

Last revised on Wednesday, September 29, 2004

Metadata - Laboratory methods						
Current?	Code	Name	Description	Comparability notes	Data from	Data to
No	EPA 160.1	Total Dissolved Solids	A well-mixed sample is filtered through a standard glass fiber filter. The filtrate is evaporated and dried to constant weight at 180°C. If Residue, Non-Filterable is being determined, the filtrate from that method may be used for Residue, Filterable.	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	6/11/1996
Yes	EPA 160.2	Total Suspended Solids	A well-mixed sample is filtered through a glass fiber filter, and the residue retained on the filter is dried to constant weight at 103-105°C. The filtrate from this method may be used for Residue, Filterable.	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	5/20/2004
Yes	EPA 160.4	Volatile Suspended Solids	The residue obtained from the determination of total, filterable or non-filterable residue is ignited at 550°C in a muffle furnace. The loss of weight on ignition is reported as mg/L volatile residue.	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	5/20/2004
Yes	EPA 200.7 (D)	Determination of Metals and Trace Elements by ICP-AES (Dissolved)	Except for the determination of dissolved analytes, aqueous samples are acid preserved prior to sample processing. For the analysis of dissolved analytes, an acidified portion of the filtrate is analyzed directly. For the determination of total recoverabl	Data comparable to other standard methods in this category, within accuracy and precision limits.	8/7/1997	5/20/2004
No	EPA 213.2 (D)	Cadmium by AA Furnace (Dissolved)	The sample is treated by an appropriate digestion procedure to ensure cadmium is in a detectable form (see EPA Method 200.0 for suggested digestion procedures). The digestate is then introduced into the furnace system with an appropriate matrix modifier,	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/5/1988	9/10/1993
No	EPA 213.2 (T)	Cadmium by AA Furnace (Total)	The sample is treated by an appropriate digestion procedure to ensure cadmium is in a	Data comparable to other standard methods in this	5/5/1988	9/10/1993

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			detectable form (see EPA Method 200.0 for suggested digestion procedures). The digestate is then introduced into the furnace system with an appropriate matrix modifier,	category, within accuracy and precision limits.		
No	EPA 218.2 (D)	Chromium by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/5/1988	9/10/1993
No	EPA 218.2 (T)	Chromium by AA Furnace (Total)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/4/1987	9/10/1993
No	EPA 220.2 (D)	Copper by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/5/1988	9/10/1993
No	EPA 220.2 (T)	Copper by AA Furnace (Total)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/7/1987	9/10/1993
No	EPA 236.2 (D)	Iron by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/4/1987	9/10/1993
No	EPA 236.2	Iron by AA Furnace	A sample prepared according to EPA Method	Data comparable to other	5/4/1987	9/10/1993

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	(T)	(Total)	200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	standard methods in this category, within accuracy and precision limits.		
No	EPA 239.2 (D)	Lead by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/5/1988	9/10/1993
No	EPA 239.2 (T)	Lead by AA Furnace (Total)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/5/1988	9/10/1993
No	EPA 243.2 (D)	Manganese by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/4/1987	9/10/1993
No	EPA 243.2 (T)	Manganese by AA Furnace (Total)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/4/1987	9/10/1993
No	EPA 245.1(T)	Mercury by AA Cold Vapor (Total)	A sample is digested in a glass bottle for 2 hours with a persulfate/permanganate solution under heating. After digestion, the mercury in the sample is reduced to its elemental form with stannous chloride. The concentration of mercury in the sample is det	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/8/1975	9/10/1993

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Current?	Code	Name	Description	Comparability notes	Data from	Data to
No	EPA 289.2 (D)	Zinc by AA Furnace (Dissolved)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/6/1987	9/10/1993
No	EPA 289.2 (T)	Zinc by AA Furnace (Total)	A sample prepared according to EPA Method 200.0 is analyzed using a graphite furnace atomic absorption spectrometer. Specifications for instrument operation and preparation of standards are provided in the method.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/6/1987	9/10/1993
Yes	EPA 300.0	Inorganic Anions	A small volume of sample, typically 50-100 uL, is introduced into an ion chromatograph. The anions of interest are separated and measured, using a system comprised of a guard column, separator column, suppressor device, and conductivity detector.	Data comparable to other standard methods in this category, within accuracy and precision limits.	11/1/2000	5/20/2004
No	EPA 325.2	Chloride	Thiocyanate ion (SCN) is liberated from mercuric thiocyanate through sequestration of mercury by chloride ion to form un-ionized mercuric chloride. In the presence of ferric ion, the liberated SCN forms a highly colored ferric thiocyanate in concentration	Data comparable to other standard methods in this category, within accuracy and precision limits.	4/7/1980	10/19/2000
Yes	EPA 350.1	Ammonia, Nitrogen (Dissolved)	The sample is buffered at a pH of 9.5 with a borate buffer in order to decrease hydrolysis of cyanates and organic nitrogen compounds, and is distilled into a solution of boric acid. Alkaline phenol and hypochlorite react with ammonia to form indophenol b	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/16/1979	5/20/2004
No	EPA 350.2	Ammonia by Distillation and Colorimetry	A sample is buffered at alkaline pH with borate buffer to decrease hydrolysis of cyanates and organic nitrogen compounds, and is distilled	Data comparable to other standard methods in this category, within accuracy and	1/7/1975	12/7/1978

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Current?	Code	Name	Description	Comparability notes	Data from	Data to
			into a solution of boric acid. The ammonia distillate is determined colorimetrically by Nesslerization, or by other	precision limits.		
No	EPA 351.2	Kjeldahl Nitrogen	This is a semi-automated method. A sample is heated in the presence of sulfuric acid, potassium sulfate, and mercuric sulfate for two and one half hours. The digestion converts nitrogen components of biological origin (e.g., amino acids, proteins, and pep	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/1/1978	5/20/2004
Yes	EPA 351.2 (Dissolved)	Dissolved Organic Nitrogen	This is a semi-automated method. A sample is heated in the presence of sulfuric acid, potassium sulfate, and mercuric sulfate for two and one half hours. The digestion converts nitrogen components of biological origin (e.g., amino acids, proteins, and pep	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/2/1978	5/20/2004
No	EPA 351.3	Nitrogen, Colorimetric	The sample is heated in the presence of sulfuric acid, potassium sulfate, and mercuric sulfate, and evaporated until sulfite fumes are obtained and the solution becomes colorless or pale yellow. The residue is cooled, diluted, and is treated and made alka	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	5/1/1978
No	EPA 353.2 (DWR Modified )	Nitrate, Cd Reduction (frozen to -10°C)	DWR Variation on EPA 353.2. Samples are frozen in the field to -10°C and holding time extended to 28 days. A filtered sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite (that originally pres	Data comparable to other standard methods in this category, within accuracy and precision limits.	2/15/1979	6/11/1996
No	EPA 353.3 (DWR Modified)	Nitrate, Cd Reduction unpreserved oxidized form	DWR Variation on EPA 353.3. Samples are frozen in the field to -10°C and holding time extended to 28 days.	Data comparable to other standard methods in this category, within accuracy and	1/21/1975	1/24/1979

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Current?	Code	Name	Description	Comparability notes	Data from	Data to
			Nitrate and nitrite: A filtered sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite	precision limits.		
Yes	EPA 365.1 (DWR Modified)	DWR Ortho-Phosphate (Dissolved)	EPA Method 365.1 modified holding time of 28 days and preservation by freezing to -10 degrees Celsius. A sample is appropriately treated to convert all phosphorus of interest to reactive orthophosphate. Ammonium molybdate and antimony potassium tartrate	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/16/1979	5/20/2004
Yes	EPA 365.4	Phosphorus (Total)	The sample is heated in the presence of sulfuric acid, potassium sulfate, and mercuric sulfate for two and one half hours. The residue is cooled and diluted to 25 mL and placed in autoanalyzer for determination of phosphorus by colorimetry.	Data comparable to other standard methods in this category, within accuracy and precision limits.	5/2/1978	5/20/2004
No	EPA 405.1	BOD	The BOD test is an empirical bioassay-type test which measures the dissolved oxygen consumed by microbial life while assimilating and oxidizing organic matter in a sample. A waste sample (or dilution) is incubated for five days 20oC in the dark. Dissolved	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	12/16/1977
No	EPA 608	Organochlorine Pesticides and PCBs	A 1L sample is extracted using a liquid/liquid phase extraction technique with methylene chloride as the extracting solvent. The extract is dried through sodium sulfate, exchanged to hexane, and then concentrated down to a volume of less than 10mL. The ex	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/21/1975	9/10/1993
Yes	Std Method 10200 H	Spectrophotometric Determination of	Measured samples (500 to 1000 ml depending on the concentration of suspended solids) are	Data comparable to other standard methods in this	2/2/1998	5/20/2004

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Current?	Code	Name	Description	Comparability notes	Data from	Data to
		Chlorophyll	filtered in the field and frozen. Pigments are extracted in aqueous acetone with tissue grinding, centrifugation and incubation at 4°C. Chlorophyll a and Pheophytin a	category, within accuracy and precision limits.		
No	Std Method 10200 H (modified)	Spectrophotometric Determination of Chlorophyll (Sonication)	Measured samples (400 ml) are filtered in the field and frozen. Pigments are extracted in aqueous acetone with warm water bath (58°C), sonication followed by incubation at room temperature. Chlorophyll a and Pheophytin a concentrations are measured with	A study was conducted in 2001-2002 and found good agreement between the between the modified and unmodified chlorophyll extraction methods. (See Triboli, K., Mueller-Solger, A. and Vayssières, M. 2003)	1/7/1975	1/9/1998
Yes	Std Method 2540-C	Total Dissolved Solids (TDS)	Total Dissolved Solids, total filterable residue dried at 180 degrees Celsius.	Data comparable to other standard methods in this category, within accuracy and precision limits.	7/19/1996	5/20/2004
No	Std Method 3111 B	Cations by Flame AA	Cations: Ca, Mg, Na, and K analyzed by Direct Air-Acetylene Flame AA.	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	9/11/1986
No	Std Method 3111 C	Metals AA Flame	Chelation, extraction followed by aspiration into air-acetylene flame.	Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	9/11/1986
No	Std Method 3114 C	Arsenic	Continuous Hydride generation/Atomic absorption Spectrometric method	Data comparable to other standard methods in this category, within accuracy and precision limits.	9/9/1986	9/10/1993
No	Std Method 3500-As, C	Arsenic, Colorimetric		Data comparable to other standard methods in this category, within accuracy and	1/13/1976	5/22/1986

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Current?	Code	Name	Description	Comparability notes	Data from	Data to
				precision limits.		
No	Std Method 4500-Cl, B	Chloride, Titrimetric		Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	3/13/1980
Yes	Std Method 4500-NO3-F Modified	Nitrite, Nitrate (DWR Modified) (Dissolved)	Similar to EPA Method 353.2 with modified holding time: 28 days, preservation: freeze sample.	Data comparable to other standard methods in this category, within accuracy and precision limits.	7/19/1996	5/20/2004
No	Std Method 4500-P, D	Ortho Phosphate, Colorimetric		Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	12/7/1978
Yes	Std Method 4500-P, F	Ortho-phosphate (Dissolved)		Data comparable to other standard methods in this category, within accuracy and precision limits.	7/19/1996	11/12/2002
No	Std Method 4500-Si-D	Silica (dissolved) Molybdosilicate method		Data comparable to other standard methods in this category, within accuracy and precision limits.	3/2/1994	7/15/1997
No	USGS I-1700-85	Silica (SiO <sub>2</sub> )		Data comparable to other standard methods in this category, within accuracy and precision limits.	1/7/1975	2/7/1994