

Analytical Methods Approved for Drinking Water Compliance Monitoring under the Disinfection Byproduct Rules

Analysis for the following disinfectants, contaminants and other parameters shall be conducted in accordance with the methods in the following table, or their equivalent as determined by EPA. The methods are specified in 40 CFR 141.131 and in Appendix A to Subpart C of Part 141. The monitoring requirements are specified in 40 CFR 141.132, 141.135, 141.600-141.603, and 141.620-141.268. The CFR is the legal reference for approved methods and takes precedence over this table. The table should accurately reflect the analytical methods information published in 40 CFR 141.

Disinfectants:

If approved by the State, residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide may be measured using DPD colorimetric test kits.

Chlorine Dioxide

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
327, Rev. 1.1	EPA	Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrometry	May 2005	EPA-815-R-05-008	EPA-815-R-05-008
ChlordioX Plus	Palintest, Ltd.	Palintest ChlordioX Plus Method – Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors	November 2013		<u>ChlordioX Plus</u>
4500-ClO ₂ D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-ClO ₂ D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-CIO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-CIO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods

Office of Water (MS – 4606 M) EPA 815-B-19-001 April 2019

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-ClO₂ E- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

Combined Chlorine

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D1253-86	ASTM International	Standard Test Method for Residual Chlorine in Water	1986		ASTM International
D1253-03	ASTM International	Standard Test Method for Residual Chlorine in Water	2003		ASTM International
D1253-08	ASTM International	Standard Test Method for Residual Chlorine in Water	2008		ASTM International
D1253-14	ASTM International	Standard Test Method for Residual Chlorine in Water	2014		ASTM International
Hach 10260, Rev. 1.0	Hach Company	Determination of Chlorinated Oxidants (Free and Total) in Water using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry	April 2013		Hach 10260, Rev. 1.0
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		<u>Standard Methods</u>

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-CI D- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl F-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl G- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		<u>Standard Methods</u>

Free Chlorine						
	Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
	D99-003	Industrial Test Systems, Inc.	Free Chlorine Species (HOCl and OCl) by Test Strip	November 2003		Method D99-003
	D1253-86	ASTM International	Standard Test Method for Residual Chlorine in Water	1986		ASTM International
	D1253-03	ASTM International	Standard Test Method for Residual Chlorine in Water	2003		ASTM International
	D1253-08	ASTM International	Standard Test Method for Residual Chlorine in Water	2008		ASTM International
	D1253-14	ASTM International	Standard Test Method for Residual Chlorine in Water	2014		ASTM International
	334.0	EPA	Determination of Residual Chlorine in Drinking Water using an On-line Chlorine Analyzer	September 2009	EPA 815-B-09-013	EPA 815-B-09-013
	Hach 10260, Rev. 1.0	Hach Company	Determination of Chlorinated Oxidants (Free and Total) in Water using Disposable Planar	April 2013		Hach 10260, Rev. 1.0

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry			
Hach 10241, Rev. 1.2	Hach Company	Spectrophotometric Measurement of Free Chlorine (Cl ₂) in Finished Drinking Water	November 2015		Hach 10241, Rev. 1.2
ChloroSense	Palintest Ltd.	Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense	August 2009		<u>ChloroSense</u>
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-CI F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl H	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl H	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl H	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-CI H	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-CI H	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-CI D- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl F-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the	2000		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		regulations or in Appendix A to Subpart C of Part 141 are approved.			
4500-Cl G- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl H- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

Total Chlorine

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D1253-86	ASTM International	Standard Test Method for Residual Chlorine in Water	1986		ASTM International
D1253-03	ASTM International	Standard Test Method for Residual Chlorine in Water	2003		ASTM International
D1253-08	ASTM International	Standard Test Method for Residual Chlorine in Water	2008		ASTM International
D1253-14	ASTM International	Standard Test Method for Residual Chlorine in Water	2014		ASTM International
334.0	EPA	Determination of Residual Chlorine in Drinking Water using an On-line Chlorine Analyzer	September 2009	EPA 815-B-09-013	EPA 815-B-09-013
Hach 10260, Rev. 1.0	Hach Company	Determination of Chlorinated Oxidants (Free and Total) in Water using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry	April 2013		Hach 10260, Rev. 1.0
Palintest Ltd.	ChloroSense	Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense	August 2009		<u>ChloroSense</u>

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-CI D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-CI E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl F	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl G	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-Cl I	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-Cl I	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-Cl I	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-Cl I	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-Cl I	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-CI D- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the	2000		<u>Standard Methods</u>

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		regulations or in Appendix A to Subpart C of Part 141 are approved.			
4500-Cl E-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		<u>Standard Methods</u>
4500-Cl F-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl G- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
4500-Cl I-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		<u>Standard Methods</u>

Disinfection Byproducts:

Bromate

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6581-00	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography	2000		ASTM International

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6581-08 A	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Chemically) Suppressed Ion Chromatography	2008		ASTM International
D6581-08 B	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Electrolytically) Suppressed Ion Chromatography	2008		ASTM International
300.1, Rev. 1.0	ЕРА	In Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume I	August 2000	EPA 815-R-00-014	National Environmental Methods Index
321.8	ЕРА	In Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume I	August 2000	EPA 815-R-00-014	National Environmental Methods Index
317, Rev. 2.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis	July 2001	EPA 815-B-01-001	EPA 815-B-01-001
326.0, Rev. 1.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis	June 2002	EPA 815-R-03-007	EPA 815-R-03-007
302.0	EPA	Determination of Bromate in Drinking Water using Two- Dimensional Ion Chromatography with Suppressed Conductivity Detection	September 2009	EPA 815-B-09-014	EPA 815-B-09-014
557	EPA	Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography	September 2009	EPA 815-B-09-012	EPA 815-B-09-012

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-			
		MS/MS)			

Chlorite (Daily Monitoring)

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6581-00	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography	2000		ASTM International
D6581-08 A	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Chemically) Suppressed Ion Chromatography	2008		ASTM International
D6581-08 B	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Electrolytically) Suppressed Ion Chromatography	2008		ASTM International
300.0, Rev. 2.1	EPA	In Methods for the Determination of Inorganic Substances in Environmental Samples	August 1993	EPA/600/R-93-100	National Environmental Methods Index
300.1, Rev. 1.0	ЕРА	In Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume I	August 2000	EPA 815-R-00-014	National Environmental Methods Index
317, Rev. 2.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis	July 2001	EPA 815-B-01-001	EPA 815-B-01-001
326.0, Rev. 1.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion	June 2002	EPA 815-R-03-007	EPA 815-R-03-007

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis			
327, Rev. 1.1	EPA	Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrometry	May 2005	EPA-815-R-05-008	EPA-815-R-05-008
ChlordioX Plus	Palintest, Ltd.	Palintest ChlordioX Plus Method – Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors	November 2013		<u>ChlordioX Plus</u>
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-CIO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-ClO ₂ E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-CIO ₂ E- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

Chlorite (Distribution System Monitoring)

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6581-00	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography	2000		ASTM International
D6581-08 A	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Chemically) Suppressed Ion Chromatography	2008		ASTM International
D6581-08 B	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by (Electrolytically) Suppressed Ion Chromatography	2008		ASTM International
300.0, Rev. 2.1	EPA	In Methods for the Determination of Inorganic Substances in Environmental Samples	August 1993	EPA/600/R-93-100	National Environmental Methods Index
300.1, Rev. 1.0	ЕРА	In Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume I	August 2000	EPA 815-R-00-014	National Environmental Methods Index
317, Rev. 2.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis	July 2001	EPA 815-B-01-001	EPA 815-B-01-001
326.0, Rev. 1.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis	June 2002	EPA 815-R-03-007	EPA 815-R-03-007

Haloacetic Acids (HAA5)

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
552.1, Rev. 1.0	EPA	In Methods for the Determination of Organic Compounds in Drinking Water – Supplement II	August 1992	EPA/600/R-92-129	National Environmental Methods Index
552.2, Rev. 1.0	EPA	In Methods for the Determination of Organic Compounds in Drinking Water – Supplement III	August 1995	EPA/600/R-95-131	National Environmental Methods Index
552.3, Rev. 1.0	ЕРА	Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection	July 2003	EPA 815-B-03-002	EPA 815-B-03-002
557	EPA	Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI- MS/MS)	September 2009	EPA 815-B-09-012	EPA 815-B-09-012
6251 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
6251 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
6251 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
6251 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
6251 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
6251 B-94	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the	1994		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		regulations or in Appendix A to Subpart C of Part 141 are approved.			
6251 B-07	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2007		Standard Methods
Thermo Fisher 557.1, v. 1.0	Thermo Fisher	Determination of Haloacetic Acids in Drinking Water using Two- Dimensional Ion Chromatography with Suppressed Conductivity Detection	January 2017		Thermo Fisher 557.1, v. 1.0

Total Trihalomethanes (TTHM)

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
502.2, Rev. 2.1	EPA	In Methods for the Determination of Organic Compounds in Drinking Water – Supplement III	August 1995	EPA/600/R-95-131	National Environmental Methods Index
524.2, Rev. 4.1	EPA	In Methods for the Determination of Organic Compounds in Drinking Water – Supplement III	August 1995	EPA/600/R-95-131	National Environmental Methods Index
524.3	EPA	Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry	June 2009	EPA 815-B-09-009	EPA 815-B-09-009
524.4	EPA	Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry using Nitrogen Purge Gas	May 2013	EPA 815-R-13-002	EPA 815-R-13-002
551.1, Rev. 1.0	EPA	In Methods for the Determination of Organic Compounds in Drinking Water – Supplement III	August 1995	EPA/600/R-95-131	National Environmental Methods Index

Water Quality Parameters

Alkalinity

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D1067-92 B	ASTM International	Standard Test Methods for Acidity or Alkalinity of Water: Electrometric or Color-Change Titration	1992		ASTM International
D1067-02 B	ASTM International	Standard Test Methods for Acidity or Alkalinity of Water: Electrometric or Color-Change Titration	2002		ASTM International
D1067-06 B	ASTM International	Standard Test Methods for Acidity or Alkalinity of Water: Electrometric or Color-Change Titration	2006		ASTM International
D1067-11 B	ASTM International	Standard Test Methods for Acidity or Alkalinity of Water: Electrometric or Color-Change Titration	2011		ASTM International
D1067-16B	ASTM International	Standard Test Methods for Acidity or Alkalinity of Water: Electrometric or Color-Change Titration	2016		ASTM International
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
2320 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
2320 B-97	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	1997		Standard Methods
I-1030-85	US Geological Survey	In Methods for Determination of Inorganic Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation Report; edited by Fishman, M.J. and Friedman, L.C.	1989		<u>USGS</u>

Bromide

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6581-00	ASTM International	Standard Test Methods for Bromate, Bromide, Chlorate and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography	2000		ASTM International
300.0, Rev. 2.1	EPA	In Methods for the Determination of Inorganic Substances in Environmental Samples	August 1993	EPA/600/R-93-100	National Environmental Methods Index
300.1, Rev. 1.0	ЕРА	In Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume I	August 2000	EPA 815-R-00-014	National Environmental Methods Index
317, Rev. 2.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis	July 2001	EPA 815-B-01-001	EPA 815-B-01-001

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
326.0, Rev. 1.0	EPA	Determination of Inorganic Oxyhalide Disinfection Byproducts in Drinking Water using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis	June 2002	EPA 815-R-03-007	EPA 815-R-03-007

Dissolved Organic

Carbon (DOC) for SUVA

DOC samples must be filtered through a $0.45 \mu m$ filter as soon as practical after sampling (not to exceed 48 hours). After filtration, DOC samples must be acidified to pH < 2. Analyze acidified DOC samples within 28 days of sample collection. Water passed through the filtration prior to filtration serves as the filtered blank. Filtered blank DOC must be < 0.5 mg/L. Inorganic carbon must be removed from samples prior to analysis.

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
415.3, Rev. 1.1	ЕРА	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	February 2005	EPA/600/R-05/055	EPA/600/R-05/055
415.3, Rev. 1.2	ЕРА	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	September 2009	EPA/600/R-09/122	EPA/600/R-09/122
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		<u>Standard Methods</u>

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5310 B-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
5310 C-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the	2000		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		regulations or in Appendix A to Subpart C of Part 141 are approved.			
5310 D-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

Magnesium

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D511-93 A	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Complexometric Titration	1993		ASTM International
D511-03 A	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Complexometric Titration	2003		ASTM International
D511-09 A	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Complexometric Titration	2009		ASTM International
D511-14 A	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Complexometric Titration	2014		ASTM International
D511-93 B	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Atomic Absorption Spectrometry	1993		ASTM International
D511-03 B	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Atomic Absorption Spectrometry	2003		ASTM International
D511-09 B	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Atomic Absorption Spectrometry	2009		ASTM International
D511-14 B	ASTM International	Standard Test Methods for Calcium and Magnesium in Water: Complexometric Titration	2014		ASTM International

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D6919-03	ASTM International	Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water by Ion Chromatography	2003		ASTM International
D6919-09	ASTM International	Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water by Ion Chromatography	2009		ASTM International
200.5, Rev. 4.2	EPA	Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry	October 2003	EPA/600-R-06/115	EPA/600-R-06/115
200.7, Rev. 4.4	EPA	In Methods for the Determination of Metals in Environmental Samples, Supplement I	May 1994	EPA/600/R-94/111	National Environmental Methods Index
3111 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
3111 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
3111 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
3111 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
3111 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
3120 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
3500-Mg E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
3500-Mg E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
3500-Mg B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
3500-Mg B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
3500-Mg B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
3500-Mg B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
3111 B-99	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	1999		Standard Methods
3120 B-99	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the	1999		Standard Methods

Source of Method

EPA Publication

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D1293-95	ASTM International	Standard Test Methods for pH of Water	1995		ASTM International
D1293-99	ASTM International	Standard Test Methods for pH of Water	1999		ASTM International
D1293-12	ASTM International	Standard Test Methods for pH of Water	2012		ASTM International
150.1	EPA	In Methods for Chemical Analysis of Water and Wastes	March 1983	EPA/600/4-79/020	National Environmental Methods Index
150.2	EPA	In Methods for Chemical Analysis of Water and Wastes	March 1983	EPA/600/4-79/020	National Environmental Methods Index
150.3	EPA	Determination of pH in Drinking Water	February 2017	EPA-815-B-17-001	EPA-815-B-17-001
4500-H⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
4500-H⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
4500-H⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
4500-H ⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
4500-H⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
4500-H⁺ B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
4500-H ⁺ B- 00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

SUVA

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
415.3, Rev. 1.1	ЕРА	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	February 2005	EPA/600/R-05/055	EPA/600/R-05/055
415.3, Rev. 1.2	EPA	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	September 2009	EPA/600/R-09/122	EPA/600/R-09/122

Total Organic Carbon

Inorganic carbon must be removed from samples prior to analysis. TOC samples are not filtered prior to analysis. Acidify TOC samples to pH < 2 at the time of sample collection. Analyze acidified TOC samples within 28 days.

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
415.3, Rev. 1.1	ЕРА	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	February 2005	EPA/600/R-05/055	EPA/600/R-05/055
415.3, Rev. 1.2	EPA	Determination of Total Organic Carbon and Specific UV	September 2009	EPA/600/R-09/122	EPA/600/R-09/122

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		Absorbance at 254 nm in Source Water and Drinking Water			
Hach 10261, Rev. 1.2	Hach Company	Total Organic Carbon in Finished Drinking Water by Catalyzed Ozone Hydroxyl Radical Oxidation Infrared Analysis	December 2015		Hach 10261, Rev. 1.2
Hach 10267, Rev. 1.2	Hach Company	Spectrophotometric Measurement of Total Organic Carbon (TOC) in Finished Drinking Water	December 2015		Hach 10267, Rev. 1.2
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5310 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5310 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5310 D	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5310 B-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
5310 C-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
5310 D-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods

UV254 for SUVA

UV absorption must be measured at 253.7 nm (rounded to 254 nm). Prior to UV254 analysis, filter samples through 0.45 μm filter. Do not adjust pH of UV254 samples. Analyze samples as soon as practical after sampling, not to exceed 48 hours.

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
415.3, Rev. 1.1	EPA	Determination of Total Organic Carbon and Specific UV	February 2005	EPA/600/R-05/055	EPA/600/R-05/055

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
		Absorbance at 254 nm in Source Water and Drinking Water			
415.3, Rev. 1.2	ЕРА	Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water	September 2009	EPA/600/R-09/122	EPA/600/R-09/122
5910 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
5910 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
5910 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
5910 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods
5910 B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 23 rd Edition	2017		Standard Methods
5910 B-00	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2000		Standard Methods
5910 B-11	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2011		Standard Methods