



SCOPE OF ACCREDITATION TO ISO 17034:2016

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REFERENCE MATERIAL PRODUCER

Valid To: September 30, 2026

Certificate Number: 1539.03

In recognition of the successful completion of the A2LA Evaluation process, accreditation is granted to this Reference Material Producer for the production of certified reference materials of the following categories:

Certified Reference Material	Class or Type of Reference Materials/Artifact or Matrix	Concentration Range <sup>2</sup> (after dilution, if applicable)	Relative Uncertainty <sup>1</sup> (Expanded)	Measurement Technique(s)
Environmental Reference Materials	Single and Multi-component microorganisms in lyophilized pellets and in solution.			MPN Membrane Filtration Pour Plate Presence/Absence
Waters Potable Water Routine Analytes, Fresh Water Routine Analytes, Industrial Wastewater, Routine Analytes	<b>Microbiology:</b> Total Coliforms Fecal Coliforms E.Coli  Enterococci Fecal Streptococci  Heterotrophic Plate Count	Presence/Absence, (20 – 2400) CFU/100 mL (20 – 2400) MPN/100 mL  Presence/Absence, (20 – 1000) CFU/100 mL (20 – 1000) MPN/100 mL  (5 – 500) CFU/mL (5 – 500) MPN/mL	(2 to 150) %	



<b>Certified Reference Material</b>	<b>Class or Type of Reference Materials/Artifact or Matrix</b>	<b>Concentration Range<sup>2</sup> (after dilution, if applicable)</b>	<b>Relative Uncertainty<sup>1</sup> (Expanded)</b>	<b>Measurement Technique(s)</b>
Environmental Reference Materials	Single and Multi-component organic and inorganic material on soil/sludge/oil and in solution.			Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Conductivity Gravimetric Ion Selective Electrode
Soils and Sludges Trace Elements, Mineral Content, Trace Organics, TCLP Leachate,	<b>Inorganic Chemistry</b> Metals Anions Nutrients Cyanide	(0.1 – 500,000) mg/kg	(0.5 – 20) %	Closed-Cup LC/UV LC/FLUOR LC/MS LC/MS/MS GC/FID GC/MS GC/ECD GC/NPD
Organic Reference Materials	<b>Physical Properties / pH</b> Corrosivity (pH) Ignitability	(2 – 12) S.U. (100 – 200) °F	(0.2 – 30) %	
Petroleum Products Transformer Oils, PCBs	<b>Organic Chemistry</b> Volatile Organic Compounds (VOCs) Nitroaromatics/Nitramines Polynuclear Aromatic Hydrocarbons (PAHs) Semi-Volatile Organic Compounds (SVOC) Per-and Polyfluoroalkyl Substances (PFAS) Glycols Organochlorine Pesticides (OCPs) Carbamate Pesticides Organophosphorus Pesticides (OPPs) Chlorinated Acid Herbicides Polychlorinated Biphenyls (PCBs) - Aroclors  <b>Petroleum Hydrocarbons</b> (TPH/DRO/GRO/VPH/EPH/ORO) Oil & Grease  <b>TCLP</b> Metals Volatiles Organic Compounds (VOCs) Semi-Volatile Organic Compounds (SVOC) Organochlorine Pesticides (OCPs)	1.0 µg/kg – 10,000 mg/kg	(0.4 – 30) %	
		(0.1 – 10,000) mg/kg	(0.5 – 30) %	
		(0.01 – 1000) mg/L	(0.5 – 25) %	

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Environmental Reference Materials  Health and Industrial Hygiene  Materials on Filter Media  Trace Elements in Blank Filters  Reference Gases  Gas Mixtures  Trace Volatile Organic Compounds	Single and Multi-component organic and inorganic material on filter paper, on sorbent substance and in solution:  <b>Inorganic Chemistry</b> Metals (Filter)  Particulate Matter (Filter) Metals (Impinger) Particulate Matter (Impinger) Hydrogen Halides/Halogens Anions/Cations Ammonia  <b>Organic Chemistry</b> Volatile Organic Compounds (Sorbent) Semi-Volatile Organic Compounds (SVOC) Organochlorine Pesticides (OCPs) Polychlorinated Biphenyls (PCBs) - Aroclors Polynuclear Aromatic Hydrocarbons (PAHs) Aldehydes/Ketone	1 µg/Filter – 2000 mg/Filter (10 – 2000) mg/Filter (0.0005 – 2000) µg/ml (50 – 1000) mg/L (0.1 – 2500) mg/L (0.2 – 4000) mg/dscm (0.1 – 500) mg/L  0.01 µg/sample – 5000 µg/sample	          (0.2 – 15) %          (0.5 – 20) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Conductivity Gravimetric Ion Selective Electrode LC/UV LC/FLUOR LC/MS GC/FID GC/MS GC/ECD
Inorganic Reference Materials  Pure Chemicals Primary Standards Working Standards Secondary Standards Standards Chromatography Standards Pharmaceutical Materials  Organic Reference Materials  Pure Organic Compounds Pharmaceutical Materials	Single and Multi-component organic and inorganic material in solution:  <b>Metals/Inorganic Chemistry</b> Trace Metals Anions/Cations/Cyanide Ions Nutrients Demand Solids Total Organic Carbon (TOC) Total Inorganic Carbon Total Organic Halides (TOX) Surfactants Phenols  <b>Physical Properties / pH</b> Conductivity Turbidity pH Buffers	          (0.001 – 20,000) mg/L          (5 – 500,000) uS/cm (0.5 – 4000) NTU (2 – 12) S.U.	          (0.1 – 8) %          (0.2 – 5) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Infrared Conductivity Gravimetric Ion Selective Electrode Nephelometry

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Ion Activity pH Standards  Ion Selective Electrode Calibrants Conductivity Standards Buffer Systems	Single and Multi-component organic and inorganic material in solution:  <b>Ultra-Pure Water Analytes</b> Conductivity Total Organic Carbon Total Inorganic Carbon	(5 – 500,000) uS/cm (0.05 – 10,000) mg/L (0.05 – 10,000) mg/L	(0.1 – 5) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Colorimetric Infrared Conductivity Gravimetric Ion Selective Electrode Nephelometry
Environmental Reference Materials  Waters  Potable Water Routine Analytes Trace Elements Organic Pollutants Other Analytes  Industrial Waste Water Routine Analytes Trace Elements Organic Pollutants Other Analytes	Single and Multi- component organic and inorganic material in solution:  <b>Miscellaneous Chemistry</b> Cyanide Silica Surfactants Total Organic Halides Acidity Organic Carbon Chlorine Alkalinity Dissolved Oxygen	1.0 µg/L – 10,000 mg/L	(0.4 – 20) %	Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Conductivity Nephelometry Gravimetric Ion Selective Electrode LC/UV LC/FLUOR LC/MS LC/MS/MS GC/FID GC/MS GC/ECD GC/NPD

Certified Reference Material	Class or Type of Reference Materials/Artifact or Matrix	Concentration Range <sup>2</sup> (after dilution, if applicable)	Relative Uncertainty <sup>1</sup> (Expanded)	Measurement Technique(s)
Environmental Reference Materials	Single and Multi-component organic and inorganic material in solution:			Titration IC ICP/OES ICP/MS CVAA Spectrophotometry Conductivity Nephelometry Gravimetric Ion Selective Electrode LC/UV LC/FLUOR LC/MS LC/MS/MS GC/FID GC/MS GC/ECD GC/NPD
Waters	<b>Organic Chemistry</b>	2 pg/L – 10,000 mg/L	(0.3 – 35) %	
Potable Water	Volatiles Organic Compounds (VOCs)			
Routine Analytes	Semi-Volatiles Organic Compounds (SVOCs)			
Trace Elements	Per-and Polyfluoroalkyl Substances (PFAS)			
Organic Pollutants	Polynuclear Aromatic Hydrocarbons (PAHs)			
Other Analytes	Phenolics			
Industrial Waste Water	Organochlorine Pesticides (OCPs)			
Routine Analytes	Organonitrogen Pesticides (ONPs)			
Trace Elements	Organophosphorus Pesticides (OPPs)			
Organic Pollutants	Triazine Pesticides			
Other Analytes	Carbamate/Carbamoxyl oxime Pesticides			
	Polychlorinated Biphenyls (PCBs) – Aroclors/Congeners			
	Chlorinated Acid Herbicides			
	Herbicides			
	Haloacetic Acids			
	Glycols			
	Nitroaromatics/Nitramines			
	Petroleum Hydrocarbons (TPH/DRO/GRO/PVOC/VPH/EPH)			
	Disinfection By-Products			
	Dioxin			

<sup>1</sup> Uncertainties for the certified values are available on the reference material producer's issued certificates for reference materials and certified reference materials. The uncertainty ranges stated above represent typical relative expanded uncertainties, where k approximates a 95% confidence interval for given analytes within their respective product/category or sub-category. As some categories encompass many different products, concentration ranges, matrices, technologies and analyte/properties, please contact ERA/Waters for product/lot specific Certificates of Analysis to obtain actual estimates of uncertainty.

<sup>2</sup> This scope includes concentration ranges where applicable. Contact the reference material producer for certified values and other lot specific values.



# Accredited Reference Material Producer

A2LA has accredited

**ERA**  
Golden, CO

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation.

This producer meets the requirements of ISO 17034:2016 *General Requirements for the Competence of Reference Material Producers*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.



Presented this 20<sup>th</sup> day of November 2024.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1539.03  
Valid to September 30, 2026

*For reference materials to which this accreditation applies, please refer to the reference material producer's Scope of Accreditation.*