SCOPE OF ACCREDITATION TO ISO 17034:2016

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REFERENCE MATERIALS PRODUCER

Valid To: July 31, 2026 Certificate Number: 0883.02

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 and reference materials of the following categories:

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Trace Metals Standard	Aluminum (Al) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Antimony (Sb) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Arsenic (As) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Arsenic $^{+3}$(As^{+3}) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-26	Spectroscopy Titrimetric
	Arsenic $^{+5}$(As^{+5}) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Trace Metals Standard	Barium (Ba) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-22	Spectroscopy Gravimetric
	^{135}Barium(^{135}Ba) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Beryllium (Be) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Bismuth (Bi) CRMs Containing this element – Range 0.02 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Boron (B) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{10}Boron(^{10}B) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{11}Boron(^{11}B) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Cadmium (Cd) CRMs Containing this element – Range 0.025 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric

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Trace Metals Standard	^{106}Cadmium(^{106}Cd) CRMs Containing this element – Range 0.025 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Calcium (Ca) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Carbon (C) CRMs Containing this element – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Cerium (Ce) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Cesium (Cs) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.8 – Modified WI-QC-22 EPA 300.0 - Modified	Spectroscopy Gravimetric Chromatography
	Chromium^{+3} (Cr^{+3}) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Hexavalent Chromium (Cr+6) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7–Modified; EPA Method 200.8–Modified EPA Method 300.0 Modified WI-QC-37	Spectroscopy Chromatography Titrimetric
	^{50}Chromium(^{50}Cr) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy

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Trace Metals Standard	Cobalt (Co) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Copper (Cu) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	^{65}Copper(^{65}Cu) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Dysprosium (Dy) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Erbium (Er) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Europium (Eu) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Gadolinium (Gd) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Gallium (Ga) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Germanium (Ge) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy

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Trace Metals Standard	Gold (Au) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Hafnium (Hf) CRMs Containing this element – Range 0.02 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified	Spectroscopy
	Holmium (Ho) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7– Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Iodide (I^-) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-29 WI-QC-48	Spectroscopy Titrimetric
	Indium (In) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-21	Spectroscopy Titrimetric
	Iridium (Ir) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified SOP-LAB-34	Spectroscopy, Gravimetric
	Iron (Fe) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified WI-QC-21	Spectroscopy Titrimetric
	^{54}Iron(^{54}Fe) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 –Modified	Spectroscopy

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Trace Metals Standard	^{57}Iron(^{57}Fe) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Lanthanum (La) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Lead (Pb) CRMs Containing this element – Range 0.025 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	^{204}Lead(^{204}Pb) CRMs Containing this element – Range 0.025 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{206}Lead(^{206}Pb) CRMs Containing this element – Range 0.025 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{207}Lead(^{207}Pb) CRMs Containing this element – Range 0.025 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Lithium (Li) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	Spectroscopy Gravimetric
	^{6}Lithium(^{6}Li) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	Spectroscopy Gravimetric

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Trace Metals Standard	Lutetium (Lu) CRMs Containing this element – Range 0.02 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Magnesium (Mg) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	^{25}Magnesium(^{25}Mg) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Manganese (Mn) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Mercury (Hg) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Molybdenum (Mo) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Neodymium (Nd) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Nickel (Ni) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Trace Metals Standard	^{61}Nickel(^{61}Ni) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Niobium (Nb) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Osmium (Os) CRMs Containing this element – Range 0.1 µg/L to 1011 µg/mL Relative uncertainty ± 1%	WI-QC-17 SOP-LAB-32	Spectroscopy Gravimetric
	Palladium (Pd) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Phosphorus (P) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-28	Spectroscopy Titrimetric
	Platinum (Pt) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Potassium (K) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	Spectroscopy Gravimetric
	Praseodymium (Pr) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric

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Trace Metals Standard	Rhenium (Re) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Rhodium (Rh) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Rubidium (Rb) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	Chromatography Spectroscopy Gravimetric
	Ruthenium (Ru) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Samarium (Sm) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Scandium (Sc) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Selenium^{+4} (Se^{+4}) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Selenium^{+6} (Se^{+6}) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy

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Trace Metals Standard	^{78}Selenium(^{78}Se) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{82}Selenium(^{82}Se) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Silicon (Si) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Silver (Ag) CRMs Containing this element – Range 0.025 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-29	Spectroscopy Titrimetric
	^{109}Silver(^{109}Ag) CRMs Containing this element – Range 0.025 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Sodium (Na) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-22	Spectroscopy Gravimetric
	Strontium (Sr) CRMs Containing this element – Range 0.05 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	^{86}Strontium(^{86}Sr) CRMs Containing this element – Range 0.05 µg/L to 100 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy

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Trace Metals Standard	Sulfur (S) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-28 & WI-QC-46	Spectroscopy Titrimetric
	Tantalum (Ta) CRMs Containing this element – Range 0.025 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Tellurium (Te) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Terbium (Tb) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Thallium (Tl) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{203}Thallium(^{203}Tl) CRMs Containing this element – Range 0.05 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{205}Thallium(^{205}Tl) CRMs Containing this element – Range 0.05 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Thorium (Th) CRMs Containing this element – Range 1 µg/L to 20 000 µg/mL Relative uncertainty ± 1%	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric

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Trace Metals Standard	Thulium (Tm) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Tin (Sn) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	^{122}Tin(^{122}Sn) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Titanium (Ti) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Tungsten (W) CRMs Containing this element – Range 0.05 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Uranium(U) CRMs Containing this element – Range 0.02 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Vanadium (V) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Ytterbium (Yb) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric

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Trace Metals Standard	Yttrium (Y) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	Zinc (Zn) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified WI-QC-21	Spectroscopy Titrimetric
	^{67}Zinc(^{67}Zn) CRMs Containing this element – Range 0.1 µg/L to 10 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
	Zirconium (Zr) CRMs Containing this element – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 – Modified; EPA Method 200.8 – Modified	Spectroscopy
Ion Chromatography & Ion Selective Electrode Calibrants	3-methoxypropylamine (MPA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Acetate (OAC) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Adipate (ADP) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Ammonia (NH3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography

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Ion Chromatography & Ion Selective Electrode Calibrants	Ammonium (NH4) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mLRelative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	Chromatography Titrimetric
	Ammonia as Nitrogen (NNH3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Ammonium as Nitrogen (NNH4) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	Chromatography Titrimetric
	Benzoate (BEN) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Bromate (BRO3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29	Chromatography Titrimetric
	Bromide (BR) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	Chromatography Titrimetric
	Butyrate (BTR) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Carbonate (CO3) CRMs Containing this component Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	WI-QC-33 WI-QC-45	Titrimetric

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Ion Chromatography & Ion Selective Electrode Calibrants	Chlorate (CLO3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified EPA Method 200.7	Chromatography Spectroscopy
	Chloride (CL) CRMs Containing this component – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-29 WI-QC-48	Chromatography Titrimetric
	Chlorite (CLO2) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified WI-QC-32-9	Chromatography Titrimetric
	Chromate (CRO4) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 200.7 WI-QC-37	Spectroscopy Titrimetric
	Citrate (CIT) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Dichloroacetate (DCA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	DiEthanolamine (DEA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Dimethylamine (DMA) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography

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Ion Chromatography & Ion Selective Electrode Calibrants	Fluoride (F) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Formate (HCO) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Glutarate (GTR) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Glycolate (GLY) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Lactate (LCT) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Malate (MLA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Maleate (MLE) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Malonate (MLO) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Ion Chromatography & Ion Selective Electrode Calibrants	Methanesulfonate (MSA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Monoethanolamine (MEA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Monomethylamine (MMA) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Nitrate (NO3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Nitrate as Nitrogen (NNO3) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Nitrilotriacetate (NTA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Nitrite (NO2) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Nitrite as Nitrogen (NNO2) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Ion Chromatography & Ion Selective Electrode Calibrants	Oxalate (OXA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Perchlorate (CLO4) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified EPA Method 200.7	Chromatography Spectroscopy
	Phosphate (PO4) CRMs Containing this component – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Phosphate as Phosphorous (PPO4) CRMs Containing this component – Range 0.1 µg/L to 750 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Phthalate (KHP) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Propionate (OPR) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Succinate (SCC) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Sulfate (SO4) CRMs Containing this component – Range 0.1 µg/L to 950 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Ion Chromatography & Ion Selective Electrode Calibrants	Tartrate (TRTR) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Thiocyanate (SCN) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	WI-QC-29WI-QC-48	Titrimetric
	Thiosulfate (S2O3) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	Standard Methods 4500-Cl B – Modified WI-QC-32-35	Titrimetric
	Triethanolamine (TEA) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Triethylamine (TA) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Trimethylamine (TMA) CRMs Containing this component– Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
	Tetramethylammonium (TMAH) CRMs Containing this component – Range 0.1 µg/L to 100 000 µg/mL Relative uncertainty ± 1 %	EPA Method 300.0 – Modified	Chromatography
Waters	Filterable, Non-Filterable, and Total Solids CRMs Total Solids Range (140 to 800) mg/L Non-filterable Solids (20 to 100) mg/L Dissolved Solids (140 to 800) mg/L Relative uncertainty ± 10 %	Modified Standard Methods 2540C, 2540D, 2540B respectively	Gravimetric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Waters	Oil & Grease CRMs Range (20 to 200) mg/L Relative uncertainty ± 5 %	Standard Methods 5520B - Modified	Gravimetric
	Cation CRMs Ca^{+2} Range (10 to 100) mg/L K^{+1} Range (4 to 40 mg/L) Mg^{+2} Range (4.0 to 40 mg/L) Na^{+1} Range (10 to 100 mg/L) Relative uncertainty ± 1 %	EPA Method 200.7 – Modified	Spectroscopy
	Chromium $^{+6}$ CRMs Cr^{+6} Range (90 to 900 µg/L) Relative uncertainty ± 1%	Standard Methods 3500-Cr B Modified EPA Method 200.7 – Modified; EPA Method 300.0 – Modified;	Colorimetric Spectroscopy Chromatography
	Cyanide CRMs Containing this component– Range (0.1 to 10 000) µg/mL Relative uncertainty ± 5 %	Standard Methods 4500-CN^- D – Modified; WI-QC Appendix A CN	Titrimetric
	Hg CRMs Hg Range (3.0 to 30 µg/L) Relative uncertainty ± 1%	EPA Method 200.7 – Modified	Spectroscopy
	Metals / Trace Metals CRMs Ag - Range (100 to 1000 µg/L) Al - Range (200 to 4000 µg/L) As - Range (90 to 900 ug/L) B – Range (800 to 2000 ug/L) Ba - Range (100 to 2500 µg/L) Be - Range (50 to 500 ug/L) Ca - Range (10 to 100 mg/L) Cd - Range (100 to 1000 ug/L) Co – Range (100 to 1000 ug/L) Cr - Range (100 to 1000 ug/L) Cu - Range (100 to 1000 ug/L) Fe - Range (200 to 4000 µg/L) Mn -Range (200 to 2000 ug/L) Mo – Range (60 to 600 ug/L) Ni - Range (200 to 2000 ug/L) Pb - Range (100 to 1500 ug/L) Sb - Range (90 to 900 µg/L) Se - Range (100 to 1000 ug/L) Sr – Range (50 to 500 ug/L) Tl - Range (80 to 800 ug/L) V – Range (50 to 2000 ug/L) Zn - Range (300 to 2000 ug/L) Relative uncertainty ± 1 %	EPA Method 200.7 – Modified	Spectroscopy

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Waters	Nitrite CRMs Nitrite as Nitrogen Range (0.4 to 4 mg/L) Relative uncertainty ± 1%	EPA Method 300.0 – Modified	Chromatography
	Simple Nutrients CRMs Phosphate as Range (0.5 to 5.5 mg/L) Nitrate as Range (2.0 to 25 mg/L) Ammonium as Range (1.0 to 20 mg/L) Relative uncertainty ± 1%	EPA Method 300.0 – Modified	Chromatography
	pH CRMs pH Range (5 to 10 units @ *x* °C) Absolute Uncertainty ± 0.05 pH units	Standard Methods 4500 – H+ – Modified WI-QC-Appendix A_pH	Electrometric
	Simulated Rainwater CRMs Ca^{+2} - Range (3.5 to 110 mg/L) Cl^{-} - Range (35 to 275 mg/L) F^{-} - Range (0.3 to 4 mg/L) K^{+} - Range (4 to 40 mg/L) Mg^{+2} - Range (2 to 40 mg/L) pH - Range (5 to 10 units @ *x* °C) Conductivity - Range (200 to 1200 µmhos @ *x* °C) Na^{+} - Range (6 to 100 mg/L) NH_4^{+} - Range (0.79 to 24 mg/L) NO_3^{-} - Range (1.1 to 177 mg/L) SO_4^{-2} - Range (5 to 125 mg/L) Relative uncertainty ± 2 %	EPA Method 200.7- Modified EPA Method 300.0 – Modified Standard Methods 4500 – H+ – Modified WI-QC-AppendixA_pH Standard Methods 2510B – Modified WI-QC-Appendix A_Conductance	Spectroscopy Chromatography Electrometric
	Water Hardness CRMs Ca - Range (25 to 250 mg/L) Mg - Range (4.0 to 40 mg/L) Hardness as $CaCO_3$ - Range (40 to 415 mg/L) Relative uncertainty 1 %	EPA Method 200.7 – Modified Standard Methods 2340 B – Modified	Spectroscopy
	Minerals CRMs Cl^{-} - Range (35 to 275 mg/L) F^{-} - Range (0.4 to 4 mg/L) K^{+} - Range (4 to 40 mg/L) Nitrate as (2.0 to 25 mg/L) Conductivity - Range (200 to 1200 µmhos @ *x* °C) Alkalinity - Range (25 to 400 mg/L) Na^{+} - Range (10 to 100 mg/L) SO_4^{-2} - Range (5 to 125 mg/L) Relative uncertainty ± 1 %	EPA Method 200.7 – ModifiedEPA Method 300.0 – Modified Standard Methods 2510B – Modified WI-QC_ AppendixA_ Conductance Standard Methods 2320B – Modified WI-QC-Appendix A_ Alkalinity	Spectroscopy Chromatography Electrometric Titrimetric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Water	Carbon CRMs Total Organic Carbon Containing this element Range 0.1 µg/mL to 100 000 µg/mL Relative uncertainty ± 1 %	WI-QC-45	Titrimetric Spectroscopy
	Total Alkalinity CRMs Range 1 µg/mL to 20 000 µg/mL Relative uncertainty ± 1 %	WI-QC-Appendix A_ Alkalinity EPA Method 200.7 – Modified	Titrimetric Spectroscopy
	Bicarbonate CRMs Range 1 µg/mL to 50 000 µg/mL Relative uncertainty ± 1 %	WI-QC-18.1WI-QC-33	Titrimetric Spectroscopy
pH Standards	pH 0.5 CRMs Range (0.48 to 0.52 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 1.68 CRMs Range (1.61 to 1.77 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 2 CRMs Range (1.92 to 2.08 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 3 CRMs Range (2.90 to 3.10 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 4 CRMs Range (3.90 to 4.10 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 4.01 CRMs Range (3.90 to 4.10 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 5 CRMs Range (4.90 to 5.10 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
pH Standards	pH 6 CRMs Range (5.70 to 6.30 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 6.86 CRMs Range (6.75 to 7.00 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ - Modified WI-QC Appendix A_pH	Electrometric
	pH 7 CRMs Range (6.90 to 7.10 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 8 CRMs Range (7.85 to 8.15 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 9 CRMs Range (8.65 to 9.35 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 9.18 CRMs Range (8.85 to 9.51pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 10 CRMs Range (9.65 to 10.35 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 10.01 CRMs Range (9.65 to 10.35 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 11 CRMs Range (10.25 – 11.75 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 12 CRMs Range (10.75 to 12.75 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 12.45 CRMs Range (11.35 to 13.20 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	pH 12.47 CRMs Range (11.35 to 13.20 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A _pH	Electrometric
	Custom pH CRMs Range (0.1 to 13.3 pH units @ *x* °C) Absolute uncertainty ± 0.05 pH units	Standard Methods 4500H$^+$ Modified WI-QC Appendix_A_pH	Electrometric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Titrants	Titrant 0.1M Hydrochloric Acid CRMs Range (0.098 to 0.102) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 1.0M Hydrochloric Acid CRMs Range (0.980 to 1.020) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 0.1M Nitric Acid CRMs Range (0.098 to 0.102) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 1.0M Nitric Acid CRMs Range (0.980 to 1.020) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 0.1M Perchloric Acid CRMs Range (0.098 to 0.102) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 0.1M Sodium Hydroxide CRMs Range (0.098 to 0.102) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 1.0M Sodium Hydroxide CRMs Range (0.980 to 1.020) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 0.05M EDTA CRMs Range (0.049 to 0.051) M Relative uncertainty ± 1 %	WI-QC-47	Titrimetric
	Titrant 0.5M EDTA CRMs Range (0.490 to 0.510) M Relative uncertainty ± 1%	WI-QC-47	Titrimetric
	Titrant 0.1N AGNO3 CRMs Range (0.098 to 0.102) N Relative uncertainty ± 1%	WI-QC-47	Titrimetric
	Titrant 0.1N NA2S2O3 CRMs Range (0.098 to 0.102) N Relative uncertainty ± 1 %	WI-QC-47	Titrimetric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Titrants	Custom Titrants CRMs Range (0.0001 to 50) N Relative uncertainty ± 1 %	WI-QC-47 WI- QC-21 Standard Methods 4500H^{+} Modified Standard Methods 4500-CN- D- Modified; WI-QC_Appendix_A_CN WI-QC-32 WI-QC-27	Titrimetric Electrometric
Conductivity Standards	2 µmhos/cm Conductivity CRMs Range (1.50 to 2.50) µmhos/cm @ *x* °C Relative uncertainty ± 10%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	5 µmhos/cm Conductivity CRMs Range (4.50 to 5.50) µmhos/cm @ *x* °C Relative uncertainty ± 10%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	10 µmhos/cm Conductivity CRMs Range (9.0 to 11.0) µmhos/cm @ *x* °C Relative uncertainty ± 2%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	84 µmhos/cm Conductivity CRMs Range (75.0 to 87.0) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	100 µmhos/cm Conductivity CRMs Range (90.0 to 102.2) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	147 µmhos/cm Conductivity CRMs Range (130.0 to 150.0) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric

Certified Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Conductivity Standards	500 µmhos/cm Conductivity CRMs Range (– 450 to 505) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	1000 µmhos/cm Conductivity CRMs Range (900 to 1010) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	1200 µmhos/cm Conductivity CRMs Range (1080 to 1220) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	1400 µmhos/cm Conductivity CRMs Range (1260 to 1414) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	1413 µmhos/cm Conductivity CRMs Range (1270 to 1427) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	1430 µmhos/cm Conductivity CRMs Range (1285 to 1444) µmhos/cm@ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	10,000 µmhos/cm Conductivity CRMs Range (9000 to 10 100) µmhos/cm @ *x* °C Relative uncertainty ± 1 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	100,000 µmhos/cm Conductivity CRMs Range (90 500 to 101 000) µmhos/cm @ *x* °C Relative uncertainty ± 1%	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric
	Custom Conductivity CRMs Range (1.0 to 250 000) µmhos/cm @ *x* °C Relative uncertainty ± 1 to 10 %	Standard Methods 2510B Modified WI-QC_AppendixA_ Conductance	Electrometric

Reference Material	Concentration Ranges and Best Relative Uncertainty[1]	Test, Analysis, Measurement, Methods	Measurement Technique(s)
Eluent	Carbonate Eluent RMs Containing this component - Range (0.0005 M to 3 M) Relative Uncertainty ± 0.5 %	WI-QC-33 WI-QC-28	Titrimetric
	Bicarbonate Eluent RMs Containing this component - Range (0.0005 M to 3 M) Relative Uncertainty ± 0.5 %	WI-QC-33 WI-QC-28	Titrimetric
	Methanesulfonate Eluent RMs Range (0.1M to 5M) Relative Uncertainty ± 0.5 %	WI-QC-18.1	Spectroscopy
Releasing Agent	Lanthanum Releasing Agent RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-19 WI-QC-18.1	Spectroscopy
Ionization Buffer	Cesium Ionization Buffer RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-19 WI-QC-22 WI-QC-18.1	Spectroscopy Gravimetric
	Lithium Ionization Buffer RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-19 WI-QC-18.1	Spectroscopy
Matrix Modifier	Magnesium Matrix Modifier RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-19 WI-QC-18.1	Spectroscopy
	Phosphate Matrix Modifier RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1%	WI-QC-19 WI-QC-18.1	Spectroscopy
	Palladium Matrix Modifier RMs Range (100 µg/mL to 100 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-19 WI-QC-18.1	Spectroscopy
	Palladium and Magnesium Matrix Modifier RMs Range (100 µg/mL to 10 000 µg/mL) Relative Uncertainty ± 1 %	WI-QC-18.1	Spectroscopy

[1] Upper concentration range dependent on solubility of starting material used. An absolute uncertainty estimate may be determined by multiplying the stated Relative uncertainty by the reported certified reference material value on the certificate. The absolute uncertainty estimate will thus be represented in the units of the value provided on the certified reference material certificate. Uncertainties are reported as the maximum expected for each material.

Accredited Reference Material Producer

A2LA has accredited

I.V. LABS, INC DBA INORGANIC VENTURES

Christiansburg, VA

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 18th day of September 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 883.02
Valid to July 31, 2026

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