.9} values ((CTcalc/CT_{99.9})) before or at the first customer.

(vii) The daily determination of whether disinfection achieves adequate *Giardia* cyst and virus inactivation, i.e., whether (CTcalc/CT_{99.9}) is at least 1.0 or, where disinfectants other than chlorine are used, other indicator conditions that the State determines are appropriate, are met.

(viii) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to §141.72:

(A) Number of instances where the residual disinfectant concentration is measured;

(B) Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

(C) Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

(D) Number of instances where the residual disinfectant concentration is detected and where HPC is >500/ml;

(E) Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;

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

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

where:

a=the value in paragraph (a)(2)(viii)(A) of this section,

b=the value in paragraph (a)(2)(viii)(B) of this section,

c=the value in paragraph (a)(2)(viii)(C) of this section,

d=the value in paragraph (a)(2)(viii)(D) of this section, and

e=the value in paragraph (a)(2)(viii)(E) of this section.

(G) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (a)(2)(viii) (A)-(F)

of this section do not apply to that system.

(ix) A system need not report the data listed in paragraphs (a)(2) (i), and (iii)-(vi) of this section if all data listed in paragraphs (a)(2) (i)-(viii) of this section remain on file at the system, and the State determines that:

(A) The system has submitted to the State all the information required by paragraphs (a)(2) (i)-(viii) of this section for at least 12 months; and

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

(3) No later than ten days after the end of each Federal fiscal year (September 30), each system must provide to the State a report which summarizes its compliance with all watershed control program requirements specified in § 141.71(b)(2).

(4) No later than ten days after the end of each Federal fiscal year (September 30), each system must provide to the State a report on the on-site inspection conducted during that year pursuant to § 141.71(b)(3), unless the on-site inspection was conducted by the State. If the inspection was conducted by the State, the State must provide a copy of its report to the public water system.

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

(ii) If at any time the turbidity exceeds 5 NTU, the system must consult with the primacy agency as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under § 141.203(b)(3).

(iii) If at any time the residual falls below 0.2 mg/l in the water entering the distribution system, the system must notify the State as soon as possible, but no later than by the end of the next business day. The system also must notify the State by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

(b) A public water system that uses a surface water source or a ground water

source under the direct influence of surface water and provides filtration treatment must report monthly to the State the information specified in this paragraph (b) beginning June 29, 1993, or when filtration is installed, whichever is later.

(1) Turbidity measurements as required by § 141.74(c)(1) must be reported within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) The total number of filtered water turbidity measurements taken during the month.

(ii) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in § 141.73 for the filtration technology being used.

(iii) The date and value of any turbidity measurements taken during the month which exceed 5 NTU.

(2) Disinfection information specified in § 141.74(c) must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

(ii) The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the State was notified of the occurrence.

(iii) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to § 141.72:

(A) Number of instances where the residual disinfectant concentration is measured;

(B) Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

(C) Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

(D) Number of instances where no residual disinfectant concentration is detected and where HPC is >500/ml;

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(E) Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;

(F) For the current and previous month the system serves water to the public, the value of "V" in the following formula:

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

where:

a=the value in paragraph (b)(2)(iii)(A) of this section,

b=the value in paragraph (b)(2)(iii)(B) of this section,

c=the value in paragraph (b)(2)(iii)(C) of this section,

d=the value in paragraph (b)(2)(iii)(D) of this section, and

e=the value in paragraph (b)(2)(iii)(E) of this section.

(G) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory within the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(2)(iii) (A)-(F) of this section do not apply.

(iv) A system need not report the data listed in paragraph (b)(2)(i) of this section if all data listed in paragraphs (b)(2) (i)-(iii) of this section remain on file at the system and the State determines that the system has submitted all the information required by paragraphs (b)(2) (i)-(iii) of this section for at least 12 months.

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

(ii) If at any time the turbidity exceeds 5 NTU, the system must consult with the primacy agency as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under §141.203(b)(3).

(iii) If at any time the residual falls below 0.2 mg/l in the water entering the distribution system, the system must notify the State as soon as possible,

but no later than by the end of the next business day. The system also must notify the State by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

[54 FR 27527, June 29, 1989, as amended at 65 FR 26022, May 4, 2000]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.75 was amended in paragraph (a)(2)(viii)(G) by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)", and in paragraph (b)(2)(iii)(G) by removing the citation "§141.74(a)(3)" and adding in its place "§141.74(a)(1)", effective July 29, 2004.

§ 141.76 Recycle provisions.

(a) Applicability. All subpart H systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements in paragraphs (b) through (d) of this section.

(b) Reporting. A system must notify the State in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum, the information specified in paragraphs (b)(1) and (2) of this section.

(1) A plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.

(2) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and State-approved operating capacity for the plant where the State has made such determinations.

(c) Treatment technique requirement. Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration

system as defined in § 141.2 or at an alternate location approved by the State by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

(d) *Recordkeeping.* The system must collect and retain on file recycle flow information specified in paragraphs (d)(1) through (6) of this section for review and evaluation by the State beginning June 8, 2004.

(1) Copy of the recycle notification and information submitted to the State under paragraph (b) of this section.

(2) List of all recycle flows and the frequency with which they are returned.

(3) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(4) Typical filter run length and a written summary of how filter run length is determined.

(5) The type of treatment provided for the recycle flow.

(6) Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

[66 FR 31103, June 8, 2001]

Subpart I—Control of Lead and Copper

SOURCE: 56 FR 26548, June 7, 1991, unless otherwise noted.

§ 141.80 General requirements.

(a) *Applicability and effective dates.* (1) The requirements of this subpart I constitute the national primary drinking water regulations for lead and copper. Unless otherwise indicated, each of the provisions of this subpart applies to community water systems and non-transient, non-community water systems (hereinafter referred to as "water systems" or "systems").

(2) The requirements set forth in §§ 141.86 to 141.91 shall take effect on July 7, 1991. The requirements set forth

in §§ 141.80 to 141.85 shall take effect on December 7, 1992.

(b) *Scope.* These regulations establish 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.

(c) *Lead and copper action levels.* (1) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with § 141.86 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(2) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with § 141.86 is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(3) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.

(iv) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

(d) *Corrosion control treatment requirements.* (1) All water systems shall install and operate optimal corrosion control treatment as defined in §141.2.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under §§141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

(e) *Source water treatment requirements.* Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the State under §141.83.

(f) *Lead service line replacement requirements.* Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in §141.84.

(g) *Public education requirements.* Any system exceeding the lead action level shall implement the public education requirements contained in §141.85.

(h) *Monitoring and analytical requirements.* Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this subpart shall be completed in compliance with §§141.86, 141.87, 141.88, and 141.89.

(i) *Reporting requirements.* Systems shall report to the State any information required by the treatment provisions of this subpart and §141.90.

(j) *Recordkeeping requirements.* Systems shall maintain records in accordance with §141.91.

(k) *Violation of national primary drinking water regulations.* Failure to comply with the applicable requirements of §§141.80-141.91, including requirements established by the State pursuant to these provisions, shall constitute a violation of the national primary drinking water regulations for lead and/or copper.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992]

§ 141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems.

(a) Systems shall complete the applicable corrosion control treatment requirements described in §141.82 by the deadlines established in this section.

(1) A large system (serving >50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (d) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(2) or (b)(3) of this section.

(2) A small system (serving ≤3300 persons) and a medium-size system (serving >3,300 and ≤50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (e) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(1), (b)(2), or (b)(3) of this section.

(b) A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies one of the criteria specified in paragraphs (b)(1) through (b)(3) of this section. Any such system deemed to have optimized corrosion control under this paragraph, and which has treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the State determines appropriate to ensure optimal corrosion control treatment is maintained.

(1) A small or medium-size water system is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods conducted in accordance with §141.86.

(2) Any water system may be deemed by the State to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the State that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If the State makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control

in accordance with § 141.82(f). Water systems deemed to have optimized corrosion control under this paragraph shall operate in compliance with the State-designated optimal water quality control parameters in accordance with § 141.82(g) and continue to conduct lead and copper tap and water quality parameter sampling in accordance with § 141.86(d)(3) and § 141.87(d), respectively. A system shall provide the State with the following information in order to support a determination under this paragraph:

(i) The results of all test samples collected for each of the water quality parameters in § 141.82(c)(3).

(ii) A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in § 141.82(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

(iii) A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

(iv) The results of tap water samples collected in accordance with § 141.86 at least once every six months for one year after corrosion control has been installed.

(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under § 141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

(i) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

(ii) Any water system deemed to have optimized corrosion control in accord-

ance with this paragraph shall 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 § 141.86(c) and collecting the samples at times and locations specified in § 141.86(d)(4)(iv). Any such system that has not conducted a round of monitoring pursuant to § 141.86(d) since September 30, 1997, shall complete a round of monitoring pursuant to this paragraph no later than September 30, 2000.

(iii) Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to § 141.90(a)(3) of any change in treatment or the addition of a new source. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

(iv) As of July 12, 2001, a system is not deemed to have optimized corrosion control under this paragraph, and shall implement corrosion control treatment pursuant to paragraph (b)(3)(v) of this section unless it meets the copper action level.

(v) Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this paragraph shall implement corrosion control treatment in accordance with the deadlines in paragraph (e) of this section. Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under this paragraph.

(c) Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to § 141.86 and submits the results to the State. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or the

State, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The State may require a system to repeat treatment steps previously completed by the system where the State determines that this is necessary to implement properly the treatment requirements of this section. The State shall notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small- or medium-size system to implement corrosion control treatment steps in accordance with paragraph (e) of this section (including systems deemed to have optimized corrosion control under paragraph (b)(1) of this section) is triggered whenever any small- or medium-size system exceeds the lead or copper action level.

(d) *Treatment steps and deadlines for large systems.* Except as provided in paragraph (b) (2) and (3) of this section, large systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§ 141.82, 141.86, and 141.87) by the indicated dates.

(1) *Step 1:* The system shall conduct initial monitoring (§ 141.86(d)(1) and § 141.87(b)) during two consecutive six-month monitoring periods by January 1, 1993.

(2) *Step 2:* The system shall complete corrosion control studies (§ 141.82(c)) by July 1, 1994.

(3) *Step 3:* The State shall designate optimal corrosion control treatment (§ 141.82(d)) by January 1, 1995.

(4) *Step 4:* The system shall install optimal corrosion control treatment (§ 141.82(e)) by January 1, 1997.

(5) *Step 5:* The system shall complete follow-up sampling (§ 141.86(d)(2) and § 141.87(c)) by January 1, 1998.

(6) *Step 6:* The State shall review installation of treatment and designate optimal water quality control parameters (§ 141.82(f)) by July 1, 1998.

(7) *Step 7:* The system shall operate in compliance with the State-specified optimal water quality control parameters (§ 141.82(g)) and continue to conduct tap sampling (§ 141.86(d)(3) and § 141.87(d)).

(e) *Treatment Steps and deadlines for small and medium-size systems.* Except as

provided in paragraph (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§ 141.82, 141.86 and 141.87) by the indicated time periods.

(1) *Step 1:* The system shall conduct initial tap sampling (§ 141.86(d)(1) and § 141.87(b)) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under § 141.86(d)(4). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (§ 141.82(a)) within six months after it exceeds one of the action levels.

(2) *Step 2:* Within 12 months after a system exceeds the lead or copper action level, the State may require the system to perform corrosion control studies (§ 141.82(b)). If the State does not require the system to perform such studies, the State shall specify optimal corrosion control treatment (§ 141.82(d)) within the following timeframes:

(1) For medium-size systems, within 18 months after such system exceeds the lead or copper action level,

(i) For small systems, within 24 months after such system exceeds the lead or copper action level.

(3) *Step 3:* If the State requires a system to perform corrosion control studies under step 2, the system shall complete the studies (§ 141.82(c)) within 18 months after the State requires that such studies be conducted.

(4) *Step 4:* If the system has performed corrosion control studies under step 2, the State shall designate optimal corrosion control treatment (§ 141.82(d)) within 6 months after completion of step 3.

(5) *Step 5:* The system shall install optimal corrosion control treatment (§ 141.82(e)) within 24 months after the State designates such treatment.

(6) *Step 6:* The system shall complete follow-up sampling (§ 141.86(d)(2) and § 141.87(c)) within 36 months after the State designates optimal corrosion control treatment.

(7) *Step 7:* The State shall review the system's installation of treatment and designate optimal water quality control parameters (§ 141.82(f)) within 6 months after completion of step 6.

(8) *Step 8*: The system shall operate in compliance with the State-designated optimal water quality control parameters (§ 141.82(g)) and continue to conduct tap sampling (§ 141.86(d)(3) and § 141.87(d)).

[56 FR 26548, June 7, 1991, as amended at 59 FR 33862, June 30, 1994; 65 FR 2004, Jan. 12, 2000]

§ 141.82 Description of corrosion control treatment requirements.

Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under § 141.81.

(a) *System recommendation regarding corrosion control treatment.* Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. The State may require the system to conduct additional water quality parameter monitoring in accordance with § 141.87(b) to assist the State in reviewing the system's recommendation.

(b) *State decision to require studies of corrosion control treatment (applicable to small and medium-size systems).* The State may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under paragraph (c) of this section to identify optimal corrosion control treatment for the system.

(c) *Performance of corrosion control studies.* (1) Any public water system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

- (i) Alkalinity and pH adjustment;
- (ii) Calcium hardness adjustment; and
- (iii) The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain

an effective residual concentration in all test tap samples.

(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

- (i) Lead;
- (ii) Copper;
- (iii) pH;
- (iv) Alkalinity;
- (v) Calcium;
- (vi) Conductivity;
- (vii) Orthophosphate (when an inhibitor containing a phosphate compound is used);
- (viii) Silicate (when an inhibitor containing a silicate compound is used);
- (ix) Water temperature.

(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

- (i) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or
- (ii) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The

water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c) (1) through (5) of this section.

(d) *State designation of optimal corrosion control treatment.* (1) Based upon consideration of available information including, where applicable, studies performed under paragraph (c) of this section and a system's recommended treatment alternative, the State shall either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1) of this section. When designating optimal treatment the State shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

(2) The State shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system shall provide the information.

(e) *Installation of optimal corrosion control.* Each system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the State under paragraph (d) of this section.

(f) *State review of treatment and specification of optimal water quality control parameters.* The State shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the State in paragraph (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the State shall designate:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system;

(2) A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the

State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

(4) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the State determines to reflect optimal corrosion control treatment for the system. The State may designate values for additional water quality control parameters determined by the State to reflect optimal corrosion control for the system. The State shall notify the system in writing of these determinations and explain the basis for its decisions.

(g) *Continued operation and monitoring.* All systems optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the State under paragraph (f) of this section, in accordance with this paragraph for all samples collected under § 141.87(d) through (f). Compliance with the requirements of this paragraph shall be determined every six months, as specified under § 141.87(d). A water system is out of compliance with the requirements of this paragraph for a six-month period if it has excursions for any State-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters

measured at a sampling location is below the minimum value or outside the range designated by the State. Daily values are calculated as follows. States have discretion to delete results of obvious sampling errors from this calculation.

(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both. If EPA has approved an alternative formula under §142.16 of this chapter in the State's application for a program revision submitted pursuant to §142.12 of this chapter, the State's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this paragraph.

(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

(h) *Modification of State treatment decisions.* Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an imple-

mentation schedule for completing the treatment modifications.

(i) *Treatment decisions by EPA in lieu of the State.* Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (d), (f), or (h) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.81,

(2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(3) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

[56 FR 26548, June 7, 1991, as amended at 65 FR 2004, Jan. 12, 2000]

§ 141.83 Source water treatment requirements.

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of paragraph (b) of this section, and in §§141.86, and 141.88) by the following deadlines.

(a) *Deadlines for completing source water treatment steps*—(1) *Step 1:* A system exceeding the lead or copper action level shall complete lead and copper source water monitoring (§141.88(b)) and make a treatment recommendation to the State (§141.83(b)(1)) within 6 months after exceeding the lead or copper action level.

(2) *Step 2:* The State shall make a determination regarding source water treatment (§141.83(b)(2)) within 6 months after submission of monitoring results under step 1.

(3) *Step 3:* If the State requires installation of source water treatment, the system shall install the treatment (§141.83(b)(3)) within 24 months after completion of step 2.

(4) *Step 4:* The system shall complete follow-up tap water monitoring (§141.86(d)(2)) and source water monitoring (§141.88(c)) within 36 months after completion of step 2.

(5) *Step 5:* The State shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (§141.83(b)(4)) within 6 months after completion of step 4.

(6) *Step 6:* The system shall operate in compliance with the State-specified maximum permissible lead and copper source water levels (§141.83(b)(4)) and continue source water monitoring (§141.88(d)).

(b) *Description of source water treatment requirements—(1) System treatment recommendation.* Any system which exceeds the lead or copper action level shall recommend in writing to the State the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) *State determination regarding source water treatment.* The State shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the State determines that treatment is needed, the State shall either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: Ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the State requests additional information to aid in its review, the water system shall provide the information by the date specified by the State in its request. The State shall notify the system in writing of its determination and set forth the basis for its decision.

(3) *Installation of source water treatment.* Each system shall properly install and operate the source water treatment designated by the State under paragraph (b)(2) of this section.

(4) *State review of source water treatment and specification of maximum permissible source water levels.* The State shall review the source water samples taken by the water system both before

and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the State. Based upon its review, the State shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The State shall notify the system in writing and explain the basis for its decision.

(5) *Continued operation and maintenance.* Each water system shall maintain lead and copper levels below the maximum permissible concentrations designated by the State at each sampling point monitored in accordance with §141.88. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the State.

(6) *Modification of State treatment decisions.* Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the source water treatment under paragraph (b)(2) of this section, or maximum permissible lead and copper concentrations for finished water entering the distribution system under paragraph (b)(4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(7) *Treatment decisions by EPA in lieu of the State.* Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (b) (2), (4), or (6) of this section

and issue Federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

(i) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.83(a),

(ii) A state has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(iii) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

§ 141.84 Lead service line replacement requirements.

(a) Systems that fail to meet the lead action level in tap samples taken pursuant to §141.86(d)(2), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with the requirements of this section. If a system is in violation of §141.81 or §141.83 for failure to install source water or corrosion control treatment, the State may require the system to commence lead service line replacement under this section after the date by which the system was required to conduct monitoring under §141.86(d)(2) has passed.

(b) A water system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based on a materials evaluation, including the evaluation required under §141.86(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system. The first year of lead service line replacement shall begin on the date the action level was exceeded in tap sampling referenced in paragraph (a) of this section.

(c) A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pur-

suant to §141.86(b)(3), is less than or equal to 0.015 mg/L.

(d) A water system shall replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local or common law. A water system that does not replace the entire length of the service line also shall complete the following tasks.

(1) At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The State may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under §141.86(b)(3), within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."

(2) The water system shall provide the information required by paragraph (d)(1) of this section to the residents of individual dwellings by mail or by other methods approved by the State. In instances where multi-family dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.

(e) The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within 6 months after the system is triggered into lead service line replacement based on monitoring referenced in paragraph (a) of this section.

(f) Any system may cease replacing lead service lines whenever first draw samples collected pursuant to § 141.86(b)(2) meet the lead action level during each of two consecutive monitoring periods and the system submits the results to the State. If first draw tap samples collected in any such system thereafter exceeds the lead action level, the system shall recommence replacing lead service lines pursuant to paragraph (b) of this section.

(g) To demonstrate compliance with paragraphs (a) through (d) of this section, a system shall report to the State the information specified in § 141.90(e).

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 65 FR 2005, Jan. 12, 2000]

§ 141.85 Public education and supplemental monitoring requirements.

A water system that exceeds the lead action level based on tap water samples collected in accordance with § 141.86 shall deliver the public education materials contained in paragraphs (a) and (b) of this section in accordance with the requirements in paragraph (c) of this section.

(a) *Content of written public education materials.* (1) *Community water systems.* A community water system shall include the following text in all of the printed materials it distributes through its lead public education pro-

gram. Systems may delete information pertaining to lead service lines, upon approval by the State, if no lead service lines exist anywhere in the water system service area. Public education language at paragraphs (a)(1)(iv)(B)(5) and (a)(1)(iv)(D)(2) of this section may be modified regarding building permit record availability and consumer access to these records, if approved by the State. Systems may also continue to utilize pre-printed materials that meet the public education language requirements in 40 CFR 141.85, effective November 6, 1991, and contained in the 40 CFR, parts 100 to 149, edition revised as of July 1, 1991. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by lay people.

(i) *Introduction.* The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

(ii) *Health effects of lead.* Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant

risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination—like dirt and dust—that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(iii) *Lead in drinking water.* (A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

(B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

(C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

(iv) *Steps you can take in the home to reduce exposure to lead in drinking water.* (A) Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply,

lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].

(B) If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

(1) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than [insert a cost estimate based on flushing two times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

(2) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more

quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

(3) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

(4) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify your State [insert name of department responsible for enforcing the Safe Drinking Water Act in your State] about the violation.

(5) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by the [insert the name of the city, county, or water system that owns the line], we are required to provide the owner of the privately-owned portion of the line with information on how to replace the privately-owned

portion of the service line, and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

(6) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

(C) The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

(1) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

(2) Purchase bottled water for drinking and cooking.

(D) You can consult a variety of sources for additional information.

Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(1) [insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

(2) [insert the name of city or county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

(3) [insert the name of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.

(E) The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least two laboratories].

(2) *Non-transient non-community water systems.* A non-transient non-community water system shall either include the text specified in paragraph (a)(1) of this section or shall include the following text in all of the printed materials it distributes through its lead public education program. Water systems may delete information pertaining to lead service lines upon approval by the State if no lead service lines exist anywhere in the water system service area. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by lay people.

(i) *Introduction.* The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015

milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.

(ii) *Health effects of lead.* Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination—like dirt and dust—that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(iii) *Lead in drinking water.* (A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

(B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking

water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

(C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

(iv) *Steps you can take to reduce exposure to lead in drinking water.* (A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.

(B) Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.

(C) The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

(D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local

government agencies that can be contacted include:

(1) [insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

(2) [insert the name or title of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead.

(b) *Content of broadcast materials.* A water system shall include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcasting:

(1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [insert free or \$ per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

(2) To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system].

(c) *Delivery of a public education program.* (1) In communities where a significant proportion of the population speaks a language other than English, public education materials shall be communicated in the appropriate language(s).

(2) A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with § 141.86, and that is not already repeating public education tasks pursuant to paragraph (c)(3), (c)(7), or (c)(8), of this section, shall, within 60 days:

(i) Insert notices in each customer's water utility bill containing the information in paragraph (a)(1) of this section, along with the following alert on the water bill itself in large print: "SOME HOMES IN THIS COMMUNITY

HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION." A community water system having a billing cycle that does not include a billing within 60 days of exceeding the action level, or that cannot insert information in the water utility bill without making major changes to its billing system, may use a separate mailing to deliver the information in paragraph (a)(1) of this section as long as the information is delivered to each customer within 60 days of exceeding the action level. Such water systems shall also include the "alert" language specified in this paragraph.

(i) Submit the information in paragraph (a)(1) of this section to the editorial departments of the major daily and weekly newspapers circulated throughout the community.

(ii) Deliver pamphlets and/or brochures that contain the public education materials in paragraphs (a)(1)(ii) and (a)(1)(iv) of this section to facilities and organizations, including the following:

- (A) Public schools, and/or local school boards;
- (B) City or county health department;
- (C) Women, Infants, and Children and/or Head Start Program(s) whenever available;
- (D) Public and private hospitals and/or clinics;
- (E) Pediatricians;
- (F) Family planning clinics; and
- (G) Local welfare agencies.

(iv) Submit the public service announcement in paragraph (b) of this section to at least five of the radio and television stations with the largest audiences that broadcast to the community served by the water system.

(3) A community water system shall repeat the tasks contained in paragraphs (c)(2) (i), (ii) and (iii) of this section every 12 months, and the tasks contained in paragraphs (c)(2)(iv) of this section every 6 months for as long as the system exceeds the lead action level.

(4) Within 60 days after it exceeds the lead action level (unless it already is repeating public education tasks pursu-

ant to paragraph (c)(5) of this section), a non-transient non-community water system shall deliver the public education materials specified by paragraph (a)(1) of this section or the public education materials specified by paragraph (a)(2) of this section as follows:

(1) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

(ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

(5) A non-transient non-community water system shall repeat the tasks contained in paragraph (c)(4) of this section at least once during each calendar year in which the system exceeds the lead action level.

(6) A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to §141.86. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period.

(7) A community water system may apply to the State, in writing, (unless the State has waived the requirement for prior State approval) to use the text specified in paragraph (a)(2) of this section in lieu of the text in paragraph (a)(1) of this section and to perform the tasks listed in paragraphs (c)(4) and (c)(5) of this section in lieu of the tasks in paragraphs (c)(2) and (c)(3) of this section if:

(i) The system 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

(ii) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

(8)(i) A community water system serving 3,300 or fewer people may omit

the task contained in paragraph (c)(2)(iv) of this section. As long as it distributes notices containing the information contained in paragraph (a)(1) of this section to every household served by the system, such systems may further limit their public education programs as follows:

(A) Systems serving 500 or fewer people may forego the task contained in paragraph (c)(2)(ii) of this section. Such a system may limit the distribution of the public education materials required under paragraph (c)(2)(iii) of this section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children, unless it is notified by the State in writing that it must make a broader distribution.

(B) If approved by the State in writing, a system serving 501 to 3,300 people may omit the task in paragraph (c)(2)(ii) of this section and/or limit the distribution of the public education materials required under paragraph (c)(2)(iii) of this section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

(i) A community water system serving 3,300 or fewer people that delivers public education in accordance with paragraph (c)(8)(i) of this section shall repeat the required public education tasks at least once during each calendar year in which the system exceeds the lead action level.

(d) *Supplemental monitoring and notification of results.* A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with § 141.86 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 65 FR 2005, Jan. 12, 2000; 69 FR 38856, June 29, 2004]

§ 141.86 Monitoring requirements for lead and copper in tap water.

(a) *Sample site location.* (1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall

complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. All sites from which first draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

(2) A water system shall use the information on lead, copper, and galvanized steel that it is required to collect under § 141.42(d) of this part [special monitoring for corrosivity characteristics] when conducting a materials evaluation. When an evaluation of the information collected pursuant to § 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in paragraph (a) of this section, the water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):

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

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

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

(3) The sampling sites selected for a community water system's sampling

pool ("tier 1 sampling sites") shall consist of single family structures that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

(4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites", consisting of buildings, including multiple-family residences that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line. (5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with "tier 3 sampling sites", consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

(6) The sampling sites selected for a non-transient noncommunity water system ("tier 1 sampling sites") shall consist of buildings that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line.

(7) A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system shall use representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is

a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

(8) Any water system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first-draw samples from all of the sites identified as being served by such lines.

(b) *Sample collection methods.* (1) All tap samples for lead and copper collected in accordance with this subpart, with the exception of lead service line samples collected under §141.84(c) and samples collected under paragraph (b)(5) of this section, shall be first-draw samples.

(2) Each first-draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to paragraph (b)(5) of this section shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the system or the system may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this paragraph. 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. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform

sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(3) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following three ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated 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 building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

(4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

(5) A non-transient non-community water system, or a community water system that meets the criteria of §§ 141.85(c)(7)(i) and (ii), that does not have enough taps that can supply first-draw samples, as defined in § 141.2, may apply to the State in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The State has the discretion to waive the requirement for prior State approval of non-first-draw sample sites selected by the system, either through State regulation or written notification to the system.

(c) *Number of samples.* Water systems shall collect at least one sample during

each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column ("standard monitoring") of the table in this paragraph. A system conducting reduced monitoring under paragraph (d)(4) of this section shall collect at least one sample from the number of sites specified in the second column ("reduced monitoring") of the table in this paragraph during each monitoring period specified in paragraph (d)(4) of this section. Such reduced monitoring sites shall be representative of the sites required for standard monitoring. States may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

System size (number of people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

(d) *Timing of monitoring—(1) Initial tap sampling.*

The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System size (No. people served)	First six-month monitoring period begins on
>50,000	January 1, 1992.
3,301 to 50,000	July 1, 1992.
≤3,300	July 1, 1993.

(i) All large systems shall monitor during two consecutive six-month periods.

(ii) All small and medium-size systems shall monitor during each six-month monitoring period until:

(A) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under § 141.81, in which case the system shall continue monitoring in accordance with paragraph (d)(2) of this section, or

(B) The system meets the lead and copper action levels during two consecutive six-month monitoring periods, in which case the system may reduce

monitoring in accordance with paragraph (d)(4) of this section.

(2) *Monitoring after installation of corrosion control and source water treatment.* (i) Any large system which installs optimal corrosion control treatment pursuant to § 141.81(d)(4) shall monitor during two consecutive six-month monitoring periods by the date specified in § 141.81(d)(5).

(ii) Any small or medium-size system which installs optimal corrosion control treatment pursuant to § 141.81(e)(5) shall monitor during two consecutive six-month monitoring periods by the date specified in § 141.81(e)(6).

(iii) Any system which installs source water treatment pursuant to § 141.83(a)(3) shall monitor during two consecutive six-month monitoring periods by the date specified in § 141.83(a)(4).

(3) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for water quality control parameters under § 141.82(f), the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the State specifies the optimal values under § 141.82(f).

(4) *Reduced monitoring.* (i) A small or medium-size water system that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with paragraph (c) of this section, and reduce the frequency of sampling to once per year.

(ii) Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and reduce the number of lead and copper samples in accordance with paragraph (c) of this section if it receives written approval from the State. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with § 141.90, and shall notify the system in writing when it determines the system is eligible to com-

mence reduced monitoring pursuant to this paragraph. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) A small or medium-size water system that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years. Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under § 141.82(f) during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years if it receives written approval from the State. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with § 141.90, and shall notify the system in writing when it determines the system is eligible to reduce the frequency of monitoring to once every three years. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iv) A water system that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in paragraph (a) of this section. Systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August, or September unless the State has approved a different sampling period in accordance with paragraph (d)(4)(iv)(A) of this section.

(A) The State, at its discretion, may approve a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period shall be no longer than four consecutive months and must represent a time of normal operation where the highest

levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the State shall designate a period that represents a time of normal operation for the system.

(B) Systems monitoring annually, that have been collecting samples during the months of June through September and that receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the months of June through September, and receive State approval to alter the sampling collection period as per paragraph (d)(4)(iv)(A) of this section, must collect their 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 triennially, as required by this section. Small systems with waivers, granted pursuant to paragraph (g) of this section, that have been collecting samples during the months of June through September and receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section must collect their next round of samples before the end of the 9-year period.

(v) Any water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under §141.80(c)(3) is less than or equal to 0.005 mg/L and the tap water copper level computed under §141.80(c)(3) is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with paragraph (c) of this section and reduce the frequency of sampling to once every three calendar years.

(vi)(A) A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance with paragraph (d)(3) of this sec-

tion and collect the number of samples specified for standard monitoring under paragraph (c) of this section. Such a system shall also conduct water quality parameter monitoring in accordance with §141.87(b), (c) or (d) (as appropriate) during the monitoring period in which it exceeded the action level. Any such system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(i) of this section and/or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section.

(B) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State under §141.82(f) for more than nine days in any six-month period specified in §141.87(d) shall conduct tap water sampling for lead and copper at the frequency specified in paragraph (d)(3) of this section, collect the number of samples specified for standard monitoring under paragraph (c) of this section, and shall resume monitoring for water quality parameters within the distribution system in accordance with §141.87(d). Such a system may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

(1) The system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(ii) of this section and the system has received written approval from the State that it is appropriate to resume reduced monitoring on an annual frequency.

(2) The system may resume triennial monitoring for lead and copper at the

tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section and the system has received written approval from the State that it is appropriate to resume triennial monitoring.

(3) The system may reduce the number of water quality parameter tap water samples required in accordance with §141.87(e)(1) and the frequency with which it collects such samples in accordance with §141.87(e)(2). Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with the requirements of §141.87(e)(2), that it has re-qualified for triennial monitoring.

(vii) Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section that either adds a new source of water or changes any water treatment shall inform the State in writing in accordance with §141.90(a)(3). The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

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

(f) *Invalidation of lead or copper tap water samples.* A sample invalidated under this paragraph does not count toward determining lead or copper 90th percentile levels under §141.80(c)(3) or toward meeting the minimum monitoring requirements of paragraph (c) of this section.

(1) The State may invalidate a lead or copper tap water sample at least if one of the following conditions is met.

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(2) The system must report the results of all samples to the State and all supporting documentation for samples the system believes should be invalidated.

(3) To invalidate a sample under paragraph (f)(1) of this section, the decision and the rationale for the decision must be documented in writing. States may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(4) The water system must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of paragraph (c) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the State invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(g) *Monitoring waivers for small systems.* Any small system that meets the criteria of this paragraph may apply to the State to reduce the frequency of monitoring for lead and copper under this section to once every nine years (i.e., a "full waiver") if it meets all of the materials criteria specified in paragraph (g)(1) of this section and all of the monitoring criteria specified in paragraph (g)(2) of this section. If State

regulations permit, any small system that meets the criteria in paragraphs (g)(1) and (2) of this section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (i.e., a "partial waiver").

(1) *Materials criteria.* The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this paragraph, as follows:

(i) *Lead.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (i.e., a "lead waiver"), the water system must provide certification and supporting documentation to the State that the system is free of all lead-containing materials, as follows:

(A) It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and

(B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300g-6(e) (SDWA section 1417(e)).

(ii) *Copper.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (i.e., a "copper waiver"), the water system must provide certification and supporting documentation to the State that the system contains no copper pipes or copper service lines.

(2) *Monitoring criteria for waiver issuance.* The system must have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the State and from the number of sites required by paragraph (c) of this section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

(i) *Lead levels.* To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

(ii) *Copper levels.* To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

(3) *State approval of waiver application.* The State shall notify the system of its waiver determination, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the State may require the system to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for lead and copper at the tap as required by paragraphs (d)(1) through (d)(4) of this section, as appropriate, until it receives written notification from the State that the waiver has been approved.

(4) *Monitoring frequency for systems with waivers.* (i) A system with a full waiver must conduct tap water monitoring for lead and copper in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites identified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section for both lead and copper to the State along with the monitoring results.

(ii) A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites specified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section pertaining to the waived contaminant along with the monitoring results. Such a system also must continue to monitor for the non-waived contaminant in accordance with requirements of paragraph (d)(1) through (d)(4) of this section, as appropriate.

(iii) If a system with a full or partial waiver adds a new source of water or changes any water treatment, the system must notify the State in writing in accordance with § 141.90(a)(3). The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

(iv) If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the system shall notify the State in writing no later than 60 days after becoming aware of such a change.

(5) *Continued eligibility.* If the system continues to satisfy the requirements of paragraph (g)(4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in paragraph (g)(5)(i) through (g)(5)(iii) of this section occurs. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of paragraphs (g)(1) and (g)(2) of this section.

(i) A system with a full waiver or a lead waiver no longer satisfies the materials criteria of paragraph (g)(1)(i) of this section or has a 90th percentile lead level greater than 0.005 mg/L.

(ii) A system with a full waiver or a copper waiver no longer satisfies the materials criteria of paragraph (g)(1)(ii) of this section or has a 90th percentile copper level greater than 0.65 mg/L.

(iii) The State notifies the system, in writing, that the waiver has been revoked, setting forth the basis of its decision.

(6) *Requirements following waiver revocation.* A system whose full or partial waiver has been revoked by the State is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the system exceeds the lead and/or copper action level, the system must

implement corrosion control treatment in accordance with the deadlines specified in § 141.81(e), and any other applicable requirements of this subpart.

(ii) If the system meets both the lead and the copper action level, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in paragraph (c) of this section.

(7) *Pre-existing waivers.* Small system waivers approved by the State in writing prior to April 11, 2000 shall remain in effect under the following conditions:

(i) If the system has demonstrated that it is both free of lead-containing and copper-containing materials, as required by paragraph (g)(1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of paragraph (g)(2) of this section, the waiver remains in effect so long as the system continues to meet the waiver eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the last time the system has monitored for lead and copper at the tap.

(ii) If the system has met the materials criteria of paragraph (g)(1) of this section but has not met the monitoring criteria of paragraph (g)(2) of this section, the system shall conduct a round of monitoring for lead and copper at the tap demonstrating that it meets the criteria of paragraph (g)(2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the system meets the continued eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the round of monitoring conducted pursuant to paragraph (g)(2) of this section.

[56 FR 26548, June 7, 1991; 56 FR 32113, July 15, 1991; 57 FR 28788, June 29, 1992; as amended at 65 FR 2007, Jan. 12, 2000]

§ 141.87 Monitoring requirements for water quality parameters.

All large water systems, and all small- and medium-size systems that exceed the lead or copper action level shall monitor water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

(a) *General requirements*—(1) *Sample collection methods.* (i) Tap samples shall 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 system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under § 141.86(a). [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under 40 CFR 141.21.]

(ii) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system 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.* (i) Systems shall collect two tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) through (e) of this section from the following number of sites.

System size (No. people served)	No. of sites for water quality parameters
>100,000	25
10,001-100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(ii) Except as provided in paragraph (c)(3) of this section, systems shall collect two samples for each applicable water quality parameter at each entry

point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c)–(e) of this section, systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

(b) *Initial sampling* All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in § 141.86(d)(1). All small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in § 141.86(d)(1) during which the system exceeds the lead or copper action level.

(1) At taps:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium;

(vi) Conductivity; and

(vii) Water temperature.

(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (b)(1) of this section.

(c) *Monitoring after installation of corrosion control.* Any large system which installs optimal corrosion control treatment pursuant to § 141.81(d)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in § 141.86(d)(2)(i). Any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in § 141.86(d)(2)(ii) in which the system exceeds the lead or copper action level.

(1) At taps, two samples for:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

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(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

(2) Except as provided in paragraph (c)(3) of this section, at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

(i) pH;

(1) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

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

(3) Any ground water system can limit entry point sampling described in paragraph (c)(2) of this section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide to the State written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(d) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under §141.82(f), all large systems shall measure the applicable water quality parameters in accordance with paragraph (c) of this section and determine compliance with the requirements of §141.82(g) every six months with the first six-month period to begin on the date the State specifies the optimal values under §141.82(f).

Any small or medium-size system shall conduct such monitoring during each six-month period specified in this paragraph in which the system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to §141.86(d)(4) at the time of the action level exceedance, the end of the applicable six-month period under this paragraph shall coincide with the end of the applicable monitoring period under §141.86(d)(4). Compliance with State-designated optimal water quality parameter values shall be determined as specified under §141.82(g).

(e) *Reduced monitoring.* (1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under paragraph (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

System size (No. of people served)	Reduced No. of sites for water quality parameters
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(2)(i) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in this paragraph (e)(1) of this section from every six months to annually. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f)

during three consecutive years of annual monitoring under this paragraph may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (e)(1) from annually to every three years.

(ii) A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in §141.89 (a)(1)(ii), that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in §141.80(c)(2), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f).

(3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

(4) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of val-

ues for the water quality parameters specified by the State in §141.82(f) for more than nine days in any six-month period specified in §141.82(g) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in paragraph (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 paragraph (e)(1) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph and/or may resume triennial monitoring 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 paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(f) *Additional monitoring by systems.* The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (i.e., determining concentrations of water quality parameters) under this section or §141.82.

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS¹

Monitoring period	Parameters ²	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica ³ , calcium, conductivity, temperature.	Taps and at entry point(s) to distribution system.	Every 6 months.
After installation of corrosion control.	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ .	Taps	Every 6 months.
	pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Entry point(s) to distribution system ⁶ .	No less frequently than every two weeks.
After State specifies parameter values for optimal corrosion control.	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ .	Taps	Every 6 months.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Entry point(s) to distribution system ⁶ .	No less frequently than every two weeks.
Reduced monitoring	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ .	Taps	Every 6 months, annually ⁷ or every 3 years ⁸ ; reduced number of sites.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Entry point(s) to distribution system ⁶ .	No less frequently than every two weeks.

¹ Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.
² Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.
³ Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.
⁴ Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

⁵Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

⁶Ground water systems may limit monitoring to representative locations throughout the system.

⁷Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

⁸Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the State under § 141.82(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 59 FR 33862, June 30, 1994; 65 FR 2010, Jan. 12, 2000]

§ 141.88 Monitoring requirements for lead and copper in source water.

(a) *Sample location, collection methods, and number of samples.* (1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with § 141.86 shall collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

(i) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE TO PARAGRAPH (A)(1)(II): For the purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(iii) If a system draws water from more than one source and the sources are combined before distribution, the system 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).

(iv) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

(A) A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or

(B) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

(2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under § 141.83(b)(4), the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a State-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the State-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

(b) *Monitoring frequency after system exceeds tap water action level.* Any system which exceeds the lead or copper action level at the tap shall collect one

source water sample from each entry point to the distribution system within six months after the exceedance.

(c) *Monitoring frequency after installation of source water treatment.* Any system which installs source water treatment pursuant to § 141.83(a)(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in § 141.83(a)(4).

(d) *Monitoring frequency after State specifies maximum permissible source water levels or determines that source water treatment is not needed.* (1) A system shall monitor at the frequency specified below in cases where the State specifies maximum permissible source water levels under § 141.83(b)(4) or determines that the system is not required to install source water treatment under § 141.83(b)(2).

(i) A water system using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in § 141.2) in effect when the applicable State determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period.

(ii) A water system using surface water (or a combination of surface and groundwater) shall collect samples once during each year, the first annual monitoring period to begin on the date on which the applicable State determination is made under paragraph (d)(1) of this section.

(2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1) (i) or (ii) of this section.

(e) *Reduced monitoring frequency.* (1) A water system using only ground water may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in § 141.2) if the system meets one of the following criteria:

(i) The system 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 § 141.83(b)(4) during at least three consecutive compliance periods under paragraph (d)(1) of this section; or

(ii) The State has determined 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 paragraph (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 water system using surface water (or a combination of surface water and ground water) may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in § 141.2) if the system meets one of the following criteria:

(i) The system 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 § 141.83(b)(4) for at least three consecutive years; or

(ii) The State has determined that source water treatment is not needed and the system 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 water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the State in § 141.83(a)(5).

[56 FR 26548, June 7, 1991; 57 FR 28788 and 28789, June 29, 1992, as amended at 65 FR 2012, Jan. 12, 2000]

§ 141.89 Analytical methods.

(a) Analyses for lead, copper, pH, conductivity, calcium, alkalinity,

orthophosphate, silica, and temperature shall be conducted with the methods in § 141.23(k)(1).

(1) Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by any person acceptable to the State. Analyses under this section for lead and copper shall only be conducted by laboratories that have been certified by EPA or the State. To obtain certification to conduct analyses for lead and copper, laboratories must:

(i) Analyze Performance Evaluation samples, which include lead and copper, provided by or acceptable to EPA or the State at least once a year by each method for which the laboratory desires certification; and

(ii) Achieve quantitative acceptance limits as follows:

(A) For lead: ± 30 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

(B) For Copper: ± 10 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L.

(iii) Achieve the method detection limit for lead of 0.001 mg/L according to the procedures in appendix B of part 136 of this title. This need only be accomplished if the laboratory will be processing source water composite samples under § 141.88(a)(1)(iii).

(iv) Be currently certified by EPA or the State to perform analyses to the specifications described in paragraph (a)(2) of this section.

(2) States have the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this subpart.

(3) All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero.

(4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

(b) [Reserved]

[56 FR 26548, June 7, 1991, as amended at 57 FR 28789, June 29, 1992; 57 FR 31847, July 17, 1992; 59 FR 33863, June 30, 1994; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 65 FR 20012, Jan. 12, 2000]

§ 141.90 Reporting requirements.

All water systems shall report all of the following information to the State in accordance with this section.

(a) *Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring.*

(1) Except as provided in paragraph (a)(1)(viii) of this section, a water system shall report the information specified below for all tap water samples specified in § 141.86 and for all water quality parameter samples specified in § 141.87 within the first 10 days following the end of each applicable monitoring period specified in § 141.86 and § 141.87 (i.e., every six months, annually, every 3 years, or every 9 years):

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under § 141.86(a) (3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool;

(ii) Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to § 141.86(f)(2);

(iii) [Reserved]

(iv) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with § 141.80(c)(3)), unless the State calculates the system's 90th percentile lead and copper levels under paragraph (h) of this section;

(v) With the exception of initial tap sampling conducted pursuant to § 141.86(d)(1), the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

(vi) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under §141.87 (b)-(e);

(vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under §141.87 (b)-(e);

(viii) A water system shall report the results of all water quality parameter samples collected under §141.87(c) through (f) during each six-month monitoring period specified in §141.87(d) within the first 10 days following the end of the monitoring period unless the State has specified a more frequent reporting requirement.

(2) For a non-transient non-community water system, or a community water system meeting the criteria of §§141.85(c)(7)(i) and (ii), that does not have enough taps that can provide first-draw samples, the system must either:

(i) Provide written documentation to the State identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under §141.86(b)(5) by the start of the first applicable monitoring period under §141.86(d) that commences after April 11, 2000, unless the State has waived prior State approval of non-first-draw sample sites selected by the system pursuant to §141.86(b)(5); or

(ii) If the State has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to §141.86(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to paragraph (a)(1)(i) of this section.

(3) No later than 60 days after the addition of a new source or any change in water treatment, unless the State requires earlier notification, a water system deemed to have optimized corrosion control under §141.81(b)(3), a water system subject to reduced monitoring pursuant to §141.86(d)(4), or a water system subject to a monitoring waiver pursuant to §141.86(g), shall send writ-

ten documentation to the State describing the change. In those instances where prior State approval of the treatment change or new source is not required, water systems are encouraged to provide the notification to the State beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.

(4) Any small system applying for a monitoring waiver under §141.86(g), or subject to a waiver granted pursuant to §141.86(g)(3), shall provide the following information to the State in writing by the specified deadline:

(i) By the start of the first applicable monitoring period in §141.86(d), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of §§141.86(g)(1) and (2).

(ii) No later than nine years after the monitoring previously conducted pursuant to §141.86(g)(2) or §141.86(g)(4)(i), each small system desiring to maintain its monitoring waiver shall provide the information required by §§141.86(g)(4)(i) and (ii).

(iii) No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver shall provide written notification to the State, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(iv) By October 10, 2000, any small system with a waiver granted prior to April 11, 2000 and that has not previously met the requirements of §141.86(g)(2) shall provide the information required by that paragraph.

(5) Each ground water system that limits water quality parameter monitoring to a subset of entry points under §141.87(c)(3) shall provide, by the commencement of such monitoring, written correspondence to the State that identifies the selected entry points and

includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) *Source water monitoring reporting requirements.* (1) A water system shall report the sampling results for all source water samples collected in accordance with §141.88 within the first 10 days following the end of each source water monitoring period (i.e., annually, per compliance period, per compliance cycle) specified in §141.88.

(2) With the exception of the first round of source water sampling conducted pursuant to §141.88(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(c) *Corrosion control treatment reporting requirements.* By the applicable dates under §141.81, systems shall report the following information:

(1) For systems demonstrating that they have already optimized corrosion control, information required in §141.81(b) (2) or (3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under §141.82(a).

(3) For systems required to evaluate the effectiveness of corrosion control treatments under §141.82(c), the information required by that paragraph.

(4) For systems required to install optimal corrosion control designated by the State under §141.82(d), a letter certifying that the system has completed installing that treatment.

(d) *Source water treatment reporting requirements.* By the applicable dates in §141.83, systems shall provide the following information to the State:

(1) If required under §141.83(b)(1), their recommendation regarding source water treatment;

(2) For systems required to install source water treatment under §141.83(b)(2), a letter certifying that the system has completed installing the treatment designated by the State within 24 months after the State designated the treatment.

(e) *Lead service line replacement reporting requirements.* Systems shall report the following information to the State

to demonstrate compliance with the requirements of §141.84:

(1) Within 12 months after a system exceeds the lead action level in sampling referred to in §141.84(a), the system shall demonstrate in writing to the State that it has conducted a material evaluation, including the evaluation in §141.86(a), to identify the initial number of lead service lines in its distribution system, and shall provide the State with the system's schedule for replacing annually at least 7 percent of the initial number of lead service lines in its distribution system.

(2) Within 12 months after a system exceeds the lead action level in sampling referred to in §141.84(a), and every 12 months thereafter, the system shall demonstrate to the State in writing that the system has either:

(i) Replaced in the previous 12 months at least 7 percent of the initial lead service lines (or a greater number of lines specified by the State under §141.84(e)) in its distribution system, or

(ii) Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in §141.84(c) shall equal at least 7 percent of the initial number of lead lines identified under paragraph (a) of this section (or the percentage specified by the State under §141.84(e)).

(3) The annual letter submitted to the State under paragraph (e)(2) of this section shall contain the following information:

(i) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

(ii) The number and location of each lead service line replaced during the previous year of the system's replacement schedule;

(iii) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(4) Any system which collects lead service line samples following partial lead service line replacement required by §141.84 shall report the results to

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the State within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the State. States, at their discretion may eliminate this requirement to report these monitoring results. Systems shall also report any additional information as specified by the State, and in a time and manner prescribed by the State, to verify that all partial lead service line replacement activities have taken place.

(f) *Public education program reporting requirements.* (1) Any water system that is subject to the public education requirements in §141.85 shall, within ten days after the end of each period in which the system is required to perform public education tasks in accordance with §141.85(c), send written documentation to the State that contains:

(i) A demonstration that the system has delivered the public education materials that meet the content requirements in §141.85(a) and (b) and the delivery requirements in §141.85(c); and

(ii) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

(2) Unless required by the State, a system that previously has submitted the information required by paragraph (f)(1)(i) of this section need not resubmit the information required by paragraph (f)(1)(ii) of this section, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

(g) *Reporting of additional monitoring data.* Any system which collects sampling data in addition to that required by this subpart shall report the results to the State within the first ten days following the end of the applicable monitoring period under §§141.86, 141.87 and 141.88 during which the samples are collected.

(h) *Reporting of 90th percentile lead and copper concentrations where the State calculates a system's 90th percentile concentrations.* A water system is not required to report the 90th percentile

lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by paragraph (a)(1)(iv) of this section if:

(1) The State has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to paragraph (h)(2)(i) of this section, and has specified a date before the end of the applicable monitoring period by which the system must provide the results of lead and copper tap water samples;

(2) The system has provided the following information to the State by the date specified in paragraph (h)(1) of this section:

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under §141.86(a)(3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool, pursuant to paragraph (a)(1)(i) of this section; and

(ii) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

(3) The State has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the monitoring period.

[56 FR 26548, June 7, 1991; 57 FR 28789, June 29, 1992, as amended at 59 FR 33864, June 30, 1994; 65 FR 2012, Jan. 12, 2000]

§ 141.91 Recordkeeping requirements.

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §§141.81 through 141.88. Each water system shall retain the records required by this section for no fewer than 12 years.

Subpart J—Use of Non-Centralized Treatment Devices

SOURCE: 52 FR 25716, July 8, 1987, unless otherwise noted.

§ 141.100 Criteria and procedures for public water systems using point-of-entry devices.

(a) Public water systems may use point-of-entry devices to comply with maximum contaminant levels only if they meet the requirements of this section.

(b) It is the responsibility of the public water system to operate and maintain the point-of-entry treatment system.

(c) The public water system must develop and obtain State approval for a monitoring plan before point-of-entry devices are installed for compliance. Under the plan approved by the State, point-of-entry devices must provide health protection equivalent to central water treatment. "Equivalent" means that the water would meet all national primary drinking water regulations and would be of acceptable quality similar to water distributed by a well-operated central treatment plant. In addition to the VOCs, monitoring must include physical measurements and observations such as total flow treated and mechanical condition of the treatment equipment.

(d) Effective technology must be properly applied under a plan approved by the State and the microbiological safety of the water must be maintained.

(1) The State must require adequate certification of performance, field testing, and, if not included in the certification process, a rigorous engineering design review of the point-of-entry devices.

(2) The design and application of the point-of-entry devices must consider the tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon. It may be necessary to use frequent backwashing, post-contactor disinfection, and Heterotrophic Plate Count monitoring to ensure that the microbiological safety of the water is not compromised.

(e) *All consumers shall be protected.* Every building connected to the system must have a point-of-entry device installed, maintained, and adequately monitored. The State must be assured that every building is subject to treatment and monitoring, and that the rights and responsibilities of the public water system customer convey with title upon sale of property.

[52 FR 25716, July 8, 1987; 53 FR 25111, July 1, 1988]

§ 141.101 Use of bottled water.

Public water systems shall not use bottled water to achieve compliance with an MCL. Bottled water may be used on a temporary basis to avoid unreasonable risk to health.

[63 FR 31934, June 11, 1998]

Subpart K—Treatment Techniques

SOURCE: 56 FR 3594, Jan. 30, 1991, unless otherwise noted.

§ 141.110 General requirements.

The requirements of subpart K of this part constitute national primary drinking water regulations. These regulations establish treatment techniques in lieu of maximum contaminant levels for specified contaminants.

§ 141.111 Treatment techniques for acrylamide and epichlorohydrin.

Each public water system must certify annually in writing to the State (using third party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified as follows:

Acrylamide=0.05% dosed at 1 ppm (or equivalent)
Epichlorohydrin=0.01% dosed at 20 ppm (or equivalent)

Certifications can rely on manufacturers or third parties, as approved by the State.

Subpart L—Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors**§ 141.130 General requirements.**

(a) The requirements of this subpart L constitute national primary drinking water regulations.

(1) The regulations in this subpart establish criteria under which community water systems (CWSs) and non-transient, noncommunity water systems (NTNCWSs) which add a chemical disinfectant to the water in any part of the drinking water treatment process must modify their practices to meet MCLs and MRDLs in §§ 141.64 and 141.65, respectively, and must meet the treatment technique requirements for disinfection byproduct precursors in § 141.135.

(2) The regulations in this subpart establish criteria under which transient NCWSs that use chlorine dioxide as a disinfectant or oxidant must modify their practices to meet the MRDL for chlorine dioxide in § 141.65.

(3) EPA has established MCLs for TTHM and HAA5 and treatment technique requirements for disinfection byproduct precursors to limit the levels of known and unknown disinfection byproducts which may have adverse health effects. These disinfection byproducts may include chloroform; bromodichloromethane; dibromochloromethane; bromoform; dichloroacetic acid; and trichloroacetic acid.

(b) *Compliance dates.* (1) CWSs and NTNCWSs. Unless otherwise noted, systems must comply with the requirements of this subpart as follows. Subpart H systems serving 10,000 or more persons must comply with this subpart beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this subpart beginning January 1, 2004.

(2) *Transient NCWSs.* Subpart H systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this subpart beginning January 1, 2002. Subpart H systems serving fewer than

10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this subpart beginning January 1, 2004.

(c) Each CWS and NTNCWS regulated under paragraph (a) of this section must be operated by qualified personnel who meet the requirements specified by the State and are included in a State register of qualified operators.

(d) *Control of disinfectant residuals.* Notwithstanding the MRDLs in § 141.65, systems may increase residual disinfectant levels in the distribution system of chlorine or chloramines (but not chlorine dioxide) to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§ 141.131 Analytical requirements.

(a) *General.* (1) Systems must use only the analytical method(s) specified in this section, or otherwise approved by EPA for monitoring under this subpart, to demonstrate compliance with the requirements of this subpart. These methods are effective for compliance monitoring February 16, 1999.

(2) The following documents are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at EPA's Drinking Water Docket, 401 M St., SW., Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. EPA Method 552.1 is

in *Methods for the Determination of Organic Compounds in Drinking Water-Supplement II*, USEPA, August 1992, EPA/600/R-92/129 (available through National Information Technical Service (NTIS), PB92-207703). EPA Methods 502.2, 524.2, 551.1, and 552.2 are in *Methods for the Determination of Organic Compounds in Drinking Water-Supplement III*, USEPA, August 1995, EPA/600/R-95/131. (available through NTIS, PB95-261616). EPA Method 300.0 is in *Methods for the Determination of Inorganic Substances in Environmental Samples*, USEPA, August 1993, EPA/600/R-93/100. (available through NTIS, PB94-121811). EPA Method 300.1 is titled *USEPA Method 300.1, Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0*, USEPA, 1997, EPA/600/R-98/118 (available through NTIS, PB98-169196); also available from: Chemical Exposure Research Branch, Microbiological & Chemical Exposure Assessment Research Division, National Exposure Research Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH 45268, Fax Number: 513-569-7757, Phone number: 513-569-7586. Standard Methods 4500-C1 D, 4500-C1 E, 4500-C1 F, 4500-C1 G, 4500-C1 H, 4500-C1

I, 4500-C1O₂ D, 4500-C1O₂ E, 6251 B, and 5910 B shall be followed in accordance with *Standard Methods for the Examination of Water and Wastewater, 19th Edition*, American Public Health Association, 1995; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005. Standard Methods 5310 B, 5310 C, and 5310 D shall be followed in accordance with the *Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, 1996; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005. ASTM Method D 1253-86 shall be followed in accordance with the *Annual Book of ASTM Standards*, Volume 11.01, American Society for Testing and Materials, 1996 edition; copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

(b) *Disinfection byproducts*. (1) Systems must measure disinfection byproducts by the methods (as modified by the footnotes) listed in the following table:

APPROVED METHODS FOR DISINFECTION BYPRODUCT COMPLIANCE MONITORING

Methodology ²	EPA method	Standard method	Byproduct measured ¹			
			TTHM	HAA5	Chlorite ⁴	Bromate
P&T/GC/EICD & PID	502.2	6251 B	X			
P&T/GC/MS	524.2		X			
LLE/GC/ECD	551.1		X			
LLE/GC/ECD	552.1	4500-C1O ₂ E		X		
SPE/GC/ECD	552.1			X		
LLE/GC/ECD	552.2			X		
Amperometric Titration.					X	
IC	300.0				X	
IC	300.1				X	X

¹ X indicates method is approved for measuring specified disinfection byproduct.
² P&T=purge and trap; GC=gas chromatography; EICD=electrolytic conductivity detector; PID=photolization detector; MS=mass spectrometer; LLE=liquid/liquid extraction; ECD=electron capture detector; SPE=solid phase extractor; IC=ion chromatography.
³ If TTHMs are the only analytes being measured in the sample, then a PID is not required.
⁴ Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in § 141.132(b)(2)(i)(A). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in § 141.132(b)(2)(i)(B) and (b)(2)(ii).

(2) Analysis under this section for disinfection byproducts must be conducted by laboratories that have received certification by EPA or the State, except as specified under paragraph (b)(3) of this section. To receive certification to conduct analyses for

the contaminants in § 141.64(a), the laboratory must carry out annual analyses of performance evaluation (PE) samples approved by EPA or the State. In these analyses of PE samples, the laboratory must achieve quantitative results within the acceptance limit on

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a minimum of 80% of the analytes included in each PE sample. The acceptance limit is defined as the 95% confidence interval calculated around the mean of the PE study data between a maximum and minimum acceptance limit of +/-50% and +/-15% of the study mean.

(3) A party approved by EPA or the State must measure daily chlorite

samples at the entrance to the distribution system.

(c) *Disinfectant residuals.* (1) Systems must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods listed in the following table:

APPROVED METHODS FOR DISINFECTANT RESIDUAL COMPLIANCE MONITORING

Methodology	Standard method	ASTM method	Residual Measured ¹			
			Free chlorine	Combined chlorine	Total chlorine	Chlorine dioxide
Amperometric Titration.	4500-CI D	D 1253-86	X	X	X	
Low Level Amperometric Titration.	4500-CI E				X	
DPD Ferrous Titrimetric.	4500-CI F		X	X	X	
DPD Colorimetric ..	4500-CI G		X	X	X	
Syringaldazine (FACTS).	4500-CI H		X			
Iodometric Electrode.	4500-CI I				X	
DPD	4500-CIO ₂ D					X
Amperometric Method II.	4500-CIO ₂ E					X

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

(2) If approved by the State, systems may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.

(3) A party approved by EPA or the State must measure residual disinfectant concentration.

(d) *Additional analytical methods.* Systems required to analyze parameters not included in paragraphs (b) and (c) of this section must use the following methods. A party approved by EPA or the State must measure these parameters.

(1) *Alkalinity.* All methods allowed in §141.89(a) for measuring alkalinity.

(2) *Bromide.* EPA Method 300.0 or EPA Method 300.1.

(3) *Total Organic Carbon (TOC).* Standard Method 5310 B (High-Temperature Combustion Method) or Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D (Wet-Oxidation Method). TOC samples may not be filtered prior to analysis. TOC samples must either be analyzed or must be acidified to achieve

pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 24 hours. Acidified TOC samples must be analyzed within 28 days.

(4) *Specific Ultraviolet Absorbance (SUVA).* SUVA is equal to the UV absorption at 254nm (UV₂₅₄) (measured in m⁻¹ divided by the dissolved organic carbon (DOC) concentration (measured as mg/L). In order to determine SUVA, it is necessary to separately measure UV₂₅₄ and DOC. When determining SUVA, systems must use the methods stipulated in paragraph (d)(4)(i) of this section to measure DOC and the method stipulated in paragraph (d)(4)(ii) of this section to measure UV₂₅₄. SUVA must be determined on water prior to the addition of disinfectants/oxidants by the system. DOC and UV₂₅₄ samples used to determine a SUVA value must be taken at the same time and at the same location.

(i) Dissolved Organic Carbon (DOC). Standard Method 5310 B (High-Temperature Combustion Method) or

Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D (Wet-Oxidation Method). Prior to analysis, DOC samples must be filtered through a 0.45 µm pore-diameter filter. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following criteria: DOC < 0.5 mg/L. DOC samples must be filtered through the 0.45 µm pore-diameter filter prior to acidification. DOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 48 hours. Acidified DOC samples must be analyzed within 28 days.

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

(5) pH. All methods allowed in §141.23(k)(1) for measuring pH.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§ 141.132 Monitoring requirements.

(a) *General requirements.* (1) Systems must take all samples during normal operating conditions.

(2) Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with State approval in accordance with criteria developed under §142.16(h)(5) of this chapter.

(3) Failure to monitor in accordance with the monitoring plan required under paragraph (f) of this section is a monitoring violation.

(4) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(5) Systems may use only data collected under the provisions of this subpart or subpart M of this part to qualify for reduced monitoring.

(b) *Monitoring requirements for disinfection byproducts—(1) TTHMs and HAA5—(i) Routine monitoring.* Systems must monitor at the frequency indicated in the following table:

ROUTINE MONITORING FREQUENCY FOR TTHM AND HAA5

Type of system	Minimum monitoring frequency	Sample location in the distribution system
Subpart H system serving at least 10,000 persons.	Four water samples per quarter per treatment plant.	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods. ¹
Subpart H system serving from 500 to 9,999 persons.	One water sample per quarter per treatment plant.	Locations representing maximum residence time. ¹
Subpart H system serving fewer than 500 persons.	One sample per year per treatment plant during month of warmest water temperature.	Locations representing maximum residence time. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets criteria in paragraph (b)(1)(iv) of this section.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	One water sample per quarter per treatment plant. ²	Locations representing maximum residence time. ¹

ROUTINE MONITORING FREQUENCY FOR TTHM AND HAA5—Continued

Type of system	Minimum monitoring frequency	Sample location in the distribution system
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.	One sample per year per treatment plant ² during month of warmest water temperature.	Locations representing maximum residence time. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets criteria in paragraph (b)(1)(iv) of this section.

¹ If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

² Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with State approval in accordance with criteria developed under § 142.16(h)(5) of this chapter.

(ii) Systems may reduce monitoring, except as otherwise provided, in accordance with the following table:

REDUCED MONITORING FREQUENCY FOR TTHM AND HAA5

If you are a . . .	You may reduce monitoring if you have monitored at least one year and your . . .	To this level
Subpart H system serving at least 10,000 persons which has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
Subpart H system serving from 500 to 9,999 persons which has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. NOTE: Any Subpart H system serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L for two consecutive years OR TTHM annual average ≤0.020 mg/L and HAA5 annual average ≤0.015 mg/L for one year.	One sample per treatment plant per three year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

(iii) Systems that do not meet these levels must resume monitoring at the frequency identified in paragraph (b)(1)(i) of this section (minimum monitoring frequency column) in the quarter immediately following the monitoring period in which the system exceeds 0.060 mg/L or 0.045 mg/L for TTHM or HAA5 respectively. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual aver-

age is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system must go to the increased monitoring identified in paragraph (b)(1)(i) of this section (sample location column) in the quarter immediately following the monitoring period in which the system exceeds 0.080 mg/L or 0.060 mg/L for TTHMs or HAA5 respectively.

(iv) Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring their TTHM annual average is ≤0.060

mg/L and their HAA5 annual average is ≤ 0.045 mg/L.

(v) The State may return a system to routine monitoring at the State's discretion.

(2) *Chlorite*. Community and nontransient noncommunity water systems using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite.

(1) *Routine monitoring*. (A) *Daily monitoring*. Systems must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system must take additional samples in the distribution system the following day at the locations required by paragraph (b)(2)(i) of this section, in addition to the sample required at the entrance to the distribution system.

(B) *Monthly monitoring*. Systems must take a three-sample set each month in the distribution system. The system must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling must be conducted in the same manner (as three-sample sets, at the specified locations). The system may use the results of additional monitoring conducted under paragraph (b)(2)(i) of this section to meet the requirement for monitoring in this paragraph.

(i) *Additional monitoring*. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the system is required to take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(ii) *Reduced monitoring*. (A) Chlorite monitoring at the entrance to the distribution system required by paragraph (b)(2)(i)(A) of this section may not be reduced.

(B) Chlorite monitoring in the distribution system required by paragraph (b)(2)(i)(B) of this section may be re-

duced to one three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under paragraph (b)(2)(i)(B) of this section has exceeded the chlorite MCL and the system has not been required to conduct monitoring under paragraph (b)(2)(ii) of this section. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under paragraph (b)(2)(i)(B) of this section exceeds the chlorite MCL or the system is required to conduct monitoring under paragraph (b)(2)(ii) of this section, at which time the system must revert to routine monitoring.

(3) *Bromate*—(i) *Routine monitoring*. Community and nontransient noncommunity systems using ozone, for disinfection or oxidation, must take one sample per month for each treatment plant in the system using ozone. Systems must take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(ii) *Reduced monitoring*. Systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements. If the running annual average source water bromide concentration is ≥ 0.05 mg/L, the system must resume routine monitoring required by paragraph (b)(3)(i) of this section.

(c) *Monitoring requirements for disinfectant residuals*—(1) *Chlorine and chloramines*—(i) *Routine monitoring*. Community and nontransient noncommunity water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the

same time as total coliforms are sampled, as specified in § 141.21. Subpart H systems may use the results of residual disinfectant concentration sampling conducted under § 141.74(b)(6)(i) for unfiltered systems or § 141.74(c)(3)(i) for systems which filter, in lieu of taking separate samples.

(i) *Reduced monitoring.* Monitoring may not be reduced.

(2) *Chlorine dioxide*—(i) *Routine monitoring.* Community, nontransient noncommunity, and transient noncommunity water systems that use chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system must take samples in the distribution system the following day at the locations required by paragraph (c)(2)(i) of this section, in addition to the sample required at the entrance to the distribution system.

(ii) *Additional monitoring.* On each day following a routine sample monitoring result that exceeds the MRDL, the system is required to take three chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system must take three samples as close to the first customer as possible, at intervals of at least six hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(iii) *Reduced monitoring.* Chlorine dioxide monitoring may not be reduced.

(d) *Monitoring requirements for disinfection byproduct precursors (DBPP).*

(1) *Routine monitoring.* Subpart H sys-

tems which use conventional filtration treatment (as defined in § 141.2) must monitor each treatment plant for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water. All systems required to monitor under this paragraph (d)(1) must also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(2) *Reduced monitoring.* Subpart H systems with an average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the month following the quarter when the annual average treated water TOC ≥ 2.0 mg/L.

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

(f) *Monitoring plans.* Each system required to monitor under this subpart must develop and implement a monitoring plan. The system must maintain the plan and make it available for inspection by the State and the general public no later than 30 days following the applicable compliance dates in § 141.130(b). All Subpart H systems serving more than 3300 people must submit a copy of the monitoring plan to the State no later than the date of the first report required under § 141.134. The State may also require the plan to be

submitted by any other system. After review, the State may require changes in any plan elements. The plan must include at least the following elements.

(1) Specific locations and schedules for collecting samples for any parameters included in this subpart.

(2) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

(3) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, under the provisions of § 141.29, the sampling plan must reflect the entire distribution system.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, § 141.132 was amended in paragraph (a)(5) by removing the reference to "or subpart M of this part", effective July 29, 2004.

§ 141.133 Compliance requirements.

(a) *General requirements.* (1) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average. Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system failure to monitor makes it impossible to determine compliance with MRDLs for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

(2) All samples taken and analyzed under the provisions of this subpart must be included in determining compliance, even if that number is greater than the minimum required.

(3) If, during the first year of monitoring under § 141.132, any individual quarter's average will cause the running annual average of that system to exceed the MCL, the system is out of compliance at the end of that quarter.

(b) *Disinfection byproducts*—(1) *TTHMs and HAA5.* (i) For systems monitoring quarterly, compliance with MCLs in § 141.64 must be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic

averages of all samples collected by the system as prescribed by § 141.132(b)(1).

(ii) For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under the provisions of § 141.132(b)(1) does not exceed the MCLs in § 141.64. If the average of these samples exceeds the MCL, the system must increase monitoring to once per quarter per treatment plant and such a system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase monitoring frequency to quarterly monitoring must calculate compliance by including the sample which triggered the increased monitoring plus the following three quarters of monitoring.

(iii) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to § 141.32 or § 141.202, whichever is effective for your system, in addition to reporting to the State pursuant to § 141.134.

(iv) If a PWS fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

(2) *Bromate.* Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by § 141.132(b)(3). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to § 141.134. If a PWS fails to complete 12 consecutive months' monitoring, compliance with the MCL for the last four-quarter compliance period must

be based on an average of the available data.

(3) *Chlorite*. Compliance must be based on an arithmetic average of each three sample set taken in the distribution system as prescribed by § 141.132(b)(2)(i)(B) and § 141.132(b)(2)(ii). If the arithmetic average of any three sample set exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to § 141.134.

(c) *Disinfectant residuals*—(1) *Chlorine and chloramines*. (i) Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under § 141.132(c)(1). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to § 141.134.

(ii) In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to § 141.134 must clearly indicate which residual disinfectant was analyzed for each sample.

(2) *Chlorine dioxide*. (i) *Acute violations*. Compliance must be based on consecutive daily samples collected by the system under § 141.132(c)(2). If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and must take immediate corrective action to lower the level of chlorine dioxide below the MRDL and must notify the public pursuant to the procedures for acute health risks in subpart Q in addition to reporting to the State pursuant to § 141.134. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation

and the system must notify the public of the violation in accordance with the provisions for acute violations under subpart Q in addition to reporting to the State pursuant to § 141.134.

(ii) *Nonacute violations*. Compliance must be based on consecutive daily samples collected by the system under § 141.132(c)(2). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and will notify the public pursuant to the procedures for nonacute health risks in subpart Q in addition to reporting to the State pursuant to § 141.134. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system must notify the public of the violation in accordance with the provisions for nonacute violations under § 141.32(e)(78) in addition to reporting to the State pursuant to § 141.134.

(d) *Disinfection byproduct precursors (DBPP)*. Compliance must be determined as specified by § 141.135(c). Systems may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in § 141.135(b)(2) and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to § 141.135(b)(3) and is in violation. Systems may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For systems required to meet Step 1 TOC removals, if the value calculated under § 141.135(c)(1)(iv) is less

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than 1.00, the system is in violation of the treatment technique requirements and must notify the public pursuant to § 141.32, in addition to reporting to the State pursuant to § 141.134.

[63 FR 69466, Dec. 16, 1998, as amended at 65 FR 26022, May 4, 2000; 65 FR 40521, June 30, 2000; 66 FR 3777, Jan. 16, 2001]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, § 141.133 was amended by revising paragraph (a)(3), effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

§ 141.133 Compliance requirements.

(a) * * *

(3) If, during the first year of monitoring under § 141.132, any individual quarter's average will cause the running annual average of that system to exceed the MCL for total trihalomethanes, haloacetic acids (five), or bromate; or the MRDL for chlorine or chlor-

amine, the system is out of compliance at the end of that quarter.

* * * * *

§ 141.134 Reporting and recordkeeping requirements.

(a) Systems required to sample quarterly or more frequently must report to the State within 10 days after the end of each quarter in which samples were collected, notwithstanding the provisions of § 141.31. Systems required to sample less frequently than quarterly must report to the State within 10 days after the end of each monitoring period in which samples were collected.

(b) *Disinfection byproducts.* Systems must report the information specified in the following table:

If you are a * * *	You must report * * *
(1) System monitoring for TTHMs and HAA5 under the requirements of § 141.132(b) on a quarterly or more frequent basis.	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of all samples taken in the last quarter. (iv) The annual arithmetic average of the quarterly arithmetic averages of this section for the last four quarters.
(2) System monitoring for TTHMs and HAA5 under the requirements of § 141.132(b) less frequently than quarterly (but as least annually).	(v) Whether, based on § 141.133(b)(1), the MCL was violated. (i) The number of samples taken during the last year. (ii) The location, date, and result of each sample taken during the last monitoring period. (iii) The arithmetic average of all samples taken over the last year.
(3) System monitoring for TTHMs and HAA5 under the requirements of § 141.132(b) less frequently than annually.	(iv) Whether, based on § 141.133(b)(1), the MCL was violated. (i) The location, date, and result of each sample taken
(4) System monitoring for chlorite under the requirements of § 141.132(b).	(ii) Whether, based on § 141.133(b)(1), the MCL was violated. (i) The number of entry point samples taken each month for the last 3 months. (ii) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (iii) For each month in the reporting period, the arithmetic average of all samples taken in each three samples set taken in the distribution system. (iv) Whether, based on § 141.133(b)(3), the MCL was violated, in which month, and how many times it was violated each month.
(5) System monitoring for bromate under the requirements of § 141.132(b).	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. (iv) Whether, based on § 141.133(b)(2), the MCL was violated.

* The State may choose to perform calculations and determine whether the MCL was exceeded, in lieu of having the system report that information

(c) *Disinfectants.* Systems must report the information specified in the following table:

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If you are a * * *	You must report * * *
(1) System monitoring for chlorine or chloramines under the requirements of § 141.132(c).	(i) The number of samples taken during each month of the last quarter. (ii) The month arithmetic average of all samples taken in each month for the last 12 months. (iii) The arithmetic average of the monthly averages for the last 12 months.
(2) System monitoring for chlorine dioxide under the requirements of § 141.132(c).	(iv) Whether, based on § 141.133(c)(1), the MRD was violated. (i) The dates, result, and locations of samples taken during the last quarter. (ii) Whether, based on § 141.133(c)(2), the MRDL was violated. (iii) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

* The State may choose to perform calculations and determine whether the MRDL was exceeded, in lieu of having the system report that information.

(d) *Disinfection byproduct precursors and enhanced coagulation or enhanced softening.* Systems must report the in-

formation specified in the following table:

If you are a...	You must report... ¹
(1) System monitoring monthly or quarterly for TOC under the requirements of § 141.132(d) and required to meet the enhanced coagulation or enhanced softening requirements in § 141.135(b)(2) or (3).	(i) The number of paired (source water and treated water) samples taken during the last quarter. (ii) The location, date, and results of each paired sample and associated alkalinity taken during the last quarter. (iii) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. (iv) Calculations for determining compliance with the TOC percent removal requirements, as provided in § 141.135(c)(1). (v) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in § 141.135(b) for the last four quarters.
(2) System monitoring monthly or quarterly for TOC under the requirements of § 141.132(d) and meeting one or more of the alternative compliance criteria in § 141.135(a)(2) or (3).	(i) The alternative compliance criterion that the system is using. (ii) The number of paired samples taken during the last quarter. (iii) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (iv) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in §§ 141.135(a)(2)(i) or (ii) or of treated water TOC for systems meeting the criterion in § 141.135(a)(2)(ii). (v) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in § 141.135(a)(2)(v) or of treated water SUVA for systems meeting the criterion in § 141.135(a)(2)(vi). (vi) The running annual average of source water alkalinity for systems meeting the criterion in § 141.135(a)(2)(iii) and of treated water alkalinity for systems meeting the criterion in § 141.135(a)(3)(i). (vii) The running annual average for both TTHM and HAA5 for systems meeting the criterion in § 141.135(a)(2)(iii) or (iv). (viii) The running annual average of the amount of magnesium hardness removal (as CaCO ₃ , in mg/L) for systems meeting the criterion in § 141.135(a)(3)(ii). (ix) Whether the system is in compliance with the particular alternative compliance criterion in § 141.135(a)(2) or (3).

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

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3778, Jan. 16, 2001; 66 FR 9903, Feb. 12, 2001]

§ 141.135 Treatment technique for control of disinfection byproduct (DBP) precursors.

(a) *Applicability.* (1) Subpart H systems using conventional filtration treatment (as defined in § 141.2) must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in paragraph (b) of this section unless the system meets at least one of the alternative compliance criteria listed in paragraph (a)(2) or (a)(3) of this section.

(2) *Alternative compliance criteria for enhanced coagulation and enhanced softening systems.* Subpart H systems using conventional filtration treatment may use the alternative compliance criteria in paragraphs (a)(2)(i) through (vi) of this section to comply with this section in lieu of complying with paragraph (b) of this section. Systems must still comply with monitoring requirements in § 141.132(d).

(i) The system's source water TOC level, measured according to § 141.131(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

(ii) The system's treated water TOC level, measured according to § 141.131(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

(iii) The system's source water TOC level, measured according to § 141.131(d)(3), is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity, measured according to § 141.131(d)(1), is greater than 60 mg/L (as CaCO₃), calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or prior to the effective date for compliance in § 141.130(b), the system has made a clear and irrevocable financial commitment not later than the effective date for compliance in § 141.130(b) to use of technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. Systems must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for

installation and operation of appropriate technologies, to the State for approval not later than the effective date for compliance in § 141.130(b). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a violation of National Primary Drinking Water Regulations.

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

(v) The system's source water SUVA, prior to any treatment and measured monthly according to § 141.131(d)(4), is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(vi) The system's finished water SUVA, measured monthly according to § 141.131(d)(4), is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(3) *Additional alternative compliance criteria for softening systems.* Systems practicing enhanced softening that cannot achieve the TOC removals required by paragraph (b)(2) of this section may use the alternative compliance criteria in paragraphs (a)(3)(i) and (ii) of this section in lieu of complying with paragraph (b) of this section. Systems must still comply with monitoring requirements in § 141.132(d).

(i) Softening that results in lowering the treated water alkalinity to less than 60 mg/L (as CaCO₃), measured monthly according to § 141.131(d)(1) and calculated quarterly as a running annual average.

(ii) Softening that results in removing at least 10 mg/L of magnesium hardness (as CaCO₃), measured monthly and calculated quarterly as an annual running average.

(b) *Enhanced coagulation and enhanced softening performance requirements.* (1) Systems must achieve the percent reduction of TOC specified in paragraph (b)(2) of this section between the source water and the combined filter effluent, unless the State approves

a system's request for alternate minimum TOC removal (Step 2) requirements under paragraph (b)(3) of this section.

(2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water pa-

rameters measured in accordance with §141.131(d). Systems practicing softening are required to meet the Step 1 TOC reductions in the far-right column (Source water alkalinity >120 mg/L) for the specified source water TOC:

STEP 1 REQUIRED REMOVAL OF TOC BY ENHANCED COAGULATION AND ENHANCED SOFTENING FOR SUBPART H SYSTEMS USING CONVENTIONAL TREATMENT^{1 2}

Source-water TOC, mg/L	Source-water alkalinity, mg/L as CaCO ₃ (in percentages)		
	0-60	>60-120	>120 ³
>2.0-4.0	35.0	25.0	15.0
>4.0-8.0	45.0	35.0	25.0
>8.0	50.0	40.0	30.0

¹ Systems meeting at least one of the conditions in paragraph (a)(2)(i)-(vi) of this section are not required to operate with enhanced coagulation.

² Softening system meeting one of the alternative compliance criteria in paragraph (a)(3) of this section are not required to operate with enhanced softening.

³ System practicing softening must meet the TOC removal requirements in this column.

(3) Subpart H conventional treatment systems that cannot achieve the Step 1 TOC removals required by paragraph (b)(2) of this section due to water quality parameters or operational constraints must apply to the State, within three months of failure to achieve the TOC removals required by paragraph (b)(2) of this section, for approval of alternative minimum TOC (Step 2) removal requirements submitted by the system. If the State approves the alternative minimum TOC removal (Step 2) requirements, the State may make those requirements retroactive for the purposes of determining compliance. Until the State approves the alternate minimum TOC removal (Step 2) requirements, the system must meet the Step 1 TOC removals contained in paragraph (b)(2) of this section.

(4) *Alternate minimum TOC removal (Step 2) requirements.* Applications made to the State by enhanced coagulation systems for approval of alternate minimum TOC removal (Step 2) requirements under paragraph (b)(3) of this section must include, at a minimum, results of bench- or pilot-scale testing conducted under paragraph (b)(4)(i) of this section. The submitted bench- or pilot-scale testing must be used to determine the alternate enhanced coagulation level.

(i) *Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the*

method described in paragraphs (b)(4)(i) through (v) of this section such that an incremental addition of 10 mg/L of alum (or equivalent amount of ferric salt) results in a TOC removal of ≤ 0.3 mg/L. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the minimum TOC removal required for the system. Once approved by the State, this minimum requirement supersedes the minimum TOC removal required by the table in paragraph (b)(2) of this section. This requirement will be effective until such time as the State approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve State-set alternative minimum TOC removal levels is a violation of National Primary Drinking Water Regulations.

(ii) Bench- or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding 10 mg/L increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

ENHANCED COAGULATION STEP 2 TARGET PH

Alkalinity (mg/L as CaCO ₃)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0

ENHANCED COAGULATION STEP 2 TARGET PH—
Continued

Alkalinity (mg/L as CaCO ₃)	Target pH
>240	7.5

(iii) For waters with alkalinities of less than 60 mg/L for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the system must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

(iv) The system may operate at any coagulant dose or pH necessary (consistent with other NPDWRs) to achieve the minimum TOC percent removal approved under paragraph (b)(3) of this section.

(v) If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The system may then apply to the State for a waiver of enhanced coagulation requirements.

(c) *Compliance calculations.* (1) Subpart H systems other than those identified in paragraph (a)(2) or (a)(3) of this section must comply with requirements contained in paragraph (b)(2) or (b)(3) of this section. Systems must calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining an annual average using the following method:

(i) Determine actual monthly TOC percent removal, equal to:

$$(1 - (\text{treated water TOC} / \text{source water TOC})) \times 100$$

(ii) Determine the required monthly TOC percent removal (from either the table in paragraph (b)(2) of this section or from paragraph (b)(3) of this section).

(iii) Divide the value in paragraph (c)(1)(i) of this section by the value in paragraph (c)(1)(ii) of this section.

(iv) Add together the results of paragraph (c)(1)(iii) of this section for the last 12 months and divide by 12.

(v) If the value calculated in paragraph (c)(1)(iv) of this section is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(2) Systems may use the provisions in paragraphs (c)(2)(i) through (v) of this section in lieu of the calculations in paragraph (c)(1)(i) through (v) of this section to determine compliance with TOC percent removal requirements.

(i) In any month that the system's treated or source water TOC level, measured according to §141.131(d)(3), is less than 2.0 mg/L, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(ii) In any month that a system practicing softening removes at least 10 mg/L of magnesium hardness (as CaCO₃), the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(iii) In any month that the system's source water SUVA, prior to any treatment and measured according to §141.131(d)(4), is ≤2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(iv) In any month that the system's finished water SUVA, measured according to §141.131(d)(4), is ≤2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(v) In any month that a system practicing enhanced softening lowers alkalinity below 60 mg/L (as CaCO₃), the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the

provisions of paragraph (c)(1) of this section.

(3) Subpart H systems using conventional treatment may also comply with the requirements of this section by meeting the criteria in paragraph (a)(2) or (3) of this section.

(d) *Treatment technique requirements for DBP precursors.* The Administrator identifies the following as treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems: For Subpart H systems using conventional treatment, enhanced coagulation or enhanced softening.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001]

Subparts M-N [Reserved]

Subpart O—Consumer Confidence Reports

SOURCE: 63 FR 44526, Aug. 19, 1998, unless otherwise noted.

§ 141.151 Purpose and applicability of this subpart.

(a) This subpart establishes the minimum requirements for the content of annual reports that community water systems must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(b) Notwithstanding the provisions of § 141.3, this subpart applies only to community water systems.

(c) For the purpose of this subpart, *customers* are defined as billing units or service connections to which water is delivered by a community water system.

(d) For the purpose of this subpart, *detected* means: at or above the levels prescribed by § 141.23(a)(4) for inorganic contaminants, at or above the levels prescribed by § 141.24(f)(7) for the contaminants listed in § 141.61(a), at or above the level prescribed by § 141.24(h)(18) for the contaminants listed in § 141.61(c), and at or above the lev-

els prescribed by § 141.25(c) for radioactive contaminants.

(e) A State that has primary enforcement responsibility may adopt by rule, after notice and comment, alternative requirements for the form and content of the reports. The alternative requirements must provide the same type and amount of information as required by §§ 141.153 and 141.154, and must be designed to achieve an equivalent level of public information and education as would be achieved under this subpart.

(f) For purpose of §§ 141.154 and 141.155 of this subpart, the term "primacy agency" refers to the State or tribal government entity that has jurisdiction over, and primary enforcement responsibility for, public water systems, even if that government does not have interim or final primary enforcement responsibility for this rule. Where the State or tribe does not have primary enforcement responsibility for public water systems, the term "primacy agency" refers to the appropriate EPA regional office.

§ 141.152 Effective dates.

(a) The regulations in this subpart shall take effect on September 18, 1998.

(b) Each existing community water system must deliver its first report by October 19, 1999, its second report by July 1, 2000, and subsequent reports by July 1 annually thereafter. The first report must contain data collected during, or prior to, calendar year 1998 as prescribed in § 141.153(d)(3). Each report thereafter must contain data collected during, or prior to, the previous calendar year.

(c) A new community water system must deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

(d) A community water system that sells water to another community water system must deliver the applicable information required in § 141.153 to the buyer system:

(1) No later than April 19, 1999, by April 1, 2000, and by April 1 annually thereafter or

(2) On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

§ 141.153 Content of the reports.

(a) Each community water system must provide to its customers an annual report that contains the information specified in this section and § 141.154.

(b) Information on the source of the water delivered:

(1) Each report must identify the source(s) of the water delivered by the community water system by providing information on:

(i) The type of the water: e.g., surface water, ground water; and

(ii) The commonly used name (if any) and location of the body (or bodies) of water.

(2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the primacy agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the primacy agency or written by the operator.

(c) *Definitions.* (1) Each report must include the following definitions:

(i) *Maximum Contaminant Level Goal or MCLG:* The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(ii) *Maximum Contaminant Level or MCL:* The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(2) A report for a community water system operating under a variance or an exemption issued under § 1415 or 1416 of SDWA must include the following definition: *Variances and Exemptions:* State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

(3) A report that contains data on contaminants that EPA regulates using any of the following terms must include the applicable definitions:

(i) *Treatment Technique:* A required process intended to reduce the level of a contaminant in drinking water.

(ii) *Action Level:* The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

(iii) *Maximum residual disinfectant level goal or MRDLG:* The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(iv) *Maximum residual disinfectant level or MRDL:* The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

(d) Information on detected contaminants.

(1) This sub-section specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*). It applies to:

(i) Contaminants subject to a MCL, action level, maximum residual disinfectant level, or treatment technique (regulated contaminants).

(ii) Contaminants for which monitoring is required by § 141.40 (unregulated contaminants); and

(iii) Disinfection by-products or microbial contaminants for which monitoring is required by §§ 141.142 and 141.143, except as provided under paragraph (e)(1) of this section, and which are detected in the finished water.

(2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results which a community water system chooses to include in its report must be displayed separately.

(3) The data must be derived from data collected to comply with EPA and State monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter except that:

(i) Where a system is allowed to monitor for regulated contaminants less often than once a year, the table(s) must include the date and results of

the most recent sampling and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than 5 years need be included.

(ii) Results of monitoring in compliance with §§141.142 and 141.143 need only be included for 5 years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

(4) For detected regulated contaminants (listed in appendix A to this subpart), the table(s) must contain:

(i) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in appendix A to this subpart);

(ii) The MCLG for that contaminant expressed in the same units as the MCL;

(iii) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique and/or action level, as appropriate, specified in paragraph(c)(3) of this section;

(iv) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with an NPDWR and the range of detected levels, as follows:

(A) When compliance with the MCL is determined annually or less frequently: The highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(B) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

(C) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points: the average and range of detection expressed in the same units as the MCL.

NOTE TO PARAGRAPH (d)(4)(iv): When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in appendix A of this subpart.

(v) For turbidity.

(A) When it is reported pursuant to §141.13: The highest average monthly value.

(B) When it is reported pursuant to the requirements of §141.71: the highest monthly value. The report should include an explanation of the reasons for measuring turbidity.

(C) When it is reported pursuant to §141.73 or §141.173 or §141.551: the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in §141.73 or §141.173, or §141.551 for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity;

(vi) For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;

(vii) For total coliform:

(A) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

(B) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;

(viii) For fecal coliform: The total number of positive samples; and

(ix) The likely source(s) of detected contaminants to the best of the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the operator. If the operator lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in appendix A to this subpart that is most applicable to the system.

(5) If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table should contain a separate column for each service area and the report should identify each separate distribution system. Alternatively, systems could

produce separate reports tailored to include data for each service area.

(6) The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including: the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language of appendix A to this subpart.

(7) For detected unregulated contaminants for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(e) Information on *Cryptosporidium*, radon, and other contaminants:

(1) If the system has performed any monitoring for *Cryptosporidium*, including monitoring performed to satisfy the requirements of § 141.143, which indicates that *Cryptosporidium* may be present in the source water or the finished water, the report must include:

(i) A summary of the results of the monitoring; and

(ii) An explanation of the significance of the results.

(2) If the system has performed any monitoring for radon which indicates that radon may be present in the finished water, the report must include:

(i) The results of the monitoring; and

(ii) An explanation of the significance of the results.

(3) If the system has performed additional monitoring which indicates the presence of other contaminants in the finished water, EPA strongly encourages systems to report any results which may indicate a health concern. To determine if results may indicate a health concern, EPA recommends that systems find out if EPA has proposed an NPDWR or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline (800-426-4791). EPA considers detects above a proposed MCL or health advisory level to indicate possible health concerns.

For such contaminants, EPA recommends that the report include:

(i) The results of the monitoring; and

(ii) An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

(f) Compliance with NPDWR. In addition to the requirements of § 141.153(d)(6), the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation.

(1) Monitoring and reporting of compliance data;

(2) Filtration and disinfection prescribed by subpart H of this part. For systems which have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes which constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

(3) Lead and copper control requirements prescribed by subpart I of this part. For systems that fail to take one or more actions prescribed by §§ 141.80(d), 141.81, 141.82, 141.83 or 141.84, the report must include the applicable language of appendix A to this subpart for lead, copper, or both.

(4) Treatment techniques for Acrylamide and Epichlorohydrin prescribed by subpart K of this part. For systems that violate the requirements of subpart K of this part, the report must include the relevant language from appendix A to this subpart.

(5) Recordkeeping of compliance data.

(6) Special monitoring requirements prescribed by §§ 141.40 and 141.41; and

(7) Violation of the terms of a variance, an exemption, or an administrative or judicial order.

(g) Variances and Exemptions. If a system is operating under the terms of

a variance or an exemption issued under §1415 or 1416 of SDWA, the report must contain:

- (1) An explanation of the reasons for the variance or exemption;
- (2) The date on which the variance or exemption was issued;
- (3) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and
- (4) A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

(h) Additional information:

(1) The report must contain a brief explanation regarding contaminants which may reasonably be expected to be found in drinking water including bottled water. This explanation may include the language of paragraphs (h)(1) (i) through (iii) or systems may use their own comparable language. The report also must include the language of paragraph (h)(1)(iv) of this section.

(i) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

(ii) Contaminants that may be present in source water include:

(A) *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) *Inorganic contaminants*, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

(D) *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of in-

dustrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(E) *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

(ii) In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

(iv) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

(2) The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

(3) In communities with a large proportion of non-English speaking residents, as determined by the Primacy Agency, the report must contain information in the appropriate language(s) regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(4) The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

(5) The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

[63 FR 44526, Aug. 19, 1998, as amended at 63 FR 69516, Dec. 16, 1998; 64 FR 34733, June 29, 1999; 65 FR 26022, May 4, 2000; 67 FR 1836, Jan. 14, 2002]

§ 141.154 Required additional health information.

(a) All reports must prominently display the following language: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

(b) Ending in the report due by July 1, 2001, a system which detects arsenic at levels above 0.025 mg/L, but below the 0.05 mg/L, and beginning in the report due by July 1, 2002, a system that detects arsenic above 0.005 mg/L and up to and including 0.010 mg/L:

(1) Must include in its report a short informational statement about arsenic, using language such as: While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

(2) May write its own educational statement, but only in consultation with the Primacy Agency.

(c) A system which detects nitrate at levels above 5 mg/l, but below the MCL:

(1) Must include a short informational statement about the impacts of nitrate on children using language such as: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agri-

cultural activity. If you are caring for an infant you should ask advice from your health care provider.

(2) May write its own educational statement, but only in consultation with the Primacy Agency.

(d) Systems which detect lead above the action level in more than 5%, and up to and including 10%, of homes sampled:

(1) Must include a short informational statement about the special impact of lead on children using language such as: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

(2) May write its own educational statement, but only in consultation with the Primacy Agency.

(e) Community water systems that detect TTHM above 0.080 mg/l, but below the MCL in § 141.12, as an annual average, monitored and calculated under the provisions of § 141.30, must include health effects language for TTHMs prescribed by appendix A.

(f) Beginning in the report due by July 1, 2002, and ending January 22, 2006, a community water system that detects arsenic above 0.010 mg/L and up to and including 0.05 mg/L must include the arsenic health effects language prescribed by Appendix A to Subpart O of this part.

[63 FR 44526, Aug. 19, 1998, as amended at 63 FR 69475, Dec. 16, 1998; 64 FR 34733, June 29, 1999; 65 FR 26023, May 4, 2000; 66 FR 7064, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003]

§ 141.155 Report delivery and record-keeping.

(a) Except as provided in paragraph (g) of this section, each community water system must mail or otherwise directly deliver one copy of the report to each customer.

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(b) The system must make a good faith effort to reach consumers who do not get water bills, using means recommended by the primacy agency. EPA expects that an adequate good faith effort will be tailored to the consumers who are served by the system but are not bill-paying customers, such as renters or workers. A good faith effort to reach consumers would include a mix of methods appropriate to the particular system such as: Posting the reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunch rooms of public buildings; delivery of multiple copies for distribution by single-biller customers such as apartment buildings or large private employers; delivery to community organizations.

(c) No later than the date the system is required to distribute the report to its customers, each community water system must mail a copy of the report to the primacy agency, followed within 3 months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the primacy agency.

(d) No later than the date the system is required to distribute the report to its customers, each community water system must deliver the report to any other agency or clearinghouse identified by the primacy agency.

(e) Each community water system must make its reports available to the public upon request.

(f) Each community water system serving 100,000 or more persons must post its current year's report to a publicly-accessible site on the Internet.

(g) The Governor of a State or his designee, or the Tribal Leader where the tribe has met the eligibility requirements contained in §142.72 for the purposes of waiving the mailing requirement, can waive the requirement of paragraph (a) of this section for community water systems serving fewer than 10,000 persons. In consultation with the tribal government, the Regional Administrator may waive the requirement of §141.155(a) in areas in Indian country where no tribe has been deemed eligible.

(1) Such systems must:

(i) Publish the reports in one or more local newspapers serving the area in which the system is located;

(ii) Inform the customers that the reports will not be mailed, either in the newspapers in which the reports are published or by other means approved by the State; and

(iii) Make the reports available to the public upon request.

(2) Systems serving 500 or fewer persons may forego the requirements of paragraphs (g)(1)(i) and (ii) of this section if they provide notice at least once per year to their customers by mail, door-to-door delivery or by posting in an appropriate location that the report is available upon request.

(h) Any system subject to this subpart must retain copies of its Consumer Confidence Report for no less than 3 years.

[63 FR 44526, Aug. 19, 1998, as amended at 65 FR 26023, May 4, 2000]

APPENDIX A TO SUBPART O OF PART 141—REGULATED CONTAMINANTS

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological contaminants: Total Coliform Bacteria ...	MCL (systems that collect >40 samples/month) 5% of monthly samples are positive; (systems that collect <40 samples/month) 1 positive monthly sample. 0	.....	MCL (systems that collect >40 samples/month) 5% of monthly samples are positive; (systems that collect <40 samples/month) 1 positive monthly sample. 0	0	Naturally present in the environment.	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Fecal coliform and E. coli	0	.....	0	0	Human and animal fecal waste ...	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.
Total organic carbon (ppm).	TT	TT	N/A	Naturally present in the environment.	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

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Turbidity (NTU)	TT		TT	N/A	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
Radioactive contaminants: Beta/photon emitters (mrem/yr).	4 mrem/yr	-	4	0	Decay of natural and man-made deposits.	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters (pCi/L)	15 pCi/L	-	15	0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (pCi/L)	5 pCi/L	-	5	0	Erosion of natural deposits	Some people who drink water containing radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (pCi/L)	30 µg/L	-	30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
Inorganic contaminants: Antimony (ppb)006	1000	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

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Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Arsenic (ppb)	10.010	1000	110	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL		7	7	Decay of asbestos cement water mains; Erosion of natural deposits.	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	2		2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Bromate (ppb)	.010	1000	10	0	By-product of drinking water disinfection.	Some people who drink water of containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints.	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chloramines (ppm)	MRDL=4		MRDL=4	MRDLG=4	Water additive used to control microbes.	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

Chlorine (ppm)	MRDL=4		MRDL=4	MRDLG=4	Water additive used to control microbes.	Some people who use water containing chlorine will in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine will in excess of the MRDL could experience stomach discomfort.
Chlorine dioxide (ppb)	MRDL=8	1000	MRDL=800	MRDLG=800	Water additive used to control microbes.	Some infants and young children who drink water chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
Chlorite (ppm)	1		1	0.3	By-product of drinking water disinfection.	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Chromium (ppb)	1	1000	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.	Some people who use water containing chromium will in excess of the MCL over many years could experience allergic dermatitis.
Copper (ppm)	AL=1.3		AL=1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits.	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Cyanide (ppb)	2	1000	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
Fluoride (ppm)	4		4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Lead (ppb)	AL=015	1000	AL=15	0	Corrosion of household plumbing systems; Erosion of natural deposits.	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Mercury (inorganic) (ppb)	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10		10	10	Runoff from fertilizer use; Leaching from septic tanks, seepage; Erosion of natural deposits.	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

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Nitrite (ppm)	1		1	1	Runoff from fertilizer use; Leaching from septic tanks, sew age; Erosion of natural deposits.	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb) .....	.05	1000	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
Thallium (ppb) .....	.002	1000	2	0.5	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories.	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic organic contaminants including pesticides and herbicides: 2,4-D (ppb) .....	.07	1000	70	70	Runoff from herbicide used on row crops.	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP [Silvex](ppb) .....	.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT		TT	0	Added to water during sewage/wastewater treatment.	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Alachlor (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops.	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops.	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
Benzo(a)pyrene [PAH] (nanograms/l)	.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines.	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa.	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane (ppb)	.002	1000	2	0	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Dalapon (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way.	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Di(2-ethylhexyl) adipate (ppb)	.4	1000	400	400	Discharge from chemical factories	Some people who drink water containing di(2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.
Di(2-ethylhexyl) phthalate (ppb)	.006	1000	6	0	Discharge from rubber and chemical factories.	Some people who drink water containing di(2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromochloropropane (ppb)	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables.	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [2,3,7,8-TCDD] (ppq)	.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories.	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Endosulfan (ppb)	.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endosulfan in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Epichlorohydrin	TT		TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals.	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (ppt)	.00005	1,000,000	50	0	Discharge from petroleum refineries.	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
Glyphosate (ppb)	.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide (ppt)	.0002	1,000,000	200	0	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene (ppb)	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories.	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

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Hexachlorocyclopentadiene (ppb).	.05	1000	50	50	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens.	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl (Vydate) (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes.	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls] (ppt).	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals.	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Pentachlorophenol (ppb)	.001	1000	1	0	Discharge from wood preserving factories.	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram (ppb)	.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine (ppb)	.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

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Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Toxaphene (ppb) .....	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle.	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile organic contaminants: Benzene (ppb) .....	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills.	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon tetrachloride (ppb).	.005	1000	5	0	Discharge from chemical plants and other industrial activities.	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene (ppb) .....	.1	1000	100	100	Discharge from chemical and agricultural chemical factories.	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o-Dichlorobenzene (ppb)	.6	1000	600	600	Discharge from industrial chemical factories.	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
p-Dichlorobenzene (ppb)	.075	1000	75	75	Discharge from industrial chemical factories.	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichloroethane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

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1,1-Dichloroethylene (ppb).	.007	1000	7	7	Discharge from industrial chemical factories.	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
cis-1,2-Dichloroethylene (ppb).	.07	1000	70	70	Discharge from industrial chemical factories.	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
trans-1,2-Dichloroethylene (ppb).	.1	1000	100	100	Discharge from industrial chemical factories.	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories.	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane (ppb).	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene (ppb)	.7	1000	700	700	Discharge from petroleum refineries.	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Haloacetic Acids (HAA) (ppb).	.060	1000	60	N/A	By-product of drinking water disinfection.	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Styrene (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills.	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

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Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Tetrachloroethylene (ppb)	.005	1000	5	0	Discharge from factories and dry cleaners.	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene (ppb)	.07	1000	70	70	Discharge from textile-finishing factories.	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane (ppb)	.2	1000	200	200	Discharge from metal degreasing sites and other factories.	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
1,1,2-Trichloroethane (ppb)	.005	1000	5	3	Discharge from industrial chemical factories.	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
Trichloroethylene (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories.	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
TTHMs [Total trihalomethanes] (ppb)	0.10/.080	1000	100/80	N/A	By-product of drinking water disinfection.	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Toluene (ppm)	1	1	1	1	Discharge from petroleum factories.	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl Chloride (ppb) .....	.002	1000	2	0	Leaching from PVC piping; Discharge from plastics factories.	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes (ppm)	10	10	10	10	Discharge from petroleum factories; Discharge from chemical factories.	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

¹ These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.

Key:

AL=Action Level

MCL=Maximum Contaminant Level

MCLG=Maximum Contaminant Level Goal

MFL=million fibers per liter

MRDL=Maximum Residual Disinfectant Level

MRDLG=Maximum Residual Disinfectant Level Goal

mrem/year=millirems per year (a measure of radiation absorbed by the body)

N/A=Not Applicable

NTU=Nephelometric Turbidity Units (a measure of water clarity)

pCi/l=picocuries per liter (a measure of radioactivity)

ppm=parts per million, or milligrams per liter (mg/l)

ppb=parts per billion, or micrograms per liter (µg/l)

ppt=parts per trillion, or nanograms per liter

ppq=parts per quadrillion, or picograms per liter

TT=Treatment Technique

[65 FR 26024, May 4, 2000, as amended at 65 FR 76749, Dec. 7, 2000; 66 FR 7064, Jan. 22, 2001; 67 FR 70855, Nov. 27, 2002; 67 FR 73011, Dec. 9, 2002; 68 FR 14506, Mar. 25, 2003]

Subpart P—Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People

SOURCE: 63 FR 69516, Dec. 16, 1998, unless otherwise noted.

§ 141.170 General requirements.

(a) The requirements of this subpart P constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under subpart H of this part. The requirements of this subpart are applicable to subpart H systems serving at least 10,000 people, beginning January 1, 2002 unless otherwise specified in this subpart. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium*, and turbidity. Each subpart H system serving at least 10,000 people must provide treatment of its source water that complies with these treatment technique requirements and are in addition to those identified in § 141.70. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems.

(2) Compliance with the profiling and benchmark requirements under the provisions of § 141.172.

(b) A public water system subject to the requirements of this subpart is considered to be in compliance with the requirements of paragraph (a) of this section if:

(1) It meets the requirements for avoiding filtration in §§ 141.71 and 141.171 and the disinfection requirements in §§ 141.72 and 141.172; or

(2) It meets the applicable filtration requirements in either § 141.73 or § 141.173 and the disinfection requirements in §§ 141.72 and 141.172.

(c) Systems are not permitted to begin construction of uncovered finished water storage facilities beginning February 16, 1999.

(d) Subpart H systems that did not conduct optional monitoring under § 141.172 because they served fewer than 10,000 persons when such monitoring was required, but serve more than 10,000 persons prior to January 14, 2005 must comply with §§ 141.170, 141.171, 141.173, 141.174, and 141.175. These systems must also consult with the State to establish a disinfection benchmark. A system that decides to make a significant change to its disinfection practice, as described in § 141.172(c)(1)(i) through (iv) must consult with the State prior to making such change.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001; 67 FR 1836, Jan. 14, 2002]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, § 141.170 was amended in paragraph (d) by removing the date "January 14, 2005" and adding in its place "January 1, 2005", effective July 29, 2004.

§ 141.171 Criteria for avoiding filtration.

In addition to the requirements of § 141.71, a public water system subject to the requirements of this subpart that does not provide filtration must meet all of the conditions of paragraphs (a) and (b) of this section.

(a) *Site-specific conditions.* In addition to site-specific conditions in § 141.71(b), systems must maintain the watershed control program under § 141.71(b)(2) to minimize the potential for contamination by *Cryptosporidium* oocysts in the source water. The watershed control program must, for *Cryptosporidium*:

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

(2) Monitor the occurrence of activities which may have an adverse effect on source water quality.

(b) During the onsite inspection conducted under the provisions of § 141.71(b)(3), the State must determine

whether the watershed control program established under §141.71(b)(2) is adequate to limit potential contamination by *Cryptosporidium* oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed.

§ 141.172 Disinfection profiling and benchmarking.

(a) *Determination of systems required to profile.* A public water system subject to the requirements of this subpart must determine its TTHM annual average using the procedure in paragraph (a)(1) of this section and its HAA5 annual average using the procedure in paragraph (a)(2) of this section. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring.

(1) The TTHM annual average must be the annual average during the same period as is used for the HAA5 annual average.

(i) Those systems that collected data under the provisions of subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under §141.142.

(ii) Those systems that use "grandfathered" HAA5 occurrence data that meet the provisions of paragraph (a)(2)(ii) of this section must use TTHM data collected at the same time under the provisions of §§ 141.12 and 141.30.

(iii) Those systems that use HAA5 occurrence data that meet the provisions of paragraph (a)(2)(iii)(A) of this section must use TTHM data collected at the same time under the provisions of §§ 141.12 and 141.30.

(2) The HAA5 annual average must be the annual average during the same period as is used for the TTHM annual average.

(i) Those systems that collected data under the provisions of subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under §141.142.

(ii) Those systems that have collected four quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in §§141.12 and 141.30 and handling and analytical method requirements of §141.142(b)(1) may use those data to determine whether the requirements of this section apply.

(iii) Those systems that have not collected four quarters of HAA5 occurrence data that meets the provisions of either paragraph (a)(2)(i) or (ii) of this section by March 16, 1999 must either:

(A) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in §§141.12 and 141.30 and handling and analytical method requirements of §141.142(b)(1) to determine the HAA5 annual average and whether the requirements of paragraph (b) of this section apply. This monitoring must be completed so that the applicability determination can be made no later than March 31, 2000, or

(B) Comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with paragraph (b) of this section.

(3) The system may request that the State approve a more representative annual data set than the data set determined under paragraph (a)(1) or (2) of this section for the purpose of determining applicability of the requirements of this section.

(4) The State may require that a system use a more representative annual data set than the data set determined under paragraph (a)(1) or (2) of this section for the purpose of determining applicability of the requirements of this section.

(5) The system must submit data to the State on the schedule in paragraphs (a)(5)(i) through (v) of this section.

(i) Those systems that collected TTHM and HAA5 data under the provisions of subpart M (Information Collection Rule), as required by paragraphs (a)(1)(i) and (a)(2)(i) of this section, must submit the results of the samples collected during the last 12 months of required monitoring under §141.142 not later than December 31, 1999.

(ii) Those systems that have collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in §§ 141.12 and 141.30 and handling and analytical method requirements of § 141.142(b)(1), as allowed by paragraphs (a)(1)(ii) and (a)(2)(ii) of this section, must submit those data to the State not later than April 16, 1999. Until the State has approved the data, the system must conduct monitoring for HAA5 using the monitoring requirements specified under paragraph (a)(2)(iii) of this section.

(iii) Those systems that conduct monitoring for HAA5 using the monitoring requirements specified by paragraphs (a)(1)(iii) and (a)(2)(iii)(A) of this section, must submit TTHM and HAA5 data not later than March 31, 2000.

(iv) Those systems that elect to comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with this section, as allowed under paragraphs (a)(2)(iii)(B) of this section, must notify the State in writing of their election not later than December 31, 1999.

(v) If the system elects to request that the State approve a more representative annual data set than the data set determined under paragraph (a)(2)(i) of this section, the system must submit this request in writing not later than December 31, 1999.

(6) Any system having either a TTHM annual average ≥ 0.064 mg/L or an HAA5 annual average ≥ 0.048 mg/L during the period identified in paragraphs (a)(1) and (2) of this section must comply with paragraph (b) of this section.

(b) *Disinfection profiling.* (1) Any system that meets the criteria in paragraph (a)(6) of this section must develop a disinfection profile of its disinfection practice for a period of up to three years.

(2) The system must monitor daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the CT_{99.9} values in Tables 1.1-1.6, 2.1, and 3.1 of § 141.74(b), as appropriate, through the entire treatment plant. This system must begin this monitoring not later than April 1,

2000. As a minimum, the system with a single point of disinfectant application prior to entrance to the distribution system must conduct the monitoring in paragraphs (b)(2)(i) through (iv) of this section. A system with more than one point of disinfectant application must conduct the monitoring in paragraphs (b)(2)(i) through (iv) of this section for each disinfection segment. The system must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in § 141.74(a), as follows:

(i) The temperature of the disinfected water must be measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.

(ii) If the system uses chlorine, the pH of the disinfected water must be measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.

(iii) The disinfectant contact time(s) ("T") must be determined for each day during peak hourly flow.

(iv) The residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection must be measured each day during peak hourly flow.

(3) In lieu of the monitoring conducted under the provisions of paragraph (b)(2) of this section to develop the disinfection profile, the system may elect to meet the requirements of paragraph (b)(3)(i) of this section. In addition to the monitoring conducted under the provisions of paragraph (b)(2) of this section to develop the disinfection profile, the system may elect to meet the requirements of paragraph (b)(3)(i) of this section.

(i) A PWS that has three years of existing operational data may submit those data, a profile generated using those data, and a request that the State approve use of those data in lieu of monitoring under the provisions of paragraph (b)(2) of this section not later than March 31, 2000. The State must determine whether these operational data are substantially equivalent to data collected under the provisions of paragraph (b)(2) of this section. These data must also be representative

of *Giardia lamblia* inactivation through the entire treatment plant and not just of certain treatment segments. Until the State approves this request, the system is required to conduct monitoring under the provisions of paragraph (b)(2) of this section.

(ii) In addition to the disinfection profile generated under paragraph (b)(2) of this section, a FWS that has existing operational data may use those data to develop a disinfection profile for additional years. Such systems may use these additional yearly disinfection profiles to develop a benchmark under the provisions of paragraph (c) of this section. The State must determine whether these operational data are substantially equivalent to data collected under the provisions of paragraph (b)(2) of this section. These data must also be representative of inactivation through the entire treatment plant and not just of certain treatment segments.

(4) The system must calculate the total inactivation ratio as follows:

(i) If the system uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the methods in paragraph (b)(4)(1)(A) or (b)(4)(1)(B) of this section.

(A) Determine one inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow.

(B) Determine successive $CT_{calc}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the system must calculate the total inactivation ratio by determining ($CT_{calc}/CT_{99.9}$) for each sequence and then adding the ($CT_{calc}/CT_{99.9}$) values together to determine ($\Sigma (CT_{calc}/CT_{99.9})$).

(ii) If the system uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The ($CT_{calc}/CT_{99.9}$) value of each segment and ($\Sigma (CT_{calc}/CT_{99.9})$) must be

calculated using the method in paragraph (b)(4)(i) of this section.

(iii) The system must determine the total logs of inactivation by multiplying the value calculated in paragraph (b)(4)(i) or (ii) of this section by 3.0.

(5) A system that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the State.

(6) The system must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the State for review as part of sanitary surveys conducted by the State.

(c) *Disinfection benchmarking.* (1) Any system required to develop a disinfection profile under the provisions of paragraphs (a) and (b) of this section and that decides to make a significant change to its disinfection practice must consult with the State prior to making such change. Significant changes to disinfection practice are:

(i) Changes to the point of disinfection;

(ii) Changes to the disinfectant(s) used in the treatment plant;

(iii) Changes to the disinfection process; and

(iv) Any other modification identified by the State.

(2) Any system that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified in paragraphs (c)(2)(i) through (ii) of this section.

(i) For each year of profiling data collected and calculated under paragraph (b) of this section, the system must determine the lowest average monthly *Giardia lamblia* inactivation in each year of profiling data. The system must determine the average *Giardia lamblia* inactivation for each calendar month for each year of profiling data by dividing the sum of daily *Giardia lamblia* of inactivation by the number of values calculated for that month.

(ii) The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the

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monthly logs of *Giardia lamblia* inactivation in each year of profiling data.

(3) A system that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a method approved by the State.

(4) The system must submit information in paragraphs (c)(4)(i) through (iii) of this section to the State as part of its consultation process.

(i) A description of the proposed change;

(ii) The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) under paragraph (b) of this section and benchmark as required by paragraph (c)(2) of this section; and

(iii) An analysis of how the proposed change will affect the current levels of disinfection.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001]

§ 141.173 Filtration.

A public water system subject to the requirements of this subpart that does not meet all of the criteria in this subpart and subpart H of this part for avoiding filtration must provide treatment consisting of both disinfection, as specified in § 141.72(b), and filtration treatment which complies with the requirements of paragraph (a) or (b) of this section or § 141.73 (b) or (c) by December 31, 2001.

(a) *Conventional filtration treatment or direct filtration.* (1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in § 141.74(a) and (c).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 1 NTU, measured as specified in § 141.74(a) and (c).

(3) A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the State.

(b) *Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration.* A public water system may use a filtration technology

not listed in paragraph (a) of this section or in § 141.73(b) or (c) if it demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of § 141.72(b), consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts, and the State approves the use of the filtration technology. For each approval, the State will set turbidity performance requirements that the system must meet at least 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

[63 FR 69516, Dec. 16, 1998, as amended at 65 FR 20313, Apr. 14, 2000; 66 FR 3779, Jan. 16, 2001]

§ 141.174 Filtration sampling requirements.

(a) Monitoring requirements for systems using filtration treatment. In addition to monitoring required by § 141.74, a public water system subject to the requirements of this subpart that provides conventional filtration treatment or direct filtration must conduct continuous monitoring of turbidity for each individual filter using an approved method in § 141.74(a) and must calibrate turbidimeters using the procedure specified by the manufacturer. Systems must record the results of individual filter monitoring every 15 minutes.

(b) If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.

§ 141.175 Reporting and recordkeeping requirements.

In addition to the reporting and recordkeeping requirements in § 141.75, a

public water system subject to the requirements of this subpart that provides conventional filtration treatment or direct filtration must report monthly to the State the information specified in paragraphs (a) and (b) of this section beginning January 1, 2002. In addition to the reporting and record-keeping requirements in § 141.75, a public water system subject to the requirements of this subpart that provides filtration approved under § 141.173(b) must report monthly to the State the information specified in paragraph (a) of this section beginning January 1, 2002. The reporting in paragraph (a) of this section is in lieu of the reporting specified in § 141.75(b)(1).

(a) Turbidity measurements as required by § 141.173 must be reported within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(1) The total number of filtered water turbidity measurements taken during the month.

(2) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in § 141.173(a) or (b).

(3) The date and value of any turbidity measurements taken during the month which exceed 1 NTU for systems using conventional filtration treatment or direct filtration, or which exceed the maximum level set by the State under § 141.173(b).

(b) Systems must maintain the results of individual filter monitoring taken under § 141.174 for at least three years. Systems must report that they have conducted individual filter turbidity monitoring under § 141.174 within 10 days after the end of each month the system serves water to the public. Systems must report individual filter turbidity measurement results taken under § 141.174 within 10 days after the end of each month the system serves water to the public only if measurements demonstrate one or more of the conditions in paragraphs (b)(1) through (4) of this section. Systems that use lime softening may apply to the State for alternative exceedance levels for the levels specified in paragraphs (b)(1) through (4) of this section if they can

demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

(1) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(2) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the system must report the filter number, the turbidity, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(3) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must conduct a self-assessment of the filter within 14 days of the exceedance and report that the self-assessment was conducted. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

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(4) For any individual filter that has a measured turbidity level of greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of two consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must arrange for the conduct of a comprehensive performance evaluation by the State or a third party approved by the State no later than 30 days following the exceedance and have the evaluation completed and submitted to the State no later than 90 days following the exceedance.

(c) *Additional reporting requirements.*

(1) If at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the system must inform the State as soon as possible, but no later than the end of the next business day.

(2) If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the State under §141.173(b) for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the system must inform the State as soon as possible, but no later than the end of the next business day.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001]

Subpart Q—Public Notification of Drinking Water Violations

SOURCE: 65 FR 26035, May 4, 2000, unless otherwise noted.

§ 141.201 General public notification requirements.

Public water systems in States with primacy for the public water system supervision (PWSS) program must comply with the requirements in this subpart no later than May 6, 2002 or on the date the State-adopted rule becomes effective, whichever comes first. Public water systems in jurisdictions where EPA directly implements the PWSS program must comply with the requirements in this subpart on Octo-

ber 31, 2000. Prior to these dates, public water systems must continue to comply with the public notice requirements in §141.32 of this part. The term "primacy agency" is used in this subpart to refer to either EPA or the State or the Tribe in cases where EPA, the State, or the Tribe exercises primary enforcement responsibility for this subpart.

(a) *Who must give public notice?* Each owner or operator of a public water system (community water systems, non-transient non-community water systems, and transient non-community water systems) must give notice for all violations of national primary drinking water regulations (NPDWR) and for other situations, as listed in Table 1. The term "NPDWR violations" is used in this subpart to include violations of the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures in this part 141. Appendix A to this subpart identifies the tier assignment for each specific violation or situation requiring a public notice.

TABLE 1 TO § 141.201—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A PUBLIC NOTICE

- (1) NPDWR violations:
 - (i) Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).
 - (ii) Failure to comply with a prescribed treatment technique (TT).
 - (iii) Failure to perform water quality monitoring, as required by the drinking water regulations.
 - (iv) Failure to comply with testing procedures as prescribed by a drinking water regulation.
- (2) Variance and exemptions under sections 1415 and 1416 of SDWA:
 - (i) Operation under a variance or an exemption.
 - (ii) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.
- (3) Special public notices:

TABLE 1 TO § 141.201—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A PUBLIC NOTICE—Continued

- (i) Occurrence of a waterborne disease outbreak or other waterborne emergency.
- (ii) Exceedance of the nitrate MCL by non-community water systems (NCWS), where granted permission by the primacy agency under 141.11(d) of this part.
- (iii) Exceedance of the secondary maximum contaminant level (SMCL) for fluoride.
- (iv) Availability of unregulated contaminant monitoring data.
- (v) Other violations and situations determined by the primacy agency to require a public notice under this subpart, not already listed in Appendix A.

(b) *What type of public notice is required for each violation or situation?* Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in Table 1 of this section are determined by the tier to which it is assigned. Table 2 of this section provides the definition of each tier. Appendix A of this part identifies the tier assignment for each specific violation or situation.

TABLE 2 TO § 141.201—DEFINITION OF PUBLIC NOTICE TIERS

- (1) *Tier 1 public notice*—required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.
- (2) *Tier 2 public notice*—required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.
- (3) *Tier 3 public notice*—required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.

(c) *Who must be notified?*

(1) Each public water system must provide public notice to persons served by the water system, in accordance

with this subpart. Public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) are required to give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.

(2) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the primacy agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the primacy agency for limiting distribution of the notice must be granted in writing.

(3) A copy of the notice must also be sent to the primacy agency, in accordance with the requirements under § 141.31(d).

§ 141.202 Tier 1 Public Notice—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 1 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 1 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO § 141.202—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE

- (1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in § 141.63(b)), or when the water system fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (as specified in § 141.21(e));
- (2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in § 141.62, or when the water system fails to take a confirmation sample within 24 hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in § 141.23(f)(2);

TABLE 1 TO § 141.202—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE—Continued

- (3) Exceedance of the nitrate MCL by non-community water systems, where permitted to exceed the MCL by the primacy agency under § 141.11(d), as required under § 141.209;
- (4) Violation of the MRDL for chlorine dioxide, as defined in § 141.65(a), when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water system does not take the required samples in the distribution system, as specified in § 141.133(c)(2)(i);
- (5) Violation of the turbidity MCL under § 141.13(b), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;
- (6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit (as identified in Appendix A), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;
- (7) Occurrence of a waterborne disease outbreak, as defined in § 141.2, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);
- (8) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the primacy agency either in its regulations or on a case-by-case basis.

(b) *When is the Tier 1 public notice to be provided? What additional steps are required? Public water systems must:*

(1) Provide a public notice as soon as practical but no later than 24 hours after the system learns of the violation;

(2) Initiate consultation with the primacy agency as soon as practical, but no later than 24 hours after the public water system learns of the violation or situation, to determine additional public notice requirements; and

(3) Comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the primacy agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

(c) *What is the form and manner of the public notice?* Public water systems must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one or more of the following forms of delivery:

(1) Appropriate broadcast media (such as radio and television);

(2) Posting of the notice in conspicuous locations throughout the area served by the water system;

(3) Hand delivery of the notice to persons served by the water system; or

(4) Another delivery method approved in writing by the primacy agency.

[65 FR 26035, May 4, 2000, as amended at 67 FR 1836, Jan. 14, 2002]

§ 141.203 Tier 2 Public Notice—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 2 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 2 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO § 141.203—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 2 PUBLIC NOTICE

- (1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under § 141.202(a) or where the primacy agency determines that a Tier 1 notice is required;
- (2) Violations of the monitoring and testing procedure requirements, where the primacy agency determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation; and
- (3) Failure to comply with the terms and conditions of any variance or exemption in place.

(b) *When is the Tier 2 public notice to be provided?*

(1) Public water systems must provide the public notice as soon as practical, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The primacy agency may, in appropriate circumstances, allow additional time for the initial notice of up to three months from the date the system learns of the violation. It is not appropriate for the primacy agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the primacy agency must be in writing.

(2) The public water system must repeat the notice every three months as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the primacy agency to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Sur-

face Water Treatment Rule. It is also not appropriate for the primacy agency to allow through its rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Primacy agency determinations allowing repeat notices to be given less frequently than once every three months must be in writing.

(3) For the turbidity violations specified in this paragraph, public water systems must consult with the primacy agency as soon as practical but no later than 24 hours after the public water system learns of the violation, to determine whether a Tier 1 public notice under § 141.202(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (*i.e.*, no later than 48 hours after the system learns of the violation), following the requirements under § 141.202(b) and (c). Consultation with the primacy agency is required for:

(i) Violation of the turbidity MCL under § 141.13(b); or

(ii) Violation of the SWTR, IESWTR or LTIESWTR treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit.

(c) *What is the form and manner of the Tier 2 public notice?* Public water systems must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of

this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

[65 FR 26035, May 4, 2000, as amended at 67 FR 1836, Jan. 14, 2002]

§ 141.204 Tier 3 Public Notice—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 3 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 3 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO § 141.204—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 3 PUBLIC NOTICE

- (1) Monitoring violations under 40 CFR part 141, except where a Tier 1 notice is required under § 141.202(a) or where the primacy agency determines that a Tier 2 notice is required;
- (2) Failure to comply with a testing procedure established in 40 CFR part 141, except where a Tier 1 notice is required under § 141.202(a) or where the primacy agency determines that a Tier 2 notice is required;
- (3) Operation under a variance granted under Section 1415 or an exemption granted under Section 1416 of the Safe Drinking Water Act;
- (4) Availability of unregulated contaminant monitoring results, as required under § 141.207; and
- (5) Exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under § 141.208.

(b) *When is the Tier 3 public notice to be provided?*

(1) Public water systems must provide the public notice not later than one year after the public water system learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the public water system must repeat the notice annually for as long as the violation, variance, exemption, or other situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, variance, exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

(2) Instead of individual Tier 3 public notices, a public water system may use an annual report detailing all violations and situations that occurred during the previous twelve months, as long as the timing requirements of paragraph (b)(1) of this section are met.

(c) *What is the form and manner of the Tier 3 public notice?* Public water systems must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water

system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

(d) *In what situations may the Consumer Confidence Report be used to meet the Tier 3 public notice requirements?* For community water systems, the Consumer Confidence Report (CCR) re-

quired under Subpart O of this part may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:

(1) The CCR is provided to persons served no later than 12 months after the system learns of the violation or situation as required under §141.204(b);

(2) The Tier 3 notice contained in the CCR follows the content requirements under §141.205; and

(3) The CCR is distributed following the delivery requirements under §141.204(c).

[65 FR 26035, May 4, 2000; 65 FR 38629, June 21, 2000]

§ 141.205 Content of the public notice.

(a) *What elements must be included in the public notice for violations of National Primary Drinking Water Regulations (NPDWR) or other situations requiring a public notice?* When a public water system violates a NPDWR or has a situation requiring public notification, each public notice must include the following elements:

(1) A description of the violation or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level(s);

(2) When the violation or situation occurred;

(3) Any potential adverse health effects from the violation or situation, including the standard language under paragraph (d)(1) or (d)(2) of this section, whichever is applicable;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

(5) Whether alternative water supplies should be used;

(6) What actions consumers should take, including when they should seek medical help, if known;

(7) What the system is doing to correct the violation or situation;

(8) When the water system expects to return to compliance or resolve the situation;

(9) The name, business address, and phone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice; and

(10) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under paragraph (d)(3) of this section, where applicable.

(b) *What elements must be included in the public notice for public water systems operating under a variance or exemption?*

(1) If a public water system has been granted a variance or an exemption, the public notice must contain:

(i) An explanation of the reasons for the variance or exemption;

(ii) The date on which the variance or exemption was issued;

(iii) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and

(iv) A notice of any opportunity for public input in the review of the variance or exemption.

(2) If a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed in paragraph (a) of this section.

(c) *How is the public notice to be presented?*

(1) Each public notice required by this section:

(i) Must be displayed in a conspicuous way when printed or posted;

(ii) Must not contain overly technical language or very small print;

(iii) Must not be formatted in a way that defeats the purpose of the notice;

(iv) Must not contain language which nullifies the purpose of the notice.

(2) Each public notice required by this section must comply with multilingual requirements, as follows:

(i) For public water systems serving a large proportion of non-English speaking consumers, as determined by the primacy agency, the public notice must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.

(ii) In cases where the primacy agency has not determined what constitutes a large proportion of non-

English speaking consumers, the public water system must include in the public notice the same information as in paragraph (c)(2)(i) of this section, where appropriate to reach a large proportion of non-English speaking persons served by the water system.

(d) *What standard language must public water systems include in their public notice?* Public water systems are required to include the following standard language in their public notice:

(1) Standard health effects language for MCL or MRDL violations, treatment technique violations, and violations of the condition of a variance or exemption. Public water systems must include in each public notice the health effects language specified in Appendix B to this subpart corresponding to each MCL, MRDL, and treatment technique violation listed in Appendix A to this subpart, and for each violation of a condition of a variance or exemption.

(2) Standard language for monitoring and testing procedure violations. Public water systems must include the following language in their notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in Appendix A to this subpart:

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we "did not monitor or test" or "did not complete all monitoring or testing" for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

(3) Standard language to encourage the distribution of the public notice to all persons served. Public water systems must include in their notice the following language (where applicable):

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

§ 141.206 Notice to new billing units or new customers.

(a) *What is the requirement for community water systems?* Community water

systems must give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

(b) *What is the requirement for non-community water systems?* Non-community water systems must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation persists.

§ 141.207 Special notice of the availability of unregulated contaminant monitoring results.

(a) *When is the special notice to be given?* The owner or operator of a community water system or non-transient, non-community water system required to monitor under § 141.40 must notify persons served by the system of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

(b) *What is the form and manner of the special notice?* The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in §§ 141.204(c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

§ 141.208 Special notice for exceedance of the SMCL for fluoride.

(a) *When is the special notice to be given?* Community water systems that exceed the fluoride secondary maximum contaminant level (SMCL) of 2 mg/l as specified in § 143.3 (determined by the last single sample taken in accordance with § 141.23), but do not exceed the maximum contaminant level (MCL) of 4 mg/l for fluoride (as specified in § 141.62), must provide the public notice in paragraph (c) of this section to persons served. Public notice must be provided as soon as practical but no later than 12 months from the day the water system learns of the exceedance. A copy of the notice must also be sent to all new billing units and new cus-

tomers at the time service begins and to the State public health officer. The public water system must repeat the notice at least annually for as long as the SMCL is exceeded. If the public notice is posted, the notice must remain in place for as long as the SMCL is exceeded, but in no case less than seven days (even if the exceedance is eliminated). On a case-by-case basis, the primacy agency may require an initial notice sooner than 12 months and repeat notices more frequently than annually.

(b) *What is the form and manner of the special notice?* The form and manner of the public notice (including repeat notices) must follow the requirements for a Tier 3 public notice in § 141.204(c) and (d)(1) and (d)(3).

(c) *What mandatory language must be contained in the special notice?* The notice must contain the following language, including the language necessary to fill in the blanks:

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l.

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some

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home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP."

§ 141.209 Special notice for nitrate exceedances above MCL by non-community water systems (NCWS), where granted permission by the primacy agency under § 141.11(d)

(a) *When is the special notice to be given?* The owner or operator of a non-community water system granted permission by the primacy agency under § 141.11(d) to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under § 141.202(a) and (b).

(b) *What is the form and manner of the special notice?* Non-community water systems granted permission by the primacy agency to exceed the nitrate MCL under § 141.11(d) must provide con-

tinuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under § 141.202(c) and the content requirements under § 141.205.

§ 141.210 Notice by primacy agency on behalf of the public water system.

(a) *May the primacy agency give the notice on behalf of the public water system?* The primacy agency may give the notice required by this subpart on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this subpart.

(b) *What is the responsibility of the public water system when notice is given by the primacy agency?* The owner or operator of the public water system remains responsible for ensuring that the requirements of this subpart are met.

APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE¹

Contaminant	MCLMRDL/TT violations ²		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):³				
A. Microbiological Contaminants				
1. Total coliform	2	141.63(a)	3	141.21(a)-(e)
2. Fecal coliform/E. coli	1	141.63(b)	4, 3	141.21(e)
3. Turbidity MCL	2	141.13(a)	3	141.22
4. Turbidity MCL (average of 2 days' samples >5 NTU)	5, 2, 1	141.13(b)	3	141.22
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	6, 2, 1	141.71(a)(2), 141.71(c)(2)(i), 141.73(a)(2), 141.73(b)(2), 141.73(c)(2), 141.73(d), 141.173(a)(2), 141.173(b), 141.551(b)	3	141.74(a)(1), 141.74(b)(2), 141.74(c)(1), 141.174, 141.560(a)-(c), 141.561.
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT)	2	141.70-141.73	3	141.74
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. turbidity level (TT)	7, 2	141.170-141.173, 141.500-141.553	3	141.172, 141.174, 141.530-141.544, 141.560-141.564.
8. Filter Backwash Recycling Rule violations	2	141.76	3	141.76

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Contaminant	MCL/MRD/TT violations ²		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	141.500-141.553	3	141.530-141.544, 141.560-141.564.
B. Inorganic Chemicals (IOCs)				
1. Antimony	2	141.62(b)	3	141.23(a), (c)
2. Arsenic	2	*141.62(b)	3	*141.23(a), (c)
3. Asbestos (fibers >10 µm)	2	141.62(b)	3	141.23(a)-(b)
4. Barium	2	141.62(b)	3	141.23(a), (c)
5. Beryllium	2	141.62(b)	3	141.23(a), (c)
6. Cadmium	2	141.62(b)	3	141.23(a), (c)
7. Chromium (total)	2	141.62(b)	3	141.23(a), (c)
8. Cyanide	2	141.62(b)	3	141.23(a), (c)
9. Fluoride	2	141.62(b)	3	141.23(a), (c)
10. Mercury (inorganic)	2	141.62(b)	3	141.23(a), (c)
11. Nitrate	1	141.62(b)	¹⁰ 1, 3	141.23(a), (d), 141.23(f)(2)
12. Nitrite	1	141.62(b)	¹⁰ 1, 3	141.23(a), (e), 141.23(f)(2)
13. Total Nitrate and Nitrite	1	141.62(b)	3	141.23(a)
14. Selenium	2	141.62(b)	3	141.23(a), (c)
15. Thallium	2	141.62(b)	3	141.23(a), (c)
C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, for copper is 1.3 mg/L)				
1. Lead and Copper Rule (TT)	2	141.80-141.85	3	141.86-141.89
D. Synthetic Organic Chemicals (SOCs)				
1. 2,4-D	2	141.61(c)	3	141.24(h)
2. 2,4,5-TP (Silvex)	2	141.61(c)	3	141.24(h)
3. Alachlor	2	141.61(c)	3	141.24(h)
4. Atrazine	2	141.61(c)	3	141.24(h)
5. Benzo(a)pyrene (PAHs)	2	141.61(c)	3	141.24(h)
6. Carbofuran	2	141.61(c)	3	141.24(h)
7. Chlordane	2	141.61(c)	3	141.24(h)
8. Dalapon	2	141.61(c)	3	141.24(h)
9. Di (2-ethylhexyl) adipate	2	141.61(c)	3	141.24(h)
10. Di (2-ethylhexyl) phthalate	2	141.61(c)	3	141.24(h)
11. Dibromochloropropane	2	141.61(c)	3	141.24(h)
12. Dinoseb	2	141.61(c)	3	141.24(h)
13. Dioxin (2,3,7,8-TCDD)	2	141.61(c)	3	141.24(h)
14. Diquat	2	141.61(c)	3	141.24(h)
15. Endothall	2	141.61(c)	3	141.24(h)
16. Endrin	2	141.61(c)	3	141.24(h)
17. Ethylene dibromide	2	141.61(c)	3	141.24(h)
18. Glyphosate	2	141.61(c)	3	141.24(h)
19. Heptachlor	2	141.61(c)	3	141.24(h)
20. Heptachlor epoxide	2	141.61(c)	3	141.24(h)
21. Hexachlorobenzene	2	141.61(c)	3	141.24(h)
22. Hexachlorocyclo-pentadiene	2	141.61(c)	3	141.24(h)
23. Lindane	2	141.61(c)	3	141.24(h)
24. Methoxychlor	2	141.61(c)	3	141.24(h)
25. Oxamyl (Vydate)	2	141.61(c)	3	141.24(h)
26. Pentachlorophenol	2	141.61(c)	3	141.24(h)
27. Picloram	2	141.61(c)	3	141.24(h)
28. Polychlorinated biphenyls (PCBs)	2	141.61(c)	3	141.24(h)
29. Simazine	2	141.61(c)	3	141.24(h)
30. Toxaphene	2	141.61(c)	3	141.24(h)
E. Volatile Organic Chemicals (VOCs)				
1. Benzene	2	141.61(a)	3	141.24(f)
2. Carbon tetrachloride	2	141.61(a)	3	141.24(f)
3. Chlorobenzene (monochlorobenzene)	2	141.61(a)	3	141.24(f)
4. o-Dichlorobenzene	2	141.61(a)	3	141.24(f)
5. p-Dichlorobenzene	2	141.61(a)	3	141.24(f)
6. 1,2-Dichloroethane	2	141.61(a)	3	141.24(f)
7. 1,1-Dichloroethylene	2	141.61(a)	3	141.24(f)
8. cis-1,2-Dichloroethylene	2	141.61(a)	3	141.24(f)
9. trans-1,2-Dichloroethylene	2	141.61(a)	3	141.24(f)
10. Dichloromethane	2	141.61(a)	3	141.24(f)
11. 1,2-Dichloropropane	2	141.61(a)	3	141.24(f)
12. Ethylbenzene	2	141.61(a)	3	141.24(f)

Contaminant	MCL/MRDL/TT violations ²		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
13. Styrene	2	141.61(a)	3	141.24(f)
14. Tetrachloroethylene	2	141.61(a)	3	141.24(f)
15. Toluene	2	141.61(a)	3	141.24(f)
16. 1,2,4-Trichlorobenzene	2	141.61(a)	3	141.24(f)
17. 1,1,1-Trichloroethane	2	141.61(a)	3	141.24(f)
18. 1,1,2-Trichloroethane	2	141.61(a)	3	141.24(f)
19. Trichloroethylene	2	141.61(a)	3	141.24(f)
20. Vinyl chloride	2	141.61(a)	3	141.24(f)
21. Xylenes (total)	2	141.61(a)	3	141.24(f)
F. Radioactive Contaminants				
1. Beta/photon emitters	2	141.66(d)	3	141.25(a) 141.26(b)
2. Alpha emitters	2	141.66(c)	3	141.25(a) 141.26(a)
3. Combined radium (226 and 228)	2	141.66(b)	3	141.25(a) 141.26(a)
4. Uranium	²	141.66(e)	¹⁰ 3	141.25(a) 141.26(a)
G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs). ¹¹				
1. Total trihalomethanes (TTHMs) ..	2	¹² 141.12, 141.64(a)	3	141.30, 141.132(a)-(b)
2. Haloacetic Acids (HAAs)	2	141.64(a)	3	141.132(a)-(b)
3. Bromate	2	141.64(a)	3	141.132(a)-(b)
4. Chlorite	2	141.64(a)	3	141.132(a)-(b)
5. Chlorine (MRDL)	2	141.65(a)	3	141.132(a), (c)
6. Chloramine (MRDL)	2	141.65(a)	3	141.132(a), (c)
7. Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	141.65(a), 141.133(c)(3)	2 ¹³ , 3	141.132(a), (c), 141.133(c)(2)
8. Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above MRDL	¹⁴ 1	141.65(a), 141.133(c)(3)	1	141.132(a), (c), 141.133(c)(2)
9. Control of DBP precursors—TOC (TT)	2	141.135(a)-(b)	3	141.132(a), (d)
10. Bench marking and disinfection profiling	N/A	N/A	3	141.172 141.530- 141.544, 141.132(f)
11. Development of monitoring plan	N/A	N/A	3	141.132(f)
H. Other Treatment Techniques				
1. Acrylamide (TT)	2	141.111	N/A	N/A
2. Epichlorohydrin (TT)	2	141.111	N/A	N/A
II. Unregulated Contaminant Monitoring:¹⁵				
A. Unregulated contaminants	N/A	N/A	3	141.40
B. Nickel	N/A	N/A	3	141.23(c), (k)
III. Public Notification for Variances and Exemptions:				
A. Operation under a variance or exemption	3	¹⁶ 1415, 1416,	N/A	N/A
B. Violation of conditions of a variance or exemption	2	1415, 1416, ¹⁷ 142.307	N/A	N/A
IV. Other Situations Requiring Public Notification:				
A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	143.3	N/A	N/A
B. Exceedance of nitrate MCL for non-community systems, as allowed by primacy agency	1	141.11(d)	N/A	N/A

Contaminant	MCL/MRDL/TT violations ²		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
C. Availability of unregulated contaminant monitoring data	3	141.40	N/A	N/A
D. Waterborne disease outbreak	1	141.2, 141.71(c)(2)(ii)	N/A	N/A
E. Other waterborne emergency ^{1a}	1	N/A	N/A	N/A
F. Other situations as determined by primacy agency	^{1a} 1, 2, 3	N/A	N/A	N/A

APPENDIX A—ENDNOTES

1. Violations and other situations not listed in this table (e.g., reporting violations and failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primary agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under §141.202(a) and §141.203(a).

2. MCL—Maximum contaminant level, MRDL—Maximum residual disinfectant level, TT—Treatment technique

3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.

5. Systems that violate the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the primacy agency within 24 hours after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-hour period, the violation is automatically elevated to Tier 1.

6. Systems with treatment technique violations involving a single exceedance of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) are required to consult with the primacy agency within 24 hours after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-hour period, the violation is automatically elevated to Tier 1.

7. Most of the requirements of the Interim Enhanced Surface Water Treatment Rule (63 FR 69477) (§§141.170-141.171, 141.173-141.174) become effective January 1, 2002 for Subpart H systems (surface water systems and ground water systems under the direct influence of surface water) serving at least 10,000 persons. However, §141.172 has some requirements that become effective as early as April 16, 1999. The Surface Water Treatment Rule remains in effect for systems serving at least 10,000 persons even after 2002; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.

8. The arsenic MCL citations are effective January 23, 2006. Until then, the citations are §141.11(b) and §141.23(n).

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

10. The uranium Tier 3 violation citations are effective December 8, 2000 for all community water systems.

11. The arsenic Tier 3 violation MCL citations are effective January 23, 2006. Until then, the citations are §141.23(a), (1).

12. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

13. Subpart H community and non-transient non-community systems serving ≥10,000 must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements beginning January 1, 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. Subpart H transient non-community systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart H transient non-community systems serving fewer than 10,000 persons and using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

14. § 141.12 will no longer apply after January 1, 2004.

15. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.

16. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

17. Some water systems must monitor for certain unregulated contaminants listed in § 141.40.

18. This citation refers to §§ 1415 and 1416 of the Safe Drinking Water Act. §§ 1415 and 1416 require that "a schedule prescribed. . . for a public water system granted a variance [or exemption] shall require compliance by the system. . ."

19. In addition to §§ 1415 and 1416 of the Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in a variance for small systems.

20. Other waterborne emergencies require a Tier 1 public notice under § 141.202(a) for situations that do not meet the definition of a waterborne disease outbreak given in 40 CFR 141.2 but that still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

21. Primacy agencies may place other situations in any tier they believe appropriate, based on threat to public health.

[65 FR 26035, May 4, 2000, as amended at 65 FR 76750, Dec. 7, 2000; 66 FR 7065, Jan. 22, 2001; 66 FR 31104, June 8, 2001; 67 FR 1836, Jan. 14, 2002]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, appendix A to subpart Q of part 141 was amended in entry I.A.(8) by removing the citation in the third column "141.76" and adding in its place "141.76(c)" and by removing the citation in the fifth column "141.76" and adding in its place "141.76 (b), (d)", and in endnote 1 by removing the words "reporting violations and" from the first parenthetical phrase, effective July 29, 2004.

APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR)			
A. Microbiological Contaminants			
1a. Total coliform	Zero	See footnote ³	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/E. coli.	Zero	Zero	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
2a. Turbidity (MCL) ⁴ ...	None	1 NTU ^{5/5} NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2b. Turbidity (SWTR TT) ⁶ .	None	TT ⁷	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

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Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
2c. Turbidity (IESWTR TT and LT1ESWTR TT) ⁸ .	None	TT	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) and the Filter Backwash Recycling Rule (FBRR) violations

3. <i>Giardia lamblia</i> (SWTR/IESWTR/LT1ESWTR).	Zero	TT ¹⁰	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
4. Viruses (SWTR/IESWTR/LT1ESWTR).			
5. Heterotrophic plate count (HPC) bacteria ⁹ (SWTR/IESWTR/LT1ESWTR).			
6. <i>Legionella</i> (SWTR/IESWTR/LT1ESWTR).			
7. <i>Cryptosporidium</i> (IESWTR/FBRR/LT1ESWTR).			

C. Inorganic Chemicals (IOCs)

8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic ¹¹	0	0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm) ..	7 MFL ¹²	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

D. Lead and Copper Rule

23. Lead	Zero	TT ¹³	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT ¹⁴	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

E. Synthetic Organic Chemicals (SOCs)

25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (Silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs)	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di(2-ethylhexyl) adipate	0.4	0.4	Some people who drink water containing di(2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.
34. Di(2-ethylhexyl) phthalate	Zero	0.006	Some people who drink water containing di(2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	3x10 ⁻⁸	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

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Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclopentadiene.	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs).	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

F. Volatile Organic Chemicals (VOCs)

55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride.	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (monochlorobenzene).	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene.	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. <i>cis</i> -1,2-Dichloroethylene.	0.07	0.07	Some people who drink water containing <i>cis</i> -1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
63. <i>trans</i> -1,2-Dichloroethylene.	0.1	0.1	Some people who drink water containing <i>trans</i> -1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane ...	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane.	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene.	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane.	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane.	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene ...	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

G. Radioactive Contaminants

76. Beta/photon emitters.	Zero	4 mrem/yr ¹⁵	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/L ¹⁶	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228).	Zero	5 pCi/L	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

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Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
79. Uranium ¹⁶	Zero	30 µg/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs)¹⁷

80. Total trihalomethanes (TTHMs).	N/A	0.10/0.080 ^{17 18}	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA).	N/A	0.060 ²⁰	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG) ²¹	4.0 (MRDL) ²²	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
86a. Chlorine dioxide, where any 2 consecutive daily samples taken at the entrance to the distribution system are above the MRDL.	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. <i>Add for public notification only:</i> The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
86b. Chlorine dioxide, where one or more distribution system samples are above the MRDL.	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. <i>Add for public notification only:</i> The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
87. Control of DBP precursors (TOC).	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

I. Other Treatment Techniques

88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
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Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

APPENDIX B—ENDNOTES

1. MCLG—Maximum contaminant level goal

2. MCL—Maximum contaminant level

3. For water systems analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For systems analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.

4. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2001 Long Term 1 Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for systems that are required to filter but have not yet installed filtration (40 CFR 141.13).

5. NTU—Nephelometric turbidity unit

6. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2001 Long Term 1 Enhanced Surface Water Treatment Rule. Systems subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the primacy agency.

7. TT—Treatment technique

8. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR) and the 2001 Long Term 1 Enhanced Surface Water Treatment Rule (LTIESWTR). For systems subject to the IESWTR (systems serving at least 10,000 people, using surface water or ground water under the direct influence of surface water), that use conventional filtration or direct filtration, after January 1, 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time.

Systems subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency. For systems subject to the LTIESWTR (systems serving fewer than 10,000 people, using surface water or ground water under the direct influence of surface water) that use conventional filtration or direct filtration, after January 14, 2005 the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the LTIESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

10. SWTR, IESWTR, and LTIESWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.

11. These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.

12. Millions fibers per liter.

13. Action Level = 0.015 mg/L

14. Action Level = 1.3 mg/L

15. Millirems per year

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

17. Picocuries per liter

18. Surface water systems and ground water systems under the direct influence of surface water are regulated under Subpart H of 40 CFR 141. Subpart H community and non-transient non-community systems serving >10,000 must comply with DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) beginning January 1, 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. Subpart H transient non-community systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart H transient non-community systems serving fewer than 10,000 persons and systems using

only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

19. The MCL of 0.10 mg/l for TTHMs is in effect until January 1, 2002 for Subpart H community water systems serving 10,000 or more. This MCL is in effect until January 1, 2004 for community water systems with a population of 10,000 or more using only ground water not under the direct influence of surface water. After these deadlines, the MCL will be 0.080 mg/l. On January 1, 2004, all systems serving less than 10,000 will have to comply with the new MCL as well.

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

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

22. MRDLG—Maximum residual disinfectant level goal.

23. MRDL—Maximum residual disinfectant level.

[65 FR 26043, May 4, 2000; 65 FR 38629, June 21, 2000; 65 FR 40521, 40522, June 30, 2000, as amended at 65 FR 76751, Dec. 7, 2000; 66 FR 7065, Jan. 22, 2001; 66 FR 31104, June 8, 2001; 67 FR 1838, Jan. 14, 2002; 67 FR 70857, Nov. 27, 2002; 68 FR 14507, Mar. 25, 2003]

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, appendix B to subpart Q of part 141 was amended by revising endnotes 4 and 8, effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

* * * * *

4. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for systems that are required to filter but have not yet installed filtration (40 CFR 141.13).

* * * * *

8. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment

Rule (IESWTR) and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (LTIESWTR). For systems subject to the IESWTR (systems serving at least 10,000 people, using surface water or ground water under the direct influence of surface water), that use conventional filtration or direct filtration, after January 1, 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency. For systems subject to the LTIESWTR (systems serving fewer than 10,000 people, using surface water or ground water under the direct influence of surface water) that use conventional filtration or direct filtration, after January 1, 2005, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the LTIESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency.

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APPENDIX C TO SUBPART Q OF PART 141—LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATION

- CCR Consumer Confidence Report
CWS Community Water System
DBP Disinfection Byproduct
EPA Environmental Protection Agency
HPC Heterotrophic Plate Count
IESWTR Interim Enhanced Surface Water Treatment Rule
IOC Inorganic Chemical
LCR Lead and Copper Rule
MCL Maximum Contaminant Level
MCLG Maximum Contaminant Level Goal
MRDL Maximum Residual Disinfectant Level
MRDLG Maximum Residual Disinfectant Level Goal
NCWS Non-Community Water System
NPDWR National Primary Drinking Water Regulation
NTNCWS Non-Transient Non-Community Water System
NTU Nephelometric Turbidity Unit
OGWDW Office of Ground Water and Drinking Water
OW Office of Water
PN Public Notification
PWS Public Water System

§ 141.500

SDWA Safe Drinking Water Act
SMCL Secondary Maximum Contaminant Level
SOC Synthetic Organic Chemical
SWTR Surface Water Treatment Rule
TCR Total Coliform Rule
TT Treatment Technique
TWS Transient Non-Community Water System
VOC Volatile Organic Chemical

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- (b) Uses surface water or GWUDI as a source; and
- (c) Serves fewer than 10,000 persons.

§ 141.502 When must my system comply with these requirements?

You must comply with these requirements in this subpart beginning January 14, 2005 except where otherwise noted.

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.502 was revised, effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

§ 141.502 When must my system comply with these requirements?

You must comply with these requirements in this subpart beginning January 1, 2005, except where otherwise noted.

§ 141.503 What does subpart T require?

There are seven requirements of this subpart, and you must comply with all requirements that are applicable to your system. These requirements are:

- (a) You must cover any finished water reservoir that you began to construct on or after March 15, 2002 as described in §§141.510 and 141.511;
- (b) If your system is an unfiltered system, you must comply with the updated watershed control requirements described in §§141.520-141.522;
- (c) If your system is a community or non-transient non-community water systems you must develop a disinfection profile as described in §§141.530-141.536;
- (d) If your system is considering making a significant change to its disinfection practices, you must develop a disinfection benchmark and consult with the State for approval of the change as described in §§141.540-141.544;
- (e) If your system is a filtered system, you must comply with the combined filter effluent requirements as described in §§141.550-141.553;
- (f) If your system is a filtered system that uses conventional or direct filtration, you must comply with the individual filter turbidity requirements as described in §§141.560-141.564; and
- (g) You must comply with the applicable reporting and recordkeeping requirements as described in §§141.570 and 141.571.

Subparts R-S [Reserved]

Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People

SOURCE: 67 FR 1839, Jan. 14, 2002, unless otherwise noted.

GENERAL REQUIREMENTS

§ 141.500 General requirements.

The requirements of this subpart constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under subpart H of this part. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium* and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

- (a) At least 99 percent (2 log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems; and
- (b) Compliance with the profiling and benchmark requirements in §§141.530 through 141.544.

§ 141.501 Who is subject to the requirements of subpart T?

You are subject to these requirements if your system:

- (a) Is a public water system;

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§ 141.531

FINISHED WATER RESERVOIRS

§ 141.510 Is my system subject to the new finished water reservoir requirements?

All subpart H systems which serve fewer than 10,000 are subject to this requirement.

§ 141.511 What is required of new finished water reservoirs?

If your system begins construction of a finished water reservoir on or after March 15, 2002 the reservoir must be covered. Finished water reservoirs for which your system began construction prior to March 15, 2002 are not subject to this requirement.

ADDITIONAL WATERSHED CONTROL REQUIREMENTS FOR UNFILTERED SYSTEMS

§ 141.520 Is my system subject to the updated watershed control requirements?

If you are a subpart H system serving fewer than 10,000 persons which does not provide filtration, you must continue to comply with all of the filtration avoidance criteria in §141.71, as well as the additional watershed control requirements in §141.521.

§ 141.521 What updated watershed control requirements must my unfiltered system implement to continue to avoid filtration?

Your system must take any additional steps necessary to minimize the potential for contamination by *Cryptosporidium* oocysts in the source water. Your system's watershed control program must, for *Cryptosporidium*:

(a) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(b) Monitor the occurrence of activities which may have an adverse effect on source water quality.

§ 141.522 How does the State determine whether my system's watershed control requirements are adequate?

During an onsite inspection conducted under the provisions of §141.71(b)(3), the State must determine whether your watershed control pro-

gram is adequate to limit potential contamination by *Cryptosporidium* oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of your program to monitor and control detrimental activities occurring in the watershed; and the extent to which your system has maximized land ownership and/or controlled land use within the watershed.

DISINFECTION PROFILE

§ 141.530 What is a disinfection profile and who must develop one?

A disinfection profile is a graphical representation of your system's level of *Giardia lamblia* or virus inactivation measured during the course of a year. If you are a subpart H community or non-transient non-community water systems which serves fewer than 10,000 persons, your system must develop a disinfection profile unless your State determines that your system's profile is unnecessary. Your State may approve the use of a more representative data set for disinfection profiling than the data set required under §§141.532-141.536.

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.530 was amended in the second sentence, by revising "water systems" to read "water system", effective July 29, 2004.

§ 141.531 What criteria must a State use to determine that a profile is unnecessary?

States may only determine that a system's profile is unnecessary if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in your distribution system.

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.531 was amended by adding a sentence to the end of the section, effective July 29, 2004. For the convenience of the user, the added text is set forth as follows:

§ 141.531 What criteria must a State use to determine that a profile is unnecessary?

* * * Your State may approve a more representative TTHM and HAA5 data set to determine these levels.

§ 141.532 How does my system develop a disinfection profile and when must it begin?

A disinfection profile consists of three steps:

(a) First, your system must collect data for several parameters from the plant as discussed in §141.533 over the course of 12 months. If your system serves between 500 and 9,999 persons you must begin to collect data no later than July 1, 2003. If your system serves fewer than 500 persons you must begin to collect data no later than January 1, 2004.

(b) Second, your system must use this data to calculate weekly log inactivation as discussed in §§141.534 and 141.535; and

(c) Third, your system must use these weekly log inactivations to develop a disinfection profile as specified in §141.536.

§ 141.533 What data must my system collect to calculate a disinfection profile?

Your system must monitor the following parameters to determine the total log inactivation using the analytical methods in §141.74 (a), once per week on the same calendar day, over 12 consecutive months:

(a) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(b) If your system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(c) The disinfectant contact time(s) ("T") during peak hourly flow; and

(d) The residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.

§ 141.534 How does my system use this data to calculate an inactivation ratio?

Calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia*:

If your system * * *	Your system must determine * * *
(a) Uses only one point of disinfectant application.	(1) One inactivation ratio (CTcalc/CT99.9) before or at the first customer during peak hourly flow or (2) Successive CTcalc/CT99.9 values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, your system must calculate the total inactivation ratio by determining (CTcalc/CT99.9) for each sequence and then adding the (CTcalc/CT99.9) values together to determine (3CTcalc/CT99.9).
(b) Uses more than one point of disinfectant application before the first customer.	The (CTcalc/CT99.9) value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in paragraph (a)(2) of this section.

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.534 was amended by revising the introductory paragraph, and in the table in paragraph (a)(2), by removing the "3" and adding in its place "Σ", effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

§ 141.534 How does my system use this data to calculate an inactivation ratio?

Use the tables in §141.74(b)(3)(v) to determine the appropriate CT99.9 value. Calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia*:

* * * * *

§ 141.535 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone, or chlorine dioxide for primary

disinfection, you must also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the State.

§ 141.536 My system has developed an inactivation ratio; what must we do now?

Each log inactivation serves as a data point in your disinfection profile. Your system will have obtained 52 measurements (one for every week of the year). This will allow your system and the State the opportunity to evaluate how microbial inactivation varied over the course of the year by looking at all 52 measurements (your Disinfection Profile). Your system must retain the Disinfection Profile data in graphic form, such as a spreadsheet, which must be available for review by the State as part of a sanitary survey. Your system must use this data to calculate a benchmark if you are considering changes to disinfection practices.

DISINFECTION BENCHMARK

§ 141.540 Who has to develop a disinfection benchmark?

If you are a subpart H system required to develop a disinfection profile under §§141.530 through 141.536, your system must develop a Disinfection Benchmark if you decide to make a significant change to your disinfection practice. Your system must consult with the State for approval before you can implement a significant disinfection practice change.

§ 141.541 What are significant changes to disinfection practice?

Significant changes to disinfection practice include:

- (a) Changes to the point of disinfection;

- (b) Changes to the disinfectant(s) used in the treatment plant;

- (c) Changes to the disinfection process; or

- (d) Any other modification identified by the State.

§ 141.542 What must my system do if we are considering a significant change to disinfection practices?

If your system is considering a significant change to its disinfection practice, your system must calculate a disinfection benchmark(s) as described in §§141.543 and 141.544 and provide the benchmark(s) to your State. Your system may only make a significant disinfection practice change after consulting with the State for approval. Your system must submit the following information to the State as part of the consultation and approval process:

- (a) A description of the proposed change;

- (b) The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) and disinfection benchmark;

- (c) An analysis of how the proposed change will affect the current levels of disinfection; and

- (d) Any additional information requested by the State.

§ 141.543 How is the disinfection benchmark calculated?

If your system is making a significant change to its disinfection practice, it must calculate a disinfection benchmark using the procedure specified in the following table.

To calculate a disinfection benchmark your system must perform the following steps

Step 1: Using the data your system collected to develop the Disinfection Profile, determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.

Step 2: Determine the lowest monthly average value out of the twelve values. This value becomes the disinfection benchmark.

§ 141.544 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone or chlorine dioxide for primary disinfection your system must calculate the disinfection benchmark from the data your system collected for viruses to develop the disinfection

profile in addition to the *Giardia lamblia* disinfection benchmark calculated under §141.543. This viral benchmark must be calculated in the same manner used to calculate the *Giardia lamblia* disinfection benchmark in §141.543.

§ 141.550

COMBINED FILTER EFFLUENT REQUIREMENTS

§ 141.550 Is my system required to meet subpart T combined filter effluent turbidity limits?

All subpart H systems which serve populations fewer than 10,000, are required to filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of §§141.551-141.553. If your system uses slow sand or diatomaceous earth filtration you are not required to meet the combined filter effluent turbidity limits of subpart T, but you must continue to meet the combined filter effluent turbidity limits in §141.73.

§ 141.551 What strengthened combined filter effluent turbidity limits must my system meet?

Your system must meet two strengthened combined filter effluent turbidity limits.

(a) The first combined filter effluent turbidity limit is a "95th percentile" turbidity limit that your system must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following table describes the required limits for specific filtration technologies.

If your system consists of	Your 95th percentile turbidity value is
(1) Conventional Filtration or Direct Filtration.	0.3 NTU.
(2) All other "Alternative" Filtration	A value determined by the State (no to exceed 1 NTU) based on the demonstration described in § 141.552.

(b) The second combined filter effluent turbidity limit is a "maximum" turbidity limit which your system may at no time exceed during the month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following

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table describes the required limits for specific filtration technologies.

If your system consists of	Your maximum turbidity value is
(1) Conventional Filtration or Direct Filtration.	1 NTU.
(2) All other "Alternative"	A value determined by the State (not to exceed 5 NTU) based on the demonstration as described in § 141.552.

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, §141.551 was amended in paragraph (a)(2) by removing "no" and adding in its place "not", and in paragraph (b)(2) by removing "Alternative" and adding in its place "Alternative Filtration", effective July 29, 2004.

§ 141.552 My system consists of "alternative filtration" and is required to conduct a demonstration—what is required of my system and how does the State establish my turbidity limits?

(a) If your system consists of alternative filtration (filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) you are required to conduct a demonstration (see tables in §141.551). Your system must demonstrate to the State, using pilot plant studies or other means, that your system's filtration, in combination with disinfection treatment, consistently achieves:

- (1) 99 percent removal of *Cryptosporidium* oocysts;
- (2) 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts; and
- (3) 99.99 percent removal and/or inactivation of viruses.

(b) [Reserved]

§ 141.553 My system practices lime softening—is there any special provision regarding my combined filter effluent?

If your system practices lime softening, you may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the State.

Environmental Protection Agency

§ 141.563

INDIVIDUAL FILTER TURBIDITY REQUIREMENTS

§ 141.560 Is my system subject to individual filter turbidity requirements?

If your system is a subpart H system serving fewer than 10,000 people and utilizing conventional filtration or direct filtration, you must conduct continuous monitoring of turbidity for each individual filter at your system. The following requirements apply to continuous turbidity monitoring:

- (a) Monitoring must be conducted using an approved method in §141.74(a);
- (b) Calibration of turbidimeters must be conducted using procedures specified by the manufacturer;
- (c) Results of turbidity monitoring must be recorded at least every 15 minutes;
- (d) Monthly reporting must be completed according to §141.570; and
- (e) Records must be maintained according to §141.571.

§ 141.561 What happens if my system's turbidity monitoring equipment fails?

If there is a failure in the continuous turbidity monitoring equipment, your system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. Your system has 14 days to resume continuous monitoring before a violation is incurred.

§ 141.562 My system only has two or fewer filters—is there any special provision regarding individual filter turbidity monitoring?

Yes, if your system only consists of two or fewer filters, you may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. Continuous monitoring must meet the same requirements set forth in §141.560(a) through (d) and §141.561.

§ 141.563 What follow-up action is my system required to take based on continuous turbidity monitoring?

Follow-up action is required according to the following tables:

If . . .	Your system must . . .
<p>(a) The turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for systems with 2 filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart.</p>	<p>Report to the State by the 10th of the following month and include the filter number(s), corresponding date(s), turbidity value(s) which exceeded 1.0 NTU, and the cause (if known) for the exceedance(s).</p>
<p>If a system was required to report to the State . . .</p> <p>(b) For three months in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).</p> <p>(c) For two months in a row and turbidity exceeded 2.0 BTU in 2 consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).</p>	<p>Your system must . . .</p> <p>Conduct a self-assessment of the filter(s) within 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month unless a CPE as specified in paragraph (c) of this section was required. Systems with 2 filters that monitor CFE in lieu of individual filters must conduct a self-assessment on both filters. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report. If a self-assessment is required, the date that it was triggered and the date that it was completed.</p> <p>Arrange to have a comprehensive performance evaluation (CPE) conducted by the State or a third party approved by the State not later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. If a CPE has been completed by the State or a third party approved by the State within the 12 prior months or the system and State are jointly participating in an ongoing Comprehensive Technical Assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the State no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.</p>

EFFECTIVE DATE NOTE: At 69 FR 38856, June 29, 2004, § 141.563 was amended in paragraph (b) by removing the last sentence in the second column of the table, and in paragraph (c) by removing "BTU" and adding in its place "NTU" in the first column of the table, effective July 29, 2004.

§ 141.564

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§ 141.564 My system practices lime softening—is there any special provision regarding my individual filter turbidity monitoring?

If your system utilizes lime softening, you may apply to the State for alternative turbidity exceedance levels for the levels specified in the table in § 141.563. You must be able to demonstrate to the State that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

REPORTING AND RECORDKEEPING REQUIREMENTS

§ 141.570 What does subpart T require that my system report to the State?

This subpart T requires your system to report several items to the State. The following table describes the items which must be reported and the frequency of reporting. Your system is required to report the information described in the following table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of information to report	Frequency
(a) Combined Filter Effluent Requirements. (§§ 141.550–141.553)	(1) The total number of filtered water turbidity measurements taken during the month.	By the 10th of the following month.
	(2) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to your system's required 95th percentile limit.	By the 10th of the following month.
	(3) The date and value of any turbidity measurements taken during the month which exceed the maximum turbidity value for your filtration system.	By the 10th of the following month.
(b) Individual Turbidity Requirements. (§§ 141.560–141.564)	(1) That your system conducted individual filter turbidity monitoring during the month.	By the 10th of the following month.
	(2) The filter number(s), corresponding date(s), and the turbidity value(s) which exceeded 1.0 NTU during the month, but only if 2 consecutive measurements exceeded 1.0 NTU.	By the 10th of the following month.
	(3) If a self-assessment is required, the date that it was triggered and the date that it was completed.	By the 10th of the following month (or 14 days after the self-assessment was triggered only if the self-assessment was triggered during the last four days of the month)
	(4) If a CPE is required, that the CPE is required and the date that it was triggered.	By the 10th of the following month.
	(5) Copy of completed CPE report	Within 120 days after the CPE was triggered.
(c) Disinfection Profiling (§§ 141.530–141.536)	(1) Results of optional monitoring which show TTHM levels <0.064 mg/l and HAA5 levels <0.048 mg/l (Only if your system wishes to forgo profiling) or that your system has begun disinfection profiling.	(i) For systems serving 500–9,999 by July 1, 2003; (ii) For systems serving fewer than 500 by January 1, 2004.
(d) Disinfection Benchmarking. (§§ 141.540–141.544)	(1) A description of the proposed change in disinfection, your system's disinfection profile for <i>Giardia lamblia</i> (and, if necessary, viruses) and disinfection benchmark, and an analysis of how the proposed change will affect the current levels of disinfection.	Anytime your system is considering a significant change to its disinfection practice.

EFFECTIVE DATE NOTE: At 69 FR 38857, June 29, 2004, § 141.570 was amended by revising paragraph (b)(2) in the table, effective July 29, 2004. For the convenience of the user, the revised text is set forth as follows:

§ 141.570 What does subpart T require that my system report to the State?

* * * * *

Corresponding requirement	Description of information to report	Frequency

Corresponding requirement	Description of Information to report	Frequency
(b) Individual Filter Turbidity Requirements (§§ 141.560-141.564).	(2) The filter number(s), corresponding date(s), and the turbidity value(s) which exceeded 1.0 NTU during the month, and the cause (if known) for the exceedance(s), but only if 2 consecutive measurements exceeded 1.0 NTU.	By the 10th of the following month.

§ 141.571 What records does subpart T require my system to keep?

Your system must keep several types of records based on the requirements of subpart T, in addition to recordkeeping requirements under § 141.75. The following table describes the necessary records, the length of time these records must be kept, and for which requirement the records pertain. Your system is required to maintain records described in this table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of necessary records	Duration of time records must be kept
(a) Individual Filter Turbidity Requirements (§§ 141.560-141.564)	Results of individual filter monitoring	At least 3 years.
(b) Disinfection Profiling (§§ 141.530-141.536)	Results of Profile (including raw data and analysis)	Indefinitely.
(c) Disinfection Benchmarking (§§ 141.540-141.544)	Benchmark (including raw data and analysis)	Indefinitely.

PART 142—NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

Subpart A—General Provisions

- Sec.
- 142.1 Applicability.
- 142.2 Definitions.
- 142.3 Scope.
- 142.4 State and local authority.

Subpart B—Primary Enforcement Responsibility

- 142.10 Requirements for a determination of primary enforcement responsibility.
- 142.11 Initial determination of primary enforcement responsibility.
- 142.12 Revision of State programs.
- 142.13 Public hearing.
- 142.14 Records kept by States.
- 142.15 Reports by States.
- 142.16 Special primacy requirements.
- 142.17 Review of State programs and procedures for withdrawal of approved primacy programs.
- 142.18 EPA review of State monitoring determinations.
- 142.19 EPA review of State implementation of national primary drinking water regulations for lead and copper.

Subpart C—Review of State-Issued Variances and Exemptions

- 142.20 State-issued variances and exemptions under Section 1415(a) and Section 1416 of the Act.
- 142.21 State consideration of a variance or exemption request.
- 142.22 Review of State variances, exemptions and schedules.
- 142.23 Notice to State.
- 142.24 Administrator's rescission.

Subpart D—Federal Enforcement

- 142.30 Failure by State to assure enforcement.
- 142.31 [Reserved]
- 142.32 Petition for public hearing.
- 142.33 Public hearing.
- 142.34 Entry and inspection of public water systems.

Subpart E—Variances Issued by the Administrator Under Section 1415(a) of the Act

- 142.40 Requirements for a variance.
- 142.41 Variance request.
- 142.42 Consideration of a variance request.
- 142.43 Disposition of a variance request.
- 142.44 Public hearings on variances and schedules.
- 142.45 Action after hearing.
- 142.46 Alternative treatment techniques.

§ 142.312

each objection, or withdraw the proposal to grant the small system variance.

(c) If the State issues the small system variance without resolving the concerns of the Administrator, the Administrator may overturn the State decision to grant the variance if the Administrator determines that the State decision does not comply with the Act or this rule.

§ 142.312 What EPA action is necessary when a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons?

(a) At the time a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons, the State must submit the proposed small system variance and all supporting information, including public comments received prior to proposal, to the Administrator.

(b) The Administrator must approve or disapprove the small system variance within 90 days of receipt of the proposed small system variance and supporting information. The Administrator must approve the small system variance if it meets each requirement within the Act and this rule.

(c) If the Administrator disapproves the small system variance, the Administrator must notify the State in writing of the reasons for disapproval and the small system variance does not become effective. The State may resubmit the small system variance for review and approval with modifications to address the objections stated by the Administrator.

§ 142.313 How will the Administrator review a State's program under this subpart?

(a) The Administrator must periodically review each State program under this subpart to determine whether small system variances granted by the State comply with the requirements of the Act, this rule and the affordability criteria developed by the State.

(b) If the Administrator determines that small system variances granted by a State are not in compliance with the

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requirements of the Act, this rule or the affordability criteria developed by the State, the Administrator shall notify the State in writing of the deficiencies and make public the determinations.

(c) The Administrator's review will be based in part on quarterly reports prepared by the States pursuant to § 142.15(a)(1) relating to violations of increments of progress or other violated terms or conditions of small system variances.

PART 143—NATIONAL SECONDARY DRINKING WATER REGULATIONS

Sec.

143.1 Purpose.

143.2 Definitions.

143.3 Secondary maximum contaminant levels.

143.4 Monitoring.

AUTHORITY: 42 U.S.C. 300f *et seq.*

SOURCE: 44 FR 42198, July 19, 1979, unless otherwise noted.

§ 143.1 Purpose.

This part establishes National Secondary Drinking Water Regulations pursuant to section 1412 of the Safe Drinking Water Act, as amended (42 U.S.C. 300g-1). These regulations control contaminants in drinking water that primarily affect the aesthetic qualities relating to the public acceptance of drinking water. At considerably higher concentrations of these contaminants, health implications may also exist as well as aesthetic degradation. The regulations are not Federally enforceable but are intended as guidelines for the States.

§ 143.2 Definitions.

(a) *Act* means the Safe Drinking Water Act as amended (42 U.S.C. 300f *et seq.*).

(b) *Contaminant* means any physical, chemical, biological, or radiological substance or matter in water.

(c) *Public water system* means a system for the provision to the public of piped water for human consumption, if such a system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the

year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a "community water system" or a "non-community water system."

(d) *State* means the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State does not have responsibility pursuant to section 1443 of the Act, the term "State" means the Regional Administrator, U.S. Environmental Protection Agency.

(e) *Supplier of water* means any person who owns or operates a public water system.

(f) *Secondary maximum contaminant levels* means SMCLs which apply to public water systems and which, in the judgement of the Administrator, are requisite to protect the public welfare. The SMCL means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of public water system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

[44 FR 42198, July 19, 1979, as amended at 53 FR 37412, Sept. 26, 1988]

§ 143.3 Secondary maximum contaminant levels.

The secondary maximum contaminant levels for public water systems are as follows:

Contaminant	Level
Aluminum	0.05 to 0.2 mg/l.
Chloride	250 mg/l.
Color	15 color units.
Copper	1.0 mg/l.
Corrosivity	Non-corrosive.
Fluoride	2.0 mg/l.

Contaminant	Level
Foaming agents	0.5 mg/l.
Iron	0.3 mg/l.
Manganese	0.05 mg/l.
Odor	3 threshold odor number.
pH	6.5-8.5.
Silver	0.1 mg/l.
Sulfate	250 mg/l.
Total dissolved solids (TDS)	500 mg/l.
Zinc	5 mg/l.

These levels represent reasonable goals for drinking water quality. The States may establish higher or lower levels which may be appropriate dependent upon local conditions such as unavailability of alternate source waters or other compelling factors, provided that public health and welfare are not adversely affected.

[44 FR 42198, July 19, 1979, as amended at 51 FR 11412, Apr. 2, 1986; 56 FR 3597, Jan. 30, 1991]

§ 143.4 Monitoring.

(a) It is recommended that the parameters in these regulations should be monitored at intervals no less frequent than the monitoring performed for inorganic chemical contaminants listed in the National Interim Primary Drinking Water Regulations as applicable to community water systems. More frequent monitoring would be appropriate for specific parameters such as pH, color, odor or others under certain circumstances as directed by the State.

(b) Measurement of pH, copper and fluoride to determine compliance under § 143.3 may be conducted with one of the methods in § 141.23(k)(1). Analyses of aluminum, chloride, foaming agents, iron, manganese, odor, silver, sulfate, total dissolved solids (TDS) and zinc to determine compliance under § 143.3 may be conducted with the methods in the following table. Criteria for analyzing aluminum, copper, iron, manganese, silver and zinc samples with digestion or directly without digestion, and other analytical test procedures are contained in *Technical Notes on Drinking Water Methods*, EPA-600/R-94-173, October 1994, which is available at NTIS PB95-104766.

Contaminant	EPA	ASTM ³	SM [*] 18th and 19th ed.	SM ⁴ 20th ed.	Other
1. Aluminum	200.7 ² .....	.....	3120 B	3120 B.	.....

Contaminant	EPA	ASTM ³	SM ⁴ 18th and 19th ed.	SM ⁴ 20th ed.	Other
2. Chloride	200.8 ² 200.9 ² 300.0 ¹	D4327-97 D512-89B	3113 B. 3111 D. 4110 B 4500-Cl- D 4500-Cl- B	4110 B. 4500-Cl- D. 4500-Cl- B.	
3. Color			2120 B	2120 B.	
4. Foaming Agents			5540 C	5540 C.	
5. Iron	200.7 ² 200.9 ²		3120 B 3111 B. 3113 B.	3120 B.	
6. Manganese	200.7 ² 200.8 ² 200.9 ²		3120 B 3111 B. 3113 B.	3120 B.	
7. Odor				2150 B.	
8. Silver	200.7 ² 200.8 ² 200.9 ²		3120 B 3111 B. 3113 B.	3120 B	I-3720-85 ⁵
9. Sulfate	300.0 ¹ 375.2 ¹	D4327-97	4110 B 4500-SO ₄ ²⁻ - F 4500-SO ₄ ²⁻ - C, D.	4110 B. 4500-SO ₄ ²⁻ - F. 4500-SO ₄ ²⁻ - C, D.	
10. Total Dissolved Solids		D516-90	4500-SO ₄ ²⁻ - E 2540 C	4500-SO ₄ ²⁻ - E. 2540 C.	
11. Zinc	200.7 ² 200.8 ²		3120 B 3111 B.	3120 B.	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800-426-4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW, Room B135, Washington, DC (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

¹Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93-100, August 1993. Available at NTIS, PB94-120821.

²Methods for the Determination of Metals in Environmental Samples—Supplement I, EPA/600/R-94-111, May 1994. Available at NTIS, PB 95-125472.

³Annual Book of ASTM Standards, 1994, 1996, or 1999, Vols. 11.01 and 11.02, ASTM International; any year containing the cited version of the method may be used. Copies may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. sa

⁴Standard Methods for the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), or 20th edition (1998). American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005. The cited methods published in any of these three editions may be used, except that the versions of 3111 B, 3111 D, and 3113 B in the 20th edition may not be used.

⁵Method I-3720-85, *Techniques of Water Resources Investigation of the U.S. Geological Survey*, Book 5, Chapter A-1, 3rd ed., 1989; Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

[44 FR 42198, July 19, 1979, as amended at 53 FR 5147, Feb. 19, 1988; 56 FR 30281, July 1, 1991; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 67 FR 65252, Oct. 23, 2002; 69 FR 18803, Apr. 9, 2004]

PART 144—UNDERGROUND INJECTION CONTROL PROGRAM

Subpart A—General Provisions

- Sec.
- 144.1 Purpose and scope of part 144.
- 144.2 Promulgation of Class II programs for Indian lands.
- 144.3 Definitions.
- 144.4 Considerations under Federal law.
- 144.5 Confidentiality of information.
- 144.6 Classification of wells.
- 144.7 Identification of underground sources of drinking water and exempted aquifers.
- 144.8 Noncompliance and program reporting by the Director.

Subpart B—General Program Requirements

- 144.11 Prohibition of unauthorized injection.
- 144.12 Prohibition of movement of fluid into underground sources of drinking water.
- 144.13 Prohibition of Class IV wells.
- 144.14 Requirements for wells injecting hazardous waste.
- 144.15 [Reserved]
- 144.16 Waiver of requirement by Director.
- 144.17 Records.

Subpart C—Authorization of Underground Injection by Rule

- 144.21 Existing Class I, II (except enhanced recovery and hydrocarbon storage) and III wells.

**PUBLIC NOTICE
PROPOSED AMENDEMENTS TO CNMI
PROCUREMENT REGULATIONS**

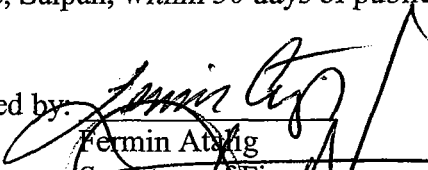
The Secretary of Finance hereby proposes to amend the CNMI Procurement Regulations in order to strengthen, clarify and update the existing regulations. The proposed amendments are promulgated under the authority set forth in the N.M.I. Constitution, Article X, Section 8 and 1 CMC 2533.

The proposed amended regulations will revise the existing procurement regulations to ensure consistency with the Commonwealth Constitution and create fair, precise and uniform procurement regulations for all expenditures of public funds. These amendments will various terms, expand the types of contracts available for use by the Department of Procurement and Supply, create uniformity among expenditures of public funds by government agencies, amend procedures for procurements of small purchases, and implement other changes designed to conform with the current organizational structure of the CNMI government.

The proposed amendments to the procurement regulations are published in the Commonwealth register and copies may be obtained from the Director, Division of Procurement and Supply, P.O. Box 510008, Saipan, MP 96950, or from the Division of Procurement and Supply offices in Lower Base, Saipan.

Interested parties with written comments may be directed to the Department of Finance, Division of Procurement and Supply, P.O. Box 510008, Saipan, MP 96950, or faxed to (670) 664-1515, or delivered to the Division of Procurement and Supply offices in Lower Base, Saipan, within 30 days of publication of these proposed amendments

Issued by:


Fermin Atang
Secretary of Finance

Date

5/17/05

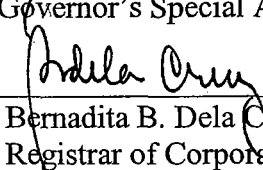
Received by:


Thomas Tebutel
Governor's Special Assistant for Administration

Date

5-17-05

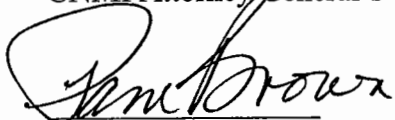
Filed by:


Bernadita B. Dela Cruz
Registrar of Corporations

Date

5/17/05

Pursuant to 1 CMC § 2153 as amended by Public Law 10-50, the rules and regulations attached hereto have been reviewed and approved as to form and legal sufficiency by the CNMI Attorney General's Office



Pamela Brown
Attorney General

Date: 5/18/05

PUBLIC NOTICE

**PROPOSED AMENDEMENTS TO CNMI
PROCUREMENT REGULATIONS**

Statutory Authority: 1 CMC 2553 and N.M. I. Constitution, Article X, Section 8, which grants the Secretary of Finance the authority to control and regulate the expenditure of public funds and to be in control of and be responsible for procurement and supply in the Commonwealth.


Goal and Objectives: These amendments are intended to strengthen, clarify and update the existing CNMI Procurement regulations.

Brief Summary: These proposed amendments to the Commonwealth of the Northern Mariana Islands Procurement Regulations would revise the existing procurement regulations to ensure consistency with the Commonwealth Constitution and create fair, precise and uniform procurement regulations for all expenditures of public funds. These amendments will various terms, expand the types of contracts available for use by the Department of Procurement and Supply, create uniformity, amend procedures for procurements of small purchases, and implement other changes designed to conform with the current organizational structure of the CNMI government.

Contact Person: Interested parties with questions may contact Robert Florian of the Department of Finance, Division of Procurement and Supply at (670) 664-1500. Written comments may be directed to the Department of Finance, Division of Procurement and Supply, P.O. Box 510008, Saipan, MP 96950, or faxed to (670) 664-1515, or delivered to the Division of Procurement and Supply offices in Lower Base, Saipan, within 30 days of publication of these proposed amendments.

Related or Effected Statutes Regulations or Orders: These proposed regulations would effect the current CNMI Procurement Regulations, as published in Volume 23, No. 05, pages 17856-7905, May 24, 2001; Volume 22, No. 8, August 18, 2000 and amended in Volume 23, No. 5; Volume 26, No. 2, February 23, 2004 at pages 021781 through 021788.

Date: April 27th, 2005

Submitted by: 

Fermin Atalig
Secretary of Finance
Department of Finance

NOTISIAN PUBLIKU

MAN MA PROPONE NA AMENDASION SIHA POT REGULASION PROCUREMENT I CNMI

Annok i Aturidât i Lai: 1 CMC Seksiona 2553 yan N.M.I. Constitution, Atikulu X, Seksiona 8, ni ha entrega i Sekretarion i Finance i aturidât para hu adahi yan maneha i gâstun salâpe publiku ya para hu adahi yan responsâpble ni Procurement and Supply i Commonwealth.

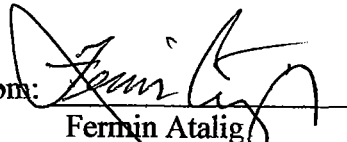
Finiho yan Diniseha: Este siha na amendasion man ma intensiona para hu na metgot, klarifika yan hu ma na fanhalom i nuebu na regulasion ni man eksiste gi Procurement i CNMI

Kada'da' na Sumâria: Este man ma propone na amendasion siha para i Regulasion Procurement gi Commonwealth I Sankattan Siha Na Islas Marianas siempre ha ribisa i man eksiste na regulasion pot para hu asigura i kinonsisten i Commonwealth Constitution ya hu establesi sânu, espesifiku yan uno' ha' na regulasion Procurement para todû i gâstun salâpe publiku. Este siha na amendasion gi maseha hâfa na palâbra hu, omenta i difirientes klâsen kontrâta siha ni man muteru (available) para hu ma usa gi Dipâtamenton i Procurement and Supply, establesi unifotme, amenda areklamento siha para i procurement para i man dikiki na kosas siha, ya hu implimenta palu na tinilaika siha ni ma designa para hi konfotna ni presente na otganisasion gi gobetnamenton i CNMI.

Petsona Ni Para Hu Ma Âgan: I petsona ni man interesao ya man gai' kuestion siña ma Âgan si Robert Florian gi Dipâtamenton i Finance, Dibision i Procurement and Supply gi (670) 664-1500. I tinige' opinion hu ma entrega guatto i Dipâtamenton i Finance, Dibision i Procurement and Supply, P.O. Box 510008, Saipan, MP 96950, pat hu ma fax guatto gi (670) 664-1515, pat hu ma entrega i Ofisinan i Dibision i Procurement and Supply gi Lower Base, Saipan, gi hâlom trenta dias ginen i publikasion este ma propone na amendasion.

Annok i Man Achule'yan/pat i Inafekta Na Lai, Regulasion, yan Otden Siha: Este man ma propone na regulasion siempre ha afekta i presente na Regulasion Procurement, ni ma publisa gi Volume 22, Numiru 05, pahinan 17856-7905, gi Mâyû 24, 2001; Volume 22, Numiru 08, gi Agosto 18, 2000 yan ma amenda gi Volume 23, Numiru 05; Volume 26, Numiru 02, gi Febreru 23, 2004 gi pâhinan 021781 esta 021788.

Fecha: Abrit 24th, 2005

Nina Halom: 
Fermin Atalig
Sekretarion i Finance
Dipâtamenton i Finance

ARONGORONGOL TOULAP

POMWOL LLIWEL KKAAL NGÁLI ALLÉGHÚL PROCUREMENT

Akkatéél bwángil: 1 CMC 2533 me Alléghúl N.M.I., Article X, Tálil 8, igha e ngálley bwángil Samwoolul Finance bwe ebwe lemelem me mwóghut ágheli salaapial toulap me ebwe lemelem reel procurement me supply mellól Commonwealth.

Aweewel Bwángil: Lliwel kkaal nge e mangemangiy bwe rebwe aghatchuweló, affata alléghúl Procurement and supply kka eyoor ighila.

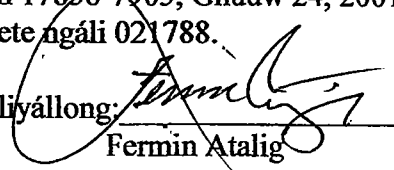
Akkáaw Aweewe: Pomwol lliwel ngáli alléghúl Procurement, Commonwealth Falúwasch Marianas ebwe ssiweli alléghúl Procurement me supply ikka ighila reel ebwe alúghúlúghúw ngáli allégh lapalapa Commonwealth me ffeer ghatch, me ffat me efil alléghúl Procurement kkaal reel alongal selaapial toulap. Lliwel kkaal nge efasúl, llapal tappal contract kka eyoor bwe rebwe yááyá sáangi Depattamentool Procurement me supply, fféer ghatch, ssiweli mwóghutul reel procurement ngáli fischal akkaméél, me ayoor akkáaw design kka ebwe ssiwel igha ebwe alúghúlúghúw organizational structure kka ighila ngali CNMI government.

Aramas ye ubwe faingi: Schóókka e ghal yoor yaar mángemáng nge emmwel rebwe faingi Robert Florida mellól Depattamentool Finance, Division of Procurement me Supply mereel (670) 664-1500. Ischil aghiyegh nge emmwel rebwe afanga ngáli Depattamentool Finance, Division of Procurement me Supply, P.O. Box 510008, Seipél, MP 96950, me ngáre fax reel (670) 664-1515, me ngare bwughilo reel Bwulasiyool Division of Procurement me Supply mellól Lower Base, Seipél, llól eliigh (30) ráálil yaal arongowow pomwol lliwel kkaal.

Akkatéél bwángil akkáaw allégh: Pomwol allégh kkaal nge ebwe allégheló alléghúl CNMI Procurement, iye raa fasúl ayoorá llól Volume 23, No. 05, peigh 17856-7905, Ghúúw 24, 2001: Volume 26, No. 2, Mááischigh 23, 2004 llól peigh 021781 mwete ngáli 021788.

Rál: Sééta 27th, 2005

Isaliyáallong:


Fermin Atalig
Samwoolul Finance
Bwulasiyool Finance

CNMI PROCUREMENT REGULATIONS

Article 1 - GENERAL PROVISION

Part A - General

Section 1-101 Purposes.

- (1) *Interpretation.* These regulations shall be construed and applied to promote their underlying purposes and policies.
- (2) *Purposes and Policies.* The underlying purposes and policies of these regulations are:
 - (a) to simplify, clarify, and modernize the procurement policies and practices of the Commonwealth and its agencies;
 - (b) to make as consistent as possible the procurement policies and practices among the various branches, activities and agencies of the Commonwealth;
 - (c) to provide for increased public confidence in the procedures followed in public procurement;
 - (d) to insure the fair and equitable treatment of persons who deal with the procurement system of the Commonwealth;
 - (e) to provide increased economy in Commonwealth procurement activities and to maximize to the fullest extent practicable the purchasing value of public funds;
 - (f) to foster effective broad-based competition within the free enterprise system; and
 - (g) to provide safeguards for the maintenance of a procurement system of quality and integrity.

Section 1-102 Authority.

These regulations are promulgated under the authority of the N.M.I. Constitution Article X, Section 8 which grants the Secretary of Finance authority to control and regulate the expenditure of public funds and 1 CMC § 2553(j) which gives the Secretary of Finance the duty to be in control of and be responsible for procurement and supply in the Commonwealth.

Section 1-103 Supplementary General Principles of Law Applicability.

Unless displaced by the particular provisions of these regulations, the principles of law and equity including, but not limited to, the Uniform Commercial Code of the Commonwealth and Common law of fraud, conflicts of interest, waste, false pretenses, and public purpose shall supplement these regulations.

Section 1-104 Requirement of Good Faith.

These regulations require all parties, including government employees, contractors and suppliers, involved in the negotiation, bidding, performance or administration of government contracts to act in good faith.

Section 1-105 Application of Regulations.

These regulations apply to every expenditure of public funds irrespective of source, including federal assistance monies and Covenant funds. These regulations apply to all agencies, departments, branches of the government, political subdivisions, public corporations and agencies of local government of the Commonwealth, all collectively referred to herein as "Public Agencies". These regulations shall apply to all purchases made through the Government Services Agency (GSA). These regulations shall apply to all funds received by grant, regardless of source. These regulations do not apply to contracts between the government and its political subdivisions or other governments. Nothing in these regulations shall be construed to prevent any governmental body or political subdivision from complying with the terms and conditions of any grant, cooperative agreement or memoranda. These regulations do not apply to employment contracts or contracts for personal services under an excepted service.

Section 1-106 Severability.

If any provision of these regulations or any application thereof to any person or circumstances is held invalid by a court of competent jurisdiction, such invalidity shall not affect other provisions or application of these regulations which can be given effect without the invalid provision or application, and to this end, the provisions of these regulations are declared to be severable.

Section 1-107 Validity of Contract.

No government contract shall be valid unless it complies with these regulations.

Section 1-108 Remedy Against Employee.

Any procurement action of an employee of the government or its agencies or political subdivisions in violation of these regulations is an action outside the scope of his or her employment. The government will seek to have any liability asserted against it by a contractor which directly results from these improper acts to be determined judicially to be the individual liability of the employee who committed the wrongful act. The Chief Procurement Officer shall refer any such action to the Attorney General for investigation and/ or prosecution

Part B - Definitions

Section 1-201 Definitions.

As used in these regulations, unless the context otherwise requires, the following meanings apply:

1. *Attorney General* means the Attorney General of the Commonwealth of the Northern Mariana Islands.
2. *Bid* means a competitive offer, which is binding on the bidder, in which price, delivery (or project completion) and conformance with specifications and the requirements of the Invitation to Bid will be the predominant award criteria.
3. *Bidder* means an individual, firm or corporation that submits a bid in response to an agency's Invitation to Bid
4. *Competitive Bidding* mean a price-based selection process that involves an advertised public notice, issuance of written, signed, and sealed bids, that are received by the Agency and publicly opened at the designated time and place, and a contract awarded (if one is awarded) to the lowest responsive, responsible bidder.
5. *Construction* means the process of building, altering, repairing, improving or demolishing of a public structure or building or public improvements commonly known as "capital improvements" It does not include the routine maintenance of existing structures, buildings, or public real property.
6. *Contract* means all types of agreements, regardless of what they may be called for the procurement of supplies, services or construction, including purchase orders.
7. *Cost-Reimbursement Contract* means a contract under which a contractor is reimbursed for costs which are allowable and in accordance with the contract terms and these regulations, and a fee, if any.
8. *Definite-Quantity Contract* means a contract which provides for delivery of a

definite quantity of specific supplies or services for a fixed period. This type of contract may be used when it can be determined in advance that a definite quantity of supplies or services will be required during the contract period.

9. *Dispute* means a disagreement concerning the legal rights and obligations of contracting parties, which, if not settled by mutual agreement, must be referred to a neutral third party for resolution.
10. *Emergency* means circumstances that are sudden and unexpected and could not have been reasonably foreseen. Such circumstances create a substantial risk of loss, damage or interruption of services that that would result in irreparable harm to public health and safety absent prompt execution of a contract to remedy the condition.
11. *Employee* means an individual receiving a salary from the government, including appointive and elective officials and non-salaried individuals performing personal services for the government. This definition extends to the Governor, Lt. Governor and members of their staff. Consultants, independent contractors and part-time workers shall be considered employees only with respect to the ethics in public contracting provisions in Article 8.
12. *Firm-fixed-price contract* means a contract which provides for a price that is not subject to any subsequent adjustment as a result of the contractor's cost experience in performing the contract. This type of contract places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss.
13. *Goods* means all property, including but not limited to equipment, materials, supplies, and other tangible personal property of any kind or nature, printing, insurance, and leases of real and personal property.
14. *Government or Commonwealth* means the Government of the Commonwealth of the Northern Mariana Islands which includes the executive, legislative and judicial branches. It also includes government agencies, political subdivisions, public corporations and agencies of local government, all collectively referred to herein as Public Agencies.
15. *Governor* means the Governor of the Commonwealth of the Northern Mariana Islands.
16. *Invitation for Bids* means all documents, whether attached or incorporated by reference, utilized for soliciting bids.
17. *Expenditure Authority* means that public official who may expend, obligate, encumber or otherwise commit public funds under the Planning and Budgeting Act or under any annual appropriation act.
18. *Person* means an individual, sole proprietorship, partnership, joint venture,

corporation, other unincorporated association or a private legal entity.

19. *Procurement* means buying, purchasing, renting, leasing or acquiring construction, goods or services. It also includes all functions that pertain to the obtaining of construction, goods or services, including description of requirements, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration.
20. *Chief Procurement Officer* means the Director of the Division of Procurement and Supply within the Department of Finance.
21. *Purchase Description* means the words used in a solicitation to describe the goods, services or construction to be purchased and includes specifications attached to, or made part of, the solicitation.
22. *Requirements Contract* means a contract which provides for filling all actual purchase requirements of designated Government activities for supplies or services during a specified contract period, with deliveries or performance to be scheduled with the contractor.
23. *Responsible* in reference to a bidder, means a person, firm or corporation who has the capability in all respects to perform fully the contract requirements, and the integrity and reliability which will assure good faith performance.
24. *Responsive* in reference to a bidder, means a person who has submitted a bid which conforms in all material respects to the invitation for bids.
25. *Secretary* means the Secretary of Finance.
26. *Services* means the furnishing of time, labor or effort by a person other than an employee, and not involving the delivery of a specific end product other than reports, plans and incidental documents.
27. *Shall* denotes the imperative.

Part C - Public Access

Section 1-301 Public Access to Procurement Information.

Procurement information shall be a matter of public record and shall be available for public inspection. Procurement information may be kept confidential when determined necessary by the Chief Procurement Officer.

Article 2 - PROCUREMENT ORGANIZATION

Part A - Director of Procurement and Supply

Section 2-101 Creation of Procurement and Supply Division.

There is created in the Department of Finance a Division of Procurement and Supply to assist the Secretary of Finance in the execution of those duties authorized under 1 CMC § 2553 (j) and § 2581 - § 2590.

Section 2-102 Director of Procurement and Supply(P&S).

The Secretary of Finance shall appoint a Chief Procurement Officer to administer and supervise the day-to-day activities of the Division. The Chief Procurement Officer shall be assisted in carrying out his functions and duties by employees of the Procurement and Supply Division.

Section 2-103 Duties of the Chief Procurement Officer.

The duties and responsibilities of the Chief Procurement Officer include, but are not limited to, the following:

1. insure that these regulations are observed in all government procurement;
2. provide advance planning for the centralized purchase of government supplies;
3. procure or supervise the procurement of all supplies, goods and services needed by the government;
4. conduct bidding, procurement, negotiation or administration of government contracts upon request of the official with expenditure authority;
5. sell, trade or otherwise dispose of surplus property belonging to and no longer needed by the Government;
6. exercise general supervision and control over all inventories of supplies belonging to the Government;
7. exercise general oversight and control on the use of physical assets and other capital equipment to prevent waste or abuse or other unauthorized use;
8. establish and maintain programs for the inspection, testing and acceptance of supplies;
9. hear all protests and disputes; and

10. oversee the administration of government contracts.

Section 2-104 Contract Review, Processing and Oversight.

1. All contracts must first be prepared by the contracting officer who shall certify that (s)he has complied with Procurement Regulations and that the proposed contract is for a public purpose, and does not constitute a waste or abuse of Public funds. All contract documents must be complete including attachments and exhibits, if they are incorporated into the contract by reference. The contract documents prepared by the contracting officer authority shall be submitted to the Chief Procurement Officer.
2. The next step in the contract process is the review by the Chief Procurement Officer. Upon his own initiative or upon the request of the Public Auditor, the Chief Procurement Officer may refer any contract to the Public Auditor for a recommendation before he approves or disapproves of the contract. The Chief Procurement Officer shall cause such review to occur in a prompt and timely manner.
3. The contract shall next be approved by the Secretary of Finance or his designee who shall certify the availability of funds. If the Secretary finds any aspect of the contract to be deficient or defective in any respect, he shall return the contract to the Chief Procurement Officer for appropriate resolution with the official with expenditure authority. The contract shall also be approved by other government agencies that need to certify the availability of funds for the contract.
4. The fourth review is that of the Attorney General or his designee who shall certify the contract as to form and legal capacity.
5. The contract shall then be approved by the Governor.
6. After the Governor's approval, the Chief Procurement Officer shall forward the contract to the contractor for his approval and signature.
7. After the signature of the contractor, the Chief Procurement Officer shall review the contract documents for completeness. If he is satisfied, he shall sign in the appropriate space and shall:
 - (a) inform in writing the official with the expenditure authority that the contract has been signed by all parties and that he may proceed with contract implementation according to the terms contained therein; and
 - (b) provide copies of said contract to the:

- (i) Secretary of Finance
- (ii) Attorney General
- (iii) Contractor

8. A contract may be referred back to the Chief Procurement Officer by the Secretary of Finance or the Attorney General for further review based on additional evidence that it may not comply with these regulations. If the Chief Procurement Officer withdraws approval or refuses to approve a contract, he shall state in writing the basis for his determination.
9. It is the responsibility of the contracting officer to ensure that the contractor does not sign the contract or incur any expenses under it until all necessary government signatures have been obtained. The supervision, inspection, and administration of a government contract is the primary responsibility of the official with expenditure authority. However, the supervision, inspection, and administration of construction contracts (including architect-engineer services) shall be performed by the Secretary of the Department of Public Works or his designee unless the Secretary certifies that the Contracting Officer has the capability to handle his own construction and A&E contracts.
10. No contract is effective against the Commonwealth until all of the parties whose signatures are required on the contract form have signed the contract. A contract shall contain a Right to Audit Records Clause.

Section 2-105 Split Contracts.

If the Chief Procurement Officer determines that a contract has been split into two or more contracts for the purpose of avoiding bidding, then he may require the contract to be competitively bid.

Section 2-106 Acceptance of Gratuities by the Chief Procurement Officer and Procurement and Supply Division Employees.

In addition to the restrictions found in Section 8-205, the Chief Procurement Officer and the employees of the Procurement and Supply Division shall not accept from any person any gift of value given to them with the intent to influence their business judgment.

Part B - Procurement Function

Section 2-201 Decentralized Procurement.

All purchases under these Regulations shall be centralized through the Chief Procurement Officer.

Section 2-202 Procurement Services.

Upon request by a contracting officer, the Chief Procurement Officer shall provide assistance or conduct the bidding, procurement, negotiation, or administration of a particular contract.

Section 2-203 Centralized Procurement of Supplies.

The Chief Procurement Officer may purchase certain government supplies in large quantities to be relied upon by all departments, agencies, offices and branches. No separate contract or purchase order for these supplies will be approved.

Article 3 - SOURCE SELECTION AND CONTRACT FORMATION

Part A - Source Selection

Section 3-101 Requirements for Competition.

The Chief Procurement Officer shall provide for full and open competition through use of the competitive procedure that is best suited to the circumstances of the contract action. Contracts shall be awarded through one of the following methods:

1. **Competitive Sealed Bidding**
2. **Competitive Sealed Proposals**
3. **Small Purchases**
4. **Sole Source Procurement**
5. **Emergency Procurements**
6. **Architect- Engineer Services**
7. **Competitive Selection Procedures for Professional Services**

Section 3-102 Competitive Sealed Bidding.

1. ***Invitation for Bids.* An invitation for bids shall be issued and shall include at the minimum:**
 - a. **an invitation for bids number;**
 - b. **date of issuance;**

- c. name, address and location of issuing office;
- d. specific location where bids must be submitted;
- e. date, hour and place of bid opening;
- f. a purchase description in sufficient detail to permit full and open competition and allow bidders to properly respond;
- g. quantity to be furnished;
- h. time, place and method of delivery or performance requirements;
- i. essential contractual terms and conditions; and
- j. any bonding requirements.

Purchase descriptions of construction, goods, or services shall detail to the greatest extent practicable the specific requirements the contractor is expected to perform or deliver. An adequate purchase description shall adequately set forth the essential physical and functional characteristics of the construction, goods, or services necessary to fulfill the Government's minimum requirements.

2. *Application for brand name descriptions.* An acquisition that uses a brand name description or other purchase description to specify a particular brand name, product, or feature of a product peculiar to one manufacturer is not normally allowed regardless of the number of sources solicited. It shall be allowed only when justified and approved in accordance with the procedures on justifying sole-source procurement. Specifically, the justification shall indicate that the use of such descriptions in the acquisition is essential to the Government's requirements, thereby precluding consideration of a product manufactured by another company. A "Brand-name or equal" descriptions, and other purchase descriptions that permit prospective contractors to offer products other than those specifically referenced by brand name, provide for full and open competition and do not require justifications and approvals to support their use.
3. *Bid Solicitation Accuracy.* The bid solicitation shall accurately reflect the Government requirement. It shall adequately state what is to be done or what is to be delivered to the Government in order to allow bidders to properly respond and evaluations to be made on a uniform basis. Exact quantities shall be stated in the statement of deliverables, unless use of a requirements contract is justified under Section 3-403.
4. *Publication.* The Chief Procurement Officer shall publicize all invitation for bids in order to increase competition and broaden industry participation. The bidding time (i.e., the time between issuance of the solicitation to the public and opening of bids) shall be prescribed as follows:

- a. **Minimum Bidding Time.** A bidding period of at least 30 calendar days shall be provided unless the contracting officer determines that a shorter time is reasonable and necessary. Such shorter bidding period must afford potential bidders a reasonable opportunity to respond considering the circumstances of the individual acquisition, such as the complexity, and urgency. The bidding period, however, shall never be less than seven calendar days.
 - b. **Extended Bidding Period.** Because of limited bidding time in certain cases, potential sources may be precluded from bidding and others may be forced to include contingencies that, with additional time, could be eliminated. To avoid unduly restricting competition or paying higher-than-necessary prices, the Chief Procurement Officer may increase the 30-day bidding period by not more than 60 additional calendar days, considering such factors as: (1) degree of urgency; (2) complexity of requirements; (3) anticipated extent of subcontracting; (4) geographic distribution of bidders; and (5) normal transmittal time for invitations and bids.
5. **Public Notice.** The Chief Procurement Officer shall advertise the invitation for bids in a newspaper of general circulation in the Commonwealth at least once in each week from the time the solicitation is issued, including the week when the bidding period expires. The invitation for bids shall also appear, wherever possible, on a website maintained by the relevant agency or by the Division of Procurement and Supply.
 6. **Bid Receipt.** All bids shall be submitted to the office of the Director of the Division of Procurement and Supply. Bids shall be received prior to the time set for opening and shall be maintained sealed in a locked receptacle at the office.

If a bid is opened by mistake, it shall be resealed and the person who opened the bid shall write his signature and print his title on the envelope and deliver it to the Chief Procurement Officer. No information contained in the bid shall be disclosed prior to the bid opening. The Chief Procurement Officer shall cause the opened bid to be placed into the sealed receptacle. Confidentiality regarding bid submissions shall be maintained at all times.
 7. **Bid opening.** The bid opening shall be conducted by the Chief Procurement Officer or his or her designee at the office of the Division of Procurement and Supply. Bids shall be opened publicly in the presence of one or more witnesses at the time and place designated in the Invitation for Bids. The amount of each bid, together with the name of each bidder shall be recorded, the record and each bid shall be open to public inspection. Within 10 days of bid opening, the Chief Procurement Officer shall prepare a written summary of the bid opening.
 8. **Bid Acceptance and Bid Evaluation.** Bids shall be unconditionally accepted without alteration or correction, except as authorized in these regulations. Bids shall be evaluated based on the requirements set forth in the Invitation for Bids.

No criteria may be used in the bid evaluation that are not set forth in the Invitation to Bid.

- 9 ***Responsiveness of Bids.*** To be considered for award, a bid must comply in all material respects with the invitation for bids. Bids must be filled out, executed, and submitted in accordance with the bid instructions. A bid may be considered only if (1) the bidder accepts all material terms and conditions of the invitation, and (2) any future award based upon the bid would result in a binding contract with terms and conditions that do not vary from the requirements of the invitation. Electronic or facsimile bids may be considered when permitted by the invitation.
- 10 ***Bid Rejection.*** A bid shall be rejected for any of the following reasons:
- a. failure to conform to essential requirements of the Invitation for Bids such as specifications or time of delivery;
 - b. receipt of bid after date and time stated in invitation for bids;
 - c. imposition of conditions or restrictions in the bid which modify requirements of the invitation or limit the bidder's liability to the government. For example, bids shall be rejected in which the bidder:
 - i. protects against future changes in conditions, such as increased costs;
 - ii. fails to state a price and indicates that price shall be the price in effect at the time of delivery;
 - iii. states a price but qualifies it as subject to price in effect at time of delivery; or
 - iv. limits the rights of government.
 - d. unreasonableness as to price;
 - e. a bid from a nonresponsible bidder as defined in Section 3-301.
11. ***Correction or Withdrawal of Bids; Cancellation of Awards.*** Correction or withdrawal of inadvertently erroneous bids, before or after award, or cancellation of awards based on bid mistakes must be approved by the Chief Procurement Officer in writing. After the bid opening, no changes in bid price or other provisions of bids prejudicial to the interest of the government or fair competition shall be allowed. Whenever a bid mistake is suspected, the government shall request confirmation of the bid prior to award. In such an instance, if the bidder alleges an error, the government shall only permit correction of the bid or withdrawal of the bid in accordance with subparagraph (a) or (b).

- a. **Correction of bids. Correction of bids shall only be permitted when:**
 - i. an obvious clerical mistake is clearly evident from examining the bid document. Examples of such mistakes are errors in addition or the obvious misplacement of a decimal point; or
 - ii. the otherwise low bidder alleges a mistake and the intended bid is evident from the bid document or is otherwise supported by clear and convincing evidence as to the bid intended and the corrected bid remains the low bid. A low bidder shall not be permitted to correct a bid mistake resulting from an error in judgment.
- b. **Withdrawal of Bids. Withdrawal of a bid shall only be permitted where the otherwise low bidder alleges a mistake and there is a clear and convincing evidence as to the existence of a mistake.**

12. Award.

- a. **The contract must be awarded with reasonable promptness to the lowest responsive bid by a responsible bidder whose bid fully meets the requirements of the invitation for bids and these regulations. Notice of intent to award shall be given to the successful bidder. Unsuccessful bidders shall be promptly notified.**
- b. **No acceptance of an offer shall occur nor shall any contract be formed until a government contract is written and has been approved by all the officials required by law and regulation. Government contracts shall contain a clause which states that the signature of the private contractor shall be the last in time to be affixed to a contract and that no contract can be formed prior to the approval of all required government officials.**
- c. **In the event all bids exceed available funds and the bid of the lowest responsive and responsible bidder does not exceed those funds by more than five percent (5%), and time or economic considerations preclude resolicitation of work of a reduced scope, the official with expenditure authority may be authorized by the Chief Procurement Officer to negotiate an adjustment of the bid price including changes in bid requirements, with the lowest responsive and responsible bidder in order to bring the bid price within the amount of available funds. The negotiation shall be documented in writing and attached to the bidding documents.**
- d. **Cancellation of Awards. Cancellation of awards or contracts shall only be permitted when:**
 - i. evidence as to the existence of the mistake is not discovered until after the award;
 - ii. there exists no clear and convincing evidence to support the bid

intended; and

- iii. (iii)performance of the contract at the award price would be unconscionable.

Section 3-103 Competitive Sealed Proposals.

1. ***Conditions for use.*** Where appropriate, a contract may be entered into by competitive sealed proposals.
2. ***Request for proposals.*** Proposals shall be solicited through a Request For Proposals.
3. ***Public notice.*** Adequate public notice of the request for proposals shall be given in the same manner as provided for in competitive sealed bids.
4. ***Receipt of proposals.*** Proposals shall be opened so as to avoid disclosure of contents to competing offerors during the process of negotiation. A register of proposals shall be prepared and opened for public inspection after contract award. The register shall be prepared contemporaneous with proposal opening and shall contain the amount of each proposal, together with the name of each proposer.
5. ***Evaluation factors.*** The request for proposals shall state the relative importance of price and other evaluation factors. Where practicable, price or cost to the government shall be included as an evaluation factor. The Chief Procurement Officer must ensure that the following requirements are complied with in any evaluation of proposals.
 - a. All evaluation factors stated in the solicitation shall be considered in determining proposals in the competitive range (i.e., those allowed to participate further in the selection process), and any subsequent evaluations (including evaluation of best and final offers from the competitive range offerors).
 - b. When technical criteria, are involved, the contracting officer may assign an evaluator or evaluation team to complete a technical evaluation of the submitted proposals. The contracting officer shall determine which proposals are in the competitive range, based on the recommendations of the evaluator or evaluation team, for the purpose of conducting written or oral discussions, and shall include all proposals that have a reasonable chance of being selected for award. When there is doubt as to whether a proposal is in the competitive range, the proposal shall be included. Proposals determined to have no reasonable chance of being selected for contract award shall no longer be considered for selection. A proposal is not reasonably susceptible of being selected for award and can be excluded from the competitive range if it is clear that (a) its contents are so

unacceptable that a revision of the proposal in the negotiation stage would be equivalent to accepting a new proposal, or (b) in comparison with other proposals, such proposal clearly has no chance of being selected for award.

6. *Discussion with responsive offerors and revisions to proposals.* As provided in the request for proposals, substantive discussions may be conducted with responsive offerors who submit proposals determined to be reasonably susceptible of being selected for award to insure full understanding of, and responsiveness to, solicitation requirements. Offerors shall be accorded fair and equal treatment with respect to any opportunity for discussion and revision of proposals and such revisions may be permitted after submission and prior to award for the purpose of obtaining the best and final offers. In conducting discussions, there shall be no disclosure of any information derived from proposals submitted by competing offerors. Communications for the purposes of clarifications of terms, typographic errors, basic biographic information or other non-substantive matters shall not be considered discussions.
7. *Award.* Award shall be made to the responsible offeror whose proposal is determined in writing to be most advantageous to the government taking into consideration price and the evaluation factors set forth in the request for proposals. No other factors or criteria shall be used in the evaluation and the contract file shall contain the basis on which the award is made. The Chief Procurement Officer shall provide prompt written notification to each unsuccessful offeror (unless pre-award notice was given under Section 3-103(6)). The notice shall include, as applicable -- (i) the number of offerors solicited; (ii) the number of proposals received; (iii) the name and address of each offeror receiving an award; (iv) the items, quantities, and unit prices of each award (if the number of items or other factors makes listing unit prices impracticable, only the total contract price need be furnished); and (v) in general terms, the reason the offeror's proposal was not accepted, unless the price information in item (iv) of this subsection readily reveals the reason. Upon a determination by the Chief Procurement Officer the following information may also be disclosed: cost breakdown, profit, overhead rates, manufacturing processes and techniques, or other confidential business information be disclosed to any other offeror.

Section 3-201 Cancellation.

An invitation for bids or request for proposals may be canceled, and any and all bids or proposals may be rejected, when such action is determined in writing by the official with expenditure authority and approved by the Chief Procurement Officer to be in the best interest of the government based on:

1. inadequate or ambiguous specifications contained in the solicitation;
2. specifications which have been revised;

3. goods or services being procured which are no longer required;
4. inadequate consideration given to all factors of cost to the government in the solicitation;
5. bids or proposals received indicate that the needs of the government can be satisfied by a less expensive good or service;
6. all offers with acceptable bids or proposals received are at unreasonable prices;
7. bids were collusive; or
8. cancellation is determined to be in the best interest of the government.

Section 3-105 Small Purchases.

1. Any procurement not exceeding the amounts established herein may be made in accordance with small purchase procedures. However, procurement requirements shall not be artificially divided so as to constitute a small purchase.
2. Bidding is not required for procurement under \$2,500.
3. Bidding is not required but is encouraged for procurement over \$2,500 and under \$10,000. The official with expenditure authority must obtain price quotations from at least three (3) vendors and base the selection on competitive price and quality for procurement valued at \$2,500 to \$10,000. Any price quotations obtained must be written, documented, and submitted to the Chief Procurement Officer for approval.
4. Purchase orders may be utilized for small purchases under \$5,000.
5. The use of purchase orders for purchases between \$10,000 to \$15,000 is discouraged but not prohibited. It shall be in the discretion of the Chief Procurement officer to allow the use of a purchase order for any amount between \$10,000 and \$20,000. Purchase orders may not be used for any item in excess of \$20,000
6. Any lease or purchase of vehicles shall be procured pursuant to Section 4-104. Any lease or purchase of machinery and equipment in excess of \$2,500 shall be procured pursuant to Section 3-102 or other applicable provisions of these regulations.

Section 3-106 Sole Source Procurement.

1. A contract may be awarded for a supply, service, or construction without competition when the Chief Procurement Officer determines in writing that there is only one source for the required supply, service, or construction. Sole source

- procurements shall be the exception, rather than the rule, in procuring government goods and services.
2. A written justification for sole source procurement shall be prepared by the official with expenditure authority or the Contracting Officer. The written sole source justification shall contain (a) the *specific* unique capabilities of the contractor selected; (b) the *specific* reasons why such unique capabilities are required for the particular procurement; (c) what *specific* efforts were made to obtain competition, and (d) what other *specifically-named* contractors and other sources, both on-island and off-island, have been considered and why they were not selected. Generalized statements are not adequate, and documents to support the statements justifying the sole source procurement are mandatory. Any justifications that do not meet these requirements must be denied.
 3. Certain contracts may use the sole source procurement method, after it is first demonstrated in writing to the Chief Procurement Officer that the requirements of 3-106(1) and 3-106(2) have been met. These contracts are limited to:
 - a. Contracts solely for the purpose of obtaining expert witnesses for litigation;
 - b. Contracts for legal defense, legal advice, or legal services; and
 - c. Independent contracts for policy consultants (e.g., economic and/or environmental consultants) of the Governor, Lt. Governor, and presiding officers of the Legislature.

Section 3-107 Emergency Procurement.

1. Notwithstanding any other provision of these regulations, the government may make emergency procurement when there exists an unexpected and unforeseen threat to public health, safety or welfare under emergency conditions and the government need cannot be met through normal procurement methods. An emergency procurement must be as competitive as practicable under the circumstances.
2. A written justification of the basis for the emergency must be made by the official with expenditure authority. If the cost of the required goods, services or construction is in excess of \$25,000 then the justification shall also address the criteria set forth in 3-106(2).
3. The Chief Procurement Officer shall then determine whether the lack of the goods, services, or construction will seriously threaten the continued function of government, the preservation of property, or the health or safety of any person.
4. If the Chief Procurement Officer determines that at legitimate emergency exists, he shall state his approval in writing.

Section 3-108 Special Procurements.

Notwithstanding any other provision of these Regulations, the Chief Procurement Officer may initiate a procurement above the small purchase amount specified in Section 3-105 where he determines that an unusual or unique situation exists that makes the application of all requirements of competitive sealed bidding or competitive sealed proposals contrary to the public interest. Any special procurement under this Section shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the procurement and for the selection of the particular contractor shall be included by the Chief Procurement Officer in the contract file, and shall be made publicly available.

Section 3-109 Prohibitions

The following do not constitute an emergency and neither the emergency procurement method nor the special procurement method shall be used in these circumstances:

1. impending expiration of funding;
2. agency's failure to plan procurements for foreseeable expenditures

Part C - Qualifications and Duties

Section 3-301 Responsibility of Bidders and Offerors.

1. *Awards shall be made only to responsible contractors.* To be determined responsible, a prospective contractor must:
 - a. have adequate financial resources to perform the contract, or the ability to obtain them;
 - b. be able to comply with the required delivery or performance schedule;
 - c. have a satisfactory performance record;
 - d. have a satisfactory record of integrity and business ethics;
 - e. have the necessary organization, experience and skills, (or the ability to obtain them), required to successfully perform the contract;
 - f. have the necessary production, construction and technical equipment facilities, or the ability to obtain them; and
 - g. be otherwise qualified and eligible to receive an award under applicable laws and rules.
2. *Obtaining information.* Prior to award, the Chief Procurement Officer shall obtain

information from the bidder or offeror necessary to make a determination of responsibility using the factors in paragraph 1 above. The unreasonable failure of a bidder or offeror to promptly supply information in connection with an inquiry with respect to responsibility may be grounds for determination of nonresponsibility with respect to that bidder or offeror.

3. *Right of non-disclosure.* Information furnished by a bidder or offeror pursuant to paragraph 2 may not be disclosed outside of the office of the Chief Procurement Officer, or any other government official involved without prior consent by the bidder or offeror.
4. *Nonresponsibility determination.* When a bid or proposal on which a contract award would otherwise be made is rejected because the prospective contractor is found to be nonresponsible, a written determination shall be signed by the Chief Procurement Officer stating the basis for the determination and this shall be placed in the contract file.

Section 3-302 Prequalification of Contractors.

Prospective suppliers of goods or services may be prequalified for particular types of construction, goods and services when determined necessary by the Chief Procurement Officer. Opportunity for qualification before solicitation shall be afforded to all suppliers. Solicitation mailing lists of potential contractors shall include, but shall not be limited to, prequalified suppliers. In no event will bidders be allowed to qualify after the bid opening.

Part D - Types of Contracts

Section 3-401 Permissible Types of Contracts.

Government contracts shall utilize a firm fixed price unless the use of a cost reimbursement contract is justified under Section 3-402. Government contracts shall also use definite-quantity contracts unless a requirements contract is justified under Section 3-403. Use of cost-plus-a-percentage-of-cost and percentage of construction cost methods of contracting are prohibited.

Section 3-402 Cost-Reimbursement Contracts

1. *Policy.* Cost-reimbursement contracts must contain a ceiling which the contractor shall not exceed without the recommendation of the official with expenditure authority and approval by the Chief Procurement Officer.
2. *Application.* A cost-reimbursement contract may be used when the Chief Procurement Officer attaches to the contract a written determination that --
 - a. Uncertainties in the work to be performed make the cost of performance too difficult to estimate with the degree of accuracy required for a firm

fixed price contract;

- b. Use of a cost reimbursement contract is likely to be less costly to the government than any other type due to the nature of the work to be performed under the contract.

3. *Limitations.*

- a. A cost-reimbursement contract may only be used when the Chief Procurement Officer determines that the contractor's accounting system is adequate for determining costs applicable to the contract, and Government surveillance in the form of a construction management contract will be obtained to ensure the use of efficient methods and effective cost controls in the performance of the contract.
- b. The use of cost-reimbursement contracts is prohibited for the acquisition of commercially available items.

4. *Cost-plus-fixed-fee contracts.*

- a. **Description.** A cost-plus-fixed-fee contract is a cost-reimbursement contract that provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract. The fixed fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the contract, authorized pursuant to Section 5-103(1).
- b. **Application.**
 - 1. A cost-plus-fixed-fee contract is suitable for use when the conditions of Section 3-402(2) are present and the contract is for the performance of research or preliminary exploration or study, and the level of effort required is unknown.
 - 2. A cost-plus-fixed-fee contract normally must not be used in development of major systems once preliminary exploration, studies, and risk reduction have indicated a high degree of probability that the development is achievable and the Government has established reasonably firm performance objectives and schedules.
- c. **Limitations.** No cost-plus-fixed-fee contract shall be awarded unless the official with expenditure authority complies with all limitations in Section 3-402(3).

Section 3-403 Requirements Contracts.

- 1. For the information of offerors and contractors, the official with expenditure authority shall state a realistic estimated total quantity in the solicitation and

resulting contract. This estimate is not a representation to an offeror or contractor that the estimated quantity will be required or ordered, or that conditions affecting requirements will be stable or normal. The official with expenditure authority may obtain the estimate from records of previous requirements and consumption, or by other means, and shall base the estimate on the most current information available.

2. The contract shall state, if feasible, the maximum limit of the contractor's obligation to deliver and the Government's obligation to order. The contract may also specify maximum or minimum quantities that the Government may order under each individual order and the maximum that it may order during a specified period of time. The contract shall specify that failure of the Government to order such estimated minimum or maximum quantities will not entitle the contractor to any equitable adjustment in unit price.
3. **Application.** A requirements contract may be appropriate for acquiring supplies or services when the Government anticipates recurring requirements but cannot predetermine the precise quantities of supplies or services that designated Government activities will need during a definite period.

Section 3-404 Indefinite Quantity Based Selection

Policy: Contracts involving goods or services for an indefinite quantity or indefinite delivery time ("IDIQ") may be entered into when the Chief Procurement Officer has identified a recurring need for goods or services of a particular type, but is unable to predetermine, above a specified minimum, the precise quantities of such services that the Commonwealth will require during the contract period. An IDIQ contract shall provide for delivery of an indefinite quantity of goods or services, between a stated minimum and maximum amount, during a defined time period. Work shall be ordered under an IQ contract by the use of Task Orders. An IDIQ contract may be used only where: (1) the contract is for specifically described goods or services or a specific project, but the quantity of goods or services that will be needed is expected to be subject to wide variation, and the Chief Procurement Officer determines that negotiation of a contract under 4-102(4) is not in the best interest of the Commonwealth. Use of this contracting method shall be at the discretion of the Chief Procurement Officer. In his discretion, the Chief Procurement Officer may impose a ceiling on the amount of goods and services that may be procured under this method.

1. **Public announcement and form of request for proposals.** Public announcement and request for proposals shall meet the criteria specified in 4-103(a)(1), above, except that (1) the intent to award an indefinite quantity contract shall be clearly specified; (2) the request for proposals shall state the minimum and maximum order amounts to be included in any contract awarded; (3) the solicitation shall state the method or methods that may be used for pricing task orders.
2. **Description of types of architect-engineer services.** The Chief Procurement Officer, shall develop and maintain descriptions of types of goods and services for which

IDIQ contracts may be awarded under the circumstances described in 4-103(b)(2), above. Such descriptions shall identify with reasonable particularity the goods needed and, where such descriptions refer to services, the nature of the activities, specialized skill and experience typically required and shall provide examples of the range of projects for which services of the type specified are generally required. Descriptions must identify services requiring particular knowledge and skills. No general category of services shall be recognized for the purpose of soliciting for an IDIQ services contract. Descriptions that have been published by the Chief Procurement Officer shall be kept on file from one year of the date of original solicitation. Such descriptions shall be made available by the Chief Procurement Officer, upon request. New descriptions may be developed or existing descriptions revised by the Chief Procurement Officer at any time.

3. *Minimum and maximum order quantities.* Each IDIQ solicitation and contract shall include a minimum commitment or quantity and a maximum limitation. The minimum commitment shall be a reasonable estimate of the Government's needs and should not exceed the amount that the Commonwealth is reasonably certain to order. A reasonable maximum limitation should be established by the Chief Procurement Officer based on a forecast of the Commonwealth's needs, with consideration given to the capacity of potential offerors. The RFP and IDIQ contract may, in the discretion of the Chief Procurement Officer specify a maximum quantity of goods or level of services that may be ordered under each task order or during a specific period of time.
4. *Duration of IDIQ contracts.* Each IDIQ solicitation and contract shall state the maximum duration of the contract. For an IQ contract related to a particular project, as described in 4-102(b)(1), the effective period of the contract shall be no longer than the duration of the project. An IDIQ contract not limited to use for a particular project, as described in 4-102(b)(2), shall not exceed an initial period of one year, with permissible option or renewal periods not to exceed one additional year. However, a task order issued during the effective period of the contract that is uncompleted at the end of the contract period may be completed and the provisions of the contract shall remain in force solely as applicable to that task order until completed. In any case, no contract or task order period may exceed any applicable funding limitations.
5. *Negotiation.* The Chief Procurement Officer or his designee shall negotiate rates and/or pricing factors with as many offerors as necessary, in descending order beginning with the highest qualified offerors to reach agreement on fair and reasonable rates and/or pricing factors to be included in a contract. Depending on the pricing method or methods set forth in the solicitation, the Chief Procurement Officer may negotiate specific rates for personnel time, definable tasks, fixed expense rates, etc., and/or the Chief Procurement Officer may negotiate fixed pricing factors, such as personnel cost or basic rate, overhead and profit factors, to be used in negotiating lump sum pricing for task orders. In determining what constitutes fair and reasonable rates and/or pricing factors to the government, the Chief Procurement Officer may consider factors such as a government estimate,

rates or prices obtained for other similar work, the rates or pricing factors proposed by other firms responding to the solicitation, and any other factors deemed relevant by the Chief Procurement Officer. If fair and reasonable rates and/or pricing factors cannot be negotiated with the highest ranking qualified firm or firms, then the Chief Procurement Officer may select additional firms from the final qualification ranking list provided by the Evaluation Authority in order of competence and qualifications and continue negotiations until fair and reasonable rates and/or pricing factors have been agreed upon with the requested number of firms for award. The P&S Director may delegate the process of conducting negotiations to the official with expenditure authority, but where the process has been delegated, the Chief Procurement Officer must concur in a determination that fair and reasonable rate structures and/or pricing factors have been negotiated.

Part E - Inspection and Audit

Section 3-501 Right to Inspect Place of Business.

The government, may at reasonable times, inspect the place of business of a contractor or any subcontractor which is related to the performance of any contract awarded or to be awarded by the government.

Section 3-502 Right to Audit Record.

As required by Section 404 of Public Law No. 3-91 (1 CMC '7845), the contractor and subcontractor or grantee and subgrantee at all levels shall provide the Public Auditor of the Commonwealth with access to and the right to examine and copy any records, data or papers relevant to a government contract or grant for a period of three (3) years after the final payment under the contract or grant. A clause to this effect shall appear in all government contracts and obligations.

Part F - Reports and Record

Section 3-601 Report of Anticompetitive or Deceptive Practices.

When for any reason any person suspects the following practices are occurring among bidders, offerors, contractors or subcontractors, a notice of the relevant facts shall be transmitted by the Chief Procurement Officer to the Attorney General without delay:

1. unfair methods of competition;
2. deceptive acts; or
3. unfair business practices.

These acts are more fully defined at 4 CMC § 5101 through § 5206.

Section 3-602 Retention of Procurement Records.

1. All procurement records shall be retained by the Chief Chief Procurement Officer for a period of 5 years after completion of construction, or full delivery of the goods or services under the contract. The official with expenditure authority shall also keep copies of all procurement records for their respective agencies.
2. The Chief Procurement Officer shall maintain a record listing all contracts for a minimum of five (5) years. The records shall contain:
 - a. each contractors name;
 - b. the amount and type of each contract; and
 - c. a listing of the supplies, services or construction procured under each contract; and
 - d. a listing of contracts per agency and by fiscal year.
3. All procurement records, except those designated herein as not subject to disclosure, shall be available to public inspection.

Article 4 - PROCUREMENT OF CONSTRUCTION AND

ARCHITECT-ENGINEER SERVICES, PROFESSIONAL SERVICES, AND VEHICLES

Section 4-101 Construction Procurement.

1. *Invitation for Bids.*
 - a. **Deposit.** The Chief Procurement Officer shall determine the amount of deposit required for potential bidders to obtain the invitation for bids.
 - b. **Contents.** The invitation for bids shall be prepared in accordance with Section 3-102(2). In addition, the following items shall be included in the Invitation for Bids:
 - i. **Notice to Bidders.** General information regarding the project;
 - ii. **Instructions to Bidders.** Information on the preparation of bids, bid security requirements and forms and certifications that must be submitted with the bid;

- iii. **General Conditions.** Standard contract clauses governing the performance of work;
- iv. **Special Conditions.** Special contract clauses depending on the nature and dollar amount of the work to be performed; and
- v. **Technical Specifications.** Specifications governing the technical aspects of the work to be performed;

2. *Bid Security.*

- a. **Requirement.** Bid security shall be required for all competitive sealed bidding construction contracts where the price is estimated by the Chief Procurement Officer to exceed \$25,000.00 or when the Chief Procurement Officer determines it is in the interest of the Commonwealth. Bid security shall be on a bid bond, in cash, by certified check, cashiers check or other form acceptable to the government. A surety company shall hold the certificate of authority from the U.S. Secretary of the Treasury as an acceptable surety or other surety acceptable to the Attorney General.
- b. **Amount.** Bid security shall be an amount equal to at least fifteen percent (15%) of the amount of the bid or other amount as specified in the Invitation for Bids depending upon the source of funding.
- c. **Rejection of Bid.** Failure to furnish bid security, when required by the invitation, shall result in rejection of the bid as nonresponsive.

3. *Contract Performance and Payment Bonds.*

- a. When a construction contract is awarded in excess of \$25,000.00, the following bonds or security shall be delivered to the government and shall become binding on the parties upon the execution of the contract:
 - i. a performance bond satisfactory to the government pursuant to subsection (b) below, executed by a surety company authorized to do business in the Commonwealth or otherwise secured in a manner satisfactory to the government, in an amount equal to one hundred percent (100%) of the price specified in the contract; and
 - ii. a payment bond satisfactory to the government pursuant to subsection (b) below, executed by a surety company authorized to do business in the Commonwealth or otherwise secured in a manner satisfactory to the government, for the protection of all persons supplying labor and material to the contractor or its subcontractors for the performance of the work provided for in the contract. The bond shall be in an amount equal to one hundred percent (100%) of the price specified in the contract.

- b. **Officer shall ensure that the bonding company's pledged assets are sufficient to cover the bond obligation. Prior to the execution of the contract, the Chief Procurement Officer shall require the selected contractor to submit -- (i) a current license from the bonding company showing that it has authority to issue bonds, and (ii) a certification from the bonding company that the unencumbered value of its assets (exclusive of all outstanding commitments on other bond obligations) exceed the penal amount of each bond.**
- c. **A contractor submitting an unacceptable payment or performance bond may be permitted a reasonable time, as determined by the Chief Procurement Officer, to substitute an acceptable bond prior to executing a contract.**

When evaluating payment and performance bonds, the Chief Procurement Officer shall confirm the acceptability of the bonding company from other Government agencies, such as the Insurance Office under the Department of Commerce.

- 4. ***Suits on Payment Bonds; Right to Institute.* Every person who has furnished labor or material to the contractor or its subcontractors for the work provided in the contract, in respect of which a payment bond is furnished under this section, and who has not been, paid in full therefor before the expiration of a period of ninety (90) days after the day on which the last of the labor was done or performed by such person or material was furnished or supplied by such person for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute said action for the sum or sums justly due such person; provided, however, that any person having a direct contractual relationship with a subcontractor of the contractor, but no contractual relationship express or implied with the contractor furnishing said payment bond, shall have a right of action upon the payment bond upon giving written notice to the contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material upon which such claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or supplied or for whom the labor was done or performed. Such notice shall be personally served or served by mailing the same by registered or certified mail, postage prepaid, in an envelope addressed to the contractor at any place the contractor maintains an office or conducts its business.**
- 5. ***Suits on Payment Bonds; Where and When Brought.* Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the Commonwealth. The obligee named in the bond need not be joined as a party in any such suit.**
- 6. ***Fiscal Responsibility.* Every contract modification, change order, or contract price adjustment under a construction contract shall be subject to prior written certification by the Secretary of Finance as to the effect of the contract**

modification, change order or adjustment in contract price on the total project budget or the total contract budget. In the event that the certification discloses a resulting increase in the total project budget and/or the total contract budget, such contract modification, change order or adjustment in contract price shall not be made unless sufficient funds are available therefore, or the scope of the project or contract is adjusted so as to permit the degree of completion that is feasible within the total project budget and/or total contract budget as it existed prior to the price under consideration; provided, however, that with respect to the validity, as to the contractor, of any executed contract modification, change order or adjustment in contract price which the contractor has reasonably relied upon, it shall be presumed that there has been compliance with the provisions of this subsection.

Section 4-102 Architect-Engineer Services.

1. ***Procurement Method.*** Architect-Engineer services shall be procured as provided in this section except when authorized as a small purchase, special, or emergency procurement.
2. ***Policy.*** It is the policy to publicly announce all requirements for architect-engineer services and negotiate contracts on the basis of demonstrated competence and qualifications at a fair and reasonable price.
3. ***Selection.*** The Chief Procurement Officer and the Technical Services Division of the Department of Public Works shall jointly maintain files of current statements of qualifications of architect-engineer firms. After public announcement of requirement for architect-engineer services, current statements shall be reviewed together with those that may be submitted by other firms in response to the announcement. Discussions shall be conducted with at least three (3) of the firms regarding the contract requirements and technical approach and selection made therefrom, in order of preference, of no less than three (3) firms determined to be the most highly qualified to perform the services required. Fee proposals may be solicited upon public announcement; however, this information shall not be considered in the selection of the most highly qualified firms. Such fee proposals may be used by the Chief Procurement Officer in determining a fair and reasonable contract price.
4. ***Negotiation.*** The Chief Procurement Officer shall negotiate a contract with the highest qualified architect-engineer firm at a price determined to be fair and reasonable to the government. In determining what constitutes a fair and reasonable price to the government, the Chief Procurement Officer shall consider factors such as the prices proposed by other firms responding to the solicitation. If a fair and reasonable price cannot be negotiated with the highest ranking qualified firm, then the Chief Procurement Officer may select additional firms in order of competence and qualifications and continue negotiations until a fair and reasonable price is agreed upon.

Section 4-103 Competitive Selection Procedures for Professional Services.

1. ***Procurement method.*** The services of accountants, physicians or lawyers shall be procured as provided in this section except when authorized as a small purchase, emergency procurement, special procurement or sole-source procurement.
2. ***Policy.*** It is the policy to publicly announce all requirements for professional services and negotiate contracts on the basis of demonstrated competence and qualifications at a fair and reasonable price. The Chief Contracting Officer shall maintain files of current statements of qualifications of professional firms. Persons engaged in providing professional services may submit statements of qualifications and expressions of interests providing such types of services. Persons may amend these statements at any time by filing a new statement.
3. ***Public announcement and form of request for proposals.*** Adequate notice of the need for such services shall be given by the Chief Procurement Officer through a Request For Proposals. The Request For Proposals shall describe the services required, list the type of information and data required of each offeror and state the relative importance of particular qualifications.
4. ***Discussions.*** The Chief Procurement Officer or his designee may conduct discussions with any offeror who has submitted a proposal to determine such offerors qualifications for further consideration. Discussions shall not disclose any information derived from proposals submitted by other offerors.
5. ***Award.*** Award shall be made to the offeror determined in writing by the Chief Procurement officer to be the best qualified based on the evaluation factors set forth in the request for proposals, and negotiation of compensation determined to be fair and reasonable. If compensation cannot be agreed upon with the best qualified offeror then negotiations will be formally terminated with the selected offeror. If proposals were submitted by one or more other offerors determined to be qualified, negotiations may be conducted with such other offeror or offerors, in the order of their respective qualification ranking, and the contract may be awarded to the offeror then ranked as best qualified if the amount of compensation is determined to be fair and reasonable.

Section 3-406 Lease or Purchase of Vehicles.

1. ***Policy:*** Any lease or purchase of government vehicles shall be governed by this section. It applies to both the initial acquisition of vehicles and the renewal or extension of vehicle leases. The lease or purchase of vehicles shall be procured using an invitation for bids, unless it qualifies for other procurement methods. The Chief Procurement Officer Director shall establish standard vehicle specifications which shall be updated on a regular basis (not less frequently than every 2 years). All vehicles leased or purchased shall be procured in the name of the Government, and shall conform to CNMI and Federal laws, including the CNMI Government Vehicle Act (1 CMC §7406), and associated rules and

regulations.

2. **Whether to Lease or Purchase.** Agencies shall consider whether to lease or purchase vehicles based on a case-by-case evaluation of comparative costs and other factors. The following factors are the minimum that shall be considered, and a record reflecting the application of these factors shall be provided in a form prescribed by the Chief Procurement Officer and shall be included in the file:
 - a. **Estimated length of the period in which the vehicle is to be used and the extent of use within that period.**
 - b. **Financial and operating advantages of alternative types and makes of vehicles.**
 - c. **Cumulative rental payments for the estimated period of use.**
 - d. **Net purchase price.**
 - e. **Maintenance and other service costs.**
 - f. **The following additional factors shall be considered, as appropriate, (i) availability of purchase options, (ii) potential for use of the vehicle by other agencies after its use by the acquiring agency is ended, (iii) trade-in or salvage value, (iv) imputed interest, and (v) availability of a servicing capability; e.g., can the vehicles be serviced by the Government or other sources if it is purchased?**
3. **Purchase method.** The purchase method is appropriate if the vehicles will be used beyond the point in time when cumulative leasing costs exceed the purchase costs.
4. **Lease method.** The lease method is appropriate if it is to the Government's advantage under the circumstances. The lease method may also serve as an interim measure when the circumstances require immediate use of vehicles to meet program or system goals; but do not currently support acquisition by purchase.
5. **Lease with Option to Purchase.** If a lease is justified, a lease with option to purchase is preferable. Generally, a long term lease shall be avoided, but may be appropriate if an option to purchase or other favorable terms are included. If a lease with option to purchase is used, the contract shall state the purchase price or provide a formula which shows how the purchase price will be established at the time of purchase. The option to purchase may only be exercised by a government entity. The expenditure authority shall notify the Chief Procurement Officer 30 days in advance if it does not intend to exercise the purchase option.
6. **VIN Specificity.** All contracts for the leased or purchased of government-funded vehicles shall be VIN specific. Vehicles bearing a different VIN number than that originally contracted may not be substituted for the original vehicle without prior

written approval of the Chief Procurement Officer.

Article 5 - CONTRACT TERMS AND ADMINISTRATION OF CONTRACTS

Section 5-101 Contract Clauses.

1. **Price.** In executing contracts, agencies shall set the maximum amount that can be charged under the contract and disallow open-ended contracts, *i.e.*, contracts which do not specify the maximum contract price. Whatever contract type is selected, agencies shall limit contracts to a fixed price or a ceiling price, and the contractor shall not exceed the price set unless a change order is approved (See Section 5-103, Change Order).
2. **Payment Terms.** Payments shall be made only upon submission of evidence of work performed and adherence to contract terms and specifications. Generally, a one-time payment shall be made after the contracting officer has certified completion of work or delivery of goods or services. Other types of payments are as follows:
 - a. **Advance Payments.** Advance payments shall be authorized only in certain circumstances as provided in (i) or in (ii) below.
 - i. The contractor fails to qualify as a responsible contractor due solely to the absence of financial capability, and it is justified under Section 3-106 that the contractor is the only available source, subject to the following conditions:
 - 1) **General Requirements** -- the contractor pledges adequate security, and the contracting officer determines, based on written findings, that the advance payment is in the public interest.
 - 2) The standards for advance payment determination are: (a) the advance payments will not exceed the contractor's interim cash needs based on an analysis of the cash flow required for contract performance, consideration of the reimbursement or other payment cycle, and employment of the contractor's own working capital; (b) the advance payments are necessary to supplement other funds or credit available to the contractor; (c) the recipient is otherwise qualified as a responsible contractor in all areas other than financial capability; and (d) paying the contractor in advance will result in specific advantages to the Government.
 - 3) Advance payments shall be limited to not more than 25 percent of the contract price or an amount equivalent to a 60 day

working capital requirement, whichever is lower.

- ii. The contracting officer demonstrates in writing that the common business practice of a particular industry requires buyers to pay on an advance payment basis. Such advance payment shall be limited to not more than 50 percent of the contract price. Pertinent documents supporting such business practice shall be attached to the written justification.
 - iii. In no event shall advance payments exceed 50% of the contract price.
- b. *Progress Payments.* Contracts may provide for progress payments to contractors for work performed or costs incurred in the performance of the contract. Not less than 20 percent of the contract amount shall be withheld pending final completion of the contract and an evaluation of the contractor's performance. However, if the contract consists of the performance of separate and distinct tasks, then any funds so withheld to a particular task may be paid upon completion of that task and an evaluation of the contractor's performance. No official with expenditure authority shall make progress payments on a contract unless it has first been established that the covered work or service has been delivered in accordance with the contract. Payments shall be allowed on stored materials only upon arrival of materials in the CNMI, not prior to shipment, and only after inspection by the official with expenditure authority.
- c. The contract shall accurately reflect the actual Government requirement, stating adequately what is to be done or to be delivered to the Government. For instance, definite quantities shall be stated in the statement of deliverables, unless use of a requirements contract was justified under Section 3-403. Contracts with general requirements shall be disallowed.

Section 5-102 Contract Administration.

1. The primary responsibility for ensuring compliance in contracting rests with the contracting officer. The official with contracting officer must comply with requirements for advertising the availability of contracts, soliciting bids from potential contractors, evaluating the bidding contractors, drafting the contracts to conform with applicable requirements, obtaining the appropriate approvals, approving payment for services, and evaluating the contractors upon completion of the contracts.
2. The oversight responsibility for the Government's administration and enforcement of its contracts rests primarily with the Chief Procurement Officer. He or she shall be responsible for developing standard contract administration procedures to be used by officials with expenditure authority, maintaining a central depository of contractor evaluations, and making the evaluations available to other agencies upon request.
3. *Contract Monitoring.* Contract monitoring shall be accomplished through

"production surveillance and reporting." Production surveillance is a function which the official with expenditure authority uses to determine contractor progress and to identify any factors that may delay performance. It shall involve Government review and analysis of (a) contractor performance plans, schedules, controls, and industrial processes, and (b) the contractor's actual performance under them. When information on contract performance status is needed, officials with expenditure authority shall require contractors to submit production progress reports. The official with expenditure authority shall review and verify the accuracy of contractor reports and advise the Chief Procurement Officer of any action he plans to take because of any potential or actual delay in performance, including withholding of payments.

- 4. The Chief Procurement Officer shall verify, whenever necessary and practicable, the results of monitoring by the contracting officer. The Chief Procurement Officer shall determine the extent of surveillance based on several factors such as the contractor's history of contract performance, the contractor's experience with the contract supplies or services, and the contractor's financial capability. For construction contracts (including architect-engineer services), contract monitoring is performed by the Secretary of the Department of Public Works or his designee pursuant to Section 2-104(9).**

5. *Evaluating Results.*

- a. Officials with expenditure authority shall complete, within 15 days of the end of the contract, a post-evaluation of each contractor which shall be kept on file for 36 months. The official with expenditure authority shall report at least the following information to the Chief Procurement Officer on a prescribed form:**
 - i. Whether the contracted work or service was completed as specified in the contract, and the reasons for and amount of any cost overruns or delayed completions.**
 - ii. Whether the contracted work or services met the quality standards specified in the contract.**
 - iii. Whether the contractor fulfilled all the requirements of the contract, and if not, in what ways the contractor did not fulfill the contract.**
 - iv. Factors outside the control of the contractor that caused difficulties in contractor performance.**
 - v. How the contract results and findings will be utilized to meet the goals of the official with expenditure authority.**
- b. The post evaluation of each contractor shall be submitted before final**

payment and close-out of the contract is done.

- c. Final payment shall not be made unless the contractor has submitted a tax clearance verifying the filing of all required Commonwealth employment, excise, gross revenue, and income tax returns and payment of all amounts owing on such returns.
- d. The Chief Procurement Officer shall establish and maintain a central depository of all contract administration documents, which should include, but not be limited to, progress performance and post-evaluation documents. These documents shall be made available to any expenditure authority upon request to the Chief Procurement Officer.

Section 5-103 Change Order.

1. Execution of a change order shall only be allowed if an increase, decrease, or change in the scope of work is required which was not reasonably foreseeable at the time of the formation of the contract. However, no change order resulting in an increase in contract cost or time shall be allowed when it is a direct result of the contractor's inexperience, inefficiency, or incompetence.
2. Before adding significant new work to existing contracts, the agency shall thoroughly assess whether or not it would be more prudent to seek competition. Change orders which exceed 25 percent of the cumulative contract price shall automatically be procured through competitive procedures pursuant to Section 3-101, except when the procurement of the additional work is authorized without using full and open competition under Section 3-104.
3. Contractors shall not be allowed to continue working beyond the expiration term of an original contract in the absence of an approved new contract or change order. Change orders shall be processed using the procedures for processing new contracts in Section 2-104. Change orders may not be processed retroactively, for work that has already been completed or is in progress.
4. For every contract modification, change order or contract price adjustment in excess of 15% of the original contract price, the Contracting Officer shall submit to the Chief Procurement Officer a written justification reporting on the status of the costs of the total project budget, the effect of the contract modification or change order or the adjustment in contract price on the total project or contract budget.

Extension of Services. Award of contracts for recurring and continuing service requirements are often delayed due to circumstances beyond the control of contracting offices. In order to avoid negotiation of short extensions to existing contracts, the Chief Procurement Officer may include an option clause in solicitations and contracts which will enable the Government to require continued performance of any services within the limits and at the rates specified in the contract. The option provision may be

exercised more than once, but the total extension of performance thereunder shall not exceed 6 months.

Article 6 - PROTESTS AND DISPUTES

Part A - Bid Protests and Appeals

Section 6-101 Protests to the Chief Procurement Officer.

(1) *General*

- a. Any actual or prospective bidder, offeror, or contractor who is aggrieved in connection with the solicitation or award of a contract may protest to the Chief Procurement Officer. The protest shall be received by the Chief Procurement Officer in writing within ten (10) days after such aggrieved person knows or should have known of the facts giving rise thereto. The Chief Procurement Officer shall consider all protests or objections to the award of a contract, whether submitted before or after award. If a protest is oral and the matter cannot be resolved, written confirmation of the protest shall state fully the factual and legal grounds for the protest;
- b. Other persons, including bidders involved in or affected by the protest shall be given notice of the protest and its basis in appropriate cases. These persons shall also be advised that they may submit their views and relevant information to the Chief Procurement Officer within a specified period of time. Normally, the time specified will be one (1) week. Exceptions are to be considered exceptional and will be granted sparingly;
- c. The Chief Procurement Officer shall decide the protest within twenty (30) calendar days after all interested parties have submitted their views unless he certifies that the complexity of the matter requires a longer time, in which event he shall specify the appropriate longer time;
- d. When a protest, before or after award, has been appealed to the Office of the Public Auditor, as provided in these procedures, and the Chief Procurement Officer is requested to submit a report, the Chief Procurement Officer should include with his report a copy of;
 - i. the protest;
 - ii. the bid submitted by the protesting bidder and a copy of the bid of the bidder who is being considered for award, or whose bid is being protested;
 - iii. the solicitation, including the specifications on portions relevant to the protest;

- iv. the abstract of offers or relevant portions;
 - v. any other documents that are relevant to the protest; and
 - vi. the Chief Procurement Officer's signed statement setting forth findings, actions, and recommendations and any additional evidence or information deemed necessary in determining the validity of the protest. The statement shall be fully responsive to the allegation of the protest. If the award was made after receipt of the protest, the Chief Procurement Officer's report will include the determination prescribed in subparagraph (2)(d) below.
- e. Since timely action on protests is essential, they should be handled on a priority basis. Upon receipt of notice that an appeal from the Chief Procurement Officer's decision has been taken to the Public Auditor, the Chief Procurement Officer shall immediately begin compiling the information necessary for a report as provided in subsection (d) above. To further expedite processing, the official who furnishes the agency's report should, upon request of the appellant or the Public Auditor, simultaneously furnish a complete copy (except for information privileged by law or which the Chief Procurement Officer deems must be confidential in order to benefit from competitive bidding) to the appellant. In such instances, the appellant shall be requested to furnish a copy of any comments on the administrative report directly to the Public Auditor as well as the Chief Procurement Officer.

2. *Protest Before Award:*

- a. The Chief Procurement Officer shall require that written confirmation of an oral protest be submitted by the time specified in Section 6-101(1)(a) and may inform the protester that the award will be withheld until the specified time. If the written protest is not received by the time specified, the oral protest may be disregarded.
- b. An award may be made in the normal manner unless the Chief Procurement Officer finds it necessary in his discretion to take remedial action.
- c. When a proper protest against the making of an award is received, the award will be withheld pending disposition of the protest. The bidders whose bids might become eligible for award shall be informed of the protest. In addition, those bidders shall be requested, before expiration of the time for acceptance of their bids, to extend the time for acceptance to avoid the need for readvertisement. In the event of failure to obtain such extensions of bids, consideration shall be given to proceeding with an award under subparagraph (c) below.

- d. When the Chief Procurement Officer receives a protest, a contract may not be awarded pending the resolution of the protest and appeal to the Public Auditor, if any, (including the time period for filing an appeal), unless it is determined in writing that urgent and compelling circumstances which significantly affect the interest of the Commonwealth will not permit awaiting the decision of the Chief Procurement Officer and the Public Auditor.
- e. The Chief Procurement Officer is authorized to make the determination in subparagraph (c) above after receiving the recommendation of the expenditure authority. The determination of the urgent and compelling situation shall be submitted to the Attorney General for review, and absent objection from the Attorney General within five (5) working days of such submittal, the Chief Procurement Officer's determination becomes final. A contract award shall not be authorized until the Chief Procurement Officer has notified the Public Auditor of his determination in subparagraph (c) above. The Chief Procurement Officer also shall give written notice to the protester and others concerned of the decision to proceed with the award.

3. *Protests After Award.*

Although persons involved in or affected by the filing of a protest after award may be limited, in addition to the Chief Procurement Officer, at least the contractor shall be furnished the notice of protest and its basis in accordance with subparagraph (1)(b) above. When it appears likely that an award may be invalidated and a delay in receiving the supplies or services is not prejudicial to the Government's interest, the Chief Procurement Officer should consider seeking a mutual agreement with the contractor to suspend performance on a no-cost basis.

4. *Computation of Time.*

- a. Except as otherwise specified, all "days" referred to in this part are deemed to be working days of the Commonwealth Government. The term "file" or "submit" except as otherwise provided refers to the date of transmission.
- b. In computing any period of time prescribed or allowed by these procedures, the day of the act or event from which the designated period of time begins to run shall not be included.

Section 6-102 Appeals of Chief Procurement Officer's Decisions to the Public Auditor.

- 1. *Jurisdiction; Exhaustion of Remedies.* A written appeal to the Public Auditor from a decision by the Chief Procurement Officer may be taken provided that the party taking the appeal has first submitted a written protest to the Chief Procurement Officer as provided in section 56-101 of these Procedures, and the Chief Procurement Officer has denied the protest or has failed to act on the protest

within the time provided for in section 6-101(l) (c) above.

2. ***Form of Appeal.*** No particular form of pleading is required for filing an appeal to the Office of the Public Auditor. The appeal shall, however:
 - a. Include the name and address of the appellant;
 - b. Identify the contracting agency and the number of the solicitation or contract;
 - c. Contain a concise, logically arranged, and direct statement of the grounds for appeal; and
 - d. Specifically request a ruling by the Public Auditor.
3. ***Time For Filing Appeal.*** An appeal from the Chief Procurement Officer's decision must be received by the Office of the Public Auditor not later than ten (10) days after the appellant receives the decision of the Chief Procurement Officer, or, in the event that the Chief Procurement Officer has not decided the protest within ten (10) days from the date that he should have decided the protest pursuant to Section 6-101(1)(c) above. Any appeal received after these time limits shall not be considered by the Office of Public Auditor unless good cause is shown or unless the Public Auditor or his designee determines that the appeal presents issues significant to procurement practices that are not outweighed by the detriment to the Commonwealth should the appeal be considered.
4. ***Notice of Appeal, Submission of Chief Procurement Officer's Report and Time for Filing of Comments on Report.***
 - a. The Public Auditor or his designee shall notify the Chief Procurement Officer by telephone and in writing within one (1) day of the receipt of an appeal, requesting the Chief Procurement Officer to give notice of the appeal to the contractor if award has been made, or, if no award has been made, to all bidders or proposers who appear to have a substantial and reasonable prospect of receiving an award if the appeal is denied. The Chief Procurement Officer shall be requested to furnish in accordance with section 6-101(l)(b) of these Procedures copies of the protest and appeal documents to such parties with instructions to communicate further directly with the Public Auditor or his designee.
 - b. Material submitted by an appellant will not be withheld from any Commonwealth or federal agency which may be involved in the appeal except to the extent that the withholding of information is permitted or required by law or regulation. If the appellant considers that the protest contains material which should be withheld, a statement advising of this fact must be affixed to the front page of the appeal document and the

allegedly proprietary information must be so identified wherever it appears.

- c The Public Auditor or his designee shall request the Chief Procurement Officer to submit a complete report on the appeal to the Office of the Public Auditor as expeditiously as possible (generally within 20 working days) in accordance with Section 6-101(l)(d) of these Procedures and to furnish a copy of the report to the appellant and other interested parties.
 - d Comments on the agency report shall be filed with the Office of the Public Auditor within ten (10) days after the Public Auditor's receipt of the report, with a copy to the agency which furnished the report and to other interested parties. Any rebuttal an appellant or interested party may make shall be filed with the Office of the Public Auditor within seven (7) days after receipt of the comments to which rebuttal is directed, with a copy to the agency office which furnished the report, the appellant, and interested parties, as the case may be. Unsolicited agency rebuttals shall be considered if filed within seven (7) days after receipt by the agency of the comments to which rebuttal is directed.
 - e The failure of an appellant or any interested party to comply with the time limits stated in this section may result in resolution of the appeal without consideration of the comments untimely filed.
5. *Withholding of Award.* When an appeal has been filed before award, the Chief Procurement Officer, will not make an award prior to resolution of the protest except as provided in this section. In the event the Chief Procurement Officer determines that award is to be made during the pendency of an appeal, the Chief Procurement Officer will notify the Office of the Public Auditor.
6. *Furnishing of Information on Protests.* The Public Auditor shall, upon request, make available to any interested party information bearing on the substance of the appeal which has been submitted by interested parties or agencies except to the extent that withholding of information is permitted or required by law or regulation. Any comments thereon shall be submitted within a maximum of ten (10) days.
7. *Time for Submission of Additional Information.* Any additional information requested by the Public Auditor from the appellant or interested parties shall be submitted no later than seven (7) days after the receipt of such request.
8. *Conference.*
- a A conference on the merits of the appeal with the Public Auditor may be held at the request of the appellant, any other interested party, or the Chief Procurement Officer. Request for a conference should be made prior to the expiration of the time period allowed for filing comments on the agency

report. Except in unusual circumstances, requests for a conference received after such time will not be honored. The Public Auditor will determine whether a conference is necessary for resolution of the appeal.

- b Conferences normally will be held prior to expiration of the period allowed for filing comments on the agency report. All interested parties shall be invited to attend the conference. Ordinarily, only one conference will be held on an appeal.
- c Any written comments to be submitted and as deemed appropriately by the Public Auditor as a result of the conference must be received in the office of the Public Auditor within five (5) days of the date on which the conference was held.
- d **Time for Decision - Notice of Decision:** The Public Auditor shall, if possible, issue a decision on the appeal within 25 days after all information necessary for the resolution of the appeal has been received. A copy of the decision shall immediately be mailed or otherwise transmitted to the appellant, other participating parties, and the Chief Procurement Officer.

9. *Request for Reconsideration:*

- a. Reconsideration of a decision of the Public Auditor may be requested by the appellant, any interested party who submitted comments during consideration of the protest, the Chief Procurement Officer, and any agency involved in the protest. The request for reconsideration shall contain a detailed statement of the factual and legal grounds upon which reversal or modification is deemed warranted, specifying any errors of law made or information not previously considered.
- b. Request for reconsideration of a decision of the Public Auditor shall be filed not later than ten (10) days after the basis for reconsideration is known or should have been known, whichever is earlier. The term "filed" as used in this section means receipt in the Office of the Public Auditor.
- c. A request for reconsideration shall be subject to these bid protest procedures consistent with the need for prompt resolution of the matter.

Section 6-103 Remedies.

- 1. *Remedies Prior to Award.* If prior to award the Chief Procurement Officer or the Public Auditor determines that a solicitation or proposed award of a contract is in violation of law or regulation, then the Chief Procurement Officer or the Public Auditor shall have the solicitation or proposed award:
 - a. canceled; or

- b. revised to comply with law or regulation.
2. **Remedies After an Award.** If after an award the Chief Procurement Officer or the Public Auditor determines that a solicitation or award of a contract is in violation of law or regulation, then the Chief Procurement Officer or the Public Auditor may:
- a. if the person awarded the contract has not acted fraudulently or in bad faith:
 - i. ratify or affirm the contract provided it is determined that doing so is in the best interest of the Commonwealth; or
 - ii. terminate the contract and the person awarded the contract shall be compensated for the actual expenses reasonably incurred under the contract, plus a reasonable profit, prior to termination;
 - b. if the person awarded the contract has acted fraudulently or in bad faith:
 - i. declare the contract null and void; or
 - ii. ratify or affirm the contract if such action is in the best interests of the Commonwealth, without prejudice to the Commonwealth's rights to such damages as may be appropriate.

Section 6-104 Effective Date.

All protests as to the manner of bidding, the failure to properly award a bid, the failure of government to contract with a business after bidding, or the cancellation of bids which may or may not be subject of lawsuit but have not reached final judgment as of the effective date of these regulations shall be heard in accordance with this Part upon the request of the actual or prospective bidder, offeror, or contractor who is aggrieved.

Part B - Disputes

Section 6-201 Disputes.

1. Any dispute between the government and a contractor relating to the performance, interpretation of or compensation due under a contract, which is the subject of these regulations, must be filed in writing with the Chief Procurement Officer and the official with the expenditure authority within ten (10) calendar days after knowledge of the facts surrounding the dispute.
2. The official with contracting authority will attempt to resolve the dispute by mutual agreement. If the dispute cannot be settled either party may request a decision on the dispute from the Chief Procurement Officer. The Chief

Procurement Officer shall review the facts pertinent to the dispute, secure necessary legal assistance and prepare a decision that shall include:

- a. description of the dispute;
- b. reference to pertinent contract terms;
- c. statement of the factual areas of disagreement or agreement; and
- d. statement of the decision as to the factual areas of disagreement and conclusion of the dispute with any supporting rationale.

The Chief Procurement Officer may require a hearing or that information be submitted on the record, in his discretion.

3. *Duty to Continue Performance.* A contractor that has a dispute pending before the official with expenditure authority or the Chief Procurement Officer must continue to perform according to the terms of the contract and failure to so continue shall be deemed to be a material breach of the contract unless he obtains a waiver of this provision by the official with the expenditure authority.

Article 8 - ETHICS IN PUBLIC CONTRACTING

Part-A - Definitions

Section 8-101 Definitions of Terms.

1. *Confidential information* means any information which is available to an employee only because of the employee's status as an employee of this government and is not a matter of public knowledge or available to the public on request.
2. *Conspicuously* means written in such special or distinctive form, print or manner that a reasonable person against whom it is to operate ought to have noticed it.
3. *Direct or indirect participation* means involvement through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity.
4. *Financial interest* means:
 - a. ownership of any interest or involvement in any relationship from which or as a result of which, a person within the past year has received or is presently or in the future entitled to receive compensation; or
 - b. holding a position in a business such as an officer, director, trustee,

partner, employee or the like or holding any position of management.

5. *Gratuity* means a payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is received.
6. *Immediate family* means spouse, children, parents, brothers and sisters.

Part B - Standards of Conduct

Section 8-201 Policy.

Public employment is a public trust. In governmental contracting, public employees shall discharge their duties impartially so as to:

1. insure fair competitive access to governmental procurement by reasonable contractors; and
2. conduct themselves in a manner as to foster public confidence in the integrity of the government procurement process.

Section 8-202 General Standards.

1. *Employees.* Any attempt to realize personal gain through public employment by conduct inconsistent with the proper discharge of the employee's duties is a breach of a public trust. In order to fulfill this ethical standard, employees must meet the requirements of these regulations.
2. *Contractors.* Any effort to influence any public employee to breach the standards of ethical conduct set forth in these regulations is also a breach of ethical standard.

Section 8-203 Employee Disclosure Requirements.

1. *Disclosure of benefit received from contract.* Any employee who has, or obtains any benefit from, any government contract with a business in which the employee has a financial interest shall report such benefit to the Chief Procurement Officer.
2. *Failure to disclose benefit received.* Any employee who knows or should have known of such benefit and fails to report such benefit is in breach of these ethical standards.

Section 8-204 Employee Conflict of Interest.

1. ***Conflict of interest.*** It is a breach of ethical standards for any employee to participate directly or indirectly in a procurement when the employee knows that:
 - a. the employee or any member of the employee's immediate family has a financial interest pertaining to the procurement; or
 - b. any other person, business or organization with whom the employee or any member of the employee's immediate family is negotiating or has an arrangement concerning prospective employment is involved in the procurement.
2. ***Discovery of actual or potential conflict of interest, disqualification and waiver.*** Upon discovery of an actual or potential conflict of interest, an employee shall promptly file with the Chief Procurement Officer a written statement of disqualification and shall withdraw from further participation in the transaction involved. The employee may, at the same time, apply to the Public Auditor for an advisory opinion as to what further participation, if any, the employee may have in the transaction.

Section 8-205 Gratuities and Kickbacks.

1. ***Gratuities.*** It shall be a breach of ethical standards for any person to offer, give or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract or to any solicitation or proposal therefor.
2. ***Kickbacks.*** It shall be a breach of ethical standards for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith as an inducement for the award of a subcontractor or order.

Section 8-206 Prohibition Against Contingent Fees.

1. ***Contingent fees.*** It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure government contracts upon an

agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business.

2. *Representation of contractor.* Every person, before being awarded a government contract, shall represent, in writing that such person has not retained anyone in violation of this section. Failure to do so constitutes a breach of ethical standards.

Section 8-207 Contract Clauses.

The prohibitions against gratuities, kickbacks and against contingent fees shall be conspicuously set forth in every contract and solicitation therefor.

Section 8-208 Restrictions on Employment of Present and Former Employees.

1. *Present employees.* It shall be a breach of ethical standards for any employee who is participating directly or indirectly in the procurement process to become or be, while such an employee, the employee of any person contracting with the governmental body by whom the employee is employed.
2. *Restrictions on former employees in matters connected with their former duties.*
 - a. Permanent disqualification of former employee personally involved in a particular matter. It shall be a breach of ethical standards for any former employee knowingly to act as a principal, or as an agent for anyone other than the government, in connection with any:
 - i. judicial or other proceeding, application, request for a ruling or other determination;
 - ii. contract;
 - iii. claim; or
 - iv. charge or controversy, in which the employee participated personally and substantially through decision, approval, disapproval, recommendation, rendering of advice, investigation, or otherwise while an employee, where the government is a party or has a direct or substantial interest.
3. *Disqualification of business when an employee has a financial interest.* It shall be a breach of ethical standards for a business in which an employee has a financial interest knowingly to act as a principal, or as an agent for anyone other than government, in connection with any:
 - i. judicial or other proceeding, application, request for a ruling or other determination;

- ii. contract;
- iii. claim; or
- iv. charge or controversy,

in which the employee either participates personally and substantially through decision, approval, disapproval recommendation, the rendering of advice, investigation, or otherwise, or which is the subject of the employee's official responsibility, where the government is a party or has a direct and substantial interest.

Section 8-209 Use of Confidential Information.

It shall be a breach of ethical standards for any employee or former employee to knowingly use confidential information for actual or anticipated personal gain, or the actual or anticipated personal gain of any other person.

Section 8-210 Collusion by Bidders.

Collusion or secret agreements between bidders for the purpose of securing an advantage to the bidders against the authorizing agent in the awarding of contracts is prohibited. The official with the expenditure authority may declare the contract void if he finds sufficient evidence after a contract has been let that contract was obtained by a bidder or bidders by reason of collusive or secret agreement among the bidders to the disadvantage of the government.

Section 8-211 Civil and Administrative Remedies.

In addition to existing remedies provided by law, any person who violates any of the provisions of these regulations may be subject to one or more of the following:

1. *Government employees.* Government employee is any person whether appointed, elected, excepted service or civil service. An employee who violates the provisions of these rules and regulations is subject to adverse action as may be appropriate in his or her particular circumstances.

This action includes but is not limited to reprimand, suspension without pay, termination of employment, civil injunction, civil suit for damages or return of government money, or criminal prosecution.

2. *Contractors.* A contractor who violates a provision of these rules and regulations shall be subject to a written warning of reprimand, the termination of the contract or suspension from being a contractor or subcontractor under a government contract in addition to other penalties prescribed by law.

3. All proceedings under this section must be in accordance with due process requirements.

Section 8-212 Authority to Debar or Suspend.

1. **Authority.** After reasonable notice to the person involved and reasonable opportunity for the person to be heard under the Administrative Procedures Act, the Chief Procurement Officer after consultation with the official with expenditure authority and the Attorney General, shall have authority to debar a person for cause from consideration for award of contracts. The debarment shall not be for a period of more than three (3) years. The same officer, after consultation with the official with authority and the Attorney General, shall have authority to suspend a person from consideration for award of contracts if there is probable cause for debarment. The suspension shall not be for a period exceeding three (3) months.
2. **Causes for debarment or suspension.** The causes for debarment or suspension include the following:
 - a. conviction for commission of a criminal offense is an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract;
 - b. conviction under Commonwealth or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, violation of the Consumer Protection Act (4 CMC ' 5101 et. seq.), violation of any unfair business practices as prescribed by 4 CMC ' 5202, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects its responsibility as a government contractor;
 - c. conviction under Commonwealth or federal antitrust statutes arising out of the submission of bids or proposals such as in Chapter 2 of Division 5 of Title 4 of the Commonwealth Code;
 - d. violation of contract provisions, as set forth below, of a character which is regarded by the Chief Procurement Officer to be so serious as to justify debarment action:
 - i. deliberate failure without good cause to perform in accordance with the specifications within the time limits provided in the contract; or
 - ii. a recent record of failure to perform or of unsatisfactory performance in accordance with the terms of one or more contracts; provided that failure to perform or unsatisfactory performance

caused by acts beyond the control of the contractor shall not be considered a basis for debarment;

- e. any other cause that the Chief Procurement Officer determines to be so serious and compelling as to affect responsibility as a government contractor, including debarment by another governmental entity; or
 - f. for violation of any of the ethical standards set forth in Article 8.
4. **Decision.** The Chief Procurement Officer shall issue a written decision to debar or suspend. The decision shall state the reasons for the action taken.
 5. **Notice of decision.** A copy of the decision shall be mailed or otherwise furnished immediately to the debarred or suspended person. A copy of the decision shall also be provided to other Commonwealth procurement offices.



**Commonwealth of the Northern Mariana
Islands**

Department of Public Health

Office of the Secretary

PUBLIC NOTICE

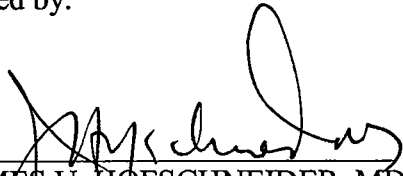
**NOTICE OF PROPOSED AMENDMENTS
TO THE RULES AND REGULATIONS
GOVERNING WATER AND ICE MANUFACTURING**

The Secretary of the Department of Public Health (DPH), Commonwealth of the Northern Mariana Islands (CNMI), hereby notifies the public that DPH proposes to adopt amendments to the rules and regulations governing water and ice manufacture. The regulations are proposed pursuant to the authority of the Commonwealth Environmental Health and Sanitation Act, P.L. 12-57, which repealed and reenacted with amendments 3 CMC Div. 2, Chapter 1, Article 2.

These regulations are intended to conform to the statute and provide the standards and procedures for environmental health and sanitation for water and ice manufacture in the CNMI.

In accordance with 1 CMC § 9104(a), the public has the opportunity to comment on the proposed amendments. Copies of the proposed revisions are available at the Office of the Secretary of Public Health at the Commonwealth Health Center in Saipan. Written comments should be submitted to: Office of the Secretary of Public Health, Department of Public Health, P.O. Box 500409 CK, Saipan, MP 96950. Comments must be received by DPH within thirty (30) days of the date this notice is published in the Commonwealth Register.

Issued by:



JAMES U. HOFSCHEIDER, MD
Secretary of Public Health
Department of Public Health

Date 05/12/05

Pursuant to 1 CMC § 2153(e) (AG approval of regulations to be promulgated as to form) and 1 CMC § 9104(a)(3) (obtain AG approval) the proposed regulations attached hereto have been reviewed and approved as to form and legal sufficiency by the CNMI Attorney General and shall be published (1 CMC § 2153(f) (publication of rules and regulations)).

Dated the 15th day of May, 2005.

James Augustine

Acting PAMELA S. BROWN,
Attorney General

Filed by:

Date: 5-10-05

Bernadita Cruz

Bernadita B. Dela Cruz
Commonwealth Registrar

Received at the Governor's Office by:

Date: 5-16-05

Thomas I. Tebuteb

Thomas I. Tebuteb
Special Assistant to the Governor for Administration

Commonwealth I Sankattan Siha Na Islas Marianas

Dipåttamenton i Hinemlo' Pupbliku

Ofisinan i Sekretario

NOTISIAN PUPBLIKU

**NOTISIAN MAN MA PROPONE NA AMENDASION POT I
AREKLAMENTO YAN REGULASION SIHA NI GINIBEBIETNA I
KOMPANIAN HANOM YAN AIS(ICE)**

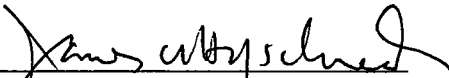
I Sekretarion i Dipåttamenton i Hinemlo' Pupbliku (DPH), gi Commonwealth I Sankattan Siha Na Islas Marianas (CNMI), a notifikika i pupbliku na i Dipåttamenton i Hinemlo' Pupbliku man propopone para u adopta i amendasion siha pot i areklamento yan regulasion siha ni ginibebietna i kompanian hanom yan ais. I regulasion siha man ma propone sigun i aturidat i Akton Sanidat yan Hinemlo' Uriyan i Commonwealth, Lai Pupbliku 12-57, ni ma diroga yan odena ni amendasion 3 CMC Dibision 2, Kapitulu 1, Attikulu 2.

Este siha na regulasion ma intensiona para u konfotma i lai ya u probeniyi manera yan areklamento siha para i Sanidat yan Hinemlo' Uriyan i Commonwealth ni ginibebietna i kompanian hanom yan ais gi Commonwealth I Sankattan Siha Na Islas Marianas.

Sigun i lai 1 CMC Seksiona 9104 (a), gai apotunidat i pupbliku na u fan laknos opinion pot i man ma propone na amendasion siha. Gaige i kopian i man ma propone siha na tinilaika gi ofisinan i Sekretarion i Dipåttamenton i Hinemlo' Pupbliku gi Sentron Hinemlo' Commonwealth (CHC) giya Saipan. Tinige' opinion debi di u ma na halom gi: ofisinan i Sekretarion, Dipåttamenton i Hinemlo' Pupbliku, P.O. Box 500409 CK, Saipan, MP 96950. Debi di u ma risibe' i opinion siha ni Dipåttamenton i Hinemlo' Pupbliku gi halom trenta (30) dias ginen i ma fechan este na notisia

anai ma pupblika gi Rehistran i Commonwealth.

Linaknos:


JAMES U. HOFSCHEIDER, MD
Sekritarion i Hinemlo' Pupbliku
Dipattamenton i Hinemlo' Pupbliku

Fecha: 5/13/05

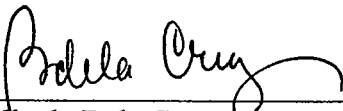
Sigun i lai 1 CMC Seksiona 2153 (e) (inapruedan i Abugao Henerat ni regulasion siha ni para u ma establesi pot para u fotma)(yan 1 CMC Seksiona 9104 (a)(3) (u guaha inapruedan i Abugao Henerat) i ma propone na regulasion siha ni man che'che'ton guine esta man ma ina yan aprueba pot para u fotma yan suficiente ligat ginen i Abugao Henerat i CNMI ya debi di u ma publika (1 CMC Seksiona 2153 (f) (publikasion i areklamento yan regulasion siha).

Ma fecha este mina _____ na dia gi Mayo, 2005.

PAMELA BROWN
Abugao Henerat

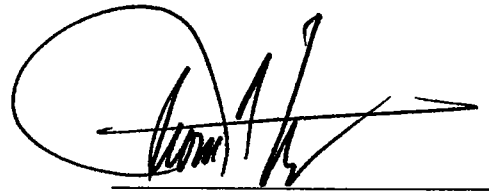
Pine'lo as:

Fecha: 5-13-05


Bernadita b. Dela Cruz
Rehistran i Commonwealth

Ma risibe' gi Ofisinan i Gubietno as:

Fecha: 5.16.05



Thomas I. Tebuteb
Espesiât Na Ayudânte

ARONGOL TOULAP

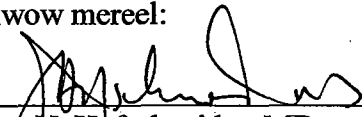
Arongol pomwol lliwel reel alléghúl Lemelemil Schaal me fféerúl Ice

Sekketóriyool Limil Malaweer Toulap (DPH) mellól Commonwealth Téél faluw kka faluwasch Efáng (CNMI) ekki arongaar aramas toulap bwe DPH ekki pomwoli bwe ebwe fillóoy lliwelil alléghúl lemelemil schaal me fféerúl ice. Pomwol allégh kkaal nge e mwir sáangi bwángil Alléghúl Fischil weleór me Limifisch, Commonwealth (Enviromental Health and Sanitation Act,) PL 12-57, iye e ayúwuló me allegh sefal me lliwel kkaal 3 CMC Div. 2 Chapter 1, Article 2.

Allégh kkaal nge bwelle ebwe fil fengál me alléghúl fischil weleór me limifischil schaal me fféerúl ice mellól CNMI.

Sáangi allégh ye 1 CMC 9004(a) nge eyoor bwángiir toulap bwe rebwe aghiyeghiy nge isisilong mángemáng reel pomwol lliwel kkaal. Tilighial pomwol lliwel kkaal eyoor bwulasiyool Sekkeretoriyool Public Health mereel Commonwealth Health Center mellól Seipél. Ischil mángemáng ebwe akkafangeló reel bwulasiyool Sekkeretóriyool Public Health mereel Public Health PO Box 500409 CK Seipél, MP 96950. Mángemáng ebwe toolong DPH llól eliigh (30) rál, sáangi ráálil ye e filló mellól Commonwealth Register.

Isisiwow mereel:


James U. Hofschneider, MD
Sekkeretóriyool Public Health
Bwulasiyool Public Health

05/13/05
Rál

Sáangi allégh ye 1CMC 2153 (e) (Sów Bwungúl Allégh Lapalap yaal appelúghúlúgh reel allégh kka e appasch) me 1CMC 9104 (a) (3) (Sáangi yaal AG appelúghúlúgh) lliwel kkaal nge aa mwir sáangi me appelúgh mereel Sów Bwungúl Lapalap mellól CNMI nge ebwe filló (1 CMC 2153 (f) (fillóól allégh kkaal).

Rál ye _____ Ilól Ghúúw, 2005

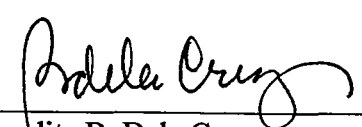
PAMELA S. BROWN,
Sów Bwungúl Allégh Lapalap

Aisis sáangi:

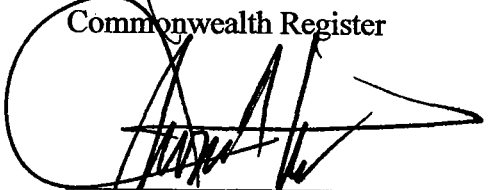
Rál: 5.17.05

Mwir sáangi Bwulasiyool Sów Lemelem:

Rál: 5.16.05



Bernadita B. Dela Cruz
Commonwealth Register



Thomas I. Tebuteb
Sów Alillisil Sów Lemelem

REVISED

CHAPTER VI

RULES AND REGULATIONS GOVERNING WATER AND ICE MANUFACTURING

- I. Definitions
- II. General Sanitary Requirements
- III. Production and Process Control
- IV. Compliance Procedures
- V. Remedies

I. DEFINITIONS

- 1.1. **BOTTLED WATER.** Shall mean water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may contain safe and suitable anti-microbial agents.
- 1.2. **BULK TANK HOUSING.** Shall mean the covers, boxes, and/or compartments commonly used by water manufacturers and/or suppliers to protect the bulk water tanks located at retail outlets.
- 1.3. **BUREAU.** Shall mean the CNMI Bureau of Environmental Health.
- 1.4. **CONTAMINANTS.** Shall mean undesirable particles, agents, pathogens, bacteria or other forms of microorganisms.
- 1.5. **HEALTH INSPECTOR.** Shall mean an individual duly authorized by the Secretary of the Department of Public Health to represent the Bureau of Environmental Health during a sanitary inspection, investigation, or other public environmental health related duty.
- 1.6. **IDENTITY LABEL.** Shall mean labels, as required in these regulations, which are placed on primary containers, which identifying the manufacturer's name, address and telephone numbers.
- 1.7. **PACKAGED ICE.** Shall mean ice made solid from potable water and that is sealed in bags or other containers with no added ingredients except that it may contain safe and suitable anti-microbial agents.
- 1.8. **POTABLE WATER.** Shall mean water that is of a quality that meets the requirements of the CNMI Department of Environmental Quality Drinking Water Regulations.
- 1.9. **POTABLE WATER TANKER TRUCK.** Shall mean tanker trucks used by a water or ice manufacturer for the transportation of bulk potable water.
- 1.10. **PRIMARY CONTAINERS.** Shall mean the containers used for the transport, dispensing or consuming of water or ice, such as but not limited to; bulk water tanker, retail bulk water tanks, plastic bottles and/or plastic bags.

1.11. PRODUCT WATER. Shall mean processed water used by a water or ice manufacturer.

~~1.11.~~ 1.12. RETAIL BULK WATER TANK. Shall mean the storage tanks located at retail stores that are used to dispense product water from the water or ice manufacturer to the general public.

~~1.12.~~ 1.13. SECRETARY. Shall mean the Secretary of the CNMI Department of Public Health or his/her duly authorized representative.

~~1.13.~~ 1.14. SANITIZED or SANITIZATION. Shall mean the processes of eliminating or inactivating biological contaminants.

~~1.14.~~ 1.15. TESTING AND/OR MONITORING. Shall mean the methods used to analyze the bacteriological, chemical, and/or physical content of water and/or ice intended for human consumption.

~~1.15.~~ 1.16. WATER AND ICE MANUFACTURING. Shall mean the processes of purifying water and the processes of converting such water into solid form of ice for human consumption.

II. GENERAL SANITARY REQUIREMENT

2.1. GENERAL

All equipment, buildings and facilities used in operation of water or ice manufacturing shall be maintained by means of sanitization and in good repair. Any equipment, buildings and/or facilities not used in connection with the operation shall be removed.

2.2. STRUCTURES

(1) The building and its facilities and its surrounding premises shall be clean and orderly.

(2) All rooms, space or facilities of all buildings shall be adequately ventilated and lighted in compliance with the requirements of the CNMI Building Safety Code.

(3) The building must be properly constructed as to be of safe and sound condition and in compliance with the requirements of the CNMI's Building Safety Code.

2.3. WASTE

(1) All litter, trash or garbage generated through water or ice manufacturing must be disposed of in compliance with the CNMI Litter Control Act, the CNMI Solid Waste Management Act, and all regulations which implement those Acts. Adequate disposal sites and confinements shall be maintained in order to prevent overflowing and scattering of waste. All confinements must have tight fitting lids to prevent nuisance emission and vermin infestation.

(2) Raw sewage and wastewater shall be disposed in a CNMI Division of Environmental Quality approved waste disposal system or be transported to a public sewer system using an appropriately designed connection.

2.4. STORAGE AND HANDLING

(1) All equipment, water bottles, devices, or instruments including their accessories or parts shall be sanitized prior to use and shall be stored in a place protected from dust, insects or rodents.

(2) All persons handling water or ice, where the possibility of contamination exists, must wear disposable hand gloves and hair restraint (e.g. hairnets, caps, etc.).

(3) Bottled water and/or packaged ice at retail outlets must not be stored or come into contact with potentially hazardous foods (e.g. eggs, meat, fish or other un-processed and/or un-packaged foods) or substances that may contain toxins.

2.5. TRANSPORTATION

(1) All potable water tanker trucks shall be labeled on the sides of the tanks "Potable Water Only" in bright and legible print not less than 6 inches in height. Labeling will aid workers to avoid cross-contamination. The transportation of potable water shall be in compliance with the CNMI Bureau of Environmental Health Food Transportation Regulations.

(2) Tanks, hoses and appurtenances that are outfitted on potable water tanker trucks must conform to the standards for materials that come in contact with drinking water described in CNMI Division of Environmental Quality Drinking Water Regulations. Tanker trucks shall be maintained in a sanitary manner. Potable water tanker trucks may not be used for any other purpose than to deliver potable water.

(3) Processed water and/or packed ice must be protected from contamination during delivery.

(4) Upon delivery, bottled water must be stored in a clean place. Packed ice must be stored immediately in a freezer. Bottled water and/or ice must not be stored directly on a floor surface. The conveyance used to transport processed water and/or packed ice must be free of filth or dust.

III. PRODUCTION AND PROCESS CONTROLS

3.1. GENERAL

The product water contact surfaces of all equipment, devices, and instruments used in the manufacturing of water or ice shall be washed and sterilized, at a minimum, every eight hours of operation. The quality of processed water and ice intended for human consumption shall meet or exceed the drinking water standards described in the CNMI Division of Environmental Quality Drinking Water Regulations.

3.2. CONTAINERS

Single-service and/or multi-service primary containers shall be cleaned, sanitized, and inspected just prior to being filled, capped, and sealed. Containers found to be unsanitary or defective by the inspection shall be reprocessed or discarded. All single-service and/or multi-service primary containers shall be washed, rinsed, and sanitized by mechanical washers or by immersion in a three compartment sink so as to wash, rinse, sanitize and air dry. Mechanical washers shall be inspected as often as is necessary to assure adequate performance.

3.3. CLEANING AND SANITIZING SOLUTIONS

Cleaning and sanitizing solutions utilized by the water and/or ice manufacturer shall be disposed of prior to the prescribed expiration date or sampled and tested as often as necessary to assure adequate performance in the cleaning and sanitizing operation and shall be disposed of prior to the prescribed expiration date. Records of these tests shall be maintained by the water or ice manufacturer.

3.4 SANITIZING OPERATIONS

Sanitizing operations including those performed by chemical means or by any other means, such as circulation of live steam or hot water, shall be adequate to disinfect the intended product water or ice contact surfaces and any other critical area. The manufacturer shall maintain a record of the concentration and/or efficacy of the sanitizing agent and the time duration that the agent is in contact with the surface being sanitized. The following contact time and/or concentration shall be the minimum required to sanitize bottles and other contact surfaces:

(1) Steam in an enclosed system: At least 170° Fahrenheit for at least 15 minutes or at least 200 °Fahrenheit for at least 5 minutes; or,

(2) Hot water in an enclosed system: At least 170° Fahrenheit for at least 15 minutes or at least 200° Fahrenheit for at least 5 minutes; or,

(3) Chemical sanitizer equivalent in strength to the bactericidal action of 50 parts per million free chlorine over 2 minute exposure at 57° Fahrenheit when used as an immersion or circulating solution. Chemical sanitizers applied as a spray or fog shall be equivalent 100 parts per million free chlorine at 57° Fahrenheit for 5 minutes or its equivalent in bactericidal action. When using a chemical sanitizer, a final rinse, prior to filling the primary container with product water or ice, shall be performed using a disinfected water rinse free of pathogenic bacteria. The final rinsing of the primary container interior surfaces shall remove any residues of the chemical sanitizer; or,

~~(3) Chemical sanitizers shall be equivalent in strength to the bactericidal action of 50 parts per million free chlorine over 2 minutes exposure at 57° Fahrenheit when used as an immersion or circulating solution. Chemical sanitizers applied as a spray or fog shall be equivalent 100 parts per million free chlorine at 57° Fahrenheit for 5 minutes or its equivalent in bactericidal action.~~

~~(4) The primary container interior surfaces must be exposed to a cleaning agent with a concentration of not less than 0.35% active alkalinity at a minimum temperature of 130° Fahrenheit for not less than 1 minute where high velocity jets are used, or for not less than 3 minutes where soaked type bottle three sink compartment washers are used, followed by a rinse of at least 1 minute of 25 parts per million chlorine solution. When using a cleaning agent, a final rinse, prior to filling the primary container with product water or ice, shall be performed using a disinfected water rinse free of pathogenic bacteria. The final rinsing of the primary container interior surfaces shall remove any residues of cleaning agent or chlorine.~~

~~The final rinse, prior to filling the primary container with product water or ice, shall be performed using a disinfected water rinse free of pathogenic bacteria. The final rinsing of the primary container interior surfaces shall remove any residues of cleaning agent or chlorine.~~

3.5 FILLING, CAPPING OR SEALING

During the process of filling, capping or sealing either single-service or multi-service primary containers, the performance of the filler, capper or sealer, shall be monitored and the filled

containers visually or electronically inspected to assure they are sound, and properly capped or sealed, and free of foreign matter. Containers that are visually inspected shall be viewed in a well-lighted area to assure adequate inspection. Containers that are not properly capped or sealed, or contain any type of foreign matter, shall be rejected or re-processed. Only non-toxic containers or covers shall be used.

3.6 LABELLING

All packaged ice containers, potable water tanker trucks, primary containers, and retail bulk water tanks shall have an identity label identifying the manufacturer's name, address, and telephone number. All identity labels on primary containers shall clearly indicate the date and time on which the container was sealed. Retail bulk water tanks shall clearly indicate the date and time on which potable water was delivered to the tank.

3.7 TESTING AND MONITORING

To assure that the production of water and/or ice maintains standards necessary to prevent the spread of disease and does not pose an adverse health effect (via toxin or other harmful chemicals), manufacturers of water or ice shall perform testing and monitoring of production samples as required by the Division of Environmental Quality or as directed by the Secretary of the Department of Public Health. Testing and monitoring shall also be in conformance with CNMI Division of Environmental Quality Drinking Water Regulations.

3.8 RECORD RETENTION

All inspections, testing or monitoring required in these regulations and required by the CNMI Division of Environmental Quality shall be maintained by the water or ice manufacturer for a minimum of 5 years from the date of inspections, testing or monitoring. Records shall be kept that track the operation and maintenance of all equipment used to produce water and/or ice. Such records shall include, but are not limited to, (a) weekly volumes of water produced and (b) logs that display the date of equipment and/or equipment component replacement. Equipment components include such items as filter cartridges and media, UV bulbs, etc., and records should include equipment manufacturer and product names.

IV. COMPLIANCE PROCEDURES

4.1. SANITARY PERMITS AND FOOD HANDLER'S CERTIFICATES

No person shall operate a water or ice manufacturer who does not have a valid sanitary permit issued to him/her by the CNMI Bureau of Environmental Health. Only a person who complies with the requirements of these regulations shall be entitled to receive or retain such a sanitary permit. Sanitary permits are not transferable. A valid sanitary permit shall be posted in public view in every water or ice manufacturing facility.

4.2. ISSUANCE OF A SANITARY PERMIT

(a) Any person desiring to operate a water or ice manufacturer shall submit a written application for a sanitary permit on forms provided by the Bureau. Such application shall include the name and address of each applicant, the location and type of the proposed water or ice manufacturer and the signature of each applicant.

(b) The applicant shall submit the Standard Operating Procedures that personnel shall use in the water and ice manufacturing facility's sanitizing operations. Standard Operating Procedures shall include descriptions of all sanitizing chemicals, which shall be from approved sources, and instructions on proper mixtures. Health Inspectors shall review the Standard Operating Procedures prior to inspection.

(c) Prior to approval of an applicant for a sanitary permit, the Bureau shall inspect the proposed water or ice manufacturer to determine compliance with the requirements of these regulations.

(d) The Bureau shall issue a sanitary permit to the applicant if its inspection reveals that the proposed water or ice manufacturer complies with the requirements of the Commonwealth Environmental Health and Sanitation Act and these regulations.

4.3. SUSPENSION OF A SANITARY PERMIT

(a) The Secretary may, without prior hearing, suspend any sanitary permit to operate a water or ice manufacturer if the operation of the water or ice manufacturer otherwise constitutes an imminent hazard to public health.

(i) Suspension is effective immediately upon written notice to the sanitary permit holder or person in charge of the establishment. When a sanitary permit is suspended, ice and water manufacturing operations shall immediately cease.

(ii) Hearings requested following the immediate suspension of a sanitary permit must be scheduled as soon as possible, but not later than five business days from the date of closure.

(b) The Secretary may suspend any sanitary permit to operate a water or ice manufacturer if the holder of the sanitary permit does not comply with the requirements of the Commonwealth Environmental Health and Sanitation Act or these regulations, or if the establishment fails to pay fees assessed against it for violations of the Commonwealth Environmental Health and Sanitation Act or these regulations. Suspension may be imposed for such time until the violation is corrected or may be imposed as a penalty for repeated violations, in which case, the suspension shall not exceed six months.

(i) Written notice of intent to suspend a sanitary permit shall be delivered to the sanitary permit holder. The sanitary permit holder shall have ten calendar days to request a hearing.

(c) Whenever a sanitary permit is suspended, the holder of the permit, or the person in charge, shall be notified in writing of the sections of these regulations that were determined to be in non-compliance. Upon compliance, the person-in-charge or permit holder shall contact the Bureau for re-inspection. A sanitary permit may be re-issued if in compliance, but if rectification has not been fulfilled, extension of suspension and extension for compliance shall be issued in writing.

4.4. REVOCATION OF SANITARY PERMIT

(a) The Secretary may revoke a sanitary permit that has been suspended on two separate occasions and continues to violate the requirements of the Commonwealth Environmental Health

and Sanitation Act or these regulations, or if the establishment has resumed operations after being closed by the Secretary.

(b) Prior to revocation, the Secretary shall notify the sanitary permit holder, in writing, of the specific reasons for which the sanitary permit is to be revoked. The sanitary permit holder may submit a request to the Bureau for re-inspection during any compliance period. The sanitary permit holder shall have ten calendar days to request a hearing.

4.5. REISSUANCE AFTER REVOCATION

(a) A sanitary permit is no longer valid and may not be reinstated when it has been revoked, except upon order of the Court. No person whose sanitary permit has been revoked shall be eligible to apply for a new sanitary permit for a period of one year.

(b) Records and any relevant history pertaining to the initial revocation shall be considered in the review of any new sanitary permit application. Probationary status may be imposed upon the new sanitary permit holder

4.6. FOOD HANDLERS HEALTH CERTIFICATES

Water and ice manufacturers are considered food handling establishments, and all employees must obtain Food Handler Certificates from the CNMI Bureau of Environmental Health.

4.7. INSPECTIONS

The CNMI Bureau of Environmental Health shall perform inspections of water or ice manufacturers at least once every six months. Additional inspections of the water or ice manufacturer shall be performed as deemed necessary for the re-enforcement of non-complied sections of these regulations.

4.8. ACCESS

Health Inspectors, after proper presentation of credentials, shall be permitted to enter any water or ice manufacturer at any reasonable time for the purpose of making inspections to determine compliance with these regulations. The Health Inspectors shall also be permitted to examine the records of the establishment.

4.9. REPORT OF INSPECTION

Whenever an inspection of a water or ice manufacturer is made, the findings shall be recorded on an inspection report form provided by the Bureau. The inspection report form shall summarize the requirements of these regulations and shall set forth a demerit value for each violation. Inspection remarks may be written to reference, by section number, the section violated and shall state the correction to be made. The rating score of the establishment shall be based upon the total demerit values for all violations. A copy of the completed inspection report shall be furnished to the person in charge of the establishment at the conclusion of the inspection. The completed report form is a public document that shall be made available for public disclosure to any person who requests it, in accordance with the CNMI's Open Government Act, and to any aggrieved person.

4.10. CORRECTION OF VIOLATIONS

(a) The completed inspection report form shall specify a reasonable period for the correction of the violations found. Correction of the violations shall be accomplished within the period specified, in accordance with the following provisions:

(1) If the demerit score of the water or ice manufacturer is less than 10 demerits, violations shall be corrected as soon as possible, but in any event, within the compliance period indicated following inspection. Within the compliance period after inspection, the holder of the sanitary permit(s) shall notify the Bureau stating that the violations have been corrected. A follow-up inspection shall be conducted for full compliance.

(2) If the demerit score of the water or ice manufacturer is more than ten (10) demerits but less than thirty (30) demerits, violations must be corrected within the compliance period that is determined by the Secretary. Structural violations shall be corrected within a reasonable time or within the maximum compliance period of thirty (30) days. Extensions of compliance period for violations may be granted after a written request is made stating the cause for needing such extension and the expected time of completion. A second request for extension of compliance period may provide cause for permit suspension.

(3) When the demerit score of the water or ice manufacturer is more than 30 demerits, the establishment shall be considered an imminent health hazard and shall be subject to immediate sanitary permit suspension.

(b) The inspection report shall state that failure to comply with any required correction of violations may result in permit suspension.

(c) Whenever a water or ice manufacturer is required to cease operations, pursuant to section 4.3 of these regulations, it shall not resume operations until it is shown on re-inspection that the conditions responsible for the suspension of operations no longer exist. Opportunity for re-inspection shall be offered within a reasonable time.

4.11. SUBMISSION OF PLANS

Plans for the construction, reconstruction, or the alteration of any bottled water or ice manufacturing facility must be approved by various CNMI regulatory agencies (e.g., DEQ for waste disposal; CRM for coastal concerns; DPW for building safety). After all governmental approvals are received, a set of final plans and specifications must be submitted to the Bureau for recordation. The final plans and specifications for the construction, reconstruction, or the alteration of any bottled water or ice manufacturing facility shall follow the format below:

(a) Plans and specifications shall not be larger than 8 ½ inches by 14 inches and shall include a title block. Large standard size drawings are acceptable, provided that they are folded to the above dimensions and that the title block appears frontage.

(b) Plans must be to scale and the title block shall include the name and location of the establishment.

(c) Specifications shall be detailed and specific, and include placements of all equipment including sinks, washbasins, and permanently affixed appliances.

4.12. PRE-OPERATIONAL INSPECTION

A Health Inspector shall inspect any water and/or ice manufacturing establishment prior to the start of operation for compliance with the requirements of the Commonwealth Environmental Health and Sanitation Act and these regulations, and for the conformity with final plans and specifications as submitted.

4.13. SUSPICION OF DISEASE TRANSMISSION

When the Secretary has reasonable cause to suspect possible disease transmission by an employee of a water or ice manufacturer, s/he may secure a morbidity history of the suspected employee or perform any other investigation as s/he may deem necessary. The Secretary may require any or all of the following:

- (a) The immediate exclusion of the employee from employment in water or ice manufacturing;
- (b) The immediate suspension of the water or ice manufacturer sanitary permit until, in the opinion of the Secretary, no further danger of disease outbreak exists;
- (c) Restriction of the employee's services to some area of the establishment where there would be no danger of transmitting disease; or,
- (d) Adequate medical and laboratory examination of the employee and of other employees and of their bodily discharges.

V. REMEDIES

5.1. PENALTIES

Those permit holders found violating the requirements of the Commonwealth Environmental Health and Sanitation Act or these regulations, upon issuance of notice to the sanitary permit holder or the person in charge of the establishment, shall be fined and penalized as follows:

- (1) First Offense: The permit holder shall receive a warning.
- (2) Second Offense: The permit holder shall receive a fine of up to \$500.00.
- (3) Subsequent Offenses: The permit holder shall be subject to a fine of \$1,000.00 for each subsequent offense.

A permit holder who has received notice of imposition of a fine shall have ten calendar days from the date of service of the notice to request a hearing.

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Proposed Amendments to the Rules and Regulations for the
Saipan Higher Education Financial Assistance (SHEFA) Program

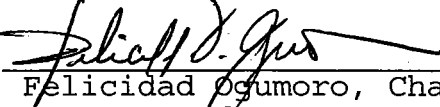
Citation of Statutory Authority: The proposed amended rules and regulations for the Saipan Higher Education Financial Assistance Program are promulgated pursuant to Saipan Local Law 13-21.

Statement of Goals and Objectives: The proposed amended rules and regulations are intended to permit the SHEFA Board to grant a one-time exception to the automatic default provisions of financial assistance for failure to meet minimum grade point average (GPA). This provision is intended to avoid financial hardship on students participating in the program from being penalized for a one-time failure to meet minimum GPA.

Brief Summary of the Rules: The amended rules and regulations would permit the SHEFA Board to grant a one-time exception to the automatic default provisions of financial assistance for failure to meet minimum grade point average (GPA).

For Further Information: Chairperson, Saipan Higher Education Financial Assistance Program, PO Box 501457, Capitol Hill, Saipan MP 96950, telephone: 234-6208 or by facsimile at 234-1190

Citation of Related and/or Affected Statutes, Regulations and Orders: Saipan Local Law 13-21; Section Eleven of the SHEFA Rules and Regulations.

Submitted By: 
Felicidad Ogumoro, Chairwoman
SHEFA Board

4/29/05
Date

PUBLIC NOTICE
PROPOSED AMENDMENT TO RULES AND REGULATIONS FOR
THE SAIPAN HIGHER EDUCATION FINANCIAL ASSISTANCE PROGRAM (SHEFA)

The Saipan Higher Education Financial Assistance Board for the Saipan Higher Education Financial Assistance Program hereby notifies the general public of its intention to adopt amendments to Section Eleven of the rules and regulations governing the SHEFA program. These amended regulations are promulgated pursuant to the authority set forth in Saipan Local Law 13-21. Specifically these amendments provide the SHEFA Board to grant a one-time exception to the automatic default provisions of financial assistance for failure to meet minimum grade point average (GPA).

All interested persons may examine the proposed amended regulations and submit written comments to the Chairperson, Saipan Higher Education Financial Assistance Program, PO Box 501457, Capitol Hill, Saipan MP 96950 or by facsimile at 234-1190 within 30 calendar days following the publication of this notice in the Commonwealth Register.

Dated this 29th day of April, 2005, at Saipan, Northern Mariana Islands.

By: Felicidad Ogumero
Felicidad Ogumero, Chairwoman
SHEFA Board

Pursuant to 1 CMC Section 2153, as amended by P.L. 10-50, the proposed regulations for the Saipan Higher Education Financial Assistance Program, a copy of which is attached hereto, have been received and approved as to form and legal sufficiency by the Attorney General's Office.

By: James Johnston for
Pamela Brown
Acting Attorney General **KEB**

5/12/05
Date

Filed by: Bernadita De la Cruz
Bernadita De la Cruz
Commonwealth Registrar

5-12-05
Date

Received by: Thomas Tebuteb
Thomas Tebuteb
Special Assistant for
Administration

5.13.05
Date

AMENDASION I REGULASION SIHA POT AYUDON SALÂPE' PARA I LA'TAKILO' NA EDUKASION GIYA SAIPAN (SAIPAN HIGHER EDUCATION FINANCIAL ASSISTANCE-SHEFA)

Seksiona Onse gi Areklamento yan Regulasion siha gi SHEFA man ma amenda pot para u ma taitai taiguine: (i man ma amenda man ma rāya gi papa i palābra)

SEKSIONA ONSSE

Kondision siha para i ma Kontinuan Ayudon Salāpe': Maseha hāye' na nuebu na aplikānte yan man manrisesibi i ayudon salāpe' gi SHEFA debi di u kuālifikao yan u elihible ni ayudu ni ma probeniyi gi Seksiona ochu (8) ginen este na areklamento yan regulasion siha todū i tiempo, ya debi di u tatiyi palu siha na areklamento yan regulasion guine, a enklulusu i probension siha gi kontrātan peña (promissory note)/memorandum inakomprende ni ma na guaha, na nisisario yan sufisiente na kondision pot para u ma risibi ya ma kontinua murisibi i ayudon salāpe ginen i Kuetpon i SHEFA yanggen guaha fondo sigun i lai. I Kuetpo siña man konsidera gi aplikātble na regulasion yan probension siha gi eksiste na kontrātan peña/memorandum inakomprende, ya u malaknos i un-biāhi ni ma kontinunua na ayudon salāpe' para i man ma rehista na undergraduate, i man ma gradua pat estudiānte ni man adulantao gi anai ma fitma i otro na kontrāta fuerra di kontrātan peña/memorandum inakomprende, enao na ma sedi i Kuetpo man laknos un-biāhi na diniteni pot ma intension dilinkuente siha sigun i presente na omentasion grade point average (GPA). I murisibi i ayudu debi di u na halom tinige' ginagao kao siña ma despensa ni Seksiona dies (10) gi regulasion yan i eksiste na kontrātan peña/memorandum inakomprende ya debi di u ma risibe ni SHEFA menos di dies (10) dias na ha'ānen cho'chu' ya tinatitiyi ni uttimon i mās hihot na semester pat tres mesis na sakkan akademiku anai i murisibi i ayudu ti ha kumple hāfa i SHEFA ma rekomemenda na GPA. Siña ma na guaha inetnun inekungok pat enkuentan i tinige ginagao siña ma entrega guatto i kuetpo gigigu yan i ebidensia sigun i fiet na rason siha pat prisisu na manera tat kumo medikāt, hinemlo', pat rason psychological, yan palu na infotmasion ni ma aprueba yan kreditu ni ma probeniyi ni i pagu ha chachagi murisibi i ayudu ya a rehista gue' gi estaon fulltime. Probeniyi na, ti ha repiti maseha hāfa na leksion ya siña ma konsidera i leksion takpapa na estaon pot para u tatiyi i nisisidat i estaon fulltime yan i marikohe na GPA ni SHEFA para i ti man ma gradudua (undergraduate), man ma gradua pat i man adilantao na estudiante. It mās, yanggen a diseha i kuetpo para u aprueba i un-biāhe na diniteni, pues siempre ma konsidera un kondision kualifikasion para i tiempo ni ti para u upos i semester pat tres mesis despues, ya i kualifikasion ti debi di u enklusu i kualifikasion i academic performance scholarship ni ma nisisita 3.5 na rinikohen GPA para i ti man ma gradudua (undergraduate), man ma gradua pat i man adilantao na estudiante ma rehista gi estaon fulltime.

COMMONWEALTH I SANKATTAN SIHA NA ISLAS MARIANAS

MAN MA PROPONE I AMENDASION I REGULASION SIHA POT I
PROGRAMAN AYUDON SALAPE' PARA I LA'TAKILO' NA EDUKASION
GIYA SAIPAN (SAIPAN HIGHER EDUCATION FINANCIAL ASSISTANCE-
SHEFA)

Annok I Aturidat I Lai: I man ma propone ni man ma amenda na areklamento yan regulasion siha para i Proqraman i Ayudon Salape' Para La' Takhilo Na Edukasion Giya Saipan man ma establesi sigun i Lai 13-21 giya Saipan.

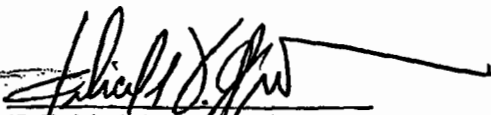
Mensáhe Pot Finiho yan Diniseha: I ma propone ni man ma amenda na areklamento yan regulasion siha man ma intensiona para u ma sedi i Kuetpon i SHEFA para u konsidera un-biahe na probension dilinkuente ni ayudon salape para i ti ha kumple i ginagagao na grade point average. Este na probension ma intensiona para u eskapáyi i ginaddon man apási para i estudiante siha ni man patisipao gi programa pot-nao u fan ma na mutta ni un-biáhe na deskuidon i ti ma kumple na nisisidat i GPA

Kada'da' Na Sumaria Pot i Areklamento Siha: I man ma amenda na areklamento yan regulasion siha man ma intensiona para u ma sedi i Kuetpon i SHEFA para u konsidera un-biahe na probension dilinkuente ni ayudon salape para i ti ha kumple i ginagagao na grade point average.

Para Más Infotmasion: Kabiseyo, gi Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan, gi P.O. Box 501457, gi Capitol Hill, giya Saipan MP 96950, numirun tilifon: 234-6208 pat fax gi 234-1190.

Annok i Man Achule'yan/pat i Inafekta Na Lai, Regulasion, yan Otden Siha: Lia 13-21 giya Saipan; Seksiona onse (11) gi Areklamento yan Regulasion siha gi Ayudon Salape' Para La' Takhilo Na Edukasion Giya Saipan.

Ninahalom:


Felicidad Ogumoro, Kabiseya
Kuetpon i Ayudon Salape' Para
La' Takhilo Na Edukasion Giya Saipan

5/18/05
Fecha

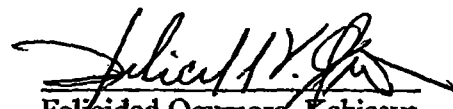
NOTISIAN PUPBLIKU

MAN MA PROPONE I AMENDASION I REGULASION SIHA POT I
PROGRAMAN AYUDON SALAPE' PARA I LA'TAKILO' NA EDUKASION
GIYA SAIPAN (SAIPAN HIGHER EDUCATION FINANCIAL ASSISTANCE-
SHEFA)

I Kuetpon i Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan para i Programan i Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan ha notifikika i pupbliku henerat pot i intension-niha para u adopta i amendasion siha para i Seksiona onse gi areklamento yan regulasion siha ni ginibebetna i programan Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan. Este man ma amenda na regulasion man ma establesi sigun i aturidat ni ma mensiona gi lai giya Saipan 13-21. Espisifikatmente este na amendasion siha ma probeniyi i Kuetpon i Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan pot para u konsidera unbiähe na probension dilinkuente ni ayudon salape para i ti ha kumple i ginagagao na grade point average (GPA).

Todu i man enteresao na petsona siña ma ina i man ma propone na amendasion i regulasion ya ma entrega halom tinige' opinion guatto i Kabiseya, gi Programan i Ayudon Salape' Para I La'takhilo' Na Edukasion Giya Saipan, gi P.O Box 501457, gi Capitol Hill, Saipan MP 96950 pat fax gi 234-1190 g halom trenta (30) dias tinatitiye' ni publikasion este na na notisia gi Rehistran i Commonwealth.

Ma Fecha gi este mina 18th na dia gi May, 2005, giya Saipan, I Sankattan Siha Na Islas Marianas.


Felicidad Ogumoro, Kabiseya
Kuetpon i Ayudon Salape'
Para La' Takhilo Na
Edukasion Giya Saipan

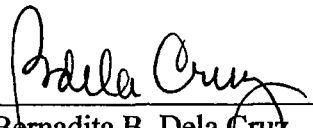
Sigun i Lai 1 CMC Seksiona 2153, ni inamenda nu i Lai Pupbliku 10-50, i ma propone na regulasion siha para i Programan i Ayudon Salape' Para La' Takhilo Na Edukasion Giya Saipan, i che'che'ton na kopia esta man ma ina yan aprueba pot para u fotma yan suficiente ligat ginen i

Abugao Henerát.

Pamela Brown
Abugao Henerát

Fecha

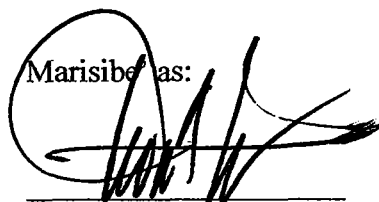
Rinikot as:



Bernadita B. Dela Cruz
Rehistran i Commonwealth

5-16-05

Fecha

Marisibe as:


Thomas A. Tebuteb
Espesiát Na Ayudánte
Para i Atministrasion



Fecha

LLIWEL NGÁLI ALLÉGHÚL SHEFA KKAAL
TÁLIL SEIGH ME EEW
YÁÁYÁL NGÁLI SÓBWÓLÓÓL ALILLISIL SELAAPI

Tálil seigh me eew reel Alléghúl SHEFA kkaal ebwe siweli igha rebwe árághi talil kka faal:
(Siweli óutol tilighi ye e róóza.)

TÁLIL SEIGH ME EEW

Aweweel igha ebwe sóbwusóbwóló alillis kkaal: Alongeer schóóy isisilong tingór (applicant) me schóóy yááyá SHEFA, alillisil selapi, nge rebwe kkof (qualify) me rebwe fillong reel alillis yeel, iye re ayoorá, sáangi tálil waluw (8) reel alléghúl me ammwel kkaal, sáangi alongal ótol me e pwal fil ngáli allégh kka akkááw mellól, e bwal toolong aweeweel kkapasal pwol (promisory note) kkapasal appelúghúlúgh (memorandum of agreement) e bwal akkatéélong bweigha e welepakk me e fisch aghiyeghil igha ebwe bweibwogh me sóbwusóbw alillisil selapi mereel mwiischil SHEFA, sáangi allégh me ngáre eyoor fondo. Emmwel bwe mwiisch yeel ebwe akkayúwuló mwo (exemption) allégh me ammwel kka e fillong reel tingórol pwol/kkapasal appelúghúlúgh kka ighila, nge aa sáleti ngáli mille one-time reel sóbwusóbwol alillisil selapi ngáliir schóókka raa toolong llól full-time undergraduate, graduate me ngáre advanced student ngáre raa makkey (sign) kkapasal apelúghúlúgh ye supplemental agreement ngáli tingórol pwol/kkepasal appelúghúlúgh, iye e sáleti ngáli mwiisch yeel bwe ebwe ngáleeey one-time deferment wóól alléghúl automatic default, sáangi yaal GPA ighila. Ischil tingór mereel schóóy tingór ebwe akkatéélong reer mwiisch, reel tingórol akkayúló, sáangi tálil seigh (10) reel allégh kkaal me tingórol pwol/kkepasal appelúghúlúgh, nge ebwe toolong reel SHEFA, essóbw luulól llól seigh (10) rállil tarabwagho, sáangi mwirilóól semester me ngáre quarter ye eghilaal takkeló, llól ótol ye schóóy tingór ese toori alléghúl SHEFA reel aweweel GPA. Emmwel rebwe ayoorá arongorong (hearing) me ngáre isisilong ischil tingór ngáli schóóy mwiisch fengál me aweweel aghiyegh reel bwulúl ebwe yoor weires bwelle re semwaay me ngáre psychological me akkááw rasoon kka e akkatéélong reel schóóy tingór ye eghilaal faal eew yaal toolong llól full-time status. Ngare schagh ese bweibwogh sefal course (no course repeat) me ngáre below-level course ebwe aghiyeghiy igha ebwe fil ngáli alléghúl SHEFA reel full-time me tool GPA reel undergraduate, graduate me ngáre advanced student. Me bwal eew, ngáre mwiisch e fillóóy bwe ebwe ngáleeey one-time deferral, iwe rebwe lugheey bwe ebwe conditional eligibility llól ótol ye essóbw lu sáangi eew semester me ngáre quarter mwirilóól, eligibility yeel essóbw toolong reel academic performance scholarship, iye ekke tingór 3.5 GPA ngáliir undergraduate, graduate me ngáre advanced student iye e undergraduate, graduate me ngáre advanced student nge e lo llól full-time status.

COMMONWEALTH TEEL FALÚW KKA EFÁNG MARIANAS
Pomwol lliwelil ngali alleghul Saipan Higher Education financial Assistance Program

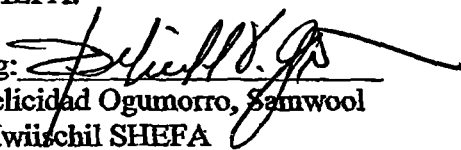
Akkatéel bwángil: Pomwol lliwelil reel allégh kkaal ngáli Saipan Higher Education Financial Assistant Program re fillóoy sáangi bwángil alléghúl Saipan Local Law 13-21.

Aweweel kkapasal allégh: Pomwol lliwelil allégh kkaal nge bwelle ebwe mweiti ngáli Mwiischil SHEFA igha ebwe isisiwow one-time exception reel alléghúl automatic default reel alillisil selapi, igha ese toori minimum grade point average (GPA). Allégh yeel nge bwelle ebwe ataweey weiresil selapi reer atel meleitey kka re lo llól tappal progróoma yeel igha faal eew schagh yaar rese toori minimum GPA.

Aweweel pomwol lliwel: Allégh kka aa lliwel nge bwelle ebwe mweiti ngáli Mwiischil SHEFA igha ebwe isisiwow akkayúwulóól faal eew (one-time exception) ngáli alléghúl automatic default, reel alillisil selapi, igha rese toori minimum grade point average (GPA).

Reel ammataf faingi: Assamwoolul Saipan Higher Education Financial Assistance Program, P.O Box 501457, Capitol Hill, Seipél MP 96950 tilifoon: 234-6208 me ngáre facsmile 234-1190.

Akkatéel bwángil akkááw allégh: Alléghúl Saipan Local Law 13-21; Tálil Seigh me Eew mereel alléghúl SHEFA.

Isaliyallong: 
Felicidad Ogumorro, Samwool
Mwiischil SHEFA

5/18/05
Rál

ARONGOL TOULAP
POMWOL LLIWEL NGALI ALLEGHUL ME AMMWELIL SAIPAN HIGHER EDUCATION
FINANCIAL ASSISTANCE PROGRAM (SHEFA)

Mwiischil Saipan Higher Education Financial Assistance reel Saipan Higher Education Financial Assitance Program ekke arongaar toulap reel aghiyeghil igha ebwe fillóoy lliwel kkaal ngáli Tálil seigh me eew reel allégh me ammwelil ye e lemelem progróomal SHEFA. Allégh kkaal nge e ssiwel bwelle reel bwángil Saipan Local Law 13-21. Schéeschéél ssiwel kkaal nge rebwe ayoora ngáli mwiischil SHEFA igha rebwe ngáleeey one-time exception reel automatic default provision bwelle alillisil selapi igha ese tabweey minimum grede point average (GPA).

Schóókka eyoor mángemángiir reel pomwol allégh kka e ssiwel nge emmwel bwe rebwe amweri me isisilong yaar aghiyegh reel Chairperson, Saipan Higher Education Financial Assistance Program, PO Box 501457, Capitol Hill, Seipel MP 96950 me ngáre facsmile reel 234-1190 llool eliigh (30) ráálil sáangi yaal arongowow ammataf yeel mellól Commonwealth Register.

Ráálil ye _____ llól Sééta, 2005, Seipél, Téél falúw kka falúwasch Marianas.

Sáangi: _____
Felicidad Ogumoro, Samwoolul
mwiischil SHEFA

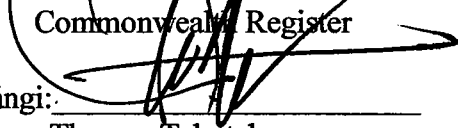
Sáangi allégh ye 1 CMC Tálil 2153, iye aa lliwel mereel P.L. 10-50, pomwol allégh kkaal ngáli Saipan Higher Education Financial Assitnce Program, tilighial iye e appasch, nge raa takkal amweri fischiy alúghúlúghúló mereel Bwulasiyool Sów Bwungúl Allégh Lapalap.

Sáangi: _____
Pamela Brown
Sów Bwungúl Allégh Lapalap

Rál _____

Aisis sáangi: 
Bernadita Dela Cruz
Commonwealth Register

Rál 5-16-05

Mwir sáangi: 
Thomas Tebuteb
Sów Alillisil Sów Lemelem

RI 

AMENDMENT TO THE SHEFA REGULATIONS
SECTION ELEVEN
REQUIREMENTS FOR CONTINUING FINANCIAL ASSISTANCE

Section Eleven of the SHEFA Rules and Regulations is hereby amended to read as follows: (Amended text is underlined.)

SECTION ELEVEN

Conditions for Continuing Assistance: Any new applicant and recipient of SHEFA financial assistance must qualify and be eligible for the assistance as provided for in section eight (8) of these rules and regulations at all times and must adhere to all other rules and regulations herein, including the provisions of the promissory note/memorandum of agreement incorporated herein as a necessary and sufficient condition to receiving and continuing to receive financial assistance from the SHEFA board pursuant to law subject to availability of funds. The Board may consider an exception to the applicable regulations and provision in the existing promissory note/memorandum of agreement, and grant a one-time continuing financial assistance to a currently enrolled fulltime undergraduate, graduate or advanced student upon signing a supplemental agreement to the existing promissory note/memorandum of agreement, thereby allowing the board to grant a one-time deferment on the automatic default provisions based on the most current cumulative GPA. A written request by the recipient to the board for an exception to section 10 of these regulations and the existing promissory note/memorandum of agreement must be received by SHEFA not more than ten (10) working days following the end of the most recent semester or quarter of the academic year in which the recipient failed to meet SHEFA's minimum cumulative GPA. A show cause hearing may be held or in the alternative a written request may be submitted to the board along with evidence based on substantiated compelling reasons or extenuating circumstances on account of medical, health, or psychological reasons, and other credible and verifiable information provide by a first-time recipient enrolled on fulltime status. Provided, however, that no course repeat or below-level course shall be considered in meeting SHEFA's fulltime and cumulative GPA requirements for an undergraduate, graduate or advanced student. Furthermore, if the board decides to approve a one-time deferral, then it shall be deemed a conditional eligibility for a period not to exceed a semester or quarter immediately thereafter, and such eligibility shall not include eligibility for the academic performance scholarship which requires a 3.5 cumulative GPA for an undergraduate, graduate or advanced student enrolled on fulltime status.

PUBLIC NOTICE

NOTICE OF CERTIFICATION AND ADOPTION OF PROPOSED RULES AND REGULATIONS GOVERNING THE PUBLIC LAW 14-37 "CNMI HONORS SCHOLARSHIP PROGRAM".

I, Margarita D. Tudela, Scholarship Advisory Board Acting Chairperson of the Commonwealth of the Northern Mariana Islands which is promulgating the Rules and Regulations regarding scholarship program published in the Commonwealth Register Volume 27 Number 03 on March 17, 2005 pages 024109 to 024118, by signature below hereby certify that as published such Rules and Regulations are a true, complete and correct copy of the Rules and Regulations Governing the PL14-37 "CNMI Honors Scholarship Program" previously proposed by the Scholarship Office, which after the expiration of the appropriate time for public comment, have been adopted.

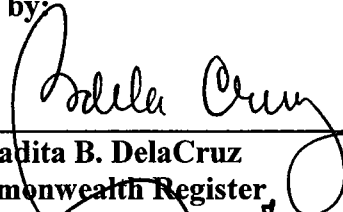
By signature below, I hereby certify that the proposed Rules and Regulations Governing the PL14-37 "CNMI Honors Scholarship Program" as herein are true, correct and complete Rules and Regulations Governing the set program. I further request that this Notice and Certification of Adoption be published in the Commonwealth Register.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on this _____ day of April 2006, at Saipan, Commonwealth of the Northern Mariana Islands.



MARGAITA D. TUDELA
Scholarship Advisory Board, Acting Chairperson

Filed by:



Bernadita B. Delacruz
Commonwealth Register

5-12-05
Date

Received by:



Thomas A. Tebuteb
Special Assistant for Administration

5-13-05
Date



Commonwealth of the Northern Mariana Islands
Office of the Attorney General

2nd Floor Hon. Juan A. Sablan Memorial Bldg.
Caller Box 10007, Capitol Hill
Saipan, MP 96950

Attorney General/Civil Division
Tel: (670) 664-2341
Fax: (670) 664-2349

Criminal Division
Tel: (670) 664- 2366/2367/2368
Fax: (670) 234-7016

ATTORNEY GENERAL LEGAL OPINION NO. 05-06

TO: Division of Immigration and Airport Enforcement

FROM: Pamela Brown, Attorney General

DATE: April 5, 2005

RE: Entry of former "Stateless" Individuals

Until further notice, all formerly "stateless" individuals entering the CNMI will be required to show proof of identity by way of valid foreign passport and a CNMI birth certificate establishing U.S. citizenship. Their date of birth must fall between January 9, 1978, and November 4, 1986, inclusive. These individuals will not be required to present a Visitor's Entry Permit (VEP) for entry into the Commonwealth.

A handwritten signature in cursive script that reads "Pamela Brown".

PAMELA BROWN, Attorney General
Commonwealth of the Northern Mariana Islands

ATTORNEY GENERAL LEGAL OPINION NO. 05-07

To: Mathilda Rosario, Acting Director of Personnel
cc: Fermin Atalig, Secretary, Department of Finance
From: Pamela Brown, Attorney General
Date: April 28, 2005
Re: *Resident Directors of Executive Branch Departments – Discharge or Removal Based Solely on Employment Restrictions or Conditions Set Forth in Personnel Actions Initiated by the Mayor – Duty to Consult With Executive Branch Department Heads*

I write in response to your question about the length of employment of Resident Directors of Executive Branch Departments serving on the island of Tinian.

QUESTION PRESENTED AND CONCLUSION

Does the Commonwealth Constitution, governing Tinian local law, or the Civil Service Act clearly confer upon the Mayor of Tinian and Aguiguan the power and authority to impose restrictions or conditions on the employment of Resident Directors of Executive Branch Departments on the island of Tinian, with the result that their employment does not and cannot exceed one year in duration unless “renewed” by the Mayor?

Conclusion: No.

ANALYSIS

The powers and authority of public officers are determined and circumscribed by law. Public officers “have only such power and authority as are clearly conferred or necessarily implied from the powers granted” (emphasis added). 67 C.J.S. Officers and Public Employees § 190 (1978); 63 Am.Jur.2d Public Officers and Employees §§ 231, 232; see *Douglass v. Kelton*, 199 Colo. 446, 610 P.2d 1067 (1980); see also *Skidmore v. O'Rourke*, 152 Colo. 470, 383 P.2d 473 (1963). “Statutes delegating powers to public officers must be strictly construed.” 67 C.J.S. Officers and Public Employees § 190. These principles control my analysis of the questions presented, which pertain to the power and authority of the Mayor of Tinian and Aguiguan.

After reviewing the relevant provisions of the Commonwealth Constitution, Tinian local law, and the Civil Service Act, I conclude that Mayor of Tinian and Aguiguan does not have the power or authority to restrict the employment of Resident Directors of Executive Branch Departments on Tinian to term limits that do not exceed one year in duration. Consequently, to the extent that such employment

employment restrictions or conditions are or have been set forth in personnel actions initiated by the Mayor involving the Resident Directors of Executive Branch Departments on Tinian, they are illegal and unenforceable.

1. Commonwealth Constitution

NMI Const. art. VI, § 3(g) states: "The Mayors of Rota, and Tinian and Aguiguan, shall appoint, in consultation with the head of the respective executive branch department, all resident department heads." Thus, the Commonwealth Constitution clearly indicates that Resident Directors are Mayoral appointments, subject to prior consultation between the Mayor and the respective Executive Branch Department head, as well as confirmation by the Municipal Council of the respective municipality.

However, there is no constitutional delegation of power or authority to the Mayors to impose restrictions or conditions on the employment of Resident Directors of Executive Branch Departments, with the result that their employment does not exceed one year in duration unless "renewed" by the Mayors.

It is and has been the position of the Office of the Attorney General for over 18 years that although a Mayor has the constitutional power and authority to discharge or remove a Resident Director from office, consultation in advance with the respective Executive Branch Department head is a prerequisite to the exercise of that power. *See* AG Legal Opinion No. 87-09, dated March 25, 1987 (concluding: "before a mayor can remove a resident department head he/she must first consult with the respective executive branch department head in Saipan."); *see also* Legislative Bureau Office of Legal Counsel Opinion No. 236, dated March 11, 1987 (duty to consult prior to removal of resident department heads; also noting: "In the event the executive branch department head disagree[s] with the mayor's choice and a compromise [can]not be reached between them, the mayor then has the authority to make the final decision."). Copies of AG Legal Opinion No. 87-09 and Legislative Counsel Opinion No. 236 are attached for your information.

I find AG Legal Opinion No. 87-09, which was jointly issued by former Attorney General [now Commonwealth Supreme Court Justice] Alexandro C. Castro and former Chief Solicitor and later Attorney General Richard Weil, to be persuasive and controlling here. Since the Mayor of Tinian and Aguiguan did not consult at all with Secretary of Public Works Juan Reyes, the removal of the Resident Director of the Department of Public Works from office was unconstitutional. Furthermore, since the Mayor also did not consult at all with Secretary of Commerce Andrew Salas, the removal of the Resident Director of the Department of Commerce was unconstitutional.

2. Tinian Local Law

Under the provisions of Tinian local law, Resident Directors may initially be "temporarily appointed." 10 CMC § 2322 specifically states:

If the mayor's appointment pursuant to 10 CMC § 2321 is not confirmed by the municipal council within 30 days from the date the person was **temporarily appointed**, the appointment shall automatically terminate and the position shall become vacant and the person nominated shall not be renominated.

(Emphasis added). If a temporarily appointed Resident Director is not confirmed by the Tinian Municipal Council pursuant to 10 CMC § 2322, the appointment "shall automatically terminate."

However, there is no grant of local legislative authority to the Mayor of Tinian and Aguiguan to restrict the employment of Resident Directors of Executive Branch Departments on Tinian to limited terms that do not exceed one year in duration unless "renewed" by the Mayor. As discussed below, the Civil Service Act also does not confer any such authority on the Mayors.

3. Civil Service Act: 1 CMC §8131(a)

Effective February 13, 2002, 1 CMC § 8131(a)(6) was repealed and reenacted as follows:

(a) Except as provided in this section, the civil service system shall apply to all employees of and positions in the Commonwealth government now existing or hereafter established. Unless this part is otherwise specifically made applicable to them, **the following persons or positions are exempt from the civil service system: ... (6) Any official at or above the level of division director**, including the principal executive or head and deputy secretary of departments and the principal executive or heads of offices, divisions, boards, commissions and councils, and the executive and staff of any Commonwealth liaison office.

P.L. 13-1, § 4 (2002) (emphasis added). Subsection 8131(a)(6) exempts Resident Directors of Executive Branch Departments from the civil service system because they are "at or above the level of division director."

Subsection 8131(a)(6) does not authorize the Mayors to restrict the employment of Resident Directors of Executive Branch Departments to limited terms that do not exceed one year in duration unless "renewed" by the Mayor.

In contrast, 1 CMC § 8131(a)(10) exempts "[p]ositions of a part-time nature requiring the services of four hours or less a day but not exceeding one year in duration." 1 CMC § 8131(a)(11) exempts "[p]ositions of a temporary nature which involve special projects having specific completion dates which shall not exceed one year." Thus, the CNMI legislature chose to use a one-year limit for certain positions of a part-time or temporary nature. 1 CMC §§ 8131(a)(10), (11).

The legislature's choice not to use a one-year limit to apply to the subsection 8131(a)(6) exception, when it applied this limit to the subsection 8131(a)(10) and (11) exceptions, suggests that the intent

was not to authorize or require temporary appointments that do not exceed one year in duration for positions at or above the position of division director.

Absent a clear and unmistakable indication of legislative intent from the legislature or the local legislative delegation, or an executive order or directive from the Governor, I decline to construe the provisions of NMI Const. art. VI, § 3(g), Tinian local law, and 1 CMC § 8131(a) in any manner which operates as an open invitation for adverse actions against Resident Directors, without consultation with the respective Executive Branch Department heads, such as occurred here, under the guise or pretense of a “nonrenewal.”

CONCLUSION

The Commonwealth Constitution, governing Tinian local law, and the Civil Service Act do not clearly confer upon the Mayor of Tinian and Aguiguan the power or authority to impose restrictions or conditions on the employment of Resident Directors of Executive Branch Departments on the island of Tinian, such that their employment does not and cannot exceed one year in duration unless “renewed” by the Mayor. To the extent that such employment restrictions or conditions are or have been set forth in personnel actions initiated by the Mayor involving the Resident Directors of Executive Branch Departments on Tinian, they are illegal and unenforceable, and should be disregarded. You are advised to correct the official personnel files and records of the Resident Directors of the Department of Commerce and the Department of Public Works on Tinian accordingly, so that there is no interruption in their continuing employment or their compensation, and to certify the corrected personnel information to the Department of Finance without delay.

I trust this is responsive to your inquiry.



PAMELA BROWN
Attorney General

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
OFFICE OF THE ATTORNEY GENERAL

A.G. OPINION NO. 87-09

ALEXANDRO C. CASTRO
ATTORNEY GENERAL

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SAIPAN, CM 96950
TEL: (670) 234-7771/6207/7111

March 25, 1987

Raymond L. Riley, Esq.
Chief, Legal Counsel
House of Legislative Bureau
Fifth Northern Mariana Islands
Commonwealth Legislature
Saipan, CM 96950

Re: Removal of Resident Department Heads

Dear Mr. Riley:

We are in receipt of your memorandum dated March 11, 1987 whereby your office concluded that before a mayor can remove a resident department head appointed pursuant to Constitutional Amendment No. 25, he/she must first consult with the respective executive department head in Saipan. In the memorandum, you sought the position of the Office of the Attorney General on the same issue.

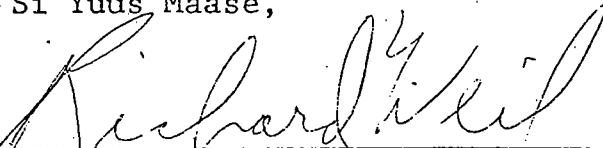
Section 3(g) of Constitutional Amendment No. 25 directs a mayor to ". . . appoint, in consultation with the head of the respective executive department head, all resident department heads." To date, there is neither a specific constitutional nor a statutory provision dealing with the removal of the resident department heads appointed pursuant to Section 3(g) of Constitutional Amendment No. 25. It is a well established principle of law that when ". . . the removal is not governed by a constitutional or statutory provision . . . the power of removal is incident to the power to appoint." 63A Am. Jur. 2d 826, Public Officers and Employees, Section 221. Accordingly, the Office of

Raymond L. Riley, Esq.
March 27, 1987
Page Two

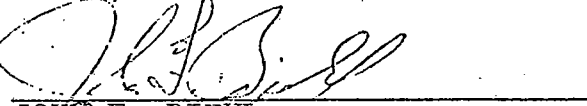
Re: Removal of Resident Department Heads

the Attorney General hereby concludes that before a mayor can remove a resident department head he/she must first consult with the respective executive branch department head in Saipan.

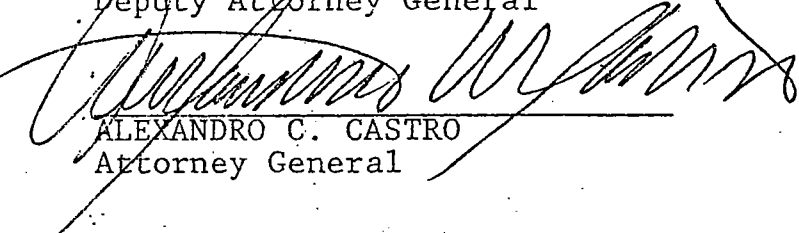
Si Yuus Maase,



RICHARD WEIL
Chief, Solicitor



JOHN F. BIEHL
Deputy Attorney General



ALEXANDRO C. CASTRO
Attorney General

RECEIVED 17 MAR 1987



Commonwealth of the Northern Mariana Islands

Legislative Bureau

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RAYMOND L. RILEY
Chief Legal Counsel

CLAUDE L. BIDDLE
Deputy Legal Counsel

Asst. Legal Counsel

LEGAL OPINION NO. 236

March 11, 1987

TO: Senator Herman T. Manglona

FROM: Chief Legal Counsel

SUBJECT: Removal of Resident Department Heads

You have asked this office for an opinion on:

Issue: Can a mayor unilaterally remove a resident department head?

Answer: No.

Discussion: The issue on authority of a mayor as it relates to resident department heads has been previously addressed by this office. The previous discussion of a mayor's authority is in conformity with this Opinion.

Constitutional Amendment No. 25 amended Article Section 3 g), which states as follows:

"g) The mayors of Rota, and Tinian and Aguiguan, shall appoint, in consultation with the head of the respective executive branch department, all resident department heads." (Emphasis added)

What this means is that the mayor will appoint the resident department heads for thier island. but as a condition precedent, the mayor must first consult with the executive branch department on Saipan.

In the event the executive branch department head disagreed with the mayor's choice, and a compromise could not be reached between them, the mayor then has the authority to make the final desicion.

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March 11, 1987
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The same procedure for removal of a resident head is also required. The issue of removal of a resident department head is not covered by existing law, as such, we must look to existing law that relates to resident department heads, and that law is the appointment. It is for this reason that I conclude that before a mayor may remove a resident department head, he must first consult with the executive branch department head. Again, in the event a compromise can not be reached on the course of action to take, the mayor will have the final decision on removal.

I further believe that the requirement for consultation was ment to create a balance so that one person in the government could not act in a unilateral manner in dealing with personnel. This balance is an important safeguard that must be maintained.

I have also checked the CNMI Personnel Regulations which are in conflict with the Constitution, and as such must be disregarded. The Personnel Regulation stated that the resident department heads serve at the pleasure of the mayor s. This provision goes to far and is in conflict because as stated above, the mayor has an obligation of consultation before he acts.

I hope I have answered your questions. If not please do not hesitate to contact me. I am also taking the liberty of sending a copy of this Opinion to the Attorney General and asking for his comments as to my opinion. I will advise you as soon as I have received those comments.


RAYMOND L. RILEY

cc: Attorney General



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MEMORANDUM AND ORDER

May 4, 2005

To: All Immigration Personnel

From: Pamela Brown, Attorney General

Re: Countries eligible for Comity Entry Permits

Pursuant to Immigration Regulation Section 706(Q), establishing the Comity Entry Permit ("CEP"), the Attorney General hereby designates citizens of the following countries as eligible for a CEP:

- Australia
- Canada
- Ireland
- Japan
- New Zealand
- Singapore
- South Korea
- United Kingdom

Please note, Hong Kong (special administrative region of China) has been removed from the list and South Korea has been added. An applicant must hold a passport from one of the above-designated locations. The passport must be valid for at least 60 days after the expected date of departure. Applicants must meet all other eligibility criteria for a CEP pursuant to § 706(Q), and must comply with all other applicable laws and regulations. This Memorandum and Order shall be promptly published in the Commonwealth Register, pursuant to regulation.

Respectfully submitted,

PAMELA BROWN
Attorney General
Commonwealth of the Northern Mariana Islands