



WET CHEMISTRY/INORGANIC TEST METHODS

WET CHEMISTRY / INORGANIC ANALYSIS METHODS	DESCRIPTION	INSTRUMENTATION
ASTM D1498	Standard Practice for Oxidation-Reduction Potential of Water	Not Applicable
ASTM D2216	Determination of Water (Moisture) Content of Soil and Rock by Mass	Not Applicable
ASTM D2382	Heat Of Combustion Of Hydrocarbon Fuels	Bomb Calorimeter (High-Precision Method)
ASTM D240-92	Heat of Combustion of Liquid Hydrocarbon Fuels	Bomb Calorimeter
ASTM D2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils	
ASTM D3987-12	Shake Extraction Of Solid Waste With Water	
ASTM D422	Particle-Size Analysis of Soils	
ASTM D4239	Sulfur in the Analysis Sample of Coal and Coke	High-Temperature Tube Furnace Combustion
ASTM D482-07	Ash from Petroleum Products	
ASTM D5057-90	Screening Apparent Specific Gravity and Bulk Density of Waste	
ASTM D5058-90C	Compatibility of Screening Analysis of Waste	
ASTM D516-11	Sulfate Ion in Water	Turbidity
ATSM D516-16	Sulfate Ion in Water (excess of about 250 mg/L)	Turbidity
ASTM D516-9002	Sulfate Ion in Water	Turbidity
ASTM D5468	Gross Calorific and Ash Value of Waste Materials	Digital Oxygen Bomb Calorimeter
ASTM D6913	Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	
ASTM 7928	Particle-Size Distribution (Gradation) of Fine-Grained Soils Using Sedimentation (Hydrometer) Analysis	Hydrometer
ASTM D7237-10	Free Cyanide with Flow Injection Analysis (FIA) in aqueous wastewater or effluent	Gas Diffusion Separation and Amperometric Detection
ASTM D92	Flash and Fire Points by Cleveland Open Cup Tester	
ASTM D93-80	Flash Point by Pensky-Martens Closed Cup Tester	
ASTM F1647	Organic Matter Content of Athletic Field Rootzone Mixes	
EPA Method 120.1	Conductance (Specific Conductance, umhos at 25°C) applicable to drinking, surface, and saline water, domestic and industrial wastes and acid rain (atmospheric deposition).	Conductivity Meter

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EPA Method 130.1	Hardness, Total (mg/L as CaCO ₃) (Colorimetric, Automated EDTA)	Spectrophotometer
EPA Method 130.2	Hardness, Total (mg/L as CaCO ₃)(Titrimetric, EDTA)	Titration
EPA Method 150.1	pH, Electrometric Method	pH Meter
EPA Method 160.1	Residue, Filterable	Gravimetric
EPA Method 160.2	Residue, Non-Filterable (Gravimetric, Dried at 103-105°C)	Drying Oven
EPA Method 160.4	Residue, Volatile (Gravimetric, Ignition at 550°C)	Muffled Furnace
EPA Method 180.1	determination of turbidity in drinking, ground, surface, and saline waters, domestic and industrial wastes	Turbidimeter
EPA Method 218.6	Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents	Ion Chromatography
EPA Method 218.7	Determination of Dissolved Hexavalent Chromium in Drinking Water	Ion Chromatography with Post-Column Derivatization and UV-Visible Spectroscopic Detection
EPA Method 300.0	Determination of Inorganic Anions	Ion Chromatography
EPA Method 300.1	Determination of Inorganic Anions in Drinking Water	Ion Chromatography
EPA Method 305.1	Acidity in Water	Titration
EPA Method 310.1	Alkalinity (Titrimetric, pH 4.5)	Titration
EPA Method 310.2	Alkalinity (Colorimetric, Automated, Methyl Orange)	Autoanalyzer
EPA Method 314.0	Determination of Perchlorate in Drinking Water	Ion Chromatography
EPA Method 335.4	Determination of Total Cyanide	Semi-Automated Colorimetry
EPA Method 350.1	Determination of Ammonia Nitrogen	Semi-Automated Colorimetry
EPA Method 351.2	Determination of Total Kjeldahl Nitrogen	Semi-Automated Colorimetry
EPA Method 353.2	Determination of Nitrate-Nitrite Nitrogen	Automated Colorimetry
EPA Method 365.1.365.3	Determination of Phosphorus	Semi-Automated Colorimetry
EPA Method 365.4	Phosphorous, Total	Colorimetric, Automated, Block Digester AA II
EPA Method 410.4	Determination of Chemical Oxygen Demand	SemiAutomated Colorimetry
EPA Method 415.1	Determination of Organic Carbon, Total (Combustion or Oxidation)	Total Organic Carbon Analyzer
EPA Method 420.1	Phenolics	Spectrophotometer
EPA Method 420.4	Determination of Total Recoverable Phenolics	SemiAutomated Colorimetry
EPA Methods 450.1	Total Organic Halides (TOX)	Carbon adsorption with a microcoulometric-titration detector
EPA Waste Characterization 7.3.3.2	Reactive Cyanide	

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EPA Waste Characterization 7.3.4.2	Reactive Sulfide	
EPA Method 1010 A (SW-846)	Pensky-Martens closed-cup tester to determine the flash point of liquids	Closed cup testers
EPA Method 1020C (SW-846)	Standard Test Methods for Flash Point by Setaflash (Small Scale)	Closed cup testers
EPA Method 1030 (SW-846)	Ignitability of Solids	Flame
EPA Method 3060A (SW-846)	Alkaline Digestion for Hexavalent Chromium	
EPA Method 5050 (SW-846)	Bomb Preparation Method for Solid Waste	
SW-846 7196A	Chromium, Hexavalent	Colorimetric
SW-846 7199	Determination of Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents	Ion Chromatography
EPA Method 9012 (SW-846)	Total and Amenable Cyanide	Automated Colorimetric, With Off-Line Distillation
SW-846 EPA Method 9014	Cyanide in Waters and Extracts	Titrimetric and Manual Spectrophotometric
SW-846 EPA Method 9016	Free Cyanide in Water, Soils and Solid Wastes	Microdiffusion
SW-846 EPA Method 9020 B	Total Organic Halides (TOX) as chloride in drinking water and ground waters	Carbon adsorption with a microcoulometric-titration detector
SW-846 EPA Method 9023	Extractable Organic Halides (EOX) in Solids	Microcoulometric Titration
SW-846 EPA Method 9030/9034	Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides	Iodometric Titration
SW-846 EPA Method 9038	Sulfate (Turbidimetric)	Spectrophotometer
SW-846 9040	pH Electrometric Measurement	pH Meter
SW-846 9041	pH Paper Method	pH strip
EPA Method 9045 (SW-846)	Soil and Waste pH	pH Meter
EPA Method 9050 A (SW-846)	Specific Conductance	Conductivity Meter
SW-846 9056 (Modified version available)	Determination of Inorganic Anions	Ion Chromatography
SW-846 9060 A	Determine the concentration of Total Organic Carbon	Flame Ionization Detector
EPA Method 9065 (SW-846)	Phenolics	Spectrophotometric, Manual 4-AAP with Distillation
SW-846 9066	Phenolics	Colorimeter
SW-846 9076	Total Chlorine in New and Used Petroleum Products	Oxidative Combustion and Microcoulometry
SW-846 9081	Cation-Exchange Capacity of Soils (Sodium Acetate)	Atomic absorption, Emission spectroscopy, or an equivalent means
SW-846 9095B	Paint Filter Liquids Test	
SW-846 9251	Chloride by Colorimetric	Colorimeter

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EPA Method OIA 1677-09	Determination of available cyanide in water and wastewater	Ligand Exchange and Flow Injection Analysis (FIA)
Draft Method 1621	Screening Method for the Determination of Adsorbable Organic Fluorine (AOF) in Aqueous Matrices	Combustion Ion Chromatography (CIC)
HACH 10360	Luminescence Measurement of Dissolved Oxygen (LDO®) in Water and Wastewater	Luminescent dissolved oxygen meter and sensor
HACH 8000	Chemical Oxygen Demand	Spectroscopy (Colorimetry)
HACH 8146	Ferrous Iron Determination	Spectroscopy (Colorimetry)
Lloyd Kahn	Determination of Total Organic Carbon in Sediment	
MA DEP PAC		
Method 29B	Louisiana Laboratory Procedures for Analysis of Exploration & Production Waste(methods analyzed SM 4500-Cl, 9045, 120.1, and 273.1)	
NCASI 71.01	Color Measurement in Pulp Mill Wastewaters	Spectrophotometry
NECi N07-0003	Enzymatic Method for Determining Nitrate in Wastewater	Colorimeter

STANDARD METHODS

WET CHEMISTRY / INORGANIC ANALYSIS METHODS	DESCRIPTION	INSTRUMENTATION
SM 10200 H	Spectrophotometric Determination of Chlorophyll	Spectroscopy
SM 2120 B	Color	Platinum-Cobalt Visual Comparison
SM 2120 E	Color in Water	Spectrophotometer
SM 2120 F	Color in Water	Spectrophotometer
SM 2130 B	Turbidity Nephelometric method	Nephelometer
SM 2150 D	Odor	
SM 2310 B	Acidity of water	Titrimetric
SM 2320 B	Alkalinity	Titrimetric Indicator
SM 2340 B	Hardness in Water by Calculation	Calculation
SM 2340 C	Total hardness	Titrimetric, EDTA
SM 2510 B	Conductivity	Conductivity meter
SM 2520 B	Determination of Salinity Values	Conductivity meter
SM 2540 B	Total Solids	Gravimetric
SM 2540 C	Total dissolved solids (TDS)	Gravimetric

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SM 2540 D	Total Suspended Solids	Gravimetric
USGS I-3765	Total Suspended Solids	Gravimetric
SM 2540 E	Fixed and Volatile Solids	Gravimetric
SM 2540 G	Total, Fixed, and Volatile Solids	Gravimetric
SM 2540 F	Settleable Solids	Volumetric
SM2550 B	Temperature of Water	Thermometer
SM 2580 B	Oxidation-Reduction Potential	pH/millivolt meter
SM 2710 B	Oxygen -Consumption Rate	Oxygen meter/Manometric/Respirometric
SM 2710 F	Specific Gravity	Gravimetric
SM 3500-Ca B	Calcium-hardness	Titration with Color Indicator
SM 3500-Cr B	Hexavalent Chromium	Colorimetric
SM 3500-Fe B	Ferrous Iron	Spectrophotometer
SM 4110	Anions in Water	Ion Chromatography
SM 4500-Cl B	Chlorine by Iodometry	Titration with Color Indicator
SM 4500-Cl D	Chlorine by Amperometry	Titration with an Amperometer
SM 4500-Cl G	Chlorine DPD Colorimetric Method	Spectroscopy (Colorimetry; Photometry)
SM 4500-ClO2 D	Determination of chlorine dioxide and other active chlorine compounds	Colorimetric
SM 4500-CN B	Cyanide: Preliminary Treatment of samples	Not Applicable
SM 4500-CN E	Cyanide: Colorimetric Method	Spectrophotometer
SM 4500-CN C	Cyanide	Titrimetric, Colorimetric, or Potentiometric
SM 4500-CN G	Cyanides Amenable to Chlorination after Distillation	Titrimetric, Colorimetric, or Electrode method
SM 4500-CN I	Determination of weak acid dissociable (WAD) cyanide	Titrimetric, Colorimetric, or Electrode method
SM 4500-CN M	Thiocyanate	Spectrophotometer
SM 4500-F B	Fluoride Distillation Step	Not Applicable
SM 4500-F C	Fluoride by Ion-Selective Electrode Method	Ion Selective Electrode
SM 4500H+B	Determination of pH Value in Water	pH Meter
SM 4500-NH3 G	Ammonia by Automated Phenate	Continuous Flow Instrument
SM 4500-NH3 B	Ammonia: Preliminary Distillation Step	Not Applicable
SM 4500-NO2 B	Nitrite Determination by Colorimetric	Spectrophotometer
SM 4500-NO3 E	Nitrate in Water After Cadmium Reduction	Spectrophotometer

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SM 4500-Norg D	Nitrogen (Organic) by Flow Injection Analysis	Flow Injection Analysis
SM 4500-Norg C	Nitrogen (Organic) Semi-Micro-Kjedldahl Method	Not Applicable
SM 4500-O C and G	Dissolved Oxygen	Titration
SM 4500-P B	Phosphorus Sample Preparation	Not Applicable
SM 4500-P F	Phosphorus by Automated Ascorbic Acid Reduction	Automated Spectrophotometer
SM 4500-P E	Orthophosphate	Colorimetric/Spectrophotometer
SM 4500-S2 B	Separation of Soluble and Insoluble Sulfides	Not Applicable
SM 4500-S2 C	Sample Pretreatment to Remove Interfering Substances	Not Applicable
SM 4500-S2 D	Sulfide by Methylene Blue Method	Spectrophotometer
SM 4500-S2 F	Sulfide by Iodometry	Titration
SM 4500-S2 H	Calculation of Un-ionized Hydrogen Sulfide	
SM 4500-SiO2 C	Silica by Molybdosilicate Method	Spectroscopy (Colorimetry; Photometry)
SM 4500-SO3 B	Sulfite by Iodometry	Titration with Color Indicator
SM 4500-SO4	Sulfate in Water	Gravimetry
SM 5210 B and C	Biochemical Oxygen Demand	
SM 5220 D	Determinization of Chemical Oxygen Demand (COD) of water samples	Spectroscopy (Colorimetry; Photometry)
SM 5310 B	Determination of total organic carbon in surface waters, and industrial wastes.	Combustion Total Organic Carbon Analyzer
SM 5310 C	Total and Dissolved organic carbon (TOC and DOC)	Persulfate-UV Total Organic Carbon Analyzer
SM 5320 B	Total Organic Halides	TOX Analyzer
SM 5530	Phenols	Spectrophotometric
SM 5540C	MBAS- Anionic Surfactants	Spectrophotometric
SM 5910 B	UV254-absorbing compounds	Spectrophotometric
SM 10200H	Determination of Chlorophyll a and Pheophytin	Spectrophotometric
USDA LOI	TOC by Loss on Ignition	Gravimetric
NCEA-C-1282	TOC by Walkley Black	Titration and colorimetric

CONTRACT LABORATORY PROGRAM STATEMENT OF WORK

CLP SOW ISM02.4	Cyanide	Spectrophotometer
SFAM01.1	Superfund Analysis for Cyanide, Anions, Hexavalent Cr, and TOC	Varies per analyte