

Environmental Protection Agency

Pt. 141, Subpt. C, App. A

monitoring shall be conducted pursuant to a schedule specified by the State and concurred in by the Administrator of the U.S. Environmental Protection Agency.

APPENDIX A TO SUBPART C OF PART 141—ALTERNATIVE TESTING METHODS APPROVED FOR ANALYSES UNDER THE SAFE DRINKING WATER ACT

Only the editions stated in the following table are approved.

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.21(f)(3)

Organism	Methodology	SM 21st edition ¹	Other
Total Coliforms	Total Coliform Fermentation Technique.	9221 A, B	
	Total Coliform Membrane Filter Technique.	9222 A, B, C	
	Presence-Absence (P-A) Coliform Test.	9221 D	
	ONPG-MUG Test	9223	
Colitag™			Modified Colitag™ ¹³

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.21(f)(6)

Organism	Methodology	SM 20th edition ⁶	SM 21st edition ¹	SM online ³	Other
<i>E. coli</i>	ONPG-MUG Test	9223 B	9223 B	9223 B-97	Modified Colitag™ ¹³

Environmental Protection Agency

Pt. 141, Subpt. C, App. A

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.23(k)(1)

Contaminant	Methodology	EPA method	SM 21st edition ¹	SM online ³	ASTM ⁴	Other
Alkalinity	Titrimetric		2320 B			
Antimony	Hydride-Atomic Absorption				D 3697-07	
	Atomic Absorption; Furnace		3113 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2. ² .				
Arsenic	Atomic Absorption; Furnace		3113 B		D 2972-08 C	
	Hydride Atomic Absorption		3114 B		D 2972-08 B	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Barium	Inductively Coupled Plasma		3120 B			
	Atomic Absorption; Direct		3111 D			
	Atomic Absorption; Furnace		3113 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2.				
Beryllium	Inductively Coupled Plasma		3120 B			
	Atomic Absorption; Furnace		3113 B		D 3645-08 B	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Cadmium	Atomic Absorption; Furnace		3113 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2.				
Calcium	EDTA titrimetric		3500-Ca B		D 511-09 A	
	Atomic Absorption; Direct Aspiration.		3111 B		D 511-09 B	
	Inductively Coupled Plasma		3120 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Chromium	Inductively Coupled Plasma		3120 B			
	Atomic Absorption; Furnace		3113 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2.				
Copper	Atomic Absorption; Furnace		3113 B		D 1688-07 C	
	Atomic Absorption; Direct Aspiration.		3111 B		D 1688-07 A	
	Inductively Coupled Plasma		3120 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Conductivity ...	Conductance		2510 B			
Cyanide	Manual Distillation followed by ..				D2036-06 A	
	Spectrophotometric, Amenable.		4500-CN ⁻ G		D2036-06 B	
	Spectrophotometric Manual ...		4500-CN ⁻ E		D2036-06 A	
	Selective Electrode		4500-CN ⁻ F			
	Gas Chromatography/Mass Spectrometry Headspace.					ME355.01 ⁷
Fluoride	Ion Chromatography		4110 B			
	Manual Distillation; Colorimetric SPADNS.		4500-F ⁻ B, D			
	Manual Electrode		4500-F ⁻ C		D1179-04 B	
	Automated Alizarin		4500-F ⁻ E			
Lead	Atomic Absorption; Furnace		3113 B		D 3559-08 D	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Magnesium ...	Atomic Absorption		3111 B		D 511-09 B	
	Inductively Coupled Plasma		3120 B			
	Complexation Titrimetric Methods.		3500-Mg B		D 511-09 A	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2..				
Mercury	Manual, Cold Vapor		3112 B			
Nickel	Inductively Coupled Plasma		3120 B			

Pt. 141, Subpt. C, App. A

40 CFR Ch. I (7–1–10 Edition)

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.23(k)(1)—Continued

Contaminant	Methodology	EPA method	SM 21st edition ¹	SM online ³	ASTM ⁴	Other	
Nitrate	Atomic Absorption; Direct	200.5, Revision 4.2.	3111 B				
	Atomic Absorption; Furnace		3113 B				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).						
	Ion Chromatography		4110 B				
	Automated Cadmium Reduction		4500–NO ₃ [–] F				
Nitrite	Manual Cadmium Reduction		4500–NO ₃ [–] E				
	Ion Selective Electrode		4500–NO ₃ [–] D				
	Reduction/Colorimetric					Systema Easy (1-Reagent) ⁸	
	Ion Chromatography		4110 B				
Orthophosphate.	Automated Cadmium Reduction		4500–NO ₃ [–] F				
	Manual Cadmium Reduction		4500–NO ₃ [–] E				
	Spectrophotometric		4500–NO ₂ [–] B				
	Reduction/Colorimetric					Systema Easy (1-Reagent) ⁸	
pH	Ion Chromatography		4110 B				
	Colorimetric, ascorbic acid, single reagent.		4500–P E	4500–P E–99			
Selenium	Colorimetric, Automated, Ascorbic Acid.		4500–P F	4500–P F–99			
	Electrometric		4500–H ⁺ B				
Silica	Hydride-Atomic Absorption		3114 B		D 3859–08 A		
	Atomic Absorption; Furnace		3113 B		D 3859–08 B		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2..					
Sodium	Colorimetric				D859–05		
	Molybdosilicate		4500–SiO ₂ C				
	Heteropoly blue		4500–SiO ₂ D				
	Automated for Molybdate-reactive Silica.		4500–SiO ₂ E				
Temperature ..	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2.					
	Inductively Coupled Plasma Atomic Absorption; Direct Aspiration.		3120 B				
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2.	3111 B				
	Thermometric		2550				

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.24(e)(1)

Contaminant	Methodology	EPA method	SM 21st edition ¹	SM online ³
Benzene	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3 ⁹		
Carbon tetrachloride	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		
Chlorobenzene	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		
1,2-Dichlorobenzene	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		
1,4-Dichlorobenzene	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		
1,2-Dichloroethane ..	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		
cis-Dichloroethylene	Purge & Trap/Gas Chromatography/Mass Spectrometry.	524.3		

Environmental Protection Agency

Pt. 141, Subpt. C, App. A

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.24(e)(1)—Continued

Contaminant	Methodology	EPA method	SM 21 st edition ¹	SM online ³
Trans-Dichloroethylene.	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Dichloromethane	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
1,2-Dichloropropane	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Ethylbenzene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Styrene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Tetrachloroethylene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
1,1,1-Trichloroethane.	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Trichloroethylene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Toluene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
1,2,4-Trichlorobenzene.	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
1,1-Dichloroethylene	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
1,1,2-Trichlorethane	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Vinyl chloride	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Xylenes (total)	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Carbofuran	High-performance liquid chromatography (HPLC) with post-column derivatization and fluorescence detection.		6610 B	6610 B-04
Dalapon	Ion Chromatography Electro spray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS).	14 557	6640 B	6640 B-01
Dibromochloropropane (DBCP).	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Ethyl dibromide (EDB).	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		
Oxamyl	High-performance liquid chromatography (HPLC) with post-column derivatization and fluorescence detection.		6610 B	6610 B-04
Total Trihalomethanes.	Purge & Trap/Gas Chromatography/ Mass Spectrometry.	524.3		

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.25(a)

Contaminant	Methodology	SM 21 st edition ¹	ASTM ⁴
Naturally Occurring:			
Gross alpha and beta	Evaporation	7110 B	
Gross alpha	Coprecipitation	7110 C	
Radium 226	Radon emanation	7500-Ra C	D3454-05
	Radiochemical	7500-Ra B	D2460-07
Radium 228	Radiochemical	7500-Ra D	
Uranium	Radiochemical	7500-U B	
	ICP-MS		D5673-05
	Alpha spectrometry	7500-U C	
	Laser Phosphorimetry		D5174-07
Man-Made:			
Radioactive Cesium	Radiochemical	7500-Cs B	
	Gamma Ray Spectrometry	7120	D3649-06
Radioactive Iodine	Radiochemical	7500-I B	D3649-06
	.....	7500-I C	
	.....	7500-I D	
	Gamma Ray Spectrometry	7120	D4785-08
Radioactive Strontium 89, 90 ...	Radiochemical	7500-Sr B	
Tritium	Liquid Scintillation	7500- ³ H B	D4107-08
Gamma Emitters	Gamma Ray Spectrometry	7120	D3649-06

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.25(a)—Continued

Contaminant	Methodology	SM 21st edition ¹	ASTM ⁴
		7500–Cs B 7500–I B	D4785–08

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.74(a)(1)

Organism	Methodology	SM 21st edition ¹	Other
Total Coliform	Total Coliform Fermentation Technique	9221 A, B, C	
	Total Coliform Membrane Filter Technique	9222 A, B, C	
	ONPG–MUG Test	9223	
Fecal Coliforms	Fecal Coliform Procedure	9221 E	
	Fecal Coliform Filter Procedure	9222 D	
Heterotrophic bacteria.	Pour Plate Method	9215 B	
Turbidity	Nephelometric Method	2130 B	
	Laser Nephelometry (on-line)		Mitchell M5271 ¹⁰
	LED Nephelometry (on-line)		Mitchell M5331 ¹¹
	LED Nephelometry (on-line)		AMI Turbiwell ¹⁵
	LED Nephelometry (portable)		Orion AQ4500 ¹²

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.74(a)(2)

Residual	Methodology	SM 21st Edition ¹	ASTM ⁴	Other
Free Chlorine	Amperometric Titration	4500–Cl D	D 1253–08.	
	DPD Ferrous Titrimetric	4500–Cl F.		
	DPD Colorimetric	4500–Cl G.		
	Syringaldazine (FACTS)	4500–Cl H.		
	On-line Chlorine Analyzer			EPA 334.0. ¹⁶
Total Chlorine	Amperometric Sensor			ChloroSense. ¹⁷
	Amperometric Titration	4500–Cl D	D 1253–08.	
	Amperometric Titration (Low level measurement).	4500–Cl E.		
	DPD Ferrous Titrimetric	4500–Cl F.		
	DPD Colorimetric	4500–Cl G.		
Chlorine Dioxide	Iodometric Electrode	4500–Cl I.		
	On-line Chlorine Analyzer			EPA 334.0. ¹⁶
	Amperometric Sensor			ChloroSense. ¹⁷
	Amperometric Titration	4500–ClO ₂ C.		
	Amperometric Titration	4500–ClO ₂ E.		
Ozone	Indigo Method	4500–O ₃ B.		

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.131(b)(1)

Contaminant	Methodology	EPA Method	ASTM ⁴	SM 21st Edition ¹
TTHM	P&T/GC/MS	⁹ 524.3		
HAA5	LLE (diazomethane)/GC/ECD			6251 B.
Bromate	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	¹⁴ 557		
	Two-Dimensional Ion Chromatography (IC).	¹⁸ 302.0		
	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	¹⁴ 557		
	Chemically Suppressed Ion Chromatography.		D 6581–08 A.	
	Electrolytically Suppressed Ion Chromatography.		D 6581–08 B.	
Chlorite	Chemically Suppressed Ion Chromatography.		D 6581–08 A.	
	Electrolytically Suppressed Ion Chromatography.		D 6581–08 B.	
Chlorite—daily monitoring as prescribed in 40 CFR 141.132(b)(2)(i)(A)..	Amperometric Titration			4500–ClO ₂ E.

Environmental Protection Agency

Pt. 141, Subpt. C, App. A

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.131(c)(1)

Residual	Methodology	SM 21st Edition ¹	ASTM ⁴	Other
Free Chlorine	Amperometric Titration	4500-CI D	D 1253-08	ChloroSense. ¹⁷ EPA 334.0. ¹⁶
	DPD Ferrous Titrimetric	4500-CI F.		
	DPD Colorimetric	4500-CI G.		
	Syringaldazine (FACTS)	4500-CI H.		
	Amperometric Sensor .....	.....	
Combined Chlorine	On-line Chlorine Analyzer	D 1253-08.	ChloroSense. ¹⁷ EPA 334.0. ¹⁶
	Amperometric Titration	4500-CI D		
Total Chlorine	DPD Ferrous Titrimetric	4500-CI F.	D 1253-08.	ChloroSense. ¹⁷ EPA 334.0. ¹⁶
	DPD Colorimetric	4500-CI G.		
	Amperometric Titration	4500-CI D		
	Low level Amperometric Titration	4500-CI E.		
	DPD Ferrous Titrimetric	4500-CI F.		
	DPD Colorimetric	4500-CI G.		
	Iodometric Electrode	4500-CI I.		
Chlorine Dioxide	Amperometric Sensor	ChloroSense. ¹⁷ EPA 334.0. ¹⁶
	On-line Chlorine Analyzer .....	.....	
	Amperometric Method II	4500-CIO ₂ E.		

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.131(c)(2), IF APPROVED BY THE STATE

Residual	Methodology	Method
Free Chlorine	Test Strips	Method D99-003 ⁵

ALTERNATIVE TESTING METHODS FOR PARAMETERS LISTED AT 40 CFR 141.131(d)

Parameter	Methodology	SM 21st edition ¹	EPA
Total Organic Carbon (TOC)	High Temperature Combustion	5310 B	415.3, Rev 1.2 ¹⁹
	Persulfate-Ultraviolet or Heated Persulfate Oxidation.	5310 C	415.3, Rev 1.2
Specific Ultraviolet Absorbance (SUVA).	Wet Oxidation	5310 D	415.3, Rev 1.2
	Calculation using DOC and UV ₂₅₄ data.	.....	415.3, Rev 1.2
Dissolved Organic Carbon (DOC).	High Temperature Combustion	5310 B	415.3, Rev 1.2
	Persulfate-Ultraviolet or Heated Persulfate Oxidation.	5310 C	415.3, Rev 1.2
Ultraviolet absorption at 254 nm (UV ₂₅₄).	Wet Oxidation	5310 D	415.3, Rev 1.2
	Spectrophotometry	5910 B	415.3, Rev 1.2

ALTERNATIVE TESTING METHODS WITH MRL > 0.0010 MG/L FOR MONITORING LISTED AT 40 CFR 141.132(b)(3)(ii)(B)

Contaminant	Methodology	EPA method
Bromate	Two-Dimensional Ion Chromatography (IC)	302.0 ¹⁸ 557 ¹⁴
	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS).	

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.402(c)(2)

Organism	Methodology	SM 20th edition ⁶	SM 21st edition ¹	SM online ³	Other
E. coli	Colilert	9223 B	9223 B-97.	ReadiCult [®] , ²⁰ Modified Colitag [™] , ¹³ Chromocult [®] . ²¹
	Colisure .....	.....	9223 B	9223 B-97.
	Colilert-18	9223 B	9223 B	9223 B-97.	
	ReadiCult [®]	
	Colitag .....	.....	.....	.....
Enterococci	Chromocult [®]	Chromocult [®] . ²¹
	Multiple-Tube Technique.	.....	.....	9230 B-04.

Pt. 141, Subpt. C, App. A

40 CFR Ch. I (7-1-10 Edition)

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.704(b)

Organism	Methodology	SM 20th edition ⁶
<i>E. coli</i>	Membrane Filtration, Two Step	9222 D/9222 G

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 143.4(b)

Contaminant	Methodology	EPA method	ASTM ⁴	SM 21st edition ¹	SM online ³
Aluminum	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2 ² .	D 512-04 B	3111 D 3113 B 3120 B	
	Atomic Absorption; Direct				
Chloride ..	Atomic Absorption; Furnace Inductively Coupled Plasma	200.5, Revision 4.2.	D 512-04 B	4500-Cl ⁻ B 4110 B 4500-Cl ⁻ D	
	Silver Nitrate Titration				
Color	Ion Chromatography	200.5, Revision 4.2.	D 512-04 B	2120 B 5540 C	
	Potentiometric Titration				
Foaming Agents.	Visual Comparison				
Iron	Methylene Blue Active Substances (MBAS).	200.5, Revision 4.2.	D 512-04 B	3111 B 3113 B 3120 B	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).				
Man-ganese.	Atomic Absorption; Direct	200.5, Revision 4.2.	D 512-04 B	3111 B 3113 B 3120 B	
	Atomic Absorption; Furnace Inductively Coupled Plasma				
Odor	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2.	D 512-04 B	4110 B 2150 B	
	Threshold Odor Test				
Silver	Atomic Absorption; Direct	200.5, Revision 4.2.	D 512-04 B	3111 B 3113 B 3120 B	
	Atomic Absorption; Furnace Inductively Coupled Plasma				
Sulfate	Ion Chromatography	200.5, Revision 4.2.	D 516-07	4110 B 4500-SO ₄ ⁻² C 4500-SO ₄ ⁻² D 4500-SO ₄ ⁻² E 4500-SO ₄ ⁻² F	4500-SO ₄ ⁻² C-97 4500-SO ₄ ⁻² D-97 4500-SO ₄ ⁻² E-97 4500-SO ₄ ⁻² F-97
	Gravimetric with ignition of residue.				
	Gravimetric with drying of residue.				
	Turbidimetric method				
	Automated methylthymol blue method.				
Total Dis-solved Solids.	Total Dissolved Solids Dried at 180 deg C.			2540 C	
Zinc	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES).	200.5, Revision 4.2.	D 512-04 B	3111 B 3120 B	
	Atomic Absorption; Direct Aspiration. Inductively Coupled Plasma				

[74 FR 38353, Aug. 3, 2009, as amended at 74 FR 57914, Nov. 10, 2009; 74 FR 63069, Dec. 2, 2009; 75 FR 32299, June 8, 2010]

¹Standard Methods for the Examination of Water and Wastewater, 21st edition (2005). Available from American Public Health Association, 800 I Street, NW., Washington, DC 20001-3710.

²EPA Method 200.5, Revision 4.2. "Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry." 2003. EPA/600/R-06/115. (Available at <http://www.epa.gov/nerlcwww/ordmeth.htm>.)

³Standard Methods Online are available at <http://www.standardmethods.org>. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

⁴Available from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or <http://astm.org>. The methods listed are the only alternative versions that may be used.

⁵Method D99-003, Revision 3.0. "Free Chlorine Species (HOCl⁻ and OCl⁻) by Test Strip." November 21, 2003. Available from Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730.

⁶Standard Methods for the Examination of Water and Wastewater, 20th edition (1998). Available from American Public Health Association, 800 I Street, NW., Washington, DC 20001-3710.

⁷Method ME355.01, Revision 1.0. "Determination of Cyanide in Drinking Water by GC/MS Headspace." May 26, 2009. Available at <http://www.nemi.gov> or from James Eaton, H & E Testing Laboratory, 221 State Street, Augusta, ME 04333. (207) 287-2727.

⁸Systea Easy (1-Reagent). "Systea Easy (1-Reagent) Nitrate Method." February 4, 2009. Available at <http://www.nemi.gov> or from Systea Scientific, LLC., 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

⁹EPA Method 524.3, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry." June 2009. EPA 815-B-09-009. Available at http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

¹⁰Mitchell Method M5271, Revision 1.1. "Determination of Turbidity by Laser Nephelometry." March 5, 2009. Available at <http://www.nemi.gov> or from Leck Mitchell, PhD, PE, 656 Independence Valley Dr., Grand Junction, CO 81507.

¹¹Mitchell Method M5331, Revision 1.1. "Determination of Turbidity by LED Nephelometry." March 5, 2009. Available at <http://www.nemi.gov> or from Leck Mitchell,

PhD, PE, 656 Independence Valley Dr., Grand Junction, CO 81507.

¹²Orion Method AQ4500, Revision 1.0. "Determination of Turbidity by LED Nephelometry." May 8, 2009. Available at <http://www.nemi.gov> or from Thermo Scientific, 166 Cummings Center, Beverly, MA 01915, <http://www.thermo.com>.

¹³Modified Colitag™ Method. "Modified Colitag™ Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water (ATP D05-0035)." August 28, 2009. Available at <http://www.nemi.gov> or from CPI, International, 580 Skyline Boulevard, Santa Rosa, CA 95403.

¹⁴EPA Method 557. "Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS)." August 2009. EPA 815-B-09-012. Available at http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

¹⁵AMI Turbiwell. "Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter." August 2009. Available at <http://www.nemi.gov> or from Markus Bernasconi, SWAN Analytische Instrumente AG, Studbachstrasse 13, CH-8340 Hinwil, Switzerland.

¹⁶EPA Method 334.0. "Determination of Residual Chlorine in Drinking Water Using an On-line Chlorine Analyzer." August 2009. EPA 815-B-09-013. Available at http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

¹⁷ChloroSense. "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense." September 2009. Available at <http://www.nemi.gov> or from Palintest Ltd, 21 Kenton Lands Road, PO Box 18395, Erlanger, KY 41018.

¹⁸EPA Method 302.0. "Determination of Bromate in Drinking Waters using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection." September 2009. EPA 815-B-09-014. Available at http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

¹⁹EPA 415.3, Revision 1.2. "Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water." August 2009. EPA/600/R-09/122. Available at <http://www.epa.gov/nerlcwww/ordmeth.htm>.

²⁰Readycult® Method. "Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters." January, 2007. Version 1.1. Available from EMD Chemicals (affiliate of Merck KGaA, Darmstadt, Germany), 480 S. Democrat Road, Gibbstown, NJ 08027-1297.

²¹Chromocult® Method. "Chromocult® Coliform Agar Presence/Absence Membrane

Continued