Dated: December 29, 2000.

Kevin Gover,

Assistant Secretary—Indian Affairs.

[FR Doc. 01–470 Filed 1–12–01; 8:45 am]

BILLING CODE 4310–02–P

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 117

[CGD05–00–055]

Drawbridge Operation Regulations; Great Egg Harbor Bay, New Jersey

AGENCY: Coast Guard, DOT.

ACTION: Notice of temporary deviation from regulations.

SUMMARY: The Commander, Fifth Coast Guard District, has approved a temporary deviation from the regulations governing the operation of the Route 9/Beesleys Point Bridge across Great Egg Harbor Bay, mile 3.5, between Somers Point and Beesleys Point, in New Jersey. Beginning at 7 a.m. on January 22, 2001, through 5 p.m. on March 22, 2001, the bridge may remain in the closed position. This closure is necessary to conduct the installation of a new deck.

DATES: This deviation is effective from 7 a.m. on January 22, 2001, until 5 p.m. on March 22, 2001.

FOR FURTHER INFORMATION CONTACT: Ann B. Deaton, Bridge Administrator, Fifth Coast Guard District, at (757) 398–6222.

SUPPLEMENTARY INFORMATION: The Coast Guard received a letter by fax from the contractor on December 1, 2000, requesting a temporary deviation from the current operating schedule of the Route 9/Beesleys Point Bridge. The draw currently is required to open on signal at all times. This requirement is included in the general operating regulations at 33 CFR 117.5. The contractor intends to install a new deck on the bascule span of the bridge. To facilitate the installation, the bascule span will be bolted down in the closed position so that the old deck can be removed and a new deck installed. This work requires completely immobilizing the operation of the bascule span. In the event of an emergency, openings of the span will be provided as quickly as possible, but may take up to 48 hours to accomplish. Requests for emergency openings can be made by calling the bridge manager at (609) 390–3190 or (609) 624–0949.

In accordance with 33 CFR 117.35, the District Commander approved the contractor's request for a temporary deviation from the governing regulations in a letter dated December 12, 2000.

The Coast Guard has informed the known commercial users of the waterway of the bridge closure so that these vessels can arrange their transits to minimize any impact caused by the temporary deviation.

The temporary deviation allows the Route 9/Beesleys Point Bridge across Great Egg Harbor, mile 3.5, between Somers Point and Beesleys Point, New Jersey to remain closed from 7 a.m. on January 22, 2001, until 5 p.m. on March 22, 2001.

Dated: December 21, 2000.

John E. Skhor,

U.S. Coast Guard, Commander, Fifth Coast Guard District.

[FR Doc. 01–1212 Filed 1–12–01; 8:45 am]

BILLING CODE 4910–15–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 136, 141, and 143

[FRL–6918–2]

RIN 2040–AD59

Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; National Primary Drinking Water Regulations; and National Secondary Drinking Water Regulations; Methods Update

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct Final Rule.

SUMMARY: EPA is approving the use of updated versions of test procedures (i.e., analytical methods) for the determination of chemical, radiological, and microbiological pollutants and contaminants in wastewater and drinking water. These updated versions of analytical methods have been published by one or more of the following organizations: American Society for Testing Materials (ASTM), United States Geological Survey (USGS), United States Department of Energy (DOE), American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF). Previously approved versions of the methods remain approved. Today's action will give the analytical community a larger selection of analytical methods. Today's action also corrects typographical errors and updates references where appropriate.

DATES: This final rule is effective on May 16, 2001 without further notice, unless EPA receives adverse comment by March 19, 2001. If EPA receives such comment, EPA will publish a timely withdrawal in the **Federal Register** informing the public that this rule (or distinct amendments, paragraphs, or sections of this rule) will not take effect.

The incorporation by reference of the publications listed in today's rule is approved by the Director of the Federal Register as of May 16, 2001.

For judicial review purposes, this final rule is promulgated as of 1:00 p.m. (Eastern time) on January 30, 2001 as provided in 40 CFR 23.2 and 23.7.

ADDRESSES: You may submit written comments either by mail or electronically. Send comments to the Methods Update Comment Clerk (W–99–21), U.S. Environmental Protection Agency, Water Docket, MC–4101, Ariel Rios Bldg., 1200 Pennsylvania Ave., NW., Washington, DC 20460. Submit electronic comments to *OW-Docket @epa.gov.* Please submit copies of any references cited in your comments. EPA would appreciate an original and 3 copies of your comments and enclosures (including references).

This **Federal Register** document is also available on the Internet at: *http://www.epa.gov/fedrgstr.* The record for this rulemaking has been established under docket number W–99–21. Supporting documents (including references and methods cited in this notice) are available for review at the U.S. Environmental Protection Agency, Water Docket, East Tower Basement, Room EB57, 401 M Street, SW., Washington, DC 20460. For access to the docket materials, call 202/260–3027 on Monday through Friday, excluding Federal holidays, between 9:00 a.m. and 3:30 p.m. Eastern Daylight Standard Time for an appointment.

Copies of final methods published by ASTM are available for a nominal cost through American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959. Copies of final methods published by USGS are available for a nominal cost through the United States Geological Survey, U.S. Geological Survey Information Services, Box 25286, Federal Center, Denver, CO 80225–0425. Copies of final methods published by DOE are available for a nominal cost through the Environmental Measurements Laboratory, U.S. Department of Energy, 376 Hudson Street, New York, NY 10014–3621. Copies of Standard Methods are available for a nominal cost from the American Public Health Association,

1015 Fifteenth Street, NW., Washington, DC. 20005.

FOR FURTHER INFORMATION CONTACT: For information regarding wastewater methods contact Dr. Maria Gomez-Taylor, Engineering and Analysis Division (4303), USEPA Office of Science and Technology, Ariel Rios Bldg., 1200 Pennsylvania Ave., NW., Washington, DC 20460 (e-mail: *Gomez-Taylor.Maria@epa.gov*). For information regarding the drinking water methods, contact Dr. Richard Reding, Office of Ground Water and Drinking Water, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268 (e-mail: *Reding.Richard@epa.gov*).

SUPPLEMENTARY INFORMATION:

Potentially Regulated Entities

A. Clean Water Act

EPA Regions, as well as States, Territories, and Tribes, are authorized to implement the National Pollutant Discharge Elimination System (NPDES) program and issue permits that comply with the technology-based and water quality-based requirements of the Clean Water Act. In doing so, the NPDES permitting authority, including authorized States, Territories, and Tribes, make a number of discretionary choices associated with permit writing, including the selection of pollutants to be measured and, in many cases, limited in permits. If EPA has ''approved'' (*i.e.,* promulgated through rulemaking) standardized testing procedures for a given pollutant, the NPDES permit must specify one of the approved testing procedures or an approved alternate test procedure. Permitting authorities may, at their discretion, require the use of any method approved at 40 CFR part 136 in the permits they issue. Therefore, dischargers with NPDES permits could be affected by the standardization of testing procedures in this rulemaking, because NPDES permits may incorporate the testing procedures in today's rulemaking. In addition, when a State, Territory, or authorized Tribe provides certification of Federal licenses under Clean Water Act section 401, States, Territories, and Tribes are directed to use the standardized testing procedures. Categories and entities that may ultimately be affected include:

Category	Examples of potentially regulated entities
Regional, State and Territorial Governments and Indian Tribes	States, Territories, and Tribes authorized to administer the NPDES permitting program; States, Territories, and Tribes providing certification under Clean Water Act section 401; Governmental NPDES permittees
Industry	Industrial NPDES permittees
Municipalities	Publicly-owned treatment works with NPDES permits

B. Safe Drinking Water Act

Public water systems are the regulated entities required to conduct analyses to measure for contaminants in water samples. However, EPA Regions, as well as States, local, and tribal governments with primacy to administer the regulatory program for public water systems under the Safe Drinking Water Act, sometimes conduct analyses to measure for contaminants in water samples. If EPA has established a maximum contaminant level (''MCL'') for a given drinking water contaminant, the Agency also ''approves'' (*i.e.,* promulgates through rulemaking) standardized testing procedures for analysis of the contaminant. Once EPA standardizes such test procedures, analysis using those procedures (or approved alternate test procedures) is required. Public water systems required to test water samples must use one of the approved standardized test procedures. Categories and entities that may ultimately be regulated include:

Category	Examples of potentially regulated entities	SIC
State, Local, & Tribal Governments	States, local and tribal governments that analyze water samples on behalf of public water systems required to conduct such analysis; States, local, and tribal governments that themselves operate public water systems required to conduct analytic monitoring.	9511
Industry	Industrial operators of public water systems	4941
Municipalities	Municipal operators of public water systems	9511

C. These tables are not intended to be exhaustive, but rather provide a guide for readers regarding entities potentially regulated by this action. The tables list the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the tables could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the applicability language at 40 CFR 141.2 (definition of public water system) and 40 CFR 136.1 (NPDES permits and CWA). If you have questions regarding the applicability of this action to a particular entity, consult the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Outline of Notice

I. Legal Authorities

A. Clean Water Act

This regulation is promulgated under the authority of sections 301, 304(h), and 501(a) of the Clean Water Act (CWA), 33 U.S.C. 1311, 1314(h), 1361(a) (the ''Act''). Section 301 of the Act prohibits the discharge of any pollutant into navigable waters unless the discharge complies with a National Pollutant Discharge Elimination System (NPDES) permit, issued under section 402 of the Act. Section 304(h) of the Act requires the EPA Administrator to ''promulgate guidelines establishing test procedures for the analysis of pollutants that shall include the factors which must be provided in any certification pursuant to section 401 of this Act or permit applications pursuant to section 402 of this Act.'' Section 501(a) of the Act authorizes the Administrator to ''prescribe such regulations as are necessary to carry out his functions under this Act.'' EPA publishes CWA analytical method regulations at 40 CFR part 136. The Administrator also has made these test procedures applicable to monitoring and reporting of NPDES permits (40 CFR part 122, §§ 122.21, 122.41, 122.44, and 123.25), and implementation of the pretreatment standards issued under section 307 of the Act (40 CFR part 403, §§ 403.10 and 403.12).

B. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), as amended in 1996, requires EPA to promulgate national primary drinking water regulations (NPDWRs) which specify maximum contaminant levels (MCLs) or treatment techniques for drinking water contaminants (SDWA section 1412 (42 U.S.C. 300g–1)). NPDWRs apply to public water systems pursuant to SDWA section 1401 (42 U.S.C. 300f(1)(A)). According to SDWA section 1401(1)(D), NPDWRs include ''criteria and procedures to assure a supply of drinking water which dependably complies with such maximum contaminant levels; including quality control and testing procedures.* * *'' (42 U.S.C. 300f(1)(D)). In addition, SDWA section 1445(a) authorizes the Administrator to establish regulations for monitoring to assist in determining whether persons are acting in compliance with the requirements of the SDWA (42 U.S.C. 300j–4). EPA's promulgation of analytical methods is authorized under these sections of the SDWA as well as the general rulemaking authority in SDWA section 1450(a), (42 U.S.C.300j–9(a)).

II. Overview of Methods Updates

EPA has promulgated analytical methods for all currently regulated wastewater and drinking water pollutants and contaminants. In most cases, EPA has approved use of more than one analytical method for measurement of a contaminant, and laboratories may use any approved method for determining compliance with a monitoring requirement. After any regulation is published, EPA may amend the regulations to approve new methods or modifications to approved methods.

Many of the analytical methods already promulgated by EPA have been published by other organizations, including the American Society for Testing Materials (ASTM), United States Geological Survey (USGS), and United States Department of Energy (DOE). In addition, three other organizations (American Public Health Association, American Water Works Association and Water Environment Federation) jointly publish *Standard Methods for Examination of Water and Wastewater* (referred to as ''Standard Methods''). This rule approves use of updated versions of currently promulgated ASTM Methods, Standard Methods, and USGS methods at 40 CFR part 136 for compliance with wastewater standards and monitoring requirements. This rule also approves updated versions of currently promulgated methods in the tables of analytical methods listed at 40 CFR parts 141 and 143 for analyses of drinking water contaminants. The drinking water methods included in this rule are published by ASTM, Standard Methods, and DOE. These organizations publish updated manuals of methods from time to time. Some of the methods in the updated manuals contain no change from previously published editions. Other methods contain no significant changes, only minor technical improvements that make the methods safer and/or easier to use. Today's amendments contain only methods that have no changes or only minor technical improvements. No EPA methods are being updated.

This rule does not withdraw from use any currently promulgated method. For an NPDES permit, the permitting authority should decide the appropriate method based on the nature of the particular water sample to be tested and based on the measurement level of concern.

Today's amendments allow use of updated versions of methods, as outlined below. Each write-up uniquely defined by an identifying method number is counted as a single updated method, regardless of the nature of changes. Even if the only change to the method is its inclusion in a more recent published edition of a methods manual (e.g, 19th Edition of Standard Methods), it is considered an updated method.

A. Amendments to Methods at 40 CFR Part 136 for Monitoring Wastewater

Today's amendments allow use of 19 updated methods published by the American Society for Testing and Materials (ASTM) in the 1999 *Annual Book of ASTM Standards,* Vols. 11.01 and 11.02 for determinations of chemical and radionuclide contaminants, and physical parameters. Previously published versions of these methods, if already promulgated by EPA, remain approved.

Today's amendments also allow use of 189 updated methods published by the Standard Methods Committee in *Standard Methods for the Examination of Water and Wastewater,* 19th edition, 1995, and 20th edition, 1998, for determinations of chemical, microbiological and radionuclide contaminants, and physical parameters.

EPA is also amending 40 CFR Part 136 to update USGS Method I–1472–85 to Method I–4471–97 for determination of cadmium, and 21 methods published by USGS in open file reports and method compendiums. The 21 USGS methods are for the determination of one or more analytes . These methods employ the same analytical procedures and technologies that are employed in promulgated EPA and VCSB methods. These USGS methods will give the analytical community a greater selection of methods.

Finally, today's amendments correct typographical errors in the tables of methods, table footnotes, and sources.

B. Amendments to Methods at 40 CFR Part 141 for Monitoring Primary Drinking Water Contaminants

Today's amendments allow use of 12 updated methods that are published in the 1999 *Annual Book of ASTM Standards,* Vols. 11.01 and 11.02, for determinations of chemical and radionuclide contaminants, and

physical parameters. Use of previously promulgated versions of ASTM methods that are published in these volumes, but have not been revised from previous editions, is also allowed.

Today's amendments also allow use of 62 updated methods published by the Standard Methods Committee in *Standard Methods for the Examination of Water and Wastewater,* 20th edition, 1998, for determinations of chemical, microbiological and radionuclide contaminants, and physical parameters.

Today's amendments allow use of six updated methods published by DOE in the document ''EML Procedures Manual,'' 28th Edition, Volume 1, 1997, for determinations of radionuclide contaminants.

C. Amendments to Methods at 40 CFR Part 143 for Monitoring Secondary Drinking Water Contaminants

Today's amendments list an updated version of one chemistry method (D 4327–97) published in the 1999 *Annual Book of ASTM Standards,* Vol. 11.01.

Today's amendments also list updated versions of 12 methods published by the Standard Methods Committee in *Standard Methods for the Examination of Water and Wastewater,* 20th edition, 1998, for determinations of secondary chemical contaminants and physical parameters.

III. Reasons for Using Direct Final Rulemaking

The Agency is promulgating these amendments as a ''direct final'' rule. EPA is publishing this rule without prior proposal because we view this as noncontroversial amendments and anticipate no adverse comment. Today's action approves updated versions of analytical methods published by several organizations in recent editions of methods manuals or recent publications. These updated versions contain no significant changes, only minor technical improvements that make the methods safer and/or easier to use. However, in the ''Proposed Rules'' section of today's **Federal Register**, we are publishing a separate document that will serve as the proposal to update these methods if adverse comments are filed. This rule will be effective on May 16, 2001 without further notice unless we receive adverse comment by March 19, 2001. If EPA receives adverse comment on one or more distinct amendments, paragraphs, or sections of this rulemaking, we will publish a timely withdrawal in the **Federal Register** indicating which provisions will become effective and which provisions are being withdrawn due to adverse comment. Any distinct amendment, paragraph, or section of today's rulemaking for which we do not receive adverse comment will become effective on the date set out above, notwithstanding any adverse comment on any other distinct amendment, paragraph, or section of today's rule. We will address all public comments in a subsequent final rule based on the companion proposed rule published elsewhere in today's **Federal Register**. We will not institute a second comment period on the action. Any parties interested in commenting must do so at this time.

IV. Description of the Amendments in Today's Actions

The Agency is amending the tables of methods at 40 CFR Parts 136, 141 and 143 to include recently updated versions of certain analytical methods and to correct typographical errors as explained below.

A. Approval of Updated Versions of Analytical Methods

The updated versions of methods listed at 40 CFR Parts 136, 141, and 143 discussed in this section contain updates of currently promulgated methods that interested parties, such as public water systems, NPDES permit writers, pretreatment coordinators, laboratory personnel, certification officials, and regulatory authorities, will consider to be noncontroversial and generally useful.

1. American Society for Testing and Materials (ASTM) Methods for Analyses of Wastewater and Drinking Water

In today's rule, EPA is amending 40 CFR Parts 136, 141, and 143 to include updated ASTM methods that are published in Vols. 11.01 and 11.02 of the ASTM's *Annual Book of Standards* [ASTM 1999]. The changes, if any, in the updated ASTM methods that are included in today's rule are editorial changes or minor technical clarifications. An example of an editorial change is the replacement of the unit for the measurement of radioactivity, picocurie, with the unit, Becquerel; 1 Becquerel equals 27 picocuries. The change to Becquerel conforms the ASTM methods to the unit of radioactivity measurement that is recommended by the International Union for Pure and Applied Chemistry (IUPAC), which is an international organization that recommends standards for units of measurement.

Examples of minor technical changes are recommendations for the safe handling of hazardous materials and safer or better ways to conduct certain hazardous or complicated analytical procedures. Some of the ASTM methods have been augmented with additional tables of method performance data. The updated ASTM methods do not contain substantive changes in procedures or instrumentation. Because EPA is not withdrawing approval of the currently approved version of any ASTM method, approval of the revised methods should have no adverse effect on users.

a. Wastewater Methods

Nineteen ASTM methods that are published in the 1999 *Annual Book of Standards* (ASTM 1999) and that have been updated from previous versions of these methods are approved in today's rule at 40 CFR Part 136 for wastewater compliance monitoring. Table 1 lists the 19 revised ASTM wastewater methods.

TABLE 1—REVISED ASTM WASTEWATER METHODS

Currently Approved Version	1999 Edition Version
D 858–90	D 858–95
D 859–88	D 859–94
D 1068–90	D 1068–96
D 1125–91	D 1125–95
D 1126–86(92)	D 1126–96
D 1246–82(88)	D 1246–95
D 1252–88	D 1252–95
D 1426–93	D 1426–98
D 1688–90	D 1688–95
D 1889–88	D 1889–94
D 2036–91	D 2036–98
D 2972–93	D 2972–97
D 3557–90	D 3557–95
D 3558–90	D 3558–94
D 3559–90	D 3559–96
D 3859–93	D 3859–98
D 3867–90	D 3867–99
D 4190–82(88)	D 4190–94
D 4382–91	D 4382–95

b. Drinking Water Methods for Primary and Secondary Drinking Water Contaminants

Twelve ASTM methods that are published in the 1999 *Annual Book of Standards* (ASTM 1999) and that have been updated from previous versions of these methods are approved in today's rule at 40 CFR part 141 for drinking water compliance monitoring. Because one of the updated methods, D 4327–97, is also applicable to determinations of both chloride and sulfate, this method is also recommended in the table at 40 CFR part 143 for monitoring of these secondary contaminants. Three methods, D 3972 for uranium, and D 2460 and D 3454 for radium, have been updated to describe an optional computation of a total propagated uncertainty (TPU). EPA is approving these updated radionuclide methods. Although the TPU computation is technically satisfactory, it requires more

effort than the uncertainty computation for radionuclide measurements specified at 40 CFR 141.25(c) and 141.26(a). EPA does not preclude use of the TPU computation, but the Agency believes that this computation is not necessary to obtain an accurate determination of uncertainty. Therefore, use of the computation specified in the CFR is recommended. Table 2 lists the 12 revised ASTM drinking water methods.

TABLE 2.—REVISED ASTM DRINKING WATER METHODS

Currently Approved Version	1999 Edition Version
D 2036–91	D 2036–98
D 2460–90	D 2460–97
D 2907–91	D 2907–97
D 2972–93	D 2972–97
D 3454–91	D 3454–97
D 3559–95	D 3559–96
D 3645–93	D 3645–97
D 3859–93	D 3859–98
D 3972–90	D 3972–97
D 4327–91	D 4327–97
D 4785–88	D 4785–93
D 5174–91	D 5174–97

2. APHA/AWWA/WEF Methods (Standard Methods)

a. Wastewater Methods

In today's rule, EPA is amending 40 CFR part 136 to include 189 updated methods that are published in the 19th (APHA 1995) and 20th (APHA 1998) Editions of Standard Methods. 40 CFR Part 136 currently includes only methods listed in the 18th Edition (APHA 1992). Because EPA is not withdrawing approval of the currently promulgated version of any Standard Method, approval of these methods in this rulemaking should have no adverse effect on users.

Thirty of the 189 Standard Methods being approved contain minor technical and/or editorial revisions to the corresponding promulgated 18th Edition versions. The revisions are intended to improve method usability. Examples of these changes include: better explanations on conducting a specific step in the method; recommendations for safer handling or disposal of hazardous reagents; and options to use alternative procedures, reagents, or equipment (such as the option to use capillary columns in Method 6200 C, and the merger of Methods 6220 B and 6230 B into one method, 6200 C).

The other 159 methods remain unchanged from the currently promulgated methods. The only difference is that they are included in a more recent edition of Standard Methods and in some cases contain a different identifying method number. Method number changes between the 18th, 19th, and 20th editions occurred in 27 instances. These changes in numbering are provided in Table 3.

TABLE 3.—STANDARD METHODS NUMBER CHANGES

18th Edition	19th Edition	20th Edition
3500–Al D	3500–Al D	3500–Al B
3500–As C	3500–As C	3500–As B
3500–Be D	3500–Be D	Dropped
3500–Cd D	3500–Cd D	Dropped
3500–Ca D	3500–Ca D	3500–Ca B
3500–Cr D	3500–Cr D	3500–Cr B
3500–Cu D	3500–Cu D	3500–Cu B
3500–Cu E	3500–Cu E	3500–Cu C
3500–Fe D	3500–Fe D	3500–Fe B
3500–Pb D	3500–Pb D	3500–Pb B
3500–Mg D	3500–Mg D	Dropped
3500–Mn D	3500–Mn D	3500–Mn B
3500–K D	3500–K D	3500–K B
3500–Na D	3500–Na D	3500–Na B
3500–V D	3500–V D	3500–V B
3500–Zn E	3500–Zn E	Dropped
3500–Zn F	3500–Zn F	3500–Zn B
4500–NH_3 C	Dropped	Dropped
4500–NH_3 E	4500–NH_3 C	4500–NH_3 C
4500–NH_3 F	4500–NH_3 D	4500–NH_3 D
4500–NH_3 G	4500–NH_3 E	4500–NH_3 E
4500–NH_3 H	4500–NH_3 G	4500–NH_3 G
4500–S^{-2} E	4500–S^{-2}F	4500–S^{-2} F
4500–Si D	4500–Si D	4500–SiO_2 C
6210 B	6210 B	6200 B
6220 B	6220 B	6220 C
6230 C	6230 B	6230 C

Five methods have been dropped from recent editions of Standards Methods. These methods are not being withdrawn from 40 CFR Part 136 because the methods are technically sound and there may be laboratories successfully using these methods. The five methods dropped from Standard Methods are Method 4500–NH_3 C, which was not included in the 19th edition, and Methods 3500–Be D, 3500–Cd D, 3500–Mg D, and 3500–Zn E, which were not included in the 20th edition.

b. Drinking Water Methods for Primary and Secondary Drinking Water Contaminants

EPA is also amending 40 CFR Parts 141 and 143 to add 71 methods that are published in the 20th Edition of Standard Methods. Previous promulgated versions of these methods, which are published in 18th and 19th Editions of Standard Methods, are listed at 40 CFR Parts 141 and 143. Because EPA is not withdrawing approval of the currently promulgated version of any Standard Method, approval of the updated revised methods in this rulemaking should have no adverse effect on users.

Of the 71 Standard Methods methods included in today's rule, 52 methods are unchanged from previous versions. The remaining 19 methods contain minor editorial changes or technical clarifications. Some of these revisions are minor modifications or voluntary but useful options, such as better explanations on conducting a specific step in the method; recommendations for safer handling or disposal of hazardous reagents; and options to use alternative procedures, reagents, or equipment. The method numbers for five methods changed between the 19th and 20th editions. These changes in numbering are provided in Table 4.

TABLE 4.—STANDARD METHODS NUMBER CHANGES

19th Edition	20th Edition
3500–Ca D	3500–Ca B
3500–Mg E	3500–Mg B
4500–Si D	4500–SiO_2 C
4500–Si E	4500–SiO_2 D
4500–Si F	4500–SiO_2 E

3. USGS Methods for Analyses of Wastewater

In today's rule, EPA is amending 40 CFR Part 136 to update USGS Method I–1472–85 to Method I–4471–97 for the determination of cadmium, and to allow use of 21 updated methods published by USGS in open file reports and method compendiums. At the request of USGS, the 21 methods are being promulgated for the determination of one or more analytes. These 21 USGS methods employ the same analytical procedures and technologies that are employed in approved EPA and voluntary consensus standards bodies (VCSB) methods. Approval of these USGS methods will give the analytical community a greater selection of methods.

4. DOE Methods for Analyses of Radionuclides in Drinking Water

In today's rule, EPA is amending 40 CFR Part 141 to add updated versions of six radionuclide methods that are published by DOE in the *EML Procedures Manual,* 28th Edition, Volume 1, 1997 (DOE 1997). The six methods are Ra–05, Sr–01, Sr–02, U–02, U–04, and Ga–01–R. Two of the methods in the 1997 DOE manual have been renumbered. Method Ra–05 is now Ra–04 and the method referred to as Sect. 4.5.4.3 in the 1990 manual has been given the method number Ga–01–R. Four of the methods in the 1997 DOE manual are unchanged. One method, Method Ga–01–R, has minor editorial changes. In Method U–02, alpha spectrometry for uranium determinations, the sample preparation procedure has been revised and now allows proceeding directly to the microprecipitation step. This change eliminates the mercury cathode electrolysis isotope separation step without affecting the sensitivity or selectivity of the analysis. In the 1990 version of Method U–02, this isotope separation step was optional for drinking water samples. This previous version of U–02 continues to be approved along with the 1990 versions of the other five DOE methods. The Agency, however, strongly recommends use of the 1997 version of U–02, because it eliminates the need for radiochemistry laboratories to handle large quantities of liquid mercury.

B. Typographical Errors

Today's rule corrects typographical errors in the CFR tables at 40 CFR Part 136, and also updates references as appropriate. All of the amendments to the tables are minor, and do not impose any new analytical requirements. Today's rule incorporates the following technical corrections:

(1) Footnote 38 to Table IB at 40 CFR Part 136.3 is corrected and updated to reference Trichlorotrifluorethane (1,1,2-trichloro-1,2,2-trifluoroethane; CFC–113) and n-hexane as approved extraction solvents for the oil and grease Standard Method 5520 B. Previously, trichlorofluoromethane (CFC–11) was incorrectly listed.

(2) The Standard Methods digestion procedure that precedes Kjeldahl Nitrogen determination is corrected to reference Standard Methods 4500–Norg B or C. Previously, Standard Methods 4500 NH_3 B or C were listed, which provide procedures for ammonia distillation and titrimetric determination (not digestion), respectively.

(3) Footnote 34 and its associated source listing is updated to reflect a change in method ownership for Direct Current Plasma (DCP) Method AES0029, developed by Fisons and acquired by Thermo Jarrell Ash.

(4) The reference for the Nickel Colorimetric (Heptoxime) method is corrected to include Standard Method 3500–Ni D from the 17th Edition instead of the 18th Edition. Method 3500–Ni D was not included in the 18th Edition of Standard Methods.

(5) Incorrect page number listings for USGS methods were corrected.

(6) The CFR contains two references with the same number. The second reference (40) in Section 136.3(b) has been renumbered (41) and reference (41) has been renumbered (42).

C. Performance-based Measurement System

On March 28, 1997, EPA proposed a rule (62 FR 14976) to streamline approval procedures and use of analytical methods in water programs through implementation of a performance-based approach to environmental measurements. On October 6, 1997, EPA published a notice of the Agency's intent to implement a performance-based measurement system (PBMS) in all media programs to the extent feasible (62 FR 52098). EPA's water program offices have developed a plan to implement PBMS. EPA anticipates that the final rule to implement PBMS in water programs will be based on the March 28, 1997 proposed rule.

V. Administrative Requirements

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735; October 4, 1993), the Agency must determine whether the regulatory action is ''significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more, or

adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a ''significant regulatory action'' under the terms of Executive Order 12866 and is therefore not subject to OMB review.

B. Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, we defined: (1) Small businesses according to SBA size standards; (2) small governmental jurisdictions as governments of a city, county, town, school district or special district with a population less than 50,000; and (3) small organizations as any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities. Today's rule approves new and revised versions of currently approved ASTM Methods, Standard Methods, United States Geological Survey (USGS), and United States Department of Energy (DOE) methods for compliance with wastewater monitoring and drinking water standards and monitoring requirements but does not require their use. Previous versions of these ASTM, Standard Methods, USGS, and DOE methods will not be withdrawn. Public water systems and laboratories performing analyses on behalf of these systems may continue to use the previous versions after the promulgation of today's rule. The final rule merely provides additional options. Any of the testing procedures currently approved at 40 CFR parts 136, 141, or 143 can be used if monitoring is otherwise required for this pollutant under the CWA or SDWA. This rule also makes minor technical corrections, amendments, and clarifications to the regulations.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. This rule imposes no enforceable duty on any State, local or tribal governments or the private sector. EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Thus, today's rule is not subject to the requirements of sections 202, 203, and 205 of the UMRA.

This rule approves the use of analytical methods for conducting analysis for contaminants in wastewater and drinking water and thus provides operational flexibility to laboratory analysts. Since the rule does not withdraw earlier versions of methods, EPA anticipates no increase in expenditure or burden.

D. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* This action merely provides additional options on the selection of testing procedures when monitoring is otherwise required under the CWA or SDWA. Any of the testing procedures approved at 40 CFR parts 136, 141, or 143 can be used if such monitoring is required for a pollutant or contaminant.

E. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* material specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standard bodies. NTTAA directs EPA to provide Congress, through the Office of Management and Budget (OMB), explanations when EPA decides not to use available and applicable voluntary consensus standards.

In this rulemaking EPA is approving newer versions of voluntary consensus standards published by ASTM and Standard Methods for many wastewater and drinking water contaminants. EPA recognizes that other voluntary consensus standards may also be available for the contaminants covered by this rule. In order to expedite publication of this rule as a direct final rule, EPA has chosen not to propose other voluntary consensus methods at this time. EPA plans to address the

availability of other voluntary consensus methods in subsequent rules.

F. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. This rule is not subject to Executive Order 13045 because it is neither ''economically significant'' as defined under Executive Order 12866, nor does it concern an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children.

G. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Today's rule approves the use of additional analytical methods by laboratories conducting analysis in wastewater and drinking water. Today's action does not, however, require use of the alternative methods. The rule provides laboratory analysts with other options to the list of currently approved testing procedures under 40 CFR parts 136, 141, and 143 which can be used if monitoring is otherwise required for these pollutants under the CWA or SDWA. Thus, Executive Order 13132 does not apply to this rule.

H. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. This rule approves new and updated analytical methods for drinking water compliance monitoring and wastewater compliance monitoring. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

I. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective on May 16, 2001.

VI. References

APHA 1992. Eighteenth edition of Standard Methods for the Examination of Water and Wastewater, 1992, American Public Health Association, 1015 Fifteenth Street NW., Washington, DC 20005.

APHA 1995. Nineteenth edition of Standard Methods for the Examination of Water and Wastewater, 1995, American Public Health Association, 1015 Fifteenth Street NW., Washington, DC 20005.

APHA 1998. Twentieth edition of Standard Methods for the Examination of Water and Wastewater, 1998, American Public Health Association, 1015 Fifteenth Street NW., Washington, DC 20005.

ASTM 1999. 1999 Annual Book of ASTM Standards, Vols. 11.01 and 11.02, American Society of Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428–2959.

AWWA 1996. ''Standard Methods—A Closer Look,'' Posavec, Steve, in Opflow, Vol.22, No.2, February 1996, American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

DOE 1997 ''EML Procedures Manual'', 28th Edition, Volume 1, 1997. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 376 Hudson Street, New York, NY 10014–3621.

USGS 1989. Fishman, M.J., et al, ''Methods for Analysis of Inorganic Substances in Water and Fluvial Sediments,'' U.S. Department of the Interior, Techniques of Water-Resource Investigations of the U.S. Geological Survey, Denver, CO.

USGS 1992. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Total Phosphorus by Kjeldahl Digestion Method and an Automated Colorimetric Finish That Includes Dialysis'' Open File Report (OFR) 92–146 of the U.S. Geological Survey, Denver, CO.

USGS 1993. ''Methods of 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 (OFR) 93–125 of the U.S. Geological Survey, Denver, CO.

USGS 1993. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Chromium in Water by Graphite Furnace Atomic Absorption Spectrometry'', Open File Report (OFR) 93–449 of the U.S. Geological Survey, Denver, CO.

USGS 1994. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Triazine and Other Nitrogen-containing Compounds by Gas Chromatography with Nitrogen Phosphorus Detectors'' of the U.S. Geological Survey, Denver, CO.

USGS 1997. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Molybdenum by Graphite Furnace Atomic Absorption Spectrophotometry'', Open File Report (OFR) 97–198 of the U.S. Geological Survey, Denver, CO.

USGS 1998 ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Ammonia Plus Organic Nitrogen by a Kjeldahl Digestion Method and an Automated Photometric Finish that Includes Digest Cleanup by Gas Diffusion and an Automated Photometric Finish That Includes Digest Cleanup by Gas Diffusion''. Open File Report (OFR) 00–170 of the U.S. Geological Survey, Denver, CO.

USGS 1998. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Arsenic and Selenium in Water and Sediments by Graphite Furnace-Atomic Absorption Spectrometry'' Open File Report (OFR) 98–639. Table IB, Note 49.

USGS 1998. ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Elements in Whole-water Digests Using Inductively Coupled Plasma-Optical Emission Spectrometry and Inductively Coupled Plasma-Mass Spectrometry'' , Open File Report (OFR) 98–165 of the U.S. Geological Survey, Denver, CO.

List of Subjects

40 CFR Part 136

Environmental protection, Analytical methods, Incorporation by reference, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 141

Environmental protection, Chemicals, Incorporation by reference, Indian-lands, Intergovernmental relations, Radiation Protection, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 143

Environmental protection, Chemicals, Incorporation by reference, Indian-lands, Water supply.

Dated: December 11, 2000.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations, is amended as follows:

PART 136—GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS

1. The authority citation for Part 136 continues to read as follows:

Authority: Secs. 301, 304(h), 307, and 501(a) Pub. L. 95–217, 91 Stat. 1566, *et seq.* (33 U.S.C. 1251, *et seq.*) (The Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977.)

2. Section 136.3 is amended:

a. In paragraph (a) by revising Tables IA, IB, IC, ID, and IE.

b. In paragraph (b) revise references (6) and (10), remove reference (41), redesignate the second reference (40) as (41), redesignate reference (43) as (51), and add references (42) through (50) to read as follows:

§ 136.3 Identification of test procedures.

* * * * *

(a) * * *

TABLE 1A.—LIST OF APPROVED BIOLOGICAL METHODS

Parameter and units	Method [1]	EPA	Standard Methods 18th, 19th, 20th Ed.	ASTM	USGS
Bacteria:					
1. Coliform (fecal), number per 100 mL..	Most Probable Number (MPN), 5 tube. 3 dilution, or Membrane filter (MF) [2], single step.	p.132 [3] p.124 [3]	9221C E [4] 9222D [4]		B–0050–85 [5]
2. Coliform (fecal) in presence of chlorine, number per 100 mL..	MPN, 5 tube, 3 dilution, or MF, single step [6]	p.132 [3] p.124 [3]	9221C E [3] 9221D [4]		
3. Coliform (total), number per 100 mL..	MPN, 5 tube, 3 dilution, or MF [2], single step or two step.	p.114 [3] p. 108 [3]	9221B [4] 9222B [4]		B–0025–85 [5]
4. Coliform (total), in presence of chlorine, number per 100 mL..	MPN, 5 tube, 3 dilution, or MF [2] with enrichment	p. 114 [3] p. 111 [3]	9221B [4] 9222(B+B.5c) [4]		
5. Fecal streptococci, number per 100 mL..	MPN, 5 tube, 3 dilution, ... MF [2], or ..... Plate count	p. 139 [3] p. 136 [3] p.143 [3]	9230B [4] 9230C [4]		B–0055–85 [5]
Aquatic Toxicity:					
6. Toxicity, acute, fresh water organisms, LC50, percent effluent..	Daphnia, Ceriodaphnia, Fathead Minnow, Rainbow Trout, Brook Trout, or Bannerfish Shiner mortality.	Sec. 9 [7]			
7. Toxicity, acute, estuarine and marine organisms, LC50, percent effluent..	Mysid, Sheepshead Minnow, or Menidia spp. mortality.	Sec. 9 [7]			
8. Toxicity, chronic, fresh water organisms, NOEC or IC25, percent effluent..	Fathead minnow larval survival and growth. Fathead minnow embryo-larval survival and teratogenicity. Ceriodaphnia survival and reproduction. Selenastrum growth	1000.0 [8] 1001.0 [8] 1002.0 [8] 1003.0 [8]			

TABLE 1A.—LIST OF APPROVED BIOLOGICAL METHODS—Continued

Parameter and units	Method [1]	EPA	Standard Methods 18th, 19th, 20th Ed.	ASTM	USGS
9. Toxicity, chronic, estuarine and marine organisms,NOEC or IC25, percent effluent..	Sheepshead minnow larval survival and growth. Sheepshead minnow embryo-larval survival and teratogenicity. Menidia beryllina larval and growth. Mysidopsis bahia survival, growth, and fecundity. Arbacia punctulata fertilization. Champia parvula reproduction.	1004.0 [9] 1005.0 [9] 1006.0 [9] 1007.0 [9] 1008.0 [9] 1009.0 [9]			

Notes to Table IA:

[1] The method must be specified when results are reported.

[2] A 0.45 μm membrane filter (MF) or other pore size certified by the manufacturer to fully retain organisms to be cultivated and to be free of extractables which could interfere with their growth.

[3] USEPA. 1978. Microbiological Methods for Monitoring the Environment, Water, and Wastes. Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio. EPA/600/8–78/017.

[4] APHA. 1998, 1995, 1992. Standard Methods for the Examination of Water and Wastewater. American Public Health Association. 20th, 19th, and 18th Editions. Amer. Publ. Hlth. Assoc., Washington, DC.

[5] USGS. 1989. U.S. Geological Survey Techniques of Water-Resource Investigations, Book 5, Laboratory Analysis, Chapter A4, Methods for Collection and Analysis of Aquatic Biological and Microbiological Samples, U.S. Geological Survey, U.S. Department of Interior, Reston, Virginia.

[6] Because the MF technique usually yields low and variable recovery from chlorinated wastewaters, the Most Probable Number method will be required to resolve any controversies.

[7] USEPA. 1993. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms. Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio. August 1993, EPA/600/4–90/027F.

[8] USEPA. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Third Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency USEPA. 1994, Cincinnati, Ohio. (July 1994, EPA/600/4–91/002).

[9] Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. Second Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio (July 1994, EPA/600/4–91/003). These methods do not apply to marine waters of the Pacific Ocean.

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
1. Acidity, as $CaCO_3$, mg/L:					
Electrometric endpoint or phenolphthalein endpoint.	305.1	2310 B(4a) [18th, 19th, 20th].	D1067–92	I–1020–85	
2. Alkalinity, as CaCO3, mg/L:					
Electrometric or Colormetric titration to pH 4.5, manual or automatic.	310.1	2320 B [18th, 19th, 20th].	D1067–92	I–1030–85	973.43.[3]
	310.2	.....		I–2030–85	
3. Aluminum—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	202.1	3111 D [18th, 19th].		I–3051–85	
AA furnace	202.2	3113 B [18th, 19th].			
Inductively Coupled Plasma/Atomic Emission Spectrometry (ICP/AES) [36].	[5] 200.7	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
Direct Current Plasma (DCP) [36].	.....	.....	D4190–94		Note 34.
Colorimetric (Eriochrome cyanine R).	3500–Al B [20th] and 3500–Al D [18th, 19th]				
4. Ammonia (as N), mg/L:					

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Manual, distillation (at pH 9.5) [6] followed by:	350.2	4500–NH_3 B [18th, 19th, 20th].			973.49.[3]
Nesserization	350.2	4500–NH_3 [18th].	D1426–98(A)	I–3520–85	973.49.[3]
Titration	350.2	4500–NH_3C [19th, 20th] and 4500–NH_3 C [18th].			
Electrode	350.3	4500–NH_3 D or E [19th, 20th] and 4500–NH_3 F or G [18th].	D1426–98(B)		
Automated phenate, or	350.1	4500–NH_3 G [19th, 20th] and 4500–NH_2 H [18th].		I–4523–85	
Automated electrode					Note 7.
5. Anitomy—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	204.1	3111 B [18th, 19th].			
AA furnace	204.2	3113 B [18th, 19th].			
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].			
6. Arsenic—Total,[4] mg/L:					
Digestion [4] followed by	206.5				
AA gaseous hydride	206.3	3114 B 4.d [18th, 19th].	D2972–97(B)	I–3062–85	
AA furnace	206.2	3113 B [18th, 19th].	D2972–97(C)	I–4063–98[49]	
ICP/AES [36] or	200.7 [5]	3120 B [18th, 19th, 20th].			
Colorimetric (SDDC)	206.4	3500–As B [20th] and 3500–As C [18th, 19th].	2972–97(A)	I–3060–85	
7. Barium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [14]	208.1	3111 D [18th, 19th].		I–3084–85	
AA furnace	208.2	3113 B [18th, 19th].	4382–95		
ICP/AES [14]	200.7 [5]	3120 B [18th, 19th, 20th].			
DCP [14]					Note 34.
8. Beryllium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	210.1	3111 D [18th, 19th].	D3645–93(88)(A)	I–3095–85	
AA furnace	210.2	3113 B [18th, 19th].	D3645–93(88)(B)		
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP, or			D4190–94		Note 34.
Colorimetric (aluminon)		3500–Be D [18th, 19th].			
9. Biochemical oxygen demand (BOD_5), mg/L:					
Dissolved Oxygen Depletion.	405.1	5210 B [18th, 19th, 20th].		1–1578–78 [8]	973.44,[3] p. 17.[9]
10. Boron [37]—Total, mg/L:					
Colorimetric (curcumin)	212.3	4500–B B [18th, 19th 20th].		I–3112–85	

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
ICP/AES, or	200.7 [5] 20th]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP			D4190–94		Note 34.
11. Bromide, mg/L:					
Titrimetric	320.1		D1246–95(C)	I–1125–85	p. S44.[10]
12. Cadmium—Total,[4] mg/L;					
Digestion [4] followed by:					
AA direct aspiration [36]	213.1	3111 B or C [18th, 19th].	D3557–95 (A or B)	I–3135–85 or I–3136–85.	974.27,[3] p. 37.[9]
AA furnace	213.2	3113 B [18th, 19th].	D3557–95(D)	I–4138–89 [44]	
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP [36]			D4190–94		Note 34.
Voltametry,[11] or			D3557–95(C)		
Colorimetric (Dithizone)		3550–Cd D [18th, 19th].			
13. Calcium—Total,[4] mg/L;					
Digestion [4] followed by:					
AA direct aspiration	215.1	3111 B [18th, 19th].	D511–93(B)	I–3152–85	
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP, or					Note 34.
Titrimetric (EDTA)	215.2	3500–Ca B [20th] and 3500–Ca D [19th, 20th].	D551–93(A)		
14. Carbonaceous biochemical oxygen demand ($CBOD_5$), mg/L: [12]					
Dissolved Oxygen Depletion with nitrification inhibitor.		521 B [18th, 19th, 20th].			
15. Chemical oxygen demand (COD), mg/L;					
Titrimetric,	410.1	5220 C [18th, 19th, 20th].	D1252–95(A)	I–3560–85	973.46,[3] p. 17.[9]
or	410.2 410.3			I–3562–85	
Spectrophotometric, manual or automatic.	410.4	5220 D [18th, 19th, 20th].	D1252–95(B)	I–3561–85	Notes 13, 14.
16. Chloride, mg/L:					
Titrimetric (silver nitrate) or		4500–Cl B [18th, 19th, 20th].	D512–89(B)	I–1183–85	
(Mercuric nitrate)	325.3	4500–Cl C [18th, 19th, 20th].	D512–89(A)	I–1184–85	973.51.[3]
Colorimetric, manual or				I–1187–85	
Automated (Ferricyanide)	325.1 or 325.2	4500–Cl E [18th, 19th, 20th].		I–2187–85	
17. Chlorine—Total residual, mg/L; Titrimetric:					
Amperometric direct	330.1	4500–Cl D [18th, 19th, 20th].	D1253–86(92)		
Iodometric direct	330.3	4500–Cl B [18th, 19th, 20th].			
Back titration ether endpoint [15] or.	330.2	4500–Cl C [18th, 19th, 20th].			
DPD–FAS	330.4	4500–Cl F [18th, 19th, 20th].			

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Spectrophotometric, DPD Or Electrode.	330.5	4500–Cl G [18th, 19th, 20th].			Note 16.
18. Chromium VI dissolved, mg/L; 0.45 micron filtration followed by:					
AA chelaation-extraction or	218.4	3111 C [18th, 19th].		I–1232–85	
Colorimetric (Diphenylcarbazide).	.....	3500–Cr B [20th] and. 3500–Cr D [18th, 19th].	D1687–92(A)	I–1230–85D	
19. Chromium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	218.1	3111 B [18th, 19th].	D1687–92(B)	I–3236–85	974.27.[3]
AA chelation-extraction ...	218.3	3111 C [18th, 19th].			
AA furnace	218.2	3113 B [18th, 19th].	D1687–92(C)	I–3233–93 [46]	
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].			
DCP,[36] or	.....	.....	D4190–94		Note 34.
Colorimetric (Diphenylcarbazide).	3500–Cr B [20th and 3500–Cr D [18th, 19th]				
20. Cobalt—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	219.1	3111 B or C [18th, 19th].	D3558–94(A or B)	I–3239–85	p. 37.[9]
AA furnace	219.2	3113 B [18th, 19th].	D3558–94(C)	I–4243–89 [44]	
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP	.....	.....	D4190–94		Note 34.
21. Color platinum cobalt units or dominant wavelength, hue, luminance purity:					
Colorimetric (ADMI), or (Platinum cobalt), or	110.1	2120 E [18th, 19th, 20th].			Note 18.
Spectrophotometric	110.2	2120 B [18th, 19th, 20th].		I–1250–85	
	110.3	2120 C [18th, 19th, 20th].			
22. Copper—Total,[4] mg/L; Digestion4 followed by:					
AA direct aspiration [36]	220.1	3111 B or C [18th, 19th].	D1688–95(A or B)	I–3270–85 or I–3271–85	974.27 [3] p. 37.[9]
AA furnace	220.2	3113 B [18th, 19th].	D1688–95(C)	I–4274–89 [44]	
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [44]	
DCP [36] or	.....	.....	D–4190–94		Note 34.
Colorimetric (Neocuproine) or.	.....	3500–Cu B [20th] and 3500 Cu D [18th, 19th].			
(Bicinchoninate)	.....	3500–Cu C [20th] and 3500–As B [18th, 19th].			Note 19.
23. Cyanide—Total, mg/L:					
Manual distillation with $MgCl^{22}$ followed by.	.....	4500–CN C [18th, 19th, 20th].	D2036–98(A)		

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Titrimetric, or	.....	4500–CN D [18th, 19th, 20th].			p. 22.[9]
Spectrophotometric, manual or.	[31] 335.2	4500–CN E [18th, 19th, 20th].	D2036–98(A).	I–3300–85	
Automated [20]	[31] 335.3	.....		I–4327–85	
24. Cyanide amenable to chlorination, mg/L:					
Manual distillation with $MgCl_2$ followed by titrimetric or Spectrophotometric.	335.1	4500–CN G [18th, 19th, 20th].	D2036–98(B)		
25. Fluoride—Total, mg/L:					
Manual distillation [6] followed by.	.....	4500–F B [18th, 19th, 20th].			
Electrode, manual or	340.2	4500–F C [18th, 19th, 20].	D1179–93(B)		
Automated	.....	.....		I–4327–85	
Colorimetric (SPADNS)	340.1	4500–F D [18th, 19th, 20th].	D1179–93(A)		
Or Automated complexone.	340.3	4500–F E [18th, 19th, 20th].			
26. Gold—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	231.1	3111 B [18th, 19th].			
AA furnace, or DCP	231.2				
.....	.....	.....			Note 34.
27. Hardness—Total, as $CaCO_3$ [23], mg/L					
Automated colorimetric,	130.1				
Titrimetric (EDTA), or Ca plus Mg as their carbonates, by inductively coupled plasma or AA direct aspiration. (See Parameters 13 and 33).	130.2	2340 B or C [18th, 19th, 20th].	D1126–86(92)	I–1338–85	973.52B.[3]
28. Hydrogen ion (pH), pH units					
Electrometric measurement, or Automated electrode.	150.1	4500–H+ B [18th, 19th, 20th].	D1293–84 (90)(A or B)	I–1586–85	973.41.[3]
.....	.....	.....		I–2587–85	Note 21.
29. Iridium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration or AA furnace.	235.1	3111 B [18th, 19th]. 235.2.			
30. Iron—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	236.1	3111 B or C [18th, 19th].	D1068–96(A or B)	I–3381–85	974.27.[3]
AA furnace	236.2	3113 B [18th, 19th].	D1068–96(C) ICP/AES [36]	200.7 [5]	I–4471–97 [50]
DCP [36] or	.....	.....	D4190–94		Note 34.
Colorimetric (Phenanthroline).	.....	3500–Fe B [20th] and 3500–Fe D [18th, 19th].	D1068–96(D)		Note 22.
31. Kjeldahl Nitrogen—Total, (as N), mg/L:					

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Digestion and distillation followed by:.	351.3	4500–N^{2org} B or C and 4500–NH^{23} B [18th, 19th, 20th].	D3590–89(A)		
Titration	351.3	.....	D3590–89(A)		973.48 [3]
Nesslerization	351.3	4500–NH^{23} C [18th].	D3590–89(A)		
Electrode	351.3	4500–NH^{23} C [19th, 20th] and 4500–NH3 E [18th].			
Automated phenate colorimetric.	351.1	4500–NH^{23} D or E [19th, 20th] and 4500–NH^{23} F or G [18th].	I–4551–78 [8]		
Semi-automated block digestor colorimetric.	351.2	.....	D3590–89(B)	I–4515–91 [45]	
Manual or block digestor potentiometric.	351.4	.....	D3590–89(A)		
Block Digester, followed by:					
Auto distillation and Titration, or Nesslerization.	.....	.....		Note 40.	
Flow injection gas diffusion.	973.483	.....			Note 41.
32. Lead—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	239.1	3111 B or C [18th, 19th].	D3559–96(A or B)	I–3399–85	974.27.[3]
AA furnace	239.2	3113 B [18th, 19th].	D3559–96(D)	I–4403–89 [44]	
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–9750	
DCP [36]	.....	.....	D4190–94		Note 34.
Voltametry [11] or	.....	.....	D3559'96(C)		
Colorimetric (Dithizone)	.....	3500–Pb B [20th] and 3500–Pb D [18th, 19th].			
33. Magnesium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	242.1	3111 B [18th, 19th].	D511–93(B)	I–3447–85	974.27.[3]
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP or	.....	.....			Note 34.
Gravimetric	.....	3500–Mg D [18th, 19th].			
34. Manganese—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	243.1	3111 B [18th, 19th].	D858–95(A or B)	I–3454–85	974.27.[3]
AA furnace	243.2	3113 B [18th, 19th].	D858–95(C)		
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP,[36] or	.....	.....	D4190–94		Note 34.
Colorimetric (Persulfate), or.	3500–Mn B [20th] and	3500–Mn D [18th, 19th].			920.203.[3]
(Periodate)	.....	.....			Note 23.
35. Mercury—Total,[4] mg/L:					
Cold vapor, manual or	245.1	3112 B [18th, 19th].	D3223–91	I–3462–85	977.22.[3]
Automated	245.2				

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Oxidation, purge and trap, and cold vapor atomic fluorescence spectrometry (ng/L).	[43] 1631				
36. Molybdenum—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	246.1	3111 D [18th, 19th].		I–3490–85	
AA furnace	246.2	3113 B [18th, 19th].		I–3492–96 [47]	
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP	.....	.....			Note 34.
37. Nickel—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	249.1	3111 B or C [18th, 19th].	D1886–90(A or B)	I–3499–85	
AA furnace	249.2	3113 B [18th, 19th].	D1886–90(C)	I–4503–89 [44]	
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP,[36] or	.....	.....	D4190–94		Note 34.
Colorimetric (heptoxime)	.....	3500–Ni D [17th].			
38. Nitrate (as N), mg/L:					
Colorimetric (Brucine sulfate), or Nitrate-nitrite N minus Nitrite N (See parameters 39 and 40).	352.1	.....			973.50,[3] 419D,[17] p. 28.[9]
39. Nitrate-nitrite (as N), mg/L:					
Cadmium reduction, Manual or.	353.3	4500–NO_3^- E [18th, 19th, 20th].	D3867–99(B)		
Automated, or	353.2	4500–NO_3^- F [18th, 19th, 20th].	D3867–99(A)	I–4545–85	
Automated hydrazine	353.1	4500–NO_3^- H [18th, 19th, 20th].			
40. Nitrite (as N), mg/L; Spectrophotometric:					
Manual or	354.1	4500–NO_2^- B [18th, 19th, 20th].			Note 25.
Automated (Diazotization)	.....	.....		I–4540–85	
41. Oil and grease—Total recoverable, mg/L:					
Gravimetric (extraction) ...	413.1	5520B [18th, 19th, 20th] [38].			
Oil and grease and nonpolar material, mg/L: Hexane extractable material (HEM): n-Hexane extraction and gravimetry [42].	1664A	5520B [18th, 19th, 20th] [39].			
Silica gel treated HEM (SGT–HEM): Silica gel treatment and gravimetry [42].	1664A				
42. Organic carbon—Total (TOC), mg/L:					
Combustion or oxidation	415.1	5310 B, C, or D [18th, 19th, 20th].	D2579–93 (A or B)		973.47,[3] p. 14.[24]
43. Organic nitrogen (as N), mg/L:					

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Total Kjeldahl N (Parameter 31) minus ammonia N (Parameter 4).					
44. Orthophosphate (as P), mg/L; Ascorbic acid method:					
Automated, or	365.1	4500–P F [18th, 19th, 20th].		I–4601–85	973.56.[3]
Manual single reagent	365.2	4500'P E [18th, 19th, 20th].	D515–88(A)		973.55.[3]
Manual two reagent	365.3	.			
45. Osmium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration, or	252.1	3111 D [18th, 19th].			
AA furnace	252.2	.			
46. Oxygen, dissolved, mg/L:					
Winkler (Azide modification), or.	360.2	4500–O C [18th, 19th, 20th].	D888–92(A)	I–1575–78 [8]	973.45B.[3]
Electrode	360.1	4500–O G [18th, 19th, 20th].	D888–92(B)	I–1576–78 [8]	
47. Palladium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration, or	253.1	3111 B [18th, 19th].			p. S27.[10]
AA furnace	253.2				p. S28.[10]
DCP					Note 34.
48. Phenols, mg/L:					
Manual distillation [26]	420.1				Note 27.
Followed by:					
Colorimetric (4AAP) manual, or.	420.1				Note 27.
Automated [19]	420.2				
49. Phosphorus (elemental), mg/L:					
Gas-liquid chromatography.					Note 28.
50. Phosphorus—Total, mg/L:					
Persulfate digestion followed by.	365.2	4500–P B, 5 [18th, 19th, 20th].			973.55.[3]
Manual or	365.2 or 365.3	4500–P E [18th, 19th, 20th].	D515–88(A)		
Automated ascorbic acid reduction.	365.1	4500–P F [18th, 19th, 20th].		1—4600–85	973.56.[3]
Semi-automated block digestor.	365.4		D515–88(B)	I–4610–91 [48]	
51. Platinum—Total,[4] mg/L: Digestion [4] followed by:					
AA direct aspiration	255.1	3111 B [18th, 19th].			
AA furnace	255.2				
DCP					Note 34.
52. Potassium—Total,[4] mg/L: Digestion [4] followed by:					
AA direct aspiration	258.1	3111 B [18th, 19th].		I–3630–85	973.53.3.[3]
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].			

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Flame photometric, or	.....	3500–K B [20th] and 3500–K D [18th, 19th].			
Colorimetric	.....	.....			317 B.[17]
53. Residue—Total, mg/L:					
Gravimetric, 103–105°	160.3	2540 B [18th, 19th, 20th].		I–3750–85	
54. Residue—filterable, mg/L:					
Gravimetric, 180°	160.1	2540 C [18th, 19th, 20th].		I–1750–85	
55. Residue—nonfilterable (TSS), mg/L:					
Gravimetric, 103–105° post washing of residue.	160.2	2540 D [18th, 19th, 20th].		I–3765–85	
56. Residue—settleable, mg/L:					
Volumetric, (Imhoff cone), or gravimetric.	160.5	2540 F [18th, 19th, 20th].			
57. Residue—Volatile, mg/L:					
Gravimetric, 550°	160.4	.....		I–3753–85	
58. Rhodium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration, or ...	265.1	3111 B [18th, 19th].			
AA furnace	265.2				
59. Ruthenium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration, or ...	267.1	3111 B [18th, 19th].			
AA furnace	267.2				
60. Selenium—Total,[4] mg/L; Digestion [4] followed by:					
AA furnace	270.2	3113 B [18th, 19th].	D3859–98(B)	I–4668–98 [49]	
ICP/AES,[36] or	200.7 [5]	3120 B [18th, 19th, 20th].			
AA gaseous hydride	.....	3114 B [18th, 19th].	D3859–98(A)	I—3667–85	
61. Silica [37]—Dissolved, mg/L; 0.45 micron filtration followed by:					
Colorimetric, Manual or ...	370.1	4500–SiO_2 C [20th] and 4500–SiD [18th, 19th].	D859–94	I–1700–85	
Automated (Molybdosilicate), or.	.....	.....		I–2700–85	
ICP	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
62. Silver—Total,[4] mg/L: Digestion [4, 29] followed by:					
AA direct aspiration	272.1	3111 B or C [18th, 19th].		I–3720–85	974.27,[3] p. 37.[9]
AA furnace	272.2	3113 B [18th, 19th].		I–4724–89 [44]	
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP	.....	.....			Note 34.
63. Sodium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	273.1	3111 B [18th, 19th].		I–3735–85	973.54.[3]
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97[50]	
DCP, or	.....	.....			Note 34.

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
Flame photometric	.....	3500 Na B [20th] and 3500 Na D [18th, 19th].			
64. Specific conductance, micromhos/cm at 25° C:					
Wheatstone bridge	120.1	2510 B [18th, 19th, 20th].	D1125–95(A)	I–2781–85	973.40.[3]
65. Sulfate (as SO_4), mg/L:					
Automated colorimetric (barium chloranilate).	375.1				
Gravimetric	375.3	4500–SO_4 $^{-2}$C or D [18th, 19th, 20th].			925.54.[3]
Turbidimetric	375.4	.....	D516–90		426C.[30]
66. Sulfide (as S), mg/L:					
Titrimetric (iodine), or	376.1	4500–S^{-2}F [19th, 20th] or 4500–S^{-2} E [18th].		I–3840–85	
Colorimetric (methylene blue).	376.2	4500–S^{-2}D.			
67. Sulfite (as SO_3), mg/L:					
Titrimetric (iodine-iodate)	377.1	4500–SO_3 $^{-2}$B [18th, 19th, 20th].			
68. Surfactants, mg/L:					
Colorimetric (methylene blue).	425.1	5540 C [18th, 19th, 20th].	D2330–88		
69. Temperature, °C:					
Thermometric	170.1	2550 B [18th, 19th, 20th].			Note 32.
70. Thallium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	279.1	3111 B [18th, 19th.			
AA furnace	279.2				
ICP/AES	200.7 [5]	3120 B [18th, 19th, 20th].			
71. Tin—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	282.1	3111 B [18th, 19th].		I–3850–78 [8]	
AA furnace, or	282.2	3113 B [18th, 19th].			
ICP/AES	200.7 [5]				
72. Titanium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	283.1	3111 D [18th, 19th].			
AA furnace	283.2				
DCP	.....	.....			Note 34.
73. Turbidity, NTU:					
Nephelometric	180.1	2130 B [18th, 19th, 20th].	D1889–94(A)	I–3860–85	
74. Vanadium—Total,[4] mg/L; Digestion [4] followed by:					
AA direct aspiration	286.1	3111 D [18th, 19th].			
AA furnace	286.2	.....	D3373–93		
ICP/AES	200.7 [5]	3120 B[18th, 19th, 20th].		I–4471–97 [50]	
DCP, or	.....	.....	D4190–94		Note 34.
Colorimetric (Gallic Acid)	.....	3500–V B [20th] and 3500–V D [18th, 19th].			

TABLE 1B.—LIST OF APPROVED INORGANIC TEST PROCEDURES—Continued

Parameter, units and method	Reference (method number or page)				
	EPA [1,3,5]	Standard methods [Edition(s)]	ASTM	USGS [2]	Other
75. Zinc—Total,[4], mg/L; Digestion [4] followed by:					
AA direct aspiration [36]	289.1	3111 B or C [18th, 19th].	D1691–95(A or B)	I–3900–85	974.27,[3] p. 37.[9]
AA furnace	289.2				
ICP/AES [36]	200.7 [5]	3120 B [18th, 19th, 20th].		I–4471–97 [50]	
DCP,[36] or	.....	.....	D4190–94		Note 34.
Colorimetric (Dithizone) or.	.....	3500–Zn E [18th, 19th].			
(Zincon)	.....	3500–Zn B [20th] and 3500–Zn F [18th, 19th].			Note 33.

Table 1B Notes:

[1] "Methods for Chemical Analysis of Water and Wastes," Environmental Protection Agency, Environmental Monitoring Systems Laboratory-Cincinnati (EMSL–CI), EPA–600/4–79–020, Revised March 1983 and 1979 where applicable.

[2] Fishman, M.J., et al. "Methods for Analysis of Inorganic Substances in Water and Fluvial Sediments," U.S. Department of the Interior, Techniques of Water—Resource Investigations of the U.S. Geological Survey, Denver, CO, Revised 1989, unless otherwise stated.

[3] "Official Methods of Analysis of the Association of Official Analytical Chemists," methods manual, 15th ed. (1990).

[4] For the determination of total metals the sample is not filtered before processing. A digestion procedure is required to solubilize suspended material and to destroy possible organic-metal complexes. Two digestion procedures are given in "Methods for Chemical Analysis of Water and Wastes, 1979 and 1983". One (Section 4.1.3), is a vigorous digestion using nitric acid. A less vigorous digestion using nitric and hydrochloric acids (Section 4.1.4) is preferred; however, the analyst should be cautioned that this mild digestion may not suffice for all samples types. Particularly, if a colorimetric procedure is to be employed, it is necessary to ensure that all organo-metallic bonds be broken so that the metal is in a reactive state. In those situations, the vigorous digestion is to be preferred making certain that at no time does the sample go to dryness. Samples containing large amounts of organic materials may also benefit by this vigorous digestion, however, vigorous digestion with concentrated nitric acid will convert antimony and tin to insoluble oxides and render them unavailable for analysis. Use of ICP/AES as well as determinations for certain elements such as antimony, arsenic, the noble metals, mercury, selenium, silver, tin, and titanium require a modified sample digestion procedure and in all cases the method write-up should be consulted for specific instructions and/or cautions.

NOTE TO TABLE 1B NOTE 4: If the digestion procedure for direct aspiration AA included in one of the other approved references is different than the above, the EPA procedure must be used.

Dissolved metals are defined as those constituents which will pass through a 0.45 micron membrane filter. Following filtration of the sample, the referenced procedure for total metals must be followed. Sample digestion of the filtrate for dissolved metals (or digestion of the original sample solution for total metals) may be omitted for AA (direct aspiration or graphite furnace) and ICP analyses, provided the sample solution to be analyzed meets the following criteria:

a. has a low COD (<20)

b. is visibly transparent with a turbidity measurement of 1 NTU or less

c. is colorless with no perceptible odor, and

d. is of one liquid phase and free of particulate or suspended matter following acidification.

[5] The full text of Method 200.7, "Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes," is given at Appendix C of this Part 136.

[6] Manual distillation is not required if comparability data on representative effluent samples are on company file to show that this preliminary distillation step is not necessary: however, manual distillation will be required to resolve any controversies.

[7] Ammonia, Automated Electrode Method, Industrial Method Number 379–75 WE, dated February 19, 1976, Bran & Luebbe (Technicon) Auto Analyzer II, Bran & Luebbe Analyzing Technologies, Inc., Elmsford, N.Y. 10523.

[8] The approved method is that cited in "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments", USGS TWRI, Book 5, Chapter A1 (1979).

[9] American National Standard on Photographic Processing Effluents, Apr. 2, 1975. Available from ANSI, 1430 Broadway, New York, NY 10018.

[10] "Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency", Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater (1981).

[11] The use of normal and differential pulse voltage ramps to increase sensitivity and resolution is acceptable.

[12] Carbonaceous biochemical oxygen demand ($CBOD_5$) must not be confused with the traditional BOD_5 test method which measures "total BOD". The addition of the nitrification inhibitor is not a procedural option, but must be included to report the $CBOD_5$ parameter. A discharger whose permit requires reporting the traditional BOD_5 may not use a nitrification inhibitor in the procedure for reporting the results. Only when a discharger's permit specifically states $CBOD_5$ is required can the permittee report data using a nitrification inhibitor.

[13] OIC Chemical Oxygen Demand Method, Oceanography International Corporation, 1978, 512 West Loop, P.O. Box 2980, College Station, TX 77840.

[14] Chemical Oxygen Demand, Method 8000, Hach Handbook of Water Analysis, 1979, Hach Chemical Company, P.O. Box 389, Loveland, CO 80537.

[15] The back titration method will be used to resolve controversy.

[16] Orion Research Instruction Manual, Residual Chlorine Electrode Model 97–70, 1977, Orion Research Incorporated, 840 Memorial Drive, Cambridge, MA 02138. The calibration graph for the Orion residual chlorine method must be derived using a reagent blank and three standard solutions, containing 0.2, 1.0, and 5.0 mL 0.00281 N potassium iodate/100 mL solution, respectively.

[17] The approved method is that cited in Standard Methods for the Examination of Water and Wastewater, 14th Edition, 1976.

[18] National Council of the Paper Industry for Air and Stream Improvement, Inc. Technical Bulletin 253, December 1971.

[19] Copper, Biocinchoinate Method, Method 8506, Hach Handbook of Water Analysis, 1979, Hach Chemical Company, P.O. Box 389, Loveland, CO 80537.

[20] After the manual distillation is completed, the autoanalyzer manifolds in EPA Methods 335.3 (cyanide) or 420.2 (phenols) are simplified by connecting the re-sample line directly to the sampler. When using the manifold setup shown in Method 335.3, the buffer 6.2 should be replaced with the buffer 7.6 found in Method 335.2.

[21] Hydrogen ion (pH) Automated Electrode Method, Industrial Method Number 378–75WA, October 1976, Bran & Luebbe (Technicon) Autoanalyzer II. Bran & Luebbe Analyzing Technologies, Inc., Elmsford, NY 10523.

[22] Iron, 1,10-Phenanthroline Method, Method 8008, 1980, Hach Chemical Company, P.O. Box 389, Loveland, CO 80537.

[23] Manganese, Periodate Oxidation Method, Method 8034, Hach Handbook of Wastewater Analysis, 1979, pages 2–113 and 2–117, Hach Chemical Company, Loveland, CO 80537.

[24] Wershaw, R.L., *et al.*, ''Methods for Analysis of Organic Substances in Water,'' Techniques of Water-Resources Investigation of the U.S. Geological Survey, Book 5, Chapter A3, (1972 Revised 1987) p. 14.

[25] Nitrogen, Nitrite, Method 8507, Hach Chemical Company, P.O. Box 389, Loveland, CO 80537.

[26] Just prior to distillation, adjust the sulfuric-acid-preserved sample to pH 4 with 1 + 9 NaOH.

[27] The approved method is cited in Standard Methods for the Examination of Water and Wastewater, 14th Edition. The colorimetric reaction is conducted at a pH of 10.0±0.2. The approved methods are given on pp 576–81 of the 14th Edition: Method 510A for distillation, Method 510B for the manual colorimetric procedure, or Method 510C for the manual spectrometric procedure.

[28] R.F. Addison and R.G. Ackman, ''Direct Determination of Elemental Phosphorus by Gas-Liquid Chromatography,'' Journal of Chromatography, Vol. 47, No. 3, pp. 421–426, 1970.

[29] Approved methods for the analysis of silver in industrial wastewaters at concentrations of 1 mg/L and above are inadequate where silver exists as an inorganic halide. Silver halides such as the bromide and chloride are relatively insoluble in reagents such as nitric acid but are readily soluble in an aqueous buffer of sodium thiosulfate and sodium hydroxide to pH of 12. Therefore, for levels of silver above 1 mg/L, 20 mL of sample should be diluted to 100 mL by adding 40 mL each of 2 M $Na_2S_2O_3$ and NaOH. Standards should be prepared in the same manner. For levels of silver below 1 mg/L the approved method is satisfactory.

[30] The approved method is that cited in Standard Methods for the Examination of Water and Wastewater, 15th Edition.

[31] EPA Methods 335.2 and 335.3 require the NaOH absorber solution final concentration to be adjusted to 0.25 N before colorimetric determination of total cyanide.

[32] Stevens, H.H., Ficke, J.F., and Smoot, G.F., ''Water Temperature—Influential Factors, Field Measurement and Data Presentation,'' Techniques of Water-Resources Investigations of the U.S. Geological Survey, Book 1, Chapter D1, 1975.

[33] Zinc, Zincon Method, Method 8009, Hach Handbook of Water Analysis, 1979, pages 2–231 and 2–333, Hach Chemical Company, Loveland, CO 80537.

[34] ''Direct Current Plasma (DCP) Optical Emission Spectrometric Method for Trace Elemental Analysis of Water and Wastes, Method AES0029,'' 1986—Revised 1991, Thermo Jarrell Ash Corporation, 27 Forge Parkway, Franklin, MA 02038.

[35] Precision and recovery statements for the atomic absorption direct aspiration and graphite furnace methods, and for the spectrophotometric SDDC method for arsenic are provided in Appendix D of this part titled, ''Precision and Recovery Statements for Methods for Measuring Metals''.

[36] ''Closed Vessel Microwave Digestion of Wastewater Samples for Determination of Metals'', CEM Corporation, P.O. Box 200, Matthews, NC 28106–0200, April 16, 1992. Available from the CEM Corporation.

[37] When determining boron and silica, only plastic, PTFE, or quartz laboratory ware may be used from start until completion of analysis.

[38] Only the Trichlorotrifluorethane (1,1,2-trichloro-1,2,2-trifluoroethane; CFC–113) and *n*-hexane extraction solvents are approved.

[39] Nitrogen, Total Kjeldahl, Method PAI–DK01 (Block Digestion, Steam Distillation, Titrimetric Detection), revised 12/22/94, OI Analytical/ALPKEM, PO Box 9010, College Station, TX 77842.

[40] Nitrogen, Total Kjeldahl, Method PAI–DK02 (Block Digestion, Steam Distillation, Colorimetric Detection), revised 12/22/94, OI Analytical/ALPKEM, PO Box 9010, College Station, TX 77842.

[41] Nitrogen, Total Kjeldahl, Method PAI–DK03 (Block Digestion, Automated FIA Gas Diffusion), revised 12/22/94, OI Analytical/ALPKEM, PO Box 9010, College Station, TX 77842.

[42] Method 1664, Revision A ''n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material (SGT–HEM; Non-polar Material) by Extraction and Gravimetry'' EPA–821–R–98–002, February 1999. Available at NTIS, PB–121949, U.S. Department of Commerce, 5285 Port Royal, Springfield, Virginia 22161.

[43] The application of clean techniques described in EPA's draft Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (EPA–821–R–96–011) are recommended to preclude contamination at low-level, trace metal determinations.

[44] ''Methods of 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 (OFR) 93–125.

[45] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Ammonia Plus Organic Nitrogen by a Kjeldahl Digestion Method'', Open File Report (OFR) 98–xxx.

[46] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Chromium in Water by Graphite Furnace Atomic Absorption Spectrophotometry'', Open File Report (OFR) 93–449.

[47] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Molybdenum by Graphite Furnace Atomic Absorption Spectrophotometry'', Open File Report (OFR) 97–198.

[48] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Total Phosphorus by Kjeldahl Digestion Method and an Automated Colorimetric Finish That Includes Dialysis'' Open File Report (OFR) 92–146.

[49] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Arsenic and Selenium in Water and Sediment by Graphite Furnace-Atomic Absorption Spectrometry'' Open File Report (OFR) 98–639.

[50] ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Elements in Whole-water Digests Using Inductively Coupled Plasma-Optical Emission Spectrometry and Inductively Coupled Plasma-Mass Spectrometry'', Open File Report (OFR) 98–165.

TABLE 1C.—LIST OF APPROVED TEST PROCEDURES FOR NON-PESTICIDE ORGANIC COMPOUNDS

Parameter [1]	EPA method number [2 7]			Other approved methods		
	GC	GC/MS	HPLC	Standard methods [Edition(s)]	ASTM	Other
1. Acenaphthene	610	625, 1625	610	6440 B, 6410 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
2. Acenaphthylene	610	625, 1625	610	6440 B, 6410 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
3. Acrolein	603	604, 1624 [4]				
4. Acrylonitrile	603	624, 1624 [4]	610			
5. Anthracene	610	625, 1625	610	6410 B 6440 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.
6. Benzene	602	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6220 B [18th, 19th].		
7. Benzidine		625, 1625 [5]	605			Note 3, p.1.
8. Benzo(a)anthracene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
9. Benzo(a)pyrene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
10. Benzo(b)fluoranthene	610	625, 1625	610	6410 B 6440 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.
11. Benzo(g, h, i)perylene	610	625, 1625	610	6410 B 6440 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.
12. Benzo(k)fluoranthene	610	625, 1625	610	6410 B 6440 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.

TABLE 1C.—LIST OF APPROVED TEST PROCEDURES FOR NON-PESTICIDE ORGANIC COMPOUNDS—Continued

Parameter [1]	EPA method number [2 7]			Other approved methods		
	GC	GC/MS	HPLC	Standard methods [Edition(s)]	ASTM	Other
13. Benzyl chloride						Note 3, p. 130: Note 6, p. S102.
14. Benzyl butyl phthalate	606	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
15. Bis(2-chloroethoxy)methane.	611	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
16. Bis(2-chloroethyl)ether	611	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
17. Bis(2-ethylhexyl)phthalate.	606	625, 1625		6200 C [20th] and 6230 B [18th, 19th], 6410 B [18th, 19th, 20th].		Note 9, p. 27
18. Bromodichloromethane	601	624, 1624		6200 C [20th] and 6230 B [18th, 19th], 6200 B [20th] and 6210 B [18th, 19th].		
19. Bromoform	601	624, 1624		6200 C [20th] and 6230 B [18th, 19th], 6200 B [20th] and 6210 B [18th, 19th].		
20. Bromomethane	601	624, 1624		6200 C [20th] and 6230 B [18th, 19th], 6200 B [20th] and 6210 B [18th, 19th].		
21. 4-Bromophenylphenyl ether.	611	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
22. Carbon tetrachloride	601	624, 1624		6200 C [20th] and 6230 B [18th, 19th], 6410 B [18th, 19th, 20th].		Note 3, p. 130.
23. 4-Chloro-3-methyl-phenol.	604	625, 1625		6410 B, 6420 B [18th, 19th, 20th].		Note 9, p. 27.
24. Chlorobenzene	601, 602	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6220 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		Note 3, p. 130.
25. Chloroethane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
26. 2-Chloroethylvinyl ether	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th].		
27. Chloroform	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th].		Note 3, p. 130.
28. Chloromethane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th].		
29. 2-Chloronaphthalene	612	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
30. 2-Chlorophenol	604	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
31. 4-Chlorophenylphenl ether.	611	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
32. Chrysene	610	625, 1625	610	6410 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.
33. Dibenzo(a,h)anthracene.	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
34. Dibromochloromethane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th].		
35. 1,2-Dichlorobenzene	601, 602, 612	624, 625, 1625		6200 B [20th] and 6220 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th], 6410 B [18th, 19th, 20th].		Note 9, p. 27.
36. 1,3-Dichlorobenzene	601, 602, 612	624,625, 1625		6200 B [20th] and 6220 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th], 6410 B [18th, 19th, 20th].		Note 9, p. 27.
37. 1,4-Dichlorobenzene	601, 602, 612	624, 625, 1625		6200 B [20th] and 6220 B [18th, 19th], 6200 C [20th] and 6230 B [18th 19th], 6410 B [18th, 19th, 20th].		Note 9, p. 27.
38. 3,3-Dichlorobenzidine		625, 1625	605	6410 B [18th, 19th, 20th]		
39. Dichlorodifuoromethane	601			6200 B [20th] and 6230 B [18th, 19th].		
40. 1,1-Dichloroethane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th].		

TABLE 1C.—LIST OF APPROVED TEST PROCEDURES FOR NON-PESTICIDE ORGANIC COMPOUNDS—Continued

Parameter [1]	EPA method number [2 7]			Other approved methods		
	GC	GC/MS	HPLC	Standard methods [Edition(s)]	ASTM	Other
41. 1,2-Dichloroethane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
42. 1,1-Dichloroethene	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
43. trans 1,2-Dichloroethene.	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
44. 2,4-Dichlorophenol	604	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
45. 1,2-Dichloropropane	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
46. cis-1,3-Dichloropropene	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
47. trans-1,3-Dichloropropene.	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
48. Diethyl phthalate	606	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
49. 2,4-Dimethylphenol	604	625, 1625		6410 B, 6420 B [18th, 19th, 20th].		Note 9, p. 27.
50. Dimethyl phthalate	606	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
51. Di-n-butyl phthalate	606	625, 1625		6410 B [18th, phthalate 19th, 20th].		Note 9, p. 27.
52 Di-n-octyl phthalate	606	625, 1625		6410 B [18th, phthalate 19th, 20th].		Note 9, p. 27.
53. 2,3-Dinitrophenol	604	625, 1625		6410 B, 6420 B [18th, 19th, 20th].		
54. 2,4-Dinitrotoluene	609	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
55. 2,6-Dinitrotoluene	609	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
56. Epichlorohydrin						Note 3, p. 130; Note 6, p. S102.
57. Ethylbenzene	602	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6220 B [18th, 19th].		
58. Fluoranthene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
59. Fluorene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
60. 1,2,3,4,6,7,8-Heptachlorodibenzofuran.		1613				
61. 1,2,3,4,7,8,9-Heptachlorodibenzofuran.		1613				
62. 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin.		1613				
63. Hexachlorobenzene	612	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
64. Hexachlorobutadiene	612	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.
65. Hexachlorocyclopentadiene.	612	625, 1625B [5]		6410 B [18th, 19th, 20th]		Note 9, p. 27.
66. 1,2,3,4,7,8-Hexachlorodibenzofuran.		1613				
67. 1,2,3,6,7,8-Hexachlorodibenzofuran.		1613				
68. 1,2,3,7,8,9-Hexachlorodibenzofuran.		1613				
69. 2,3,4,6,7,8-Hexachlorodibenzofuran.		1613				
70. 1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin.		1613				
71. 1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin.		1613				
72. 1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin.		1613				
73. Hexachloroethane	616	625, 1625		6410 B [18th, 19th, 20th]		Note 9, p. 27.

TABLE 1C.—LIST OF APPROVED TEST PROCEDURES FOR NON-PESTICIDE ORGANIC COMPOUNDS—Continued

Parameter [1]	EPA method number [2 7]			Other approved methods		
	GC	GC/MS	HPLC	Standard methods [Edition(s)]	ASTM	Other
74. Ideno(1,2,3-cd)pyrene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
75. Isophorone	609	625, 1625	.....	6410 B [18th, 19th, 20th]		Note 9, p. 27.
76. Methylene chloride	601	624, 1624	.....	6200 C [18th, 19th, 20th]		Note 3, p. 130.
77. 2-Methyl-4,6-dinitrophenol.	604	625, 1625	.....	6420 B, 6410 B [18th, 19th, 20th].		Note 9, p. 27.
78. Naphthalene	610	625, 1625	610	6440 B, 6410 B [18th, 19th, 20th].		Note 9, p. 27.
79. Nitrobenzene	609	625, 1625	.....	6410 B [18th, 19th, 20th]	D4657–92	Note 9, p. 27.
80. 2-Nitrophenol	604	625, 1625	.....	6410 B, 6420 B [18th, 19th, 20th].		Note 9, p. 27.
81. 4-Nitrophenol	604	625, 1625	.....	6410 B, 6420 B [18th, 19th, 20th].		Note 9, p. 27.
82. N-Nitrosodimethylamine.	607	625, 1625	.....	6410 B [18th, 19th, 20th]		Note 9, p. 27.
83. N-Nitrosodi-n-propyl-amine.	607	625, 1625 [5]	.....	6410 B [18th, 19th, 20th]		Note 9, p. 27.
84. N-Nitrosodiphenylamine.	607	625, 1625 [5]	.....	6410 B [18th, 19th, 20th]		Note 9, p. 27.
85. Octachlorodibenzofuran	.....	1613				
86. Octachlorodibenzo-*p*-dioxin.	.....	1613				
87. 2,2-Oxybis(1-chloropropane).	611	625, 1625	.....	6410 B [18th, 19th, 20th].		
88. PCB–1016	608	625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 43.
89. PCB–1221	608	625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 43.
90. PCB–1232	608	625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 43.
91. PCB–1242	608	625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 43.
92. PCB–1248	608	625	.....	.		
93. PCB–1254	608	625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 43.
94. PCB–1260	608	625	.....	6410 B, 6630 B [18th, 19th, 20th].		Note 3, p. 43.
95. 1,2,3,7,8-Pentachlorodibenzofuran.	.....	1613				
96. 2,3,4,7,8-Pentachlorodibenzofuran.	.....	1613				
97. 1,2,3,7,8,-Pentachlorodibenzo-*p*-dioxin.	.....	1613				
98. Pentachlorophenol	604	625, 1625	.....	6410 B, 6630 B [18th, 19th, 20th].		Note 3, p. 140; Note 9, p. 27.
99. Phenanthrene	610	625, 1625	610	6410 B, 6440 B [18th, 19th, 20th].	D4657–92	Note 9, p. 27.
100. Phenol	604	625, 1625	.....	6420 B, 6410 B [18th, 19th, 20th].		Note 9, p. 27.
101. Pyrene	610	625, 1625	610	6440 B, 6410 B [18th, 19th, 20th].	D4675–92	Note 9, p. 27.
102. 2,3,7,8-Tetrachlorodibenzofuran.	.....	1613				
103. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin.	.....	613, 1613 [5]				
104. 1,1,2,2-Tetrachlooethane.	601	624, 1624	.....	6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		Note 3, p. 130.
105. Tetrachloroethene	601	624, 1624	.....	6200 C [20th] and 6230 B [18th, 19th], 6410 B [18th, 19th, 20th].		Note 3, p. 130.
106. Toluene	602	624. 1624	.....	6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6220 B [18th, 19th].		
107. 1,2,4-Trichlorobenzene.	612	625, 1625	.....	6410 B [18th, 19th, 20th]		Note 3, p. 130; Note 9, p. 27.
108. 1,1,1-Trichloroethane	601	624, 1624	.....	6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
109. 1,1,2-Trichloroethane	601	624, 1624	.....	6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		Note 3, p. 130.

TABLE 1C.—LIST OF APPROVED TEST PROCEDURES FOR NON-PESTICIDE ORGANIC COMPOUNDS—Continued

Parameter [1]	EPA method number [2 7]			Other approved methods		
	GC	GC/MS	HPLC	Standard methods [Edition(s)]	ASTM	Other
110. Trichloroethene	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
111. Trichlorofluoromethane	601	624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		
112. 2,4,6-Trichlorophenol	604	625, 1625		6420 B, 6410 B [18th, 19th, 20th].		Note 9, p. 27.
113. Vinyl chloride	601	624, 1624		6200 B [20th] and 6210 B [18th, 19th], 6200 C [20th] and 6230 B [18th, 19th].		

Table IC notes:

[1] All parameters are expressed in micrograms per liter (μg/L) except for Method 1613 in which the parameters are expressed in picograms per liter (pg/L).

[2] The full text of Methods 601–613, 624, 625, 1624, and 1625, are given at Appendix A, ''Test Procedures for Analysis of Organic Pollutants,'' of this Part 136. The full text of Method 1613 is incorporated by reference into this Part 136 and is available from the National Technical Information Services as stock number PB95–104774. The standardized test procedure to be used to determine the method detection limit (MDL) for these test procedures is given at Appendix B, ''Definition and Procedure for the Determination of the Method Detection Limit,'' of this Part 136.

[3] ''Methods for Benzidine: Chlorinated Organic Compounds, Pentachlorophenol and Pesticides in Water and Wastewater,'' U.S. Environmental Protection Agency, September, 1978.

[4] Method 624 may be extended to screen samples for Acrolein and Acrylonitrile. However, when they are known to be present, the preferred method for these two compounds is Method 603 or Method 1624.

[5] Method 625 may be extended to include benzidine, hexachlorocyclopentadiene, N-nitrosodimethylamine, and N-nitrosodiphenylamine. However, when they are known to be present, Methods 605, 607, and 612, or Method 1625, are preferred methods for these compounds.

[5a] 625, Screening only.

[6] ''Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency,'' Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater (1981).

[7] Each Analyst must make an initial, one-time demonstration of their ability to generate acceptable precision and accuracy with Methods 601–603, 624, 625, 1624, and 1625 (See Appendix A of this Part 136) in accordance with procedures each in Section 8.2 of each of these Methods. Additionally, each laboratory, on an on-going basis must spike and analyze 10% (5% for Methods 624 and 625 and 100% for methods 1624 and 1625) of all samples to monitor and evaluate laboratory data quality in accordance with Sections 8.3 and 8.4 of these Methods. When the recovery of any parameter falls outside the warning limits, the analytical results for that parameter in the unspiked sample are suspect and cannot be reported to demonstrate regulatory compliance.

Note: These warning limits are promulgated as an ''interim final action with a request for comments.''

[8] ''Organochlorine Pesticides and PCBs in Wastewater Using Empore TM Disk'' 3M Corporation Revised 10/28/94.

[9] USGS Method 0–3116–87 from ''Methods of Analysis by U.S. Geological Survey National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments'' U.S. Geological Survey, Open File Report 93–125.

TABLE 1D.—LIST OF APPROVED TEST PROCEDURES FOR PESTICIDES [1]

Parameter	Method	EPA [2 7]	Standard methods 18th, 19th, 20th Ed.	ASTM	Other
1. Aldrin	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; note 8.
	GC/MS	625	6410 B		
2. Ametryn	GC				Note 3, p. 83; Note 6, p S68.
3. Aminocarb	TLC				Note 3, p. 94; Note 6, p. S16.
4. Atraton	GC				Note 3, p. 83; Note 6, p. S68.
5. Atrazine	GC				Note 3, p. 83; Note 6, p. S68; Note 9.
6. Azinphos methyl	GC				Note 3, p. 25; Note 6, p. S51.
7. Barban	TLC				Note 3, p. 104; Note 6, p. S64.
8. α-BHC	GC	608	6630 B & C	3086–90	Note 3, p. 7; Note 8.
	GC/MS	625 [5]	6410 B		
9. β-BHC	GC	608	6630 C	D3086–90	Note 8.
	GC/MS	625 [5]	6410 B		
10. δ-BHC	GC	608	6630 C	D3086–90	Note 8.
	GC/MS	625 [5]	6410 B		
11. δ-BHC (Lindane)	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
12. Captan	GC		6630 B	D3086–90	Note 3, p. 7.
13. Carbaryl	TLC				Note 3, p. 94, Note 6, p. S60.
14. Carbophenothion	GC				Note 4, p. 27; Note 6, p. S73.
15. Chlordane	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
16. Chloropropham	TLC				Note 3, p. 104; Note 6, p. S64.
17. 2,4-D	GC		6640 B		Note 3, p. 115; Note 4, p. 40.
18. 4,4′-DDD	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
19. 4,4′-DDE	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
20. 4,4′-DDT	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.

TABLE 1D.—LIST OF APPROVED TEST PROCEDURES FOR PESTICIDES [1]—Continued

Parameter	Method	EPA [2 7]	Standard methods 18th, 19th, 20th Ed.	ASTM	Other
	GC/MS	625	6410 B		
21. Demeton-O	GC				Note 3, p. 25; Note 6, p. S51.
22. Demeton-S	GC				Note 3, p. 25; Note 6, p. S51.
23. Diazinon	GC				Note 3, p. 25; Note 4, p. 27; Note 6, p. S51.
24. Dicamba	GC				Note 3, p. 115.
25. Dichlofenthion	GC				Note 4, p. 27; Note 6, p. S73.
26. Dichloran	GC		6630 B & C		Note 3, p. 7.
27. Dicofol	GC			D3086–90	
28. Dieldrin	GC	608	6630 B & C		Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
29. Dioxathion	GC				Note 4, p. 27; Note 6, p. S73.
30. Disulfoton	GC				Note 3, p. 25; Note 6 p. S51.
31. Diuron	TLC				Note 3, p. 104; Note 6, p. S64.
32. Endosulfan I	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625 [5]	6410 B		
33. Endosulfan II	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 8.
	GC/MS	625 [5]	6410 B		
34. Endosulfan Sulfate	GC	608	6630 C		Note 8.
	GC/MS	625	6410 B		
35. Endrin	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625 [5]	6410 B		
36. Endrin aldehyde	GC	608			Note 8.
	GC/MS	625			
37. Ethion	GC				Note 4, p. 27; Note 6, p. S73.
38. Fenuron	TLC				Note 3, p. 104; Note 6, p. S64.
39. Fenuron-TCA	TLC				Note 3, p. 104; Note 6, p. S64.
40. Heptachlor	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410 B		
41. Heptachlor epoxide	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 6, p. S73; Note 8.
	GC/MS	625	6410 B		
42. Isodrin	GC				Note 4, p. 27; Note 6, p. S73.
43. Linuron	GC				Note 3, p. 104; Note 6, p. S64.
44. Malathion	GC		6630 C		Note 3, p. 25; Note 4, p. 27; Note 6, p. S51.
45. Methiocarb	TLC				Note 3, p. 94; Note 6, p. S60.
46. Methoxychlor	GC		6630 B &C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
47. Mexacarbate	TLC				Note 3, p. 94; Note 6, p.S60.
48. Mirex	GC		6630 B & C		Note 3, p. 7; Note 4, p. 27.
49. Monuron	TLC				Note 3, p. 104; Note 6, p. S64.
50. Monuron	TLC				Note 3, p. 104; Note 6, p. S64.
51. Nuburon	TLC				Note 3, p. 104; Note 6, p. S64.
52. Parathion methyl	GC		6630 C		Note 3, p. 25; Note 4, p. 27.
53. Parathion ethyl	GC		6630 C		Note 3, p. 25; Note 4, p. 27.
54. PCNB	GC		6630 B & C		Note 3, p. 7.
55. Perthane	GC			D3086–90	Note 4, p. 27.
56. Prometron	GC				Note 3, p. 83; Note 6, p. S68; Note 9.
57. Prometryn	GC				Note 3, p. 83; Note 6, p. S68; Note 9.
58. Propazine	GC				Note 3, p. 83; Note 6, p. S68; Note 9.
59. Propham	TLC				Note 3, p. 104; Note 6, p. S64.
60. Propoxur	TLC				Note 3, p. 94; Note 6, p. S60.
61. Secbumeton	TLC				Note 3, p. 83; Note 6, p. S68.
62. Siduron	TLC				Note 3, p. 104; Note 6, p. S64.
63. Simazine	GC				Note 3, p. 83; Note 6, p. S68; Note 9.
64. Strobane	GC		6630 B & C		Note 3, p. 7.
65. Swep	TLC				Note 3, p. 104; Note 6, p. S64.
66. 2,4,5-T	GC		6640 B		Note 3, p. 115; Note 4, p. 40.
67. 2,4,5-TP (Silvex)	GC		6640 B		Note 3, p. 115; Note 4, p. 40.
68. Terbuthylazine	GC				Note 3, p. 83; Note 6, p. S68.
69. Toxaphene	GC	608	6630 B & C	D3086–90	Note 3, p. 7; Note 4, p. 27; Note 8.
	GC/MS	625	6410B		
70. Trifluralin	GC		6630 B		Note 3, p. 7; Note 9.

Table ID notes:

[1] Pesticides are listed in this table by common name for the convenience of the reader. Additional pesticides may be found under Table 1C, where entries are listed by chemical name.

[2] The full text of Methods 608 and 625 are given at Appendix A. ''Test Procedures for Analysis of Organic Pollutants,'' of this Part 136. The standardized test procedure to be used to determine the method detection limit (MDL) for these test procedures is given at Appendix B, ''Definition and Procedure for the Determination of the Method Detection Limit,'' of this Part 136.

[3] ''Methods for Benzidine, Chlorinated Organic Compounds, Pentachlorophenol and Pesticides in Water and Wastewater,'' U.S. Environmental Protection Agency, September 1978. This EPA publication includes thin-layer chromatography (TLC) methods.

[4] ''Methods for Analysis of Organic Substances in Water and Fluvial Sediments,'' Techniques of Water-Resources Investigations of the U.S. Geological Survey, Book 5, Chapter A3 (1987).

[5] The method may be extended to include α-BHC, ι-BHC, endosulfan I, endosulfan II, and endrin. However, when they are known to exist, Method 608 is the preferred method.

[6] ''Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency.'' Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater (1981).

[7] Each analyst must make an initial, one-time, demonstration of their ability to generate acceptable precision and accuracy with Methods 608 and 625 (See Appendix A of this Part 136) in accordance with procedures given in Section 8.2 of each of these methods. Additionally, each laboratory, on an on-going basis, must spike and analyze 10% of all samples analyzed with Method 608 or 5% of all samples analyzed with Method 625 to monitor and evaluate laboratory data quality in accordance with Sections 8.3 and 8.4 of these methods. When the recovery of any parameter falls outside the warning limits, the analytical results for that parameter in the unspiked sample are suspect and cannot be reported to demonstrate regulatory compliance. These quality control requirements also apply to the Standard Methods, ASTM Methods, and other Methods cited.

Note: These warning limits are promulgated as an ''Interim final action with a request for comments.''

[8] ''Organochlorine Pesticides and PCBs in Wastewater Using Empore™ Disk'', 3M Corporation, Revised 10/28/94.

[9] USGS Method 0—3106—93 from ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Triazine and Other Nitrogen-containing Compounds by Gas Chromatography with Nitrogen Phosphorus Detectors' U.S.Geological Survey Open File Report 94–37

TABLE 1E.—LIST OF APPROVED RADIOLOGIC TEST PROCEDURES

Parameter and units	Method	Reference (method number or page)			
		EPA [1]	Standard methods 18th, 19th, 20th Ed.	ASTM	USGS [2]
1. Alpha-Total, pCi per liter	Proportional or scintillation counter.	900	7110 B	D1943–90.	pp. 75 and 78.[3]
2. Alpha-Counting error, pCi per liter.	Proportional or scintillation counter.	Appendix B	7110 B	D1943–90	p. 79.
3. Beta-Total, pCi per liter	Proportional counter	900.0	7110 B	D1890–90	pp. 75 and 78.[3]
4. Beta-Counting error, pCi	Proportional counter	Appendix B	7110 B	D1890–90	p. 79.
5. (a) Radium Total pCi per liter.	Proportional counter	903.0	7500Ra B	D2460–90	
(b) Ra, pCi per liter	Scintillation counter	903.1	7500Ra C	D3454–91	p. 81.

Table 1E notes:

[1] Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA–600/4–80–032 (1980), U.S. Environmental Protection Agency, August 1980.

[2] Fishman, M.J. and Brown, Eugene, ''Selected Methods of the U.S. Geological Survey of Analysis of Wastewaters,'' U.S. Geological Survey, Open-File Report 76–177 (1976).

[3] The method found on p. 75 measures only the dissolved portion while the method on p. 78 measures only the suspended portion. Therefore, the two results must be added to obtain the ''total''.

* * * * *

(b) * * *

References, Sources, Costs, and Table Citations

* * * * *

(6) American Public Health Association. 1992, 1995, and 1998. Standard Methods for the Examination of Water and Wastewater. 18th, 19th, and 20th Edition (respectively). Amer. Publ. Hlth. Assoc., 1015 15th Street NW., Washington, DC 20005. Table IA, Note 4. Tables IB, IC, ID, IE.

* * * * *

(10) Annual Book of ASTM Standards, Water, and Environmental Technology, Section 11, Volumes 11.01 and 11.02, 1994 and 1999 in 40 CFR 136.3, Tables IB, IC, ID, and IE.

* * * * *

(42) USEPA, January 1999 Errata for the Effluent and Receiving Water Testing Manuals: Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms; Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. U.S. Environmental Protection Agency, Office of Research and Development, Duluth, MN. EPA–600/R–98–182.

(43) ''Methods of 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 (OFR) 93–125. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 44; Table IC, Note 9.

(44) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Ammonium Plus Organic Nitrogen by a Kjeldahl Digestion Method and an Automated Photmetric Finish that Includes Digest Cleanup by Gas Diffusion'', Open File Report (OFR) 00–170. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 45.

(45) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Chromium in Water by Graphite Furnace Atomic Absorption Spectrometry'', Open File Report (OFR) 93–449. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 46.

(46) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Molybdenum by Graphite Furnace Atomic Absorption Spectrophotometry'', Open File Report (OFR) 97–198. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 47.

(47) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Total Phosphorus by Kjeldahl Digestion Method and an Automated Colorimetric Finish That Includes Dialysis'' Open File Report (OFR) 92–146. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 48.

(48) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Arsenic and Selenium in Water and Sediments by Graphite Furnace-Atomic Absorption Spectrometry'' Open File Report (OFR) 98–639. Table IB, Note 49.

(49) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Elements in Whole-water Digests Using Inductively Coupled Plasma-Optical Emission Spectrometry and Inductively Coupled Plasma-Mass Spectrometry'', Open File Report (OFR) 98–165. Available from: U.S. Geological Survey, Denver Federal Center, Box 25425, Denver, CO 80225. Table IB, Note 50.

(50) ''Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Triazine and Other Nitrogen-containing Compounds by Gas Chromatography with Nitrogen Phosphorus Detectors'' U.S.Geological Survey Open File Report 94–37. Available from: U.S. Geological Survey, Denver Federal

Center, Box 25425, Denver, CO 80225. Table ID, Note 9.

(c) * * *

(d) * * *

(e) * * *

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

1. The authority citation for Part 141 continues to read as follows:

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.

2. Section 141.21 is amended by revising footnote 1 to the table in paragraph (f)(3) to read as follows:

§ 141.21 Coliform sampling.

* * * * *

(f) * * *

(3) * * *

[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.

* * * * *

3. Section 141.23 is amended by revising the table to read as follows:

§ 141.23 Inorganic chemical sampling and analytical requirements.

* * * * *

(k) * * *

(l) * * *

Contaminant	Methodology [1,3]	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.	200.8 [2]				
	Spectrometry					
	Hydride-Atomic Absorption		D3697–92			
	Atomic Absorption; Platform	200.9 [2]				
	Atomic Absorption; Furnance			3113 B		
3. Arsenic [4]	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		D2972–97C	3113 B		
	Hydride Atomic Absorption		D2972–97B	3114 B		
4. Asbestos	Transmission Electron Microscopy.	100.1 [9]				
	Transmission Electron Microscopy.	100.2 [10]				
5. Barium	Inductively Coupled Plasma	200.7 [2]		3120 B	3120B	
	ICP-Mass Spectrometry	200.8 [2]				
	Atomic Absorption; Direct			3111 D		
	Atomic Absorption; Furnace			3113 B		
6. Berylium	Inductively Coupled Plasma	200.7 [2]		3120 B	3120B	
	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	
	Atomic Absorption; Direct Aspiration.		D511–93B	3111 B		
	Inductively Coupled Plasma	200.7 [2]		3120 B	3120 B	
9. Chromium	Inductively Coupled	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. Conductance	Conductivity		D1125–95A	2510 B	2510 B	
12. Cyanide	Manual Distillation followed by		D2036–98A	4500–CN^- C	4500–CN^- C	
	Spectrophotometric, Amenable		D2036–98B	4500–CN^- G	4500–CN^- G	
	Spectrophotometric Manual		D2036–98A	4500–CN^- E	4500–CN^- E	I–3300–85 [5]
	Spectrophotometric Semi-automated.	335.4 [6]				
Selective Electrode		4500–CN– F	D4500–CN- F			
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^-	129–71W [11]
14. Lead	Atomic Absorption; Furnace		D3559–96D	3113 B		

Contaminant	Methodology [1,3]	EPA	ASTM [3]	SM [4] (18th, 19th ed.)	SM [4] (20th, ed.)	Other
	ICP-Mass spectrometry	200.8 [2]				
	Atomic Absorption; Platform	200.9 [2]				
	Differential Pulse Anodic Stripping Voltammetry.					Method 1001 [15]
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 [8]
	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	Ion Chromatography	300.0 [6]	D4327–97	4110 B	4110 B	B–1011 [8]
	Automated Cadmium Reduction.	353.2 [6]	D3867–90A	4500–NO_3– F	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	
	Colorimetric, ascorbic acid, single reagent.		D515–88A	4500–P E	4500–P E	
	Colorimetric Phosphomolybdate.					[5] I–1601–85
	Automated-segmented Flow					[5] I–2601–90
	Automated Discrete					[5] I–2598–85
	Ion Chromatography	300.0 [6]	D4327–97	4110 B	4110 B	
21. pH	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;					[5] I–1700–85
	Automated-segmented Flow					[5] I–2700–85
	Colorimetric		D859–94			
	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]				

[1] ''Methods for Chemical Analysis of Water and Wastes'', EPA/600/4–79/020, March 1983. Available at NTIS, PB84–128677.

[2] ''Methods for the Determination of Metals in Environmental Samples—Supplement I'', EPA/600/R–94/111, May 1994. Available at NTIS, PB95–125472.

[3] *Annual Book of ASTM Standards,* 1994, 1996, or 1999, Vols. 11.01 and 11.02, American Society for Testing and Materials; 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 the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

[4] 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, except that the versions of 3111 B, 3111 D, 3113 B and 3114 B in the 20th edition may not be used.

[5] Method 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 Sediments, 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.

[6] ''Methods for the Determination of Inorganic Substances in Environmental Samples'', EPA/600/R–93/100, August 1993. Available at NTIS, PB94–120821.

[7] The 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.

[8] Method 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.

[9] Method 100.1, ''Analytical Method For Determination of Asbestos Fibers in Water'', EPA/600/4–83/043, EPA, September 1983. Available at NTIS, PB83–260471.

[10] 10 Method 100.2, ''Determination of Asbestos Structure Over 10-μm In Length In Drinking Water'', EPA/600/R–94/134, June 1994. Available at NTIS, PB94–201902.

[11] Industrial 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.

[12] Unfiltered, no digestion or hydrolysis.

[13] Because 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.

[14] If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or SM 3120 B, the arsenic must be in the pentavalent state to provide uniform signal response. For methods 200.7 and 3120 B, both samples and standards must be diluted in the same mixed acid matrix concentration of nitric and hydrochloric acid with the addition of 100 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.

[15] The 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 8053.

4. Section 141.24 is amended by revising the 11th, 12th and last sentences in paragraph (e)(1), before the Table, to read as follows:

§ 141.24 Organic chemicals, sampling and analytical requirements.

* * * * *

(e) * * *

(1) * * * Method 6651 shall be followed in accordance with Standard Methods for the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), or 20th edition (1998), American Public Health Association (APHA); any of these three editions may be used. Method 6610 shall be followed in accordance with Standard Methods for the Examination of Water and Wastewater, (18th Edition Supplement) (1994), or with the 19th edition (1995) or 20th edition (1998) of Standard Methods for the Examination of Water and Wastewater; any of these three editions may be used. * * * ASTM Method D 5317–93 is available in the *Annual Book of ASTM Standards* (1999), Vol. 11.02, American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428, or in any edition published after 1993.

* * * * *

5. Section 141.25 is amended by revising the Table in paragraph (a) to read as follows:

§ 141.25 Analytical methods for radioactivity.

(a) * * *

Contaminant	Methodology	Reference (method or page number)								
		EPA [1]	EPA [2]	EPA [3]	EPA [4]	SM [5]	ASTM [6]	USGS [7]	DOE [8]	Other
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	.....		00–02		7110 C				
Radium 226.	Radon emanation,	903.1	p 16	Ra–04	p 19	7500–Ra C	D 3454–97	R–1141–76	Ra–04	N.Y.[9]
	Radiochemical	903.0	p 13	Ra–03		304, 305, 7500–Ra B	D 2460–97	R–1140–76		
Radium 228.	Radiochemical	904.0	p 24	Ra–05	p 19	7500–Ra D		R–1142–76		N.Y.[9]
	.....	.....								N.J.[10]
Uranium[12]	Radiochemical	908.0				7500–U B				
	Fluorometric	908.1				7500–U C (17th Ed.)	D2907–97	R–1180–76	U–04	
	.....	.....						R–1181–76		
	Alpha spectrometry	.....		00–07	p 33	7500–U C (18th, 19th or 20th Ed	D 3972–97	R–1182–76	U–02	
	Laser Phosphorimetry	.....					D 5174–97			
Man-made:										
Radioactive cesium.	Radiochemical	901.0	p 4			7500–Cs B	D 2459–72	R–1111–76		
	Gamma ray spectrometry.	901.1			p 92	7120	D 3649–91	R–1110–76	4.5.2.3	
Radioactive iodine.	Radiochemical	902.0	p 6			7500–I B				
	.....	.....	p 9			7500–I C				
	Gamma ray	.....				7500–I D	D 3649–91			
	spectrometry	901.1			p 92	7120	D 4785–93		4.5.2.3	
Radioactive	Radiochemical	905.0	p 29	Sr–04	p. 65	303, 7500–Sr B		R–1160–76	Sr–01	
Strontium 89, 90.	.....	.....							Sr–02	

Contaminant	Methodology	Reference (method or page number)								
		EPA [1]	EPA [2]	EPA [3]	EPA [4]	SM [5]	ASTM [6]	USGS [7]	DOE [8]	Other
Tritium	Liquid scintillation	906.0	p 34	H–02	p. 87	306, 7500–3H B	D 4107–91	R–1171–76		
Gamma emitters.	Gamma ray	901.1			p 92	7120	D 3649–91	R–1110–76	Ga–01–R	
	Spectrometry	902.0				7500–Cs B	D 4785–93			
	.....	901.0				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. 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 Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

[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 80–224744.

[2] ''Interim Radiochemical Methodology for Drinking Water'', EPA 600/4–75–008(revised), March 1976. Available NTIS, ibid. PB 253258.

[3] ''Radiochemistry Procedures Manual'', EPA 520/5–84–006, December, 1987. Available 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, 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, 7110C, 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 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.

[6] *Annual Book of ASTM Standards,* Vol. 11.02, 1999; American Society for Testing and Materials; any year containing the cited version of the method may be used. Copies may be obtained from the American Society for Testing and Materials, 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, Volume I and Volume II; 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. 4.5.4.3. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 376 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.

[11] Natural 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.

[12] In 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 ration of U–234 and U–238 that is characteristic of naturally occurring uranium..

6. Section 141.74 is amended by revising the footnote 1 to the Table in paragraph (a)(1) and by revising the first three sentences of paragraph (a)(2) to read as follows:

§ 141.74 Analytical and monitoring requirements.

(a) * * *

(1) * * *

[1] Except 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.

* * * * *

(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–O_3 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. * * *

* * * * *

PART 143—NATIONAL SECONDARY DRINKING WATER REGULATIONS

1. The authority citation for Part 143 continues to read as follows:

Authority: 42 U.S.C. 300f *et seq.*

2. Section 143.4 is amended by revising the Table in paragraph (b) to read as follows:

§ 143.4 Monitoring.

* * * * *

(b) * * *

Contaminant	EPA	ASTM [3]	SM [4] 18th and 19th ed.	SM [4] 20th ed.	Other
1. Aluminum	[2] 200.7		3120 B	3120 B	
	[2] 200.8		3113 B		
	[2] 200.9		3111 D		
2. Chloride	[1] 300.0	D4327–97	4110 B	4110 B	
	.....		4500–Cl^- D	4500–Cl^- D	
	.....	D512–89B	4500–Cl^- B	4500–Cl^- B	
3. Color	.....		2120 B	2120 B	
4. Foaming Agents	.....		5540 C	5540 C	
5. Iron	[2] 200.7		3120 B	3120 B	

Contaminant	EPA	ASTM [3]	SM [4] 18th and 19th ed.	SM [4] 20th ed.	Other
	[2] 200.9		3111 B		
	.....		3113 B		
6. Manganese	[2] 200.7		3120 B	3120 B	
	[2] 200.8		3111 B		
	[2] 200.9		3113 B		
7. Odor	.....		2150 B	2150 B	
8. Silver	[2] 200.7		3120 B	3120 B	[5] I–3720–85
	[2] 200.8		3111 B		
	[2] 200.9		3113 B		
9. Sulfate	[1] 300.0	D4327–97	4110 B	4110 B	
	[1] 375.2		4500–SO_4^{2-} F	4500–SO_4^{2-} F	
	.....		4500–SO_4^{2-} C, D	4500–SO_4^{2-} C, D	
	.....	D516–90	4500–SO_4^{2-} E	4500–SO_4^{2-} E	
10. Total Dissolved Solids	.....		2540 C	2540 C	
11. Zinc	[2] 200.7		3120 B	3120 B	
	[2] 200.8		3111 B		

[1] ''Methods for the Determination of Inorganic Substances in Environmental Samples'', EPA/600/R–93–100, August 1993. Available at NTIS, PB94–120821.

[2] ''Methods for the Determination of Metals in Environmental Samples—Supplement I'', EPA/600/R–94–111, May 1994. Available at NTIS, PB 95–125472.

[3] *Annual Book of ASTM Standards,* 1994, 1996, or 1999, Vols. 11.01 and 11.02, American Society for Testing and Materials; any year containing the cited version of the method may be used. Copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

[4] *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, except that the versions of 3111 B, 3111 D, and 3113 B in the 20th edition may not be used.

[5] Method 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.

[FR Doc. 01–178 Filed 1–12–01; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Parts 411, 413, and 489

[HCFA–1112–CN]

RIN 0938–AJ93

Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities—Update; Correction

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Correction notice.

SUMMARY: This document corrects technical errors that appeared in the final rule published in the **Federal Register** on July 31, 2000 entitled, ''Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities—Update.''

EFFECTIVE DATE: This correction is effective October 1, 2000, except for certain wage index corrections that are effective December 1, 2000.

FOR FURTHER INFORMATION CONTACT: Bill Ullman (410) 786–5667 or Susan Burris (410) 786–6655.

SUPPLEMENTARY INFORMATION:

Background

In the July 31, 2000 final rule entitled, ''Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities'' (FR Doc. 00–19004, July 31, 2000), there were several technical errors in the preamble.

In the first column of Tables 3 through 6 of the preamble there was a typographical error. We are correcting the heading of the column from ''RUG IV category'' to ''RUG III category.''

We are also correcting several SNF PPS wage index values as published in Tables 7 and 8. Specifically, effective October 1, 2000, in Table 7, the wage index value for the Allentown-Bethlehem-Easton, PA MSA (area 0240) is corrected from 1.0040 to 0.9925 and the wage index value for the Kansas City, KS–MO MSA (area 3760) is corrected from 0.9498 to 0.9509.

Effective December 1, 2000, in Table 7, the wage index value for the Alexandria, LA MSA (area 0220) is corrected from 0.8151 to 0.8123, the wage index value for the Kansas City, KS–MO MSA (area 3760) is corrected again from 0.9509 (as corrected in the previous paragraph) to 0.9527, and, in Table 8, the wage index value for rural LA (area 19) is corrected from 0.7668 to 0.7681.

In accordance with our longstanding policies, these technical and tabulation errors are being corrected prospectively, effective on the dates noted above. This correction notice conforms the published SNF PPS wage index values to the prospectively revised values.

We are also taking this opportunity to provide a correction regarding the applicable time period to which a special market basket inflation factor is to be applied for certain providers that participated in the Multistate Nursing Home Case-Mix and Quality Demonstration (NHCMQD), the demonstration project that served as the forerunner to the national skilled nursing facility (SNF) prospective payment system (PPS). In the May 12, 1998 SNF PPS interim final rule (63 FR 26288), we explained that for those providers that received payment under the NHCMQD during a cost reporting period that began in calendar year 1997, we derived a special market basket index inflation factor of 1.031532. We used this factor to adjust the 1997 costs to the midpoint of the rate setting period in calculating their facility-specific rate. The May 1998 interim final rule indicated that the initial rate setting period (which applied to those providers beginning their *first* cost reporting period under the SNF PPS) encompassed the 15-month period from July 1, 1998, to September 30, 1999.

Under the statute's phased transition from facility-specific to full Federal rates, this inflation factor was to be successively updated for the second and third cost reporting periods under the SNF PPS. However, for demonstration providers beginning their *second* cost reporting period under the SNF PPS, the