

Environmental and Process Water

Proficiency Testing and Reference Materials



Your Partner In Quality

Waters

THE SCIENCE OF WHAT'S POSSIBLE.™

COMMITMENT TO QUALITY

For more than 40 years, ERA™ has been providing analytical laboratories and organizations with the products and services required to eliminate inaccurate results. Laboratories globally rely on ERA's products to be integrated into their quality programs to ensure total confidence in their data analysis.

Our comprehensive range of Proficiency Testing (PT) programs and Certified Reference Materials (CRMs) are designed to provide you with confidence that your data is valid and defensible. Whether complying with regulatory requirements or internal quality programs, you can depend on ERA to support your efforts in providing sound, well documented data so you can have confidence in your decisions.

Then and Now – 25 Years in Continued Quality Commitment



(left to right)

Lisa Berry, Dale Shallenberger, Curtis Wood, and Craig Huff

CONTENTS

Environmental

Proficiency Testing Scheme Schedule 2020–21 6

Products

■ Water Pollution	8
■ DMR-QA	21
■ Water Supply	22
■ Microbiology	32
■ Soil	36
■ Underground Storage Tank (UST)	46
■ Air & Emissions	52
■ Radiochemistry	58
■ Low-Level CRMs	64
■ Custom Standards	70
■ Calibration Standards	74
■ Reagents	80

Process Water

Total Organic Carbon Standards

ANATEL TOC	88
Sievers TOC	91
Analytik Jena TOC	93
OI Analytical TOC	94
Shimadzu TOC	96
Teledyne Tekmar TOC	97
Other TOC Instruments	98

Consumables 99

Cleaning Validation Products 100

Other Reference Standards

Inorganic Carbon	101
Turbidity	101
High-Purity Water	102
pH Buffers	102

Conductivity Standards 103

New and Reformulated Products

Cat #	Product	Product Type
597	1,4-Dioxane (WP)	PT 14
402	1,4-Dioxane (WP)	CRM 14
402QR	1,4-Dioxane (WP)	QR 14
272	1,4-Dioxane (WS)	PT 27
689	1,4-Dioxane (WS)	CRM 27
689QR	1,4-Dioxane (WS)	QR 27
461	1,4-Dioxane Soil	PT 39
538	1,4-Dioxane Soil	CRM 39
538QR	1,4-Dioxane Soil	QR 39
598	PFAS (Non-Potable Water (WP)	PT 15
403	PFAS (Non-Potable Water (WP)	CRM 15
403QR	PFAS (Non-Potable Water (WP)	QR 15
960	PFAS Drinking Water	PT 28
735	PFAS Drinking Water	CRM 28
735QR	PFAS Drinking Water	QR 28
462	PFAS Soil	PT 41
604	PFAS Soil	CRM 41
604QR	PFAS Soil	QR 41
929	PFAS Ground Water & Surface Water	PT 28
731	PFAS Ground Water & Surface Water	CRM 28
731QR	PFAS Ground Water & Surface Water	QR 28

Sales Information and Indexes

Distributors, Sales Partners, and Subscription Services 105

Environmental Part Number Index 106

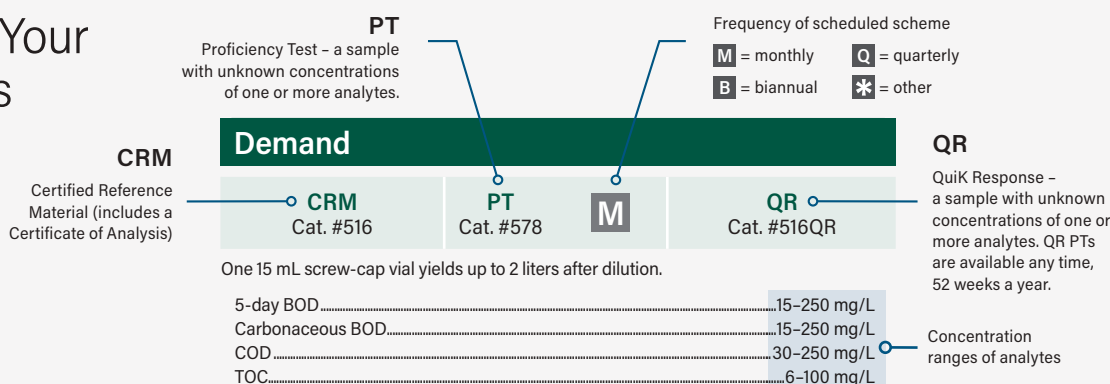
Environmental Product Index 112

Analyte Index 114

Process Water Product Index 118

Glossary 120

Ordering Your Standards



DELIVERING CONTINUOUS SUPPORT

Environmental Resource Associates (ERA) is founded in Chicago, Illinois by Mark Carter and Terry Epstein as a reference materials provider for environmental laboratories

1977

ERA receives ISO 9001 certification

1993

Process standards product line is launched including reference materials for total organic carbon and conductivity

2000

ERA is acquired by Waters™ Corp, the worldwide leader in liquid chromatography, mass spectrometry and thermal analysis

2006

1982

Analytical Products Group, Inc. (APG) is founded in Marietta, Ohio as a proficiency testing provider

1999

ERA achieves PT provider accreditation by NIST/NVLAP for EPA approved studies

2006

ERA opens international office in Manchester, UK offering reference materials to laboratories throughout Europe

Waters ERA acquires
Analytical Products
Group, Inc. (APG)

2008

Waters ERA introduces
Stationary Source Audit
Sample (SSAS)

2013

eDATA 2.0
is launched

2015

Today

After more than 40 years
in business, Waters ERA
products are in use in
over 80 countries by
nearly 13,000 labs

2008

Waters ERA products go
to the International
Space Station

2014

Waters ERA innovates
2-day turn around for final
study reports

2019

Major upgrades to
business systems
that deliver superior
customer experience



ERA

A Waters Company

2020 Proficiency Testing Scheme Schedule



www.eraqc.com

Water Pollution (including UST in Water)

	Scheme #	Opens	Closes
Q	WP 300	Jan 13	Feb 27
	WP 301	Feb 10	Mar 26
	WP 302	Mar 9	Apr 23
Q	WP 303	Apr 13	May 28
	WP 304	May 11	Jun 25
	WP 305	Jun 8	Jul 23
Q	WP 306	Jul 13	Aug 27
	WP 307	Aug 10	Sep 24
	WP 308	Sep 8	Oct 23
Q	WP 309	Oct 9	Nov 23
	WP 310	Nov 13	Dec 28
	WP 311	Dec 11	Jan 25, 2021

MRAD

Scheme #	Opens	Closes
MRAD 32	Mar 16	May 15
MRAD 33	Sep 14	Nov 13

2 schemes per year – open for 60 days

Soil (including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 109	Jan 20	Mar 5
Q	SOIL 110	Apr 20	Jun 4
Q	SOIL 111	Jul 20	Sep 3
Q	SOIL 112	Oct 16	Nov 30

Water Supply

	Scheme #	Opens	Closes
Q	WS 282	Jan 6	Feb 20
	WS 283	Feb 3	Mar 19
	WS 284	Mar 2	Apr 16
Q	WS 285	Apr 6	May 21
	WS 286	May 4	Jun 18
	WS 287	Jun 1	Jul 16
Q	WS 288	Jul 6	Aug 20
	WS 289	Aug 3	Sep 17
	WS 290	Sep 1	Oct 16
Q	WS 291	Oct 2	Nov 16
	WS 292	Nov 2	Dec 17
	WS 293	Dec 4	Jan 18, 2021

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 51	Jan 27	Mar 12
Q	AE 52	Apr 27	Jun 11
Q	AE 53	Jul 27	Sep 10
Q	AE 54	Oct 23	Dec 7

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 120	Jan 6	Feb 20
Q	RAD 121	Apr 6	May 21
Q	RAD 122	Jul 6	Aug 20
Q	RAD 123	Oct 2	Nov 16



Need PT results fast? QuiK Response™ PTs are available on demand, 52 weeks a year. Plus, when you report in eDATA, you receive your final QuiK Response PT results instantly. Contact your Customer Service Representative or an authorized Waters ERA sales partner to place your QuiK Response order.

Schedule subject to change – see Waters ERA's website at www.eraqc.com.

Q Quarterly Study

2021 Proficiency Testing Scheme Schedule



www.eraqc.com

Water Pollution (including UST in Water)

	Scheme #	Opens	Closes
Q	WP 312	Jan 18	Mar 4
	WP 313	Feb 15	Apr 1
	WP 314	Mar 15	Apr 29
Q	WP 315	Apr 12	May 27
	WP 316	May 17	Jul 1
	WP 317	Jun 14	Jul 29
Q	WP 318	Jul 19	Sep 2
	WP 319	Aug 16	Sep 30
	WP 320	Sep 13	Oct 28
Q	WP 321	Oct 15	Nov 29
	WP 322	Nov 12	Dec 27
	WP 323	Dec 13	Jan 27, 2022

Water Supply

	Scheme #	Opens	Closes
Q	WS 294	Jan 11	Feb 25
	WS 295	Feb 8	Mar 25
	WS 296	Mar 8	Apr 22
Q	WS 297	Apr 5	May 20
	WS 298	May 10	Jun 24
	WS 299	Jun 7	Jul 22
Q	WS 300	Jul 12	Aug 26
	WS 301	Aug 9	Sep 23
	WS 302	Sep 7	Oct 22
Q	WS 303	Oct 8	Nov 22
	WS 304	Nov 5	Dec 20
	WS 305	Dec 6	Jan 20, 2022

MRAD

Scheme #	Opens	Closes
MRAD 34	Mar 22	May 21
MRAD 35	Sep 20	Nov 19

2 schemes per year – open for 60 days

Soil (including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 113	Jan 25	Mar 11
Q	SOIL 114	Apr 19	Jun 3
Q	SOIL 115	Jul 26	Sep 9
Q	SOIL 116	Oct 22	Dec 6

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 55	Jan 29	Mar 15
Q	AE 56	Apr 26	Jun 10
Q	AE 57	Jul 30	Sep 13
Q	AE 58	Oct 29	Dec 13

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 124	Jan 11	Feb 25
Q	RAD 125	Apr 5	May 20
Q	RAD 126	Jul 12	Aug 26
Q	RAD 127	Oct 8	Nov 22

The Industry Standard
for over 40 years



Schedule subject to change – see Waters ERA's website at www.eraqc.com.

Q Quarterly Study

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WATER POLLUTION

Matrices with high concentrations of analytes for testing water pollution or waste water. Standards may be used to satisfy PT requirements worldwide.

Water Pollution (including UST in Water) PT Schedule 2020 2021

	Scheme #	Opens	Closes
Q	WP 300	Jan 13	Feb 27
	WP 301	Feb 10	Mar 26
	WP 302	Mar 9	Apr 23
Q	WP 303	Apr 13	May 28
	WP 304	May 11	Jun 25
	WP 305	Jun 8	Jul 23
Q	WP 306	Jul 13	Aug 27
	WP 307	Aug 10	Sep 24
	WP 308	Sep 8	Oct 23
Q	WP 309	Oct 9	Nov 23
	WP 310	Nov 13	Dec 28
	WP 311	Dec 11	Jan 25, 2021

	Scheme #	Opens	Closes
Q	WP 312	Jan 18	Mar 4
	WP 313	Feb 15	Apr 1
	WP 314	Mar 15	Apr 29
Q	WP 315	Apr 12	May 27
	WP 316	May 17	Jul 1
	WP 317	Jun 14	Jul 29
Q	WP 318	Jul 19	Sep 2
	WP 319	Aug 16	Sep 30
	WP 320	Sep 13	Oct 28
Q	WP 321	Oct 15	Nov 29
	WP 322	Nov 12	Dec 27
	WP 323	Dec 13	Jan 27, 2022

Schedule subject to change – see Waters ERA's website at www.eraqc.com

Contents

Description	CRM	PT	QR	Page
1 Liter Boston Round Oil & Grease	818	582 M	518QR	11
1 Liter Oil & Grease	518	582 M	518QR	11
1,4-Dioxane	402	597 B	402QR	14
Acidity	915	885 Q	915QR	13
Acids	712	834 M	712QR	16
Base/Neutrals	711	833 M	711QR	16
Boron	919	886 Q	919QR	14
Bromide	769	887 Q	769QR	14
BTEX & MTBE	760	643 Q	760QR	14
Carbamate Pesticides	908	899 Q	908QR	17
Chlordane	716	837 M	716QR	17
Chlorinated Acid Herbicides	718	829 M	718QR	15
Color	070	882 Q	070QR	13
Complex Nutrients	525	579 M	525QR	10
Cyanide	502	588 M	502QR	13
Demand	516	578 M	516QR	12
Diesel Range Organics (DRO) in Water	764	641 Q	764QR	16
Dissolved Oxygen	213	212 Q	213QR	13
EDB/DBCP/TCP	692	562 Q	692QR	16
Gasoline Range Organics (GRO) in Water	762	640 Q	762QR	15
Glycols in Water	401	271 Q	401QR	16
Hardness	507	580 M	507QR	10
HEM/SGT-HEM	519	489 Q	519QR	11
Hexavalent Chromium	984	898 M	984QR	12
Lithium	4992	4990 *	4992QR	12
Low-Level Mercury	931	896 Q	931QR	12
Low-Level Nitroaromatics & Nitramines	677	932 Q	677QR	16
Low-Level PAHs	715	836 Q	715QR	16
Low-Level Total Residual Chlorine (TRC)	917	881 M	917QR	14
Mercury	514	574 M	514QR	12
Minerals	506	581 M	506QR	10
Nitrite	770	888 M	770QR	10
Nitrogen Pesticides	674	487 Q	674QR	17

Description	CRM	PT	QR	Page
Oil & Grease	504			11
Oil & Grease Concentrate	4122	4120 M	4122QR	11
Organochlorine Pesticides	713	831 M	713QR	17
Organophosphorus Pesticides (OPP)	665	934 Q	665QR	17
PAHs-GC/GCMS	4882	4880 Q	4882QR	16
PCBs in Oil	729S	835S M	729SQR	15
PCBs in Water	734S	832S M	734SQR	15
PCBs in Water Standards	see page 15 for options			
Perchlorate	1501	1500 Q	1501QR	13
PFAS Non-Potable Water	403	598 B	403QR	15
pH	977	577 M	977QR	14
QC Plus	see page 19 for options			
Ready-to-Use CRMs	see page 18 for options			
Settleable Solids	911	883 M	911QR	10
Silica	775	890 Q	775QR	13
Simple Nutrients	505	584 M	505QR	10
Solids	499	241 M	499QR	10
Solids Concentrate	4032	4030 M	4032QR	10
Surfactants-MBAS	776	892 Q	776QR	13
Sulfide	071	891 M	071QR	13
Sulfite	534	244 B	534QR	13
Tin & Titanium	517	573 M	517QR	12
Total Organic Halides (TOX)	670	895 Q	670QR	13
Total Petroleum Hydrocarbons (TPH) in Water #1	600	642 Q	602QR	11
Total Petroleum Hydrocarbons (TPH) in Water #2	601	642 Q	602QR	11
Total Phenolics (4-AAP)	515	589 M	515QR	13
Total Residual Chlorine (TRC)	501	587 M	501QR	14
Toxaphene	717	838 M	717QR	17
Trace Metals	500	586 M	500QR	12
Turbidity	777	893 M	777QR	13
Uranium	4402	4400 Q	4402QR	12
Volatile Aromatics	4452	4450 Q	4452QR	14
Volatile Solids	913	884 M	913QR	10
Volatiles	710	830 M	710QR	14

CRM – Certified Reference Material
PT – Proficiency Testing
QR – Quik Response
RM – Reference Material

All Waters ERA WP PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. ***** WP Lithium PTs open in February and August. Quarterly months are January, April, July, and October. Biannual months are January and July.

Minerals/Solids

Minerals

CRM Cat. #506	PT Cat. #581	M	QR Cat. #506QR
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One 500 mL whole-volume bottle is ready to analyze.

Total alkalinity as CaCO ₃	25–400 mg/L
Chloride	35–275 mg/L
Fluoride	0.4–4 mg/L
Potassium	4–40 mg/L
Sodium	10–100 mg/L
Specific conductance at 25 °C	200–1200 µmhos/cm
Sulfate	5–125 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total solids at 105 °C	140–800 mg/L

Hardness

CRM Cat. #507	PT Cat. #580	M	QR Cat. #507QR
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One 500 mL whole-volume bottle is ready to analyze.

Calcium	10–100 mg/L
Calcium hardness as CaCO ₃	25–250 mg/L
Total hardness as CaCO ₃	40–415 mg/L
Magnesium	4–40 mg/L
Total suspended solids (TSS)	20–100 mg/L

Settleable Solids

CRM Cat. #911	PT Cat. #883	M	QR Cat. #911QR
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One 60 mL poly bottle with a solid yields 1 liter after dilution. Use with EPA Method 160.5, Standard Methods 2540F, or other applicable method.

Settleable solids	5–50 mL/L
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CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a Quik Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. Quik Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Volatile Solids

CRM Cat. #913	PT Cat. #884	M	QR Cat. #913QR
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One 12 mL screw-cap vial with a solid yields 1 liter after dilution. Use with EPA Method 160.4, Standard Methods 2540E, or other applicable method.

Total volatile solids	100–500 mg/L
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Solids Concentrate

CRM Cat. #4032	PT Cat. #4030	M	QR Cat. #4032QR
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One 24 mL screw-cap vial with a powder yields 1 liter of solution.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L

Solids

CRM Cat. #499	PT Cat. #241	M	QR Cat. #499QR
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One 500 mL whole-volume bottle is ready to analyze.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L

Nutrients

Simple Nutrients

CRM Cat. #505	PT Cat. #584	M	QR Cat. #505QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

Ammonia as N	1–20 mg/L
Nitrate as N	2–25 mg/L
Nitrate plus nitrite as N	2.5–25 mg/L
ortho-Phosphate as P	0.5–5.5 mg/L

Complex Nutrients

CRM Cat. #525	PT Cat. #579	M	QR Cat. #525QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total Kjeldahl nitrogen as N	3–35 mg/L
Total phosphorus as P	0.5–10 mg/L

Nitrite

CRM Cat. #770	PT Cat. #888	M	QR Cat. #770QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

Nitrite as N	0.4–4 mg/L
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Oil & Grease/Total Petroleum Hydrocarbons

▶▶▶ When ordering Oil & Grease or Total Petroleum Hydrocarbons (TPH) PTs, please specify if you need a sample compatible with SPE.

Oil & Grease

CRM
Cat. #504

One 250 mL whole-volume bottle is ready to analyze. For gravimetric and IR analyses.
Hexane Extractable Materials (O&G).....20-200 mg/bottle

Oil & Grease Concentrate

CRM
Cat. #4122

PT
Cat. #4120

M

QR
Cat. #4122QR

One 24 mL screw-cap vial yields up to 2 liters after dilution. Use with EPA Method 1664, or other applicable method. Gravimetric analysis only.
Hexane Extractable Materials (O&G).....20-200 mg/L

1 Liter Oil & Grease

CRM
Cat. #518

PT
Cat. #582

M

QR
Cat. #518QR

One liter whole-volume glass bottle with a 33-430 thread is ready to analyze. For gravimetric and IR analyses.
Hexane Extractable Materials (O&G).....20-200 mg/L

1 Liter Boston Round Oil & Grease

CRM
Cat. #818

PT
Cat. #582

M

QR
Cat. #518QR

One liter whole-volume glass bottle with a 33-400 thread is ready to analyze. For gravimetric and IR analyses.
Hexane Extractable Materials (O&G).....20-200 mg/L

HEM/SGT-HEM

CRM
Cat. #519

PT
Cat. #489

Q

QR
Cat. #519QR

One 5 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 1664, or other applicable method to measure hexane extractable material (HEM) and silica gel treated-HEM. Contains both hexadecane and stearic acid.

Note: If a NELAC compliant PT is required, use Cat. #582 or Cat. #4120.

Hexane extractable material.....5-100 mg/L
Silica gel treated-HEM.....5-100 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #1

CRM
Cat. #600

PT
Cat. #642

Q

QR
Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH without interfering fatty acids. Use with EPA Methods 1664, 5520, or other applicable method.

Total petroleum hydrocarbons.....20-200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #2

CRM
Cat. #601

PT
Cat. #642

Q

QR
Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH in the presence of interfering fatty acids. Use with EPA Methods 1664, 5520, or other applicable method.

Total petroleum hydrocarbons.....20-200 mg/L

CRM - Certified Reference Material
PT - Proficiency Testing
QR - Quik Response

All Waters ERA WP PTs open monthly (**M**) or quarterly (**Q**) unless otherwise noted.

Quarterly months are January, April, July, and October.

Mike Deines
General Manager

Years with Waters ERA: 3



Melissa McNamara
Director of Sales and Marketing

Years with Waters ERA: 28



Demand

Demand

CRM Cat. #516	PT Cat. #578	M	QR Cat. #516QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

5-day BOD.....	18-230 mg/L
Carbonaceous BOD.....	18-230 mg/L
COD.....	30-250 mg/L
TOC.....	6-100 mg/L

Metals

Trace Metals

CRM Cat. #500	PT Cat. #586	M	QR Cat. #500QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with AA, ICP-OES or ICP-MS and selected colorimetric methods.

Aluminum.....	200-4000 µg/L
Antimony.....	90-900 µg/L
Arsenic.....	90-900 µg/L
Barium.....	100-2500 µg/L
Beryllium.....	50-500 µg/L
Boron.....	800-2000 µg/L
Cadmium.....	100-1000 µg/L
Chromium.....	100-1000 µg/L
Cobalt.....	100-1000 µg/L
Copper.....	100-1000 µg/L
Iron.....	200-4000 µg/L
Lead.....	100-1500 µg/L
Manganese.....	200-2000 µg/L
Molybdenum.....	60-600 µg/L
Nickel.....	200-2000 µg/L
Selenium.....	100-1000 µg/L
Silver.....	100-1000 µg/L
Strontium.....	50-500 µg/L
Thallium.....	80-800 µg/L
Vanadium.....	50-2000 µg/L
Zinc.....	300-2000 µg/L

Mercury

CRM Cat. #514	PT Cat. #574	M	QR Cat. #514QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution. Analyze for total mercury.

Total mercury.....	3-30 µg/L
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Low-Level Mercury

CRM Cat. #931	PT Cat. #896	Q	QR Cat. #931QR
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One 5 mL flame-sealed ampule yields up to 4 liters after dilution. Use with EPA1631, or other sensitive mercury analysis methods.

Total mercury.....	20-100 ng/L
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Waters ERA Low-Level Mercury is also available during February and March WP PT schemes.

Metals (continued)

Hexavalent Chromium

CRM Cat. #984	PT Cat. #898	M	QR Cat. #984QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with IC or colorimetric methods.

Hexavalent chromium.....	90-900 µg/L
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Tin and Titanium

CRM Cat. #517	PT Cat. #573	M	QR Cat. #517QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with AA, ICP-OES or ICP-MS methods.

Tin.....	200-2000 µg/L
Titanium.....	60-300 µg/L

Uranium

CRM Cat. #4402	PT Cat. #4400	Q	QR Cat. #4402QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution.

Uranium.....	25-200 µg/L
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Lithium

CRM Cat. #4992	PT Cat. #4990	*	QR Cat. #4992QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution. Designed for the Ohio VAP program.

Lithium.....	50-500 µg/L
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* Waters ERA WP Lithium PTs open in February and August.

Physical Property

Color

CRM Cat. #070	PT Cat. #882	Q	QR Cat. #070QR
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One 125 mL whole-volume bottle is ready to analyze. Use with EPA Methods 110.1, 110.2, and 110.3, Standard Methods 2120B, 2120C, 2120E, or other applicable method.

Color 10–75 PC units

Turbidity

CRM Cat. #777	PT Cat. #893	M	QR Cat. #777QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with nephelometric methods.

Turbidity 2–30 NTU

Miscellaneous Chemistry

Cyanide

CRM Cat. #502	PT Cat. #588	M	QR Cat. #502QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total cyanide 0.1–1 mg/L
Amenable cyanide 0.1–1 mg/L

Dissolved Oxygen

CRM Cat. #213	PT Cat. #212	Q	QR Cat. #213QR
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One 500 mL whole-volume bottle is ready to analyze.

Dissolved oxygen 1–20 mg/L

Total Organic Halides (TOX)

CRM Cat. #670	PT Cat. #895	Q	QR Cat. #670QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total organic halides with adsorption pyrolysis titrimetric methods.

TOX 300–1500 µg/L

Total Phenolics (4-AAP)

CRM Cat. #515	PT Cat. #589	M	QR Cat. #515QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total phenolic compounds by 4-AAP methods.

Total phenolics by 4-AAP 0.5–5 mg/L

Perchlorate

CRM Cat. #1501	PT Cat. #1500	Q	QR Cat. #1501QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with EPA methods 314.0, 314.2, 331.0, 332.0, or other applicable methods. LCMS and IC compatible.

Perchlorate 10–200 µg/L

Silica

CRM Cat. #775	PT Cat. #890	Q	QR Cat. #775QR
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One 60 mL poly bottle yields up to 1 liter after dilution. Analyze for silica as SiO₂ with colorimetric or ICP methods.

Silica as SiO₂ 50–250 mg/L

Sulfide

CRM Cat. #071	PT Cat. #891	M	QR Cat. #071QR
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One 10 mL flame-sealed ampule yields up to 1 liter after dilution. Preserved sample is guaranteed stable. Analyze for sulfide by titrimetric or colorimetric methods or ISE.

Sulfide 2–10 mg/L

Sulfite

CRM Cat. #534	PT Cat. #244	B	QR Cat. #534QR
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One 10 mL concentrate yields up to 2 liters after dilution.

Sulfite 10–250 mg/L

B Waters ERA WP Sulfite PTs open in January and July.

Surfactants-MBAS

CRM Cat. #776	PT Cat. #892	Q	QR Cat. #776QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution. Analyze for surfactants-MBAS with EPA Method 425.1, or other applicable method.

Surfactants-MBAS 0.2–1 mg/L

Acidity

CRM Cat. #915	PT Cat. #885	Q	QR Cat. #915QR
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One 250 mL whole-volume bottle is ready to analyze. Designed for use with titrimetric methods to a pH endpoint of 8.3 S.U.

Acidity as CaCO₃ 650–1800 mg/L

CRM – Certified Reference Material
PT – Proficiency Testing
QR – Quick Response

All Waters ERA WP PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. ***** WP Lithium PTs open in February and August. Quarterly months are January, April, July, and October. Biannual months are January and July.

Miscellaneous Chemistry (continued)

pH

CRM	PT	M	QR
Cat. #977	Cat. #577		Cat. #977QR

One 250 mL whole-volume bottle is ready to analyze.

pH 5-10 units

Boron

CRM	PT	Q	QR
Cat. #919	Cat. #886		Cat. #919QR

One unpreserved 60 mL poly bottle yields in excess of 2 liters after dilution. Designed for colorimetric methods.

Boron 800-2000 µg/L

Bromide

CRM	PT	Q	QR
Cat. #769	Cat. #887		Cat. #769QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ion chromatography or colorimetric methods.

Bromide 1-10 mg/L

Total Residual Chlorine (TRC)

CRM	PT	M	QR
Cat. #501	Cat. #587		Cat. #501QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with titrimetric or colorimetric methods.

Total residual chlorine 0.5-3 mg/L

Free residual chlorine 0.5-3 mg/L

Low-Level Total Residual Chlorine (TRC)

CRM	PT	M	QR
Cat. #917	Cat. #881		Cat. #917QR

Designed for testing at low µg/L levels. One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with sensitive titrimetric or colorimetric methods.

Total residual chlorine 50-250 µg/L

Craig Huff
Senior Technical Manager
Years with Waters ERA: 30



Volatiles

Volatiles

CRM	PT	M	QR
Cat. #710	Cat. #830		Cat. #710QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 601, 602, 8021, 624, 8260, or other applicable method. Contains a subset of the analytes listed below at 5-300 µg/L.

Acetone	1,2-Dibromo-3-chloropropane (DBCP)	Methyl tert-butyl ether (MTBE)
Acetonitrile	1,2-Dibromoethane (EDB)	4-Methyl-2-pentanone (MIBK)
Acrolein	Dibromomethane	Methylene chloride
Acrylonitrile	1,2-Dichlorobenzene	Naphthalene
Benzene	1,3-Dichlorobenzene	Nitrobenzene
Bromobenzene	1,4-Dichlorobenzene	n-Propylbenzene
Bromochloromethane	Dichlorodifluoromethane	Styrene
Bromodichloromethane	1,1,2,2-Tetrachloroethane	1,1,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	Tetrachloroethene
Bromomethane	cis-1,2-Dichloroethene	Toluene
2-Butanone (MEK)	1,1-Dichloroethene	1,2,3-Trichlorobenzene
n-Butylbenzene	trans-1,2-Dichloroethene	1,2,4-Trichlorobenzene
sec-Butylbenzene	1,3-Dichloropropane	1,1,1-Trichloroethane
tert-Butylbenzene	1,2-Dichloropropane	1,1,2-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	Trichloroethene
Carbon tetrachloride	cis-1,3-Dichloropropene	Trichlorofluoromethane
Chlorobenzene	1,1-Dichloropropene	1,2,3-Trichloropropane
Chlorodibromomethane	trans-1,3-Dichloropropene	1,2,4-Trimethylbenzene
Chloroethane	Ethylbenzene	1,3,5-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachlorobutadiene	Vinyl acetate
Chloroform	Hexachloroethane	Vinyl chloride
Chloromethane	2-Hexanone	m&p Xylene
2-Chlorotoluene	Isopropylbenzene	o-Xylene
4-Chlorotoluene	p-Isopropyltoluene	Xylenes, total

1,4-Dioxane

NEW PRODUCT

CRM	PT	B	QR
Cat. #402	Cat. #597		Cat. #402QR

One 2 mL flame-sealed ampule yields up to 1 liter after dilution. Use with modified versions of EPA methods 8260, 8270, 1624, or other applicable methods.

1,4-Dioxane 3-30 µg/L

Volatile Aromatics

CRM	PT	Q	QR
Cat. #4452	Cat. #4450		Cat. #4452QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable method. Each standard contains all listed analytes at 10-300 µg/L after dilution.

Benzene	Ethylbenzene	1,3,5-Trimethylbenzene
Chlorobenzene	Naphthalene	m&p Xylene
1,2-Dichlorobenzene	Toluene	o-Xylene
1,3-Dichlorobenzene	1,2,4-Trichlorobenzene	Xylenes, total
1,4-Dichlorobenzene	1,2,4-Trimethylbenzene	

BTX & MTBE in Water

CRM	PT	Q	QR
Cat. #760	Cat. #643		Cat. #760QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable method. Includes all BTX compounds and MTBE at 10-300 µg/L after dilution.

Volatiles (continued)

Gasoline Range Organics (GRO) in Water

CRM Cat. #762	PT Cat. #640	Q	QR Cat. #762QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with both purge and trap and modified EPA 8015 GC/FID methods or other applicable methods to test for GRO at 400–4000 µg/L. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If you require a NELAC-compliant sample for these analytes, use WP Volatiles catalog #830 or BTEX in Water catalog #643.

PCBs

PCBs in Water

CRM Cat. #734S	PT Cat. #832S	M	QR Cat. #734SQR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 608, 8082, or other applicable method. Contains a different aroclor randomly selected from the list below at 2–10 µg/L.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

PCBs in Water Standards

PCBs in water standards are sold individually in 2 mL flame-sealed ampules that yield 1 liter after dilution. Use with EPA Methods 608, 8082, or other applicable methods. Each standard contains an Aroclor at 1–15 µg/L after dilution.

CRM Cat. #	Aroclor	Range
860	1016	1–15 µg/L
861	1221	1–15 µg/L
862	1232	1–15 µg/L
863	1242	1–15 µg/L
864	1248	1–15 µg/L
865	1254	1–15 µg/L
866	1260	1–15 µg/L

PCBs in Oil

CRM Cat. #729S	PT Cat. #835S	M	QR Cat. #729SQR
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One 10 mL flame-sealed ampule is ready to analyze. Use with EPA Method 8082, or other applicable method. Contains a different aroclor randomly selected from the list below at 10–50 mg/kg.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

CRM – Certified Reference Material
PT – Proficiency Testing
QR – QuiK Response

Per-and Polyfluoroalkyl Substances (PFAS)

PFAS - Non-Potable Water

**NEW
PRODUCT**

CRM Cat. #403	PT Cat. #598	B	QR Cat. #403QR
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One 2 mL flame sealed ampule yields in excess of 1.5 liters after dilution. Design is suitable for methods analyzing non-potable water. Use with LC-MS/MS techniques. The diluted standard will contain a minimum of 17 analytes in each lot selected from the list below.

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS).....	100–500 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS).....	100–500 ng/L
4,8-dioxa-3H-perfluorononanoic acid (DONA).....	100–500 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA).....	100–500 ng/L
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS).....	100–500 ng/L
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS).....	100–500 ng/L
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS).....	100–500 ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA).....	100–500 ng/L
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA).....	100–500 ng/L
Perfluorobutanesulfonic acid (PFBS).....	100–500 ng/L
Perfluorobutanoic acid (PFBA).....	100–500 ng/L
Perfluorodecane sulfonic acid (PFDS).....	100–500 ng/L
Perfluorodecanoic acid (PFDA).....	100–500 ng/L
Perfluorododecanoic acid (PFDoA).....	100–500 ng/L
Perfluoroheptane sulfonic acid (PFHpS).....	100–500 ng/L
Perfluoroheptanoic acid (PFHpA).....	100–500 ng/L
Perfluorohexanesulfonic acid (PFHxS).....	100–500 ng/L
Perfluorohexanoic acid (PFHxA).....	100–500 ng/L
Perfluorononane sulfonic acid (PFNS).....	100–500 ng/L
Perfluorononanoic acid (PFNA).....	100–500 ng/L
Perfluorooctane sulfonamide (PFOSAm).....	100–500 ng/L
Perfluorooctanesulfonic acid (PFOS).....	100–500 ng/L
Perfluorooctanoic acid (PFOA).....	100–500 ng/L
Perfluoropentanoic acid (PFPeA).....	100–500 ng/L
Perfluoropentane sulfonic acid (PFPeS).....	100–500 ng/L
Perfluorotetradecanoic acid (PFTDA).....	100–500 ng/L
Perfluorotridecanoic acid (PFTrDA).....	100–500 ng/L
Perfluoroundecanoic acid (PFUnDA).....	100–500 ng/L

Herbicides

Chlorinated Acid Herbicides

CRM Cat. #718	PT Cat. #829	M	QR Cat. #718QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 615, 8151, or other applicable methods. Contains a subset of the analytes listed below at 2–10 µg/L (except MCPA and MCPP at 10–100 µg/L).

Note: 4-nitrophenol and pentachlorophenol are not within the EPA/NELAC range. Use the Acids standard (page 16) for these compounds in the EPA/NELAC range.

Acifluorfen	Dalapon	MCPP
Bentazon	Dicamba	4-Nitrophenol
Chloramben	3,5-Dichlorobenzoic acid	Pentachlorophenol
2,4-D	Dichlorprop	Picloram
2,4-DB	Dinoseb	2,4,5-T
Dacthal diacid (DCPA)	MCPA	2,4,5-TP (Silvex)

All Waters ERA WP PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. ***** WP Lithium PTs open in February and August. Quarterly months are January, April, July, and October. Biannual months are January and July.

Semivolatiles

Base/Neutrals

CRM Cat. #711	PT Cat. #833	M	QR Cat. #711QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 625, 8270, or other applicable method. Contains a subset of the analytes listed below at 10–225 µg/L (except Benzidine at 200–1000 µg/L).

Acenaphthene	2-Chloronaphthalene	Hexachlorocyclopentadiene
Acenaphthylene	4-Chlorophenyl phenyl ether	Hexachloroethane
2-Amino-1-methylbenzene (o-Toluidine)	Chrysene	Indeno(1,2,3-cd)pyrene
Aniline	Dibenz(a,h)anthracene	Isophorone
Anthracene	Dibenzofuran	2-Methylnaphthalene
Benzidine	1,2-Dichlorobenzene	Naphthalene
Benzo(a)anthracene	1,3-Dichlorobenzene	2-Nitroaniline
Benzo(b)fluoranthene	1,4-Dichlorobenzene	3-Nitroaniline
Benzo(k)fluoranthene	3,3'-Dichlorobenzidine	4-Nitroaniline
Benzo(g,h,i)perylene	Diethyl phthalate	Nitrobenzene
Benzo(a)pyrene	Dimethyl phthalate	N-Nitrosodiethylamine
Benzo(b)pyrene	Di-n-butyl phthalate	N-Nitrosodimethylamine
Benzyl alcohol	2,4-Dinitrotoluene	N-Nitroso-di-n-propylamine
4-Bromophenyl phenyl ether	2,6-Dinitrotoluene	N-Nitrosodiphenylamine
Butyl benzyl phthalate	Di-n-octyl phthalate	2,2'-Oxybis(1-Chloropropane)
Carbazole	bis(2-Ethylhexyl)phthalate	Pentachlorobenzene
4-Chloroaniline	Fluoranthene	Phenanthrene
bis(2-Chloroethoxy)methane	Fluorene	Pyrene
bis(2-Chloroethyl)ether	Hexachlorobenzene	Pyridine
1-Chloronaphthalene	Hexachlorobutadiene	1,2,4,5-Tetrachlorobenzene
		1,2,4-Trichlorobenzene

Acids

CRM Cat. #712	PT Cat. #834	M	QR Cat. #712QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 604, 625, 8041, 8270, or other applicable method. Contains a subset of the analytes listed below at 30–200 µg/L.

Benzoic acid	2,4-Dinitrophenol	Pentachlorophenol
4-Chloro-3-methylphenol	2-Methyl-4,6-dinitrophenol	Phenol
2-Chlorophenol	2-Methylphenol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	3 & 4-Methylphenol	2,4,5-Trichlorophenol
2,6-Dichlorophenol	2-Nitrophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	4-Nitrophenol	

Diesel Range Organics (DRO) in Water

CRM Cat. #764	PT Cat. #641	Q	QR Cat. #764QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with modified EPA 8015 GC/FID methods, or other applicable method. Includes #2 Diesel at 800–6000 µg/L.

EDB/DBCP/TCP

CRM Cat. #692	PT Cat. #562	Q	QR Cat. #692QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 8011, or other applicable method. Each lot contains all analytes at 0.2–2.0 µg/L.

1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)
1,2,3-Trichloropropane (TCP)

Glycols in Water

CRM Cat. #401	PT Cat. #271	Q	QR Cat. #401QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 8015B, 8430, 1671, or other applicable method. Each lot contains all analytes in the concentration range 75–200 mg/L.

Diethylene glycol	Propylene glycol	Triethylene glycol
Ethylene glycol	Tetraethylene glycol	

Low-Level Nitroaromatics & Nitramines

CRM Cat. #677	PT Cat. #932	Q	QR Cat. #677QR
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One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 8330, 8091, or other applicable method for explosive and explosive residue analytes. Contains at least 80% of the analytes, randomly selected from the list below at 1–20 µg/L.

4-Amino-2,6-dinitrotoluene	HMX	RDX
2-Amino-4,6-dinitrotoluene	Nitrobenzene	Tetryl
1,3-Dinitrobenzene	2-Nitrotoluene	1,3,5-Trinitrobenzene
2,4-Dinitrotoluene	3-Nitrotoluene	2,4,6-Trinitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene	

Low-Level PAHs

CRM Cat. #715	PT Cat. #836	Q	QR Cat. #715QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA HPLC Methods 610, 8310, or other applicable method, and GC/MS Method 8270 SIM. Contains a subset of the analytes listed below at 0.5–20 µg/L.

Acenaphthene	Benzo(g,h,i)perylene	Fluorene
Acenaphthylene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene
Anthracene	Chrysene	Naphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Phenanthrene
Benzo(b)fluoranthene	Fluoranthene	Pyrene
Benzo(k)fluoranthene		

PAHs – GC/GCMS

CRM Cat. #4882	PT Cat. #4880	Q	QR Cat. #4882QR
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One 2mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 625, 8100, 8270, or other applicable method. Each standard contains a subset of the analytes listed below at 10–200 µg/L.

Acenaphthene	Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(g,h,i)perylene	1-Methylnaphthalene
Anthracene	Chrysene	2-Methylnaphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Naphthalene
Benzo(a)pyrene	Fluoranthene	Phenanthrene
Benzo(b)fluoranthene	Fluorene	Pyrene

Pesticides

Organochlorine Pesticides

CRM Cat. #713	PT Cat. #831	M	QR Cat. #713QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains a subset of the analytes listed below at 1–20 µg/L.

Aldrin	4,4'-DDD	Endrin
alpha-BHC	4,4'-DDE	Endrin aldehyde
beta-BHC	4,4'-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide (beta)
alpha-Chlordane	Endosulfan II	Methoxychlor
gamma-Chlordane	Endosulfan sulfate	

Chlordane

CRM Cat. #716	PT Cat. #837	M	QR Cat. #716QR
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One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains technical chlordane at 3–25 µg/L.

Toxaphene

CRM Cat. #717	PT Cat. #838	M	QR Cat. #717QR
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One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains toxaphene at 20–100 µg/L.

Carbamate Pesticides

CRM Cat. #908	PT Cat. #899	Q	QR Cat. #908QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA method 632, or other applicable method. Contains a subset of the analytes listed below at 5–200 µg/L.

Aldicarb	Carbaryl	Methiocarb
Aldicarb sulfone	Carbofuran	Methomyl
Aldicarb sulfoxide	Diuron	Oxamyl
Baygon	3-Hydroxycarbofuran	Propham

Nitrogen Pesticides

CRM Cat. #674	PT Cat. #487	Q	QR Cat. #674QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 619, 633, 8141, 8270, or other applicable method. Contains a subset of the analytes listed below at 2–20 µg/L.

Alachlor	Deethyl atrazine	Prometon
Ametryn	Deisopropyl atrazine	Prometryn
Anilazine	Diaminotrazine	Pronamide
Atraton	EPTC (eptam)	Propachlor
Atrazine	Hexazinone	Propazine
Bromacil	Metolachlor	Simazine
Butachlor	Metribuzin	Terbacil
Butylate	Napropamide	Trifluralin
Cyanazine		

Organophosphorus Pesticides (OPP)

CRM Cat. #665	PT Cat. #934	Q	QR Cat. #665QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA methods 614, 622, 8141, or other applicable method. Contains a subset of the analytes listed below at 2–20 µg/L.

Azinphos-methyl (guthion)	Dioxathion	Malathion
Carbophenothion	Disulfoton	Methyl parathion
Chlorpyrifos	Ethion	Phorate
Demeton	Ethoprop	Phosmet
Demeton O & S	Ethyl Parathion (parathion)	Ronnel
Diazinon	Famphur	Stirophos (tetrachlorovinphos)
Dichlorvos (DDVP)	Fonofos	Terbufos
Dimethoate		

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

All Waters ERA WP PTs open monthly (M) or quarterly (Q) unless otherwise noted. Quarterly months are January, April, July, and October.

Audrey Cornell
Principal Proficiency Testing
Technical Specialist
Years with Waters ERA: 21



Christian Milek
Chemist
Years with Waters ERA: 15



Ready-to-Use CRMs

The following whole-volume standards are ready-to-use as provided and require no dilution before analysis.*

Minerals

CRM
Cat. #506

One 500 mL whole-volume bottle is ready to analyze.

Total alkalinity as CaCO ₃	25–400 mg/L
Chloride	35–275 mg/L
Fluoride	0.4–4 mg/L
Potassium	4–40 mg/L
Sodium	10–100 mg/L
Specific conductance at 25 °C	200–1200 µmhos/cm
Sulfate	5–125 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total solids at 105 °C	140–800 mg/L

Hardness

CRM
Cat. #507

One 500 mL whole-volume bottle is ready to analyze.

Calcium	10–100 mg/L
Calcium hardness as CaCO ₃	25–250 mg/L
Total hardness as CaCO ₃	40–415 mg/L
Magnesium	4–40 mg/L
Total suspended solids (TSS)	20–100 mg/L

pH

CRM
Cat. #977

One 250 mL whole-volume bottle is ready to analyze.

pH	5–10 units
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Oil & Grease

CRM
Cat. #504

One 250 mL whole-volume bottle is ready to analyze. Use with EPA hexane extraction Method 1664, or other applicable method. Certified values are provided for IR and gravimetric methods. For additional Oil & Grease CRMs see page 11.

Oil and grease	20–200 mg/bottle
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Solids

CRM
Cat. #499

One 500 mL whole-volume bottle is ready to analyze.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L
pH	5–10 units

Trace Metals*

CRM
Cat. #740

One 500 mL whole-volume bottle is ready to analyze. Use with AA, ICP-OES, ICP-MS, and selected colorimetric methods.

Aluminum	200–4000 µg/L
Antimony	90–900 µg/L
Arsenic	90–900 µg/L
Barium	100–2500 µg/L
Beryllium	50–500 µg/L
Boron	800–2000 µg/L
Cadmium	100–1000 µg/L
Chromium	100–1000 µg/L
Cobalt	100–1000 µg/L
Copper	100–1000 µg/L
Iron	200–4000 µg/L
Lead	100–1500 µg/L
Manganese	200–2000 µg/L
Molybdenum	60–600 µg/L
Nickel	200–2000 µg/L
Selenium	100–1000 µg/L
Silver	100–1000 µg/L
Strontium	50–500 µg/L
Thallium	80–800 µg/L
Vanadium	50–2000 µg/L
Zinc	300–2000 µg/L

Demand*

CRM
Cat. #743

One 500 mL whole-volume bottle is ready to analyze.

5-day BOD	18–230 mg/L
Carbonaceous BOD	18–230 mg/L
COD	30–250 mg/L
TOC	6–100 mg/L

Simple Nutrients*

CRM
Cat. #739

One 500 mL whole-volume bottle is ready to analyze.

Ammonia as N	1–20 mg/L
Nitrate as N	2–25 mg/L
Nitrate plus nitrite as N	2.5–25 mg/L
ortho-Phosphate as P	0.5–5.5 mg/L

Complex Nutrients*

CRM
Cat. #741

One 500 mL whole-volume bottle is ready to analyze.

Total Kjeldahl nitrogen as N	3–35 mg/L
Total phosphorus as P	0.5–10 mg/L

*These standards are guaranteed stable for a minimum of one month after receipt at your facility.

QC Plus

The QC Plus Program includes environmental analytes at concentrations that reflect realistic levels of pollutants in industrial settings. Each sample level is designed for wastewater and industrial analysis. These Certified Reference Materials (CRMs) are an asset to any quality assurance program because they enable you to test your internal systems to ensure that your equipment, methods, and analysts are producing quality data.

QC Plus – Demand

CRM
Cat. #4013

One 24 mL screw-cap vial yields up to 1 liter after dilution.

5-day BOD	100–300 mg/L
Carbonaceous BOD	87.0–256 mg/L
COD	150–500 mg/L
TOC	50.0–200 mg/L

QC Plus – Hexavalent Chromium

CRM
Cat. #4183

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Hexavalent chromium	100–1000 µg/L
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QC Plus – Minerals

CRM
Cat. #4053

Two 30 mL screw-cap vials to be diluted together to yield up to 2 liters of sample.

Alkalinity as CaCO ₃	10.0–300 mg/L
Calcium	5.00–150 mg/L
Calcium hardness as CaCO ₃	12.5–375 mg/L
Chloride	10.0–700 mg/L
Conductivity	100–4000 µmhos/cm
Magnesium	1.00–50.0 mg/L
Potassium	1.00–300 mg/L
Sodium	10.0–300 mg/L
Sulfate	10.0–300 mg/L
Total dissolved solids at 180 °C	20.0–2400 mg/L
Total hardness as CaCO ₃	15.0–600 mg/L

QC Plus – Nutrients

CRM
Cat. #4023

Two 15 mL screw-cap vials yield up to 2 liters each after dilution.

Ammonia nitrogen as N	0.250–10.0 mg/L
Nitrate nitrogen as N	0.250–10.0 mg/L
ortho-Phosphate as P	0.0500–10.0 mg/L
Total Kjeldahl nitrogen	0.250–10.0 mg/L
Total phosphorus as P	0.100–10.0 mg/L

QC Plus – Oil & Grease

CRM
Cat. #4123

One 24 mL screw-cap vial yields up to 2 liters after dilution.

Oil and grease	10.0–100 mg/L
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QC Plus – pH

CRM
Cat. #4063

One 250 mL whole-volume bottle is ready to analyze.

pH	2.00–12.0 units
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QC Plus – Fluoride

CRM
Cat. #4423

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Fluoride	5–20 mg/L
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CRM – Certified Reference Material
PT – Proficiency Testing
QR – QuiK Response
RM – Reference Material

Quarterly months are January, April, July, and October. Biannual months are January and July.



Eric Negrey
IT Manager

Years with Waters: 1

QC Plus

QC Plus – Solids

CRM
Cat. #4033

One 24 mL screw-cap vial with a powder yields 1 liter after dilution.

Total dissolved solids at 180 °C.....500–2000 mg/L
Total solids at 105 °C.....600–2500 mg/L
Total suspended solids (TSS).....100–500 mg/L

QC Plus – Total Cyanide

CRM
Cat. #4093

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total cyanide.....1.00–5.00 mg/L

QC Plus – Total Phenolics

CRM
Cat. #4083

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total phenolics by 4-AAP.....0.05–0.5 mg/L

QC Plus – Total Residual Chlorine

CRM
Cat. #4103

One 24 mL amber screw cap vial yields up to 2 liters of solution after dilution.

Total residual chlorine.....0.100–1.00 mg/L

Quarterly months are January, April, July, and October. Biannual months are January and July.

Ginny Barnhill
Proficiency Testing Specialist
Years with Waters ERA: 1



Claire Toon
Customer Service
Representative
Years with Waters ERA: 5



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- Receive WP study reports two days after close date
- Meet study requirements and be successful with the DMR-QA journey



Learn more at www.eraqc.com/dmrqa

WATER SUPPLY

Matrices with low concentrations of analytes for testing water supply, drinking water, or ground water. Standards are based on requirements of the United States Environmental Protection Agency Safe Drinking Water Act and may be used to satisfy PT requirements worldwide.

Water Supply PT Schedule 2020

	Scheme #	Opens	Closes
Q	WS 282	Jan 6	Feb 20
	WS 283	Feb 3	Mar 19
	WS 284	Mar 2	Apr 16
Q	WS 285	Apr 6	May 21
	WS 286	May 4	Jun 18
	WS 287	Jun 1	Jul 16
Q	WS 288	Jul 6	Aug 20
	WS 289	Aug 3	Sep 17
	WS 290	Sep 1	Oct 16
Q	WS 291	Oct 2	Nov 16
	WS 292	Nov 2	Dec 17
	WS 293	Dec 4	Jan 18, 2021

2021

	Scheme #	Opens	Closes
Q	WS 294	Jan 11	Feb 25
	WS 295	Feb 8	Mar 25
	WS 296	Mar 8	Apr 22
Q	WS 297	Apr 5	May 20
	WS 298	May 10	Jun 24
	WS 299	Jun 7	Jul 22
Q	WS 300	Jul 12	Aug 26
	WS 301	Aug 9	Sep 23
	WS 302	Sep 7	Oct 22
Q	WS 303	Oct 8	Nov 22
	WS 304	Nov 5	Dec 20
	WS 305	Dec 6	Jan 20, 2022

Schedule subject to change – see Waters ERA's website at www.eraqc.com

Contents

Description	CRM	PT	QR	Page
1,4-Dioxane	689	272 B	689QR	27
Ammonia as N	1359	1319 B	1359QR	25
Carbamates/Carbamoxylloxime Pesticides	707	846 M	707QR	28
Chloral Hydrate	676	853 B	676QR	25
Chlordane	705	845 M	705QR	28
Chlorinated Acid Herbicides	704	851 M	704QR	30
Color	661	859 Q	661QR	26
Corrosivity	980	900 Q	980QR	26
Cyanide	983	556 M	983QR	25
Dioxin	663	857 Q	663QR	30
EDB/DBCP/TCP	706	847 M	706QR	30
Gasoline Additives	909	905 Q	909QR	27
Haloacetic Acids (HAA)	684	852 M	684QR	25
Halomethanes (THMs)	702	842 M	702QR	27
Hardness	693	555 M	693QR	24
Hexavalent Chromium	658	854 Q	658QR	24
Inorganic Disinfection #1	5272	5270 M	5272QR	25
Inorganic Disinfection #2	5262	5260 M	5262QR	25
Inorganics	698	591 M	698QR	24
Low-Level 1,2,3-TCP	682	596 B	682QR	30
Mercury	666	551 M	666QR	24
Metals	697	590 M	697QR	24

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

Description	CRM	PT	QR	Page
Nitrite	695	594 M	695QR	25
o-Phosphate Nutrients	667	558 M	667QR	25
Organic Carbon	669	557 M	669QR	26
PCBs as Decachlorobiphenyl	708	839 Q	708QR	30
Perchlorate	910	903 Q	910QR	26
Pesticides	709	850 M	709QR	28
PFAS Drinking Water	735	960 Q	735QR	28
PFAS Ground Water and Surface Water	731	929 Q	731QR	28
pH	779	552 M	779QR	26
Regulated Volatiles	703	840 M	703QR	27
Residual Chlorine	696	593 M	696QR	25
Semivolatiles #1	690	848 M	690QR	30
Semivolatiles #2 Herbicides	691	849 M	691QR	30
Silica	785	902 Q	785QR	26
Solids Concentrate	5152	5150 M	5152QR	24
Surfactants-MBAS	784	901 Q	784QR	26
Toxaphene	700	844 M	700QR	28
Turbidity	699	592 M	699QR	26
Unregulated Volatiles	683	841 M	683QR	27
Uranium	930	858 Q	930QR	24
UV 254 Absorbance	662	904 Q	662QR	26
Vanadium	660	856 Q	660QR	24

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

All Waters ERA WS PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. Quarterly months are January, April, July, and October. Biannual months are January and July.

Minerals/Solids

Hardness

CRM	PT	M	QR
Cat. #693	Cat. #555		Cat. #693QR

One 250 mL whole-volume bottle is ready to analyze.

Calcium.....	30-90 mg/L
Calcium hardness as CaCO ₃	75-225 mg/L
Total hardness as CaCO ₃	83-307 mg/L
Magnesium.....	2-20 mg/L
Sodium.....	12-50 mg/L

Inorganics

CRM	PT	M	QR
Cat. #698	Cat. #591		Cat. #698QR

One 500 mL whole-volume bottle is ready to analyze. The CRM is also certified for sodium at 10-400 mg/L. For a sodium PT, order Hardness, Cat. #555.

Alkalinity as CaCO ₃	25-200 mg/L
Chloride.....	20-160 mg/L
Fluoride.....	1-8 mg/L
Nitrate as N.....	3-10 mg/L
Nitrate plus nitrite as N.....	3-10 mg/L
Potassium.....	10-40 mg/L
Specific conductance at 25 °C.....	130-1300 µmhos/cm
Sulfate.....	25-250 mg/L
Total dissolved solids (TDS) at 180 °C.....	100-1000 mg/L

Solids Concentrate

CRM	PT	M	QR
Cat. #5152	Cat. #5150		Cat. #5152QR

One 24 mL screw-cap vial with a powder yields 1 liter after dilution.

Total filterable residue (TDS) at 180 °C.....	100-1000 mg/L
Total solids (TS) at 105 °C.....	123-1100 mg/L
Total suspended solids (TSS).....	23-100 mg/L

The Industry Standard
for over 40 years



Kyle Jordan
Account Manager

Years with Waters ERA: 1



Trace Metals

Metals

CRM	PT	M	QR
Cat. #697	Cat. #590		Cat. #697QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ICP-OES, ICP-MS, and AA methods.

Aluminum.....	130-1000 µg/L
Antimony.....	6-50 µg/L
Arsenic.....	5-50 µg/L
Barium.....	500-3000 µg/L
Beryllium.....	2-20 µg/L
Boron.....	800-2000 µg/L
Cadmium.....	2-50 µg/L
Chromium.....	10-200 µg/L
Copper.....	50-2000 µg/L
Iron.....	100-1800 µg/L
Lead.....	5-100 µg/L
Manganese.....	40-900 µg/L
Molybdenum.....	15-130 µg/L
Nickel.....	10-500 µg/L
Selenium.....	10-100 µg/L
Silver.....	20-300 µg/L
Thallium.....	2-10 µg/L
Vanadium.....	50-1000 µg/L
Zinc.....	200-2000 µg/L

Mercury

CRM	PT	M	QR
Cat. #666	Cat. #551		Cat. #666QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with CVAA, ICP-MS, or CVAFS methods.

Total mercury.....	0.5-10 µg/L
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Hexavalent Chromium

CRM	PT	Q	QR
Cat. #658	Cat. #854		Cat. #658QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Hexavalent chromium.....	5-50 µg/L
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Uranium

CRM	PT	Q	QR
Cat. #930	Cat. #858		Cat. #930QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ICP-MS methods.

Uranium.....	3-104 µg/L
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Vanadium

CRM	PT	Q	QR
Cat. #660	Cat. #856		Cat. #660QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Designed to meet California ELAP requirements.

Vanadium.....	5-50 µg/L
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Disinfection By-Products

Chloral Hydrate

CRM Cat. #676	PT Cat. #853	B	QR Cat. #676QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 551, or other applicable method. Includes chloral hydrate at 4–30 µg/L.

B Waters ERA WS Chloral Hydrate PTs open in January and July.

Haloacetic Acids (HAA)

CRM Cat. #684	PT Cat. #852	M	QR Cat. #684QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 552, or other applicable method. Includes all the analytes below at 5–50 µg/L.

Bromochloroacetic acid Dichloroacetic acid Monochloroacetic acid
Dibromoacetic acid Monobromoacetic acid Trichloroacetic acid

Inorganic Disinfection #1

CRM Cat. #5272	PT Cat. #5270	M	QR Cat. #5272QR
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One 24 mL screw-cap vial yields up to 4 liters after dilution.

Chlorate.....60–180 µg/L
Chlorite.....100–1000 µg/L

Inorganic Disinfection #2

CRM Cat. #5262	PT Cat. #5260	M	QR Cat. #5262QR
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One 24 mL screw-cap vial yields up to 4 liters after dilution.

Bromate.....7–50 µg/L
Bromide.....50–300 µg/L

Nutrients

Ammonia as N

CRM Cat. #1359	PT Cat. #1319	B	QR Cat. #1359QR
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One 15 mL screw-cap vial yields up to 1 liter after dilution.

Ammonia as N.....0.1–1 mg/L

B Waters ERA WS Ammonia as N PTs open in January and July.

Nitrite

CRM Cat. #695	PT Cat. #594	M	QR Cat. #695QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

Nitrite as N.....0.4–2 mg/L

o-Phosphate Nutrients

CRM Cat. #667	PT Cat. #558	M	QR Cat. #667QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution.

ortho-Phosphate as P.....0.5–5.5 mg/L

Miscellaneous Inorganic

Residual Chlorine

CRM Cat. #696	PT Cat. #593	M	QR Cat. #696QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution.

Total residual chlorine.....0.5–3 mg/L
Free residual chlorine.....0.5–3 mg/L

Cyanide

CRM Cat. #983	PT Cat. #556	M	QR Cat. #983QR
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One 15 mL screw-cap vial yields up to 2 liters after dilution. Source material is free cyanide.

Free cyanide.....0.1–0.5 mg/L
Total cyanide.....0.1–0.5 mg/L
Cyanide.....0.1–0.5 mg/L

Darren Sauer

Senior Customer Service
Representative

Years with Waters ERA: 22



CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

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Miscellaneous Inorganic (continued)

Organic Carbon

CRM

Cat. #669

PT

Cat. #557

M

QR

Cat. #669QR

One 15 mL screw-cap vial yields up to 1 liter after dilution.

Total organic carbon.....1.3–13 mg/L

Dissolved organic carbon.....1.3–13 mg/L

Perchlorate

CRM

Cat. #910

PT

Cat. #903

Q

QR

Cat. #910QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Perchlorate.....4–20 µg/L

pH

CRM

Cat. #779

PT

Cat. #552

M

QR

Cat. #779QR

One 250 mL whole-volume bottle is ready to analyze.

pH.....5–10 units

Silica

CRM

Cat. #785

PT

Cat. #902

Q

QR

Cat. #785QR

One 60 mL poly bottle yields 1 liter after dilution.

Silica as SiO₂.....5–75 mg/L

Surfactants-MBAS

CRM

Cat. #784

PT

Cat. #901

Q

QR

Cat. #784QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Surfactants-MBAS.....0.1–1 mg/L

Physical Property

Color

CRM

Cat. #661

PT

Cat. #859

Q

QR

Cat. #661QR

One 125 mL whole-volume bottle is ready to analyze.

Color.....10–75 PC units

Corrosivity

CRM

Cat. #980

PT

Cat. #900

Q

QR

Cat. #980QR

One 500 mL whole-volume bottle is ready to analyze for corrosivity, calcium carbonate saturation, and Langelier Saturation Index.

Corrosivity.....–4 to +4 SI units

Turbidity

CRM

Cat. #699

PT

Cat. #592

M

QR

Cat. #699QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with nephelometric methods.

Turbidity.....0.5–8 NTU

UV 254 Absorbance

CRM

Cat. #662

PT

Cat. #904

Q

QR

Cat. #662QR

One 15 mL screw-cap vial yields up to 1 liter after dilution.

UV 254 absorbance.....0.05–0.7 cm⁻¹

Our stabilized turbidity calibration solutions give you an affordable alternative to costly turbidity consumables and deliver accurate results to help stretch your facility's budget.

View our Turbidity Standards on page 101.



Volatile Organics

1,4-Dioxane

**NEW
PRODUCT**
CRM

Cat. #689

PT

Cat. #272

B
QR

Cat. #689QR

One 2 mL flame-sealed ampule yields 500 mL after dilution. Use with EPA method 522.

1,4-Dioxane.....0.1–10 µg/L

Gasoline Additives

CRM

Cat. #909

PT

Cat. #905

Q
QR

Cat. #909QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 524.2, or other applicable method for gasoline additives/oxygenates. Contains all of the analytes below at 5–50 µg/L.

tert-Amyl methyl ether (TAME)	Ethyl tert-butyl ether (ETBE)	Trichlorofluoromethane
tert-Butyl alcohol	Methyl tert-butyl ether (MTBE)	(Freon® 11)
Di-isopropylether (DIPE)		Trichlorotrifluoroethane
		(Freon 113)

Halomethanes (THMs)

CRM

Cat. #702

PT

Cat. #842

M
QR

Cat. #702QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, 551, or other applicable method. Contains all of the analytes below at 5–50 µg/L.

Bromodichloromethane	Chlorodibromomethane	Chloroform
Bromoform		

Regulated Volatiles

CRM

Cat. #703

PT

Cat. #840

M
QR

Cat. #703QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, or other applicable method. Contains all of the analytes below at 2–50 µg/L.

Benzene	cis-1,2-Dichloroethylene	Toluene
Carbon tetrachloride	trans-1,2-Dichloroethylene	1,2,4-Trichlorobenzene
Chlorobenzene	1,2-Dichloropropane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	Ethylbenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Methylene chloride	Trichloroethylene
1,2-Dichloroethane	Styrene	Vinyl chloride
1,1-Dichloroethylene	Tetrachloroethylene	Xylenes, total

Unregulated Volatiles

CRM

Cat. #683

PT

Cat. #841

M
QR

Cat. #683QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, or other applicable method. Contains at least 60% of the analytes randomly selected from the list below at 2–50 µg/L.

Bromobenzene	1,3-Dichlorobenzene	4-Isopropyltoluene
Bromochloromethane	Dichlorodifluoromethane	Methyl tert-butyl ether (MTBE)
Bromomethane	1,1-Dichloroethane	Naphthalene
n-Butylbenzene	1,3-Dichloropropane	n-Propylbenzene
sec-Butylbenzene	2,2-Dichloropropane	1,1,1,2-Tetrachloroethane
tert-Butylbenzene	1,1-Dichloropropene	1,1,2,2-Tetrachloroethane
Chloroethane	cis-1,3-Dichloropropene	1,2,3-Trichlorobenzene
Chloromethane	trans-1,3-Dichloropropene	1,2,3-Trichloropropane
2-Chlorotoluene	Fluorotrichloromethane	1,2,4-Trimethylbenzene
4-Chlorotoluene	Hexachlorobutadiene	1,3,5-Trimethylbenzene
Dibromomethane	Isopropylbenzene	

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

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Per- and Polyfluoroalkyl Substances (PFAS)

PFAS Drinking Water

NEW ANALYTES

CRM Cat. #735	PT Cat. #960	Q	QR Cat. #735QR
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One 2 mL flame sealed ampule yields in excess of 1.5 L after dilution. Use with EPA method 537. The diluted standard will contain 6-8 analytes in each lot selected from the list below.

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS).....	50-500 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS).....	50-500 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA).....	50-500 ng/L
4,8-dioxo-3H-perfluorononanoic acid (DONA).....	50-500 ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA).....	100-1000 ng/L
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA).....	50-500 ng/L
Perfluorobutanesulfonic acid (PFBS).....	100-1000 ng/L
Perfluorodecanoic acid (PFDA).....	50-500 ng/L
Perfluorododecanoic acid (PFDoA).....	50-500 ng/L
Perfluoroheptanoic acid (PFHpA).....	50-500 ng/L
Perfluorohexanesulfonic acid (PFHxS).....	50-500 ng/L
Perfluorohexanoic acid (PFHxA).....	50-500 ng/L
Perfluorononanoic acid (PFNA).....	50-500 ng/L
Perfluorooctanesulfonic acid (PFOS).....	50-500 ng/L
Perfluorooctanoic acid (PFOA).....	50-500 ng/L
Perfluorotetradecanoic acid (PFTDA).....	50-500 ng/L
Perfluorotridecanoic acid (PFTrDA).....	50-500 ng/L
Perfluoroundecanoic acid (PFUnDA).....	50-500 ng/L

PFAS Ground Water & Surface Water

NEW ANALYTES

CRM Cat. #731	PT Cat. #929	Q	QR Cat. #731QR
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One 2 mL flame sealed ampule yields in excess of 1.5 L after dilution. Design is suitable for methods analyzing ground water or surface water. Use with LC/MS/MS techniques. The diluted standard will contain 6-12 analytes in each lot selected from the list below.

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS).....	100-500 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS).....	100-500 ng/L
4,8-dioxo-3H-perfluorononanoic acid (DONA).....	100-500 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA).....	100-500 ng/L
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS).....	100-500 ng/L
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS).....	100-500 ng/L
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS).....	100-500 ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA).....	100-500 ng/L
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA).....	100-500 ng/L
Perfluorobutanesulfonic acid (PFBS).....	100-500 ng/L
Perfluorobutanoic acid (PFBA).....	100-500 ng/L
Perfluorodecane sulfonic acid (PFDS).....	100-500 ng/L
Perfluorodecanoic acid (PFDA).....	100-500 ng/L
Perfluorododecanoic acid (PFDoA).....	100-500 ng/L
Perfluoroheptane sulfonic acid (PFHpS).....	100-500 ng/L
Perfluoroheptanoic acid (PFHpA).....	100-500 ng/L
Perfluorohexanesulfonic acid (PFHxS).....	100-500 ng/L
Perfluorohexanoic acid (PFHxA).....	100-500 ng/L
Perfluorononane sulfonic acid (PFNS).....	100-500 ng/L
Perfluorononanoic acid (PFNA).....	100-500 ng/L
Perfluorooctane sulfonamide (PFOSAm).....	100-500 ng/L
Perfluorooctanesulfonic acid (PFOS).....	100-500 ng/L
Perfluorooctanoic acid (PFOA).....	100-500 ng/L
Perfluoropentanoic acid (PFPeA).....	100-500 ng/L
Perfluoropentane sulfonic acid (PFPeS).....	100-500 ng/L
Perfluorotetradecanoic acid (PFTDA).....	100-500 ng/L
Perfluorotridecanoic acid (PFTrDA).....	100-500 ng/L
Perfluoroundecanoic acid (PFUnDA).....	100-500 ng/L

Pesticides

Pesticides

CRM Cat. #709	PT Cat. #850	M	QR Cat. #709QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 507, 508, 525, or other applicable method for organochlorine, nitrogen, and organophosphorus pesticides. Each standard contains at least 14 analytes randomly selected from the list below at 0.2-20 µg/L.

Alachlor	Heptachlor	Metribuzin
Aldrin	Heptachlor epoxide (beta)	Molinate (ordram)
Atrazine	Hexachlorobenzene	Prometon
Bromacil	Hexachlorocyclopentadiene	Propachlor
Butachlor	Lindane (gamma-BHC)	Simazine
Diazinon	Methoxychlor	Thiobencarb
Dieldrin	Metolachlor	Trifluralin
Endrin		

Carbamate/Carbamoxylloxime Pesticides

CRM Cat. #707	PT Cat. #846	M	QR Cat. #707QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 531.1, 531.2, 632, or other applicable method. Each standard contains at least 8 of the analytes below at 15-150 µg/L.

Aldicarb	Carbaryl	Methiocarb
Aldicarb sulfone	Carbofuran	Methomyl
Aldicarb sulfoxide	3-Hydroxycarbofuran	Oxamyl
Baygon		

Chlordane

CRM Cat. #705	PT Cat. #845	M	QR Cat. #705QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 508, 525, or other applicable method. Each standard contains technical chlordane at 2-20 µg/L.

Toxaphene

CRM Cat. #700	PT Cat. #844	M	QR Cat. #700QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 508, 525, or other applicable method. Each standard contains toxaphene at 2-20 µg/L.



Brian Miller
Product Line Manager
Years with Waters ERA: 17



GET AHEAD OF INCREASING PFAS DEMANDS

PFASs have long been a contaminant of concern for environmental waters, but they are now emerging in food safety concerns. Laboratories are seeking fast and sensitive solutions to rapidly detect these pollutants in surface, ground, and waste waters to help target remediation efforts and prevent food chain contamination.

Waters offers robust analytical solutions to meet advisory levels for legacy and emerging PFASs:

- LC-MS/MS to reach detection limits in the low-to-sub ng/L range
- SPE sample preparation that allows for sample enrichment to increase sensitivity
- Large volume direct injection method to speed up analysis time
- Employ dependable solutions for POPs and chemical contaminant analysis.

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SAMPLE PREPARATION | CHEMISTRIES | COLUMNS | CHROMATOGRAPHY | MASS SPECTROMETRY

Pesticides (continued)

EDB/DBCP/TCP

CRM Cat. #706	PT Cat. #847	M	QR Cat. #706QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 504, 551, or other applicable method. Each lot contains all analytes below at 0.05–2 µg/L.

1,2-Dibromo-3-chloropropane (DBCP)
Ethylene dibromide (EDB)

1,2,3-Trichloropropane (1,2,3-TCP)

Low-Level 1,2,3-TCP

CRM Cat. #682	PT Cat. #596	B	QR Cat. #682QR
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One 2 mL flame-sealed ampule yields 100 mL after dilution. Use with California method SRL 524M, or other applicable method. Each standard contains 1,2,3-Trichloropropane (TCP) at 5–100 ng/L after dilution.

B Low-Level 1,2,3-TCP available in January and July.

Semivolatile Organics

Dioxin

CRM Cat. #663	PT Cat. #857	Q	QR Cat. #663QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 613, 1613, 8280, 8290, or other applicable method. Each standard contains 2,3,7,8-TCDD at 20–100 pg/L.

PCBs as Decachlorobiphenyl

CRM Cat. #708	PT Cat. #839	Q	QR Cat. #708QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Quantitative Method 508A. This standard can also be used for aroclor identification and quantification using EPA Methods 505, 508, 508.1, or other applicable method. Includes an aroclor randomly selected from the list below at 0.5–5 µg/L as decachlorobiphenyl.

Aroclor 1016
Aroclor 1221
Aroclor 1232

Aroclor 1242
Aroclor 1248

Aroclor 1254
Aroclor 1260

Semivolatile Organics (continued)

Semivolatiles #1

CRM Cat. #690	PT Cat. #848	M	QR Cat. #690QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 506, 525, 550, or other applicable method for PAHs, phthalates, and adipates. Each standard contains benzo(a)pyrene, bis(2-ethylhexyl)adipate, and bis(2-ethylhexyl)phthalate plus at least 13 additional analytes, selected from the list below, at 0.2–50 µg/L.

Acenaphthene	Butyl benzyl phthalate	bis(2-Ethylhexyl)phthalate
Acenaphthylene	Chrysene	Fluoranthene
Anthracene	Dibenz(a,h)anthracene	Fluorene
Benzo(a)anthracene	Di-n-butyl phthalate	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	Diethyl phthalate	Naphthalene
Benzo(k)fluoranthene	Dimethyl phthalate	Phenanthrene
Benzo(g,h,i)perylene	Di-n-octyl phthalate	Pyrene
Benzo(a)pyrene	bis(2-Ethylhexyl)adipate	

Naphthalene is not within the EPA/NELAC range. Use the Unregulated Volatiles standard (page 27 for this compound in the EPA/NELAC range).

Herbicides

Chlorinated Acid Herbicides

CRM Cat. #704	PT Cat. #851	M	QR Cat. #704QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 515.1, 515.2, 515.3, 515.4, 555, or other applicable method. All lots include at least 10 analytes from the list below at 1–120 µg/L.

Acifluorfen	Dalapon	4-Nitrophenol
Bentazon	Dicamba	Pentachlorophenol
Chloramben	3,5-Dichlorobenzoic acid	Picloram
2,4-D	Dichlorprop	2,4,5-T
2,4-DB	Dinoseb	2,4,5-TP (silvex)
Dacthal diacid (DCPA)		

Semivolatiles #2 Herbicides

CRM Cat. #691	PT Cat. #849	M	QR Cat. #691QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 547, 548, 549, or other applicable method. Each standard contains all the analytes below at 8–800 µg/L.

Diquat	Glyphosate	Paraquat
Endothall		

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

All Waters ERA WS PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. Quarterly months are January, April, July, and October.



MAGNIFY YOUR DIOXIN DETECTION

The analysis of dioxins is particularly demanding due to encountered low-level regulatory exposure limits and complex sample matrices. Waters provides LC-MS/MS and GC-MS/MS systems for the detection and quantification of dioxins and related compounds at ultra-trace levels. Combined with our analytical standards & reagents, proficiency testing (ERA), column and sample preparation products, and data management software, these solutions are designed to:

- Increase accuracy
- Enhance sensitivity
- Accelerate throughput
- Ensure compliance

Employ dependable solutions for POPs and chemical contaminant analysis.

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SAMPLE PREPARATION | CHEMISTRIES | COLUMNS | CHROMATOGRAPHY | MASS SPECTROMETRY

MICROBIOLOGY

Matrices with low and high concentrations of analytes for testing bacteria in drinking water and waste water. Samples are delivered as lyophilized pellets in a glass vial with phosphate buffer dilution water.

Water Pollution PT Schedule 2020

	Scheme #	Opens	Closes
Q	WP 300	Jan 13	Feb 27
	WP 301	Feb 10	Mar 26
	WP 302	Mar 9	Apr 23
Q	WP 303	Apr 13	May 28
	WP 304	May 11	Jun 25
	WP 305	Jun 8	Jul 23
Q	WP 306	Jul 13	Aug 27
	WP 307	Aug 10	Sep 24
	WP 308	Sep 8	Oct 23
Q	WP 309	Oct 9	Nov 23
	WP 310	Nov 13	Dec 28
	WP 311	Dec 11	Jan 25, 2021

2021

	Scheme #	Opens	Closes
Q	WP 312	Jan 18	Mar 4
	WP 313	Feb 15	Apr 1
	WP 314	Mar 15	Apr 29
Q	WP 315	Apr 12	May 27
	WP 316	May 17	Jul 1
	WP 317	Jun 14	Jul 29
Q	WP 318	Jul 19	Sep 2
	WP 319	Aug 16	Sep 30
	WP 320	Sep 13	Oct 28
Q	WP 321	Oct 15	Nov 29
	WP 322	Nov 12	Dec 27
	WP 323	Dec 13	Jan 27, 2022

Schedule subject to change – see Waters ERA's website at www.eraqc.com

Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a Quik Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. Quik Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Description	CRM	PT	QR	Page
Enterococci	081	880 Q	787QR	34
Heterotrophic Plate Count (WP)		935 B		34
Heterotrophic Plate Count (WS)	084	079 M	084QR	34
Massachusetts Ground Water Enterococci	081	077 *	—	34
Potable Water Coliform Microbe	694	080 M	085QR	34
Source Water Microbe	078	595 Q	078QR	34
Source Water Microbe - 9221	078A	595A Q	078AQR	34
Wastewater Coliform Microbe	083	576 M	786QR	34
Wastewater Coliform Microbe - 9221	083A	576A M	786AQR	34

Water Supply PT Schedule 2020

	Scheme #	Opens	Closes
Q	WS 282	Jan 6	Feb 20
	WS 283	Feb 3	Mar 19
	WS 284	Mar 2	Apr 16
Q	WS 285	Apr 6	May 21
	WS 286	May 4	Jun 18
	WS 287	Jun 1	Jul 16
Q	WS 288	Jul 6	Aug 20
	WS 289	Aug 3	Sep 17
	WS 290	Sep 1	Oct 16
Q	WS 291	Oct 2	Nov 16
	WS 292	Nov 2	Dec 17
	WS 293	Dec 4	Jan 18, 2021

2021

	Scheme #	Opens	Closes
Q	WS 294	Jan 11	Feb 25
	WS 295	Feb 8	Mar 25
	WS 296	Mar 8	Apr 22
Q	WS 297	Apr 5	May 20
	WS 298	May 10	Jun 24
	WS 299	Jun 7	Jul 22
Q	WS 300	Jul 12	Aug 26
	WS 301	Aug 9	Sep 23
	WS 302	Sep 7	Oct 22
Q	WS 303	Oct 8	Nov 22
	WS 304	Nov 5	Dec 20
	WS 305	Dec 6	Jan 20, 2022

All Waters ERA Microbiology PTs open monthly (**M**), quarterly (**Q**), or biannually (**B**) unless otherwise noted. Waters ERA Massachusetts Ground Water Enterococci PT is available any time. Quarterly months are January, April, July, and October.

WP Microbiology

Wastewater Coliform Microbe

CRM

Cat. #083

PT

Cat. #576

M

QR

Cat. #786QR

Each PT sample is one lyophilized quantitative standard for use with all Clean Water Act quantitative methods, including MF and MPN. If determining MPN by SM 9221 or similar multiple tube techniques, use 083A, 576A, or 786A.

CRM also includes one blank sample. Each standard can be used for total coliform, fecal coliform, and *E. coli* which are present in the range 20–2400 CFU/100 mL or MPN/100 mL.

Wastewater Coliform Microbe – 9221

CRM

Cat. #083A

PT

Cat. #576A

M

QR

Cat. #786AQR

Each PT sample is one lyophilized quantitative standard for use with Standard Methods 9221 or similar multiple tube techniques.

CRM also includes one blank sample. Each standard can be used for total coliform, fecal coliform, and *E. coli* which are present in the range of 20–2400 MPN/100 mL.

Enterococci

CRM

Cat. #081

PT

Cat. #880

Q

QR

Cat. #787QR

Each PT sample is one lyophilized standard, which can be analyzed for enterococci and/or fecal streptococci, MF or MPN in the range 20–1000 CFU/100 mL or MPN/100 mL.

CRM also includes one blank sample. Use with EPA Methods 1106.1 and 1600, ASTM Methods D5259-92, D6503-99, and Standard Methods 9230B and 9230C, and Enterolert Quantitray.

Heterotrophic Plate Count

PT

Cat. #935

B

One lyophilized sample containing a Heterotrophic bacteria. SPC PT standards are required for laboratories seeking NELAC accreditation as well as by many other state programs.

B Offered Biannually in March and September.

State-Specific Microbiology

Massachusetts Ground Water Enterococci

CRM

Cat. #081

PT

Cat. #077

*

Each PT sample set is composed of 10 lyophilized samples to be analyzed for presence or absence of enterococci. This sample is specifically designed for the State of Massachusetts certification for compliance with the federal Ground Water Rule. Each CRM sample set is composed of two lyophilized samples - one quantitative positive and one blank.

* Massachusetts Ground Water Enterococci PT is available any time.

WS Microbiology

Heterotrophic Plate Count

CRM

Cat. #084

PT

Cat. #079

M

QR

Cat. #084QR

Each sample is one lyophilized standard containing a heterotrophic bacteria present in the range 5–500 CFU/mL or MPN/mL. Use with the Standard Methods 9215B – Pour Plate Method, and Most Probable Number (MPN) Method (simplate).

Potable Water Coliform Microbe

CRM

Cat. #694

PT

Cat. #080

M

QR

Cat. #085QR

Each sample set consists of lyophilized standards for the presence or absence analysis of total coliform, fecal coliform, and *E. coli*. The standards are applicable to all SDWA promulgated methods-MF, MPN, presence/absence, and ONPG-MUG. The Potable Water Coliform Microbe PT standard is available in all 12-monthly WS studies.

Source Water Microbe

CRM

Cat. #078

PT

Cat. #595

Q

QR

Cat. #078QR

Each sample is one lyophilized quantitative standard containing *E. coli* in the range 20–200 CFU/100 mL or MPN/100 mL. Use with all SDWA quantitative methods. Each standard can be used for total coliform, fecal coliform, and *E. coli*. If determining MPN by SM 9221 or similar multiple tube techniques, use 078A, 595A, and 078AQR.

Source Water Microbe – 9221

CRM

Cat. #078A

PT

Cat. #595A

Q

QR

Cat. #078AQR

Each sample is one lyophilized quantitative standard containing *E. coli* in the range of 20–200 MPN/100 mL for use with Standard Methods 9221 or similar multiple tube techniques. Each standard can be used for total coliforms, fecal coliforms, and *E. coli*.

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

All Waters ERA Microbiology PTs open monthly (**M**) or quarterly (**Q**). Quarterly months are January, April, July, and October.

Mike Blades

Technical Manager

Years with Waters ERA: 26



GOING BEYOND THE STANDARD

Supplying Proficiency Testing (PT) and Certified Reference Material (CRM) standards is not unique. What sets us apart is our commitment to being more than a standards provider. Since 1977, we've worked as your partner, helping you produce reliable, defensible data, maintain critical accreditations, and make your laboratory successful.

- **Data Tools to Help You Succeed:** eDATA online PT data management portal allows you to effectively manage your proficiency testing program, assess risk, and evaluate trends over time.
- **Expert Guidance at Your Fingertips:** Direct access to one of the most qualified Customer Service and Technical Support teams in the environmental PT and CRM industry.
- **Superior Standards for Better Results:** Waters ERA maintains ISO 17025, ISO 17034, and ISO 17043 accreditations, giving you greater confidence in your data due to the largest studies, two-day report turn-around time, and more reliable performance evaluations.



SOIL

Matrices designed to fulfill requirements for monitoring soil and solid matrices. Dried and homogenized standards of soil and sewage sludge may be used to satisfy PT requirements.

Soil (including UST in Soil) PT Schedule 2020

	Scheme #	Opens	Closes
Q	SOIL 109	Jan 20	Mar 5
Q	SOIL 110	Apr 20	Jun 4
Q	SOIL 111	Jul 20	Sep 3
Q	SOIL 112	Oct 16	Nov 30

2021

	Scheme #	Opens	Closes
Q	SOIL 113	Jan 25	Mar 11
Q	SOIL 114	Apr 19	Jun 3
Q	SOIL 115	Jul 26	Sep 9
Q	SOIL 116	Oct 22	Dec 6

Schedule subject to change – see Waters ERA's website at www.eraqc.com

Contents

Description	CRM	PT	QR	Page
1,4-Dioxane in Soil	538	461 B	538QR	39
Anions in Soil	543	873 Q	543QR	39
Base/Neutrals & Acids in Soil	727	467 Q	727QR	41
BTEX & MTBE in Soil	761	633 Q	761QR	40
Carbamate Pesticides in Soil	926	879 Q	926QR	43
Chlordane in Soil	725	628 Q	725QR	43
Chlorinated Acid Herbicides in Soil	723	626 Q	723QR	42
Corrosivity/pH in Soil	914	875 Q	914QR	38
Cyanide in Soil	541	621 Q	541QR	39
Diesel Range Organics (DRO) in Soil	765	631 Q	765QR	41
Gasoline Range Organics (GRO) in Soil	763	630 Q	763QR	39
Glycols in Soil	928	463 Q	928QR	41
Hexavalent Chromium in Soil	921	876 Q	921QR	38
Ignitability/Flash Point	979	874 Q	979QR	38
Low-Level PAHs in Soil	722	625 Q	722QR	41
Metals & Cyanide Blank Sand	058	—	—	43
Metals & Cyanide Blank Soil	057	—	—	43
Metals in Sewage Sludge	160	619 Q	160QR	38
Metals in Soil	540	620 Q	540QR	38
Nitroaromatics & Nitramines in Soil	920	871 Q	920QR	41

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Description	CRM	PT	QR	Page
Nutrients in Sludge	545	—	—	39
Nutrients in Soil	542	869 Q	542QR	39
Oil & Grease in Soil	549	867 Q	549QR	39
Organochlorine Pesticides in Soil	728	468 Q	728QR	43
Organophosphorus Pesticides (OPP) in Soil	925	878 Q	925QR	43
PCBs in Oil	563	817 Q	563QR	42
PCBs in Oil Standards	see page 42 for options			
PCBs in Soil	726	624 Q	726QR	42
PCBs in Soil Standards	see page 42 for options			
Per- and Polyfluoroalkyl Substances (PFAS) in Soil	604	462 Q	604QR	41
Ready-to-Use VOAs in Soil	924	870 Q	924QR	40
TCLP Metals in Soil	544	629 Q	544QR	38
TCLP Organochlorine Pesticides	732	—	732QR	40
TCLP Semivolatiles	737	—	737QR	40
TCLP Volatiles	730	—	730QR	40
Total Petroleum Hydrocarbons (TPH) in Soil #1	570	632 Q	572QR	40
Total Petroleum Hydrocarbons (TPH) in Soil #2	571	632 Q	572QR	40
Toxaphene in Soil	724	627 Q	724QR	43
Volatiles in Soil	721	623 Q	721QR	39

QR: Similar to a Proficiency Test, a Quik Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. Quik Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

All ERA Soil PTs open quarterly (**Q**) or biannually (**B**), unless otherwise noted. Quarterly months are January, April, July, and October.

Metals

Metals in Soil

CRM Cat. #540	PT Cat. #620	Q	QR Cat. #540QR
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One 40 g soil sample in a screw-cap bottle for all ICP and AA, RCRA and Superfund Methods including EPA Digestion Methods 3050 Hot Plate and 3051 Microwave, or other applicable methods. Includes all metals shown below.

Aluminum.....	2500–25,000 mg/kg
Antimony.....	80–300 mg/kg
Arsenic.....	40–400 mg/kg
Barium.....	100–1000 mg/kg
Beryllium.....	40–400 mg/kg
Boron.....	80–800 mg/kg
Cadmium.....	40–400 mg/kg
Calcium.....	1500–25,000 mg/kg
Chromium.....	40–400 mg/kg
Cobalt.....	40–400 mg/kg
Copper.....	40–400 mg/kg
Iron.....	5000–50,000 mg/kg
Lead.....	40–400 mg/kg
Magnesium.....	1200–25,000 mg/kg
Manganese.....	100–2000 mg/kg
Mercury.....	1–35 mg/kg
Molybdenum.....	30–300 mg/kg
Nickel.....	40–500 mg/kg
Potassium.....	1400–25,000 mg/kg
Selenium.....	40–400 mg/kg
Silver.....	20–100 mg/kg
Sodium.....	150–15,000 mg/kg
Strontium.....	40–400 mg/kg
Thallium.....	40–400 mg/kg
Tin.....	50–250 mg/kg
Titanium.....	10–2000 mg/kg
Uranium.....	1–250 mg/kg
Vanadium.....	40–400 mg/kg
Zinc.....	100–1000 mg/kg

Hexavalent Chromium in Soil

CRM Cat. #921	PT Cat. #876	Q	QR Cat. #921QR
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One 40 g standard in a screw-cap bottle for use with all promulgated hexavalent chromium methods.

Hexavalent chromium.....	40–300 mg/kg
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TCLP Metals in Soil

CRM Cat. #544	PT Cat. #629	Q	QR Cat. #544QR
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One 105 g soil standard in a screw-cap bottle designed specifically to meet all state requirements for TCLP extraction and analysis for the metals listed below. Sample is designed to be extracted with fluid #1.

Antimony	Cadmium	Nickel
Arsenic	Chromium	Selenium
Barium	Lead	Silver
Beryllium	Mercury	Zinc

Metals in Sewage Sludge

CRM Cat. #160	PT Cat. #619	Q	QR Cat. #160QR
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One 40 g sludge standard in a screw-cap bottle to be analyzed for the metals listed below.

Aluminum.....	1000–50,000 mg/kg
Antimony.....	80–300 mg/kg
Arsenic.....	50–400 mg/kg
Barium.....	250–2000 mg/kg
Beryllium.....	30–200 mg/kg
Cadmium.....	40–300 mg/kg
Calcium.....	5000–70,000 mg/kg
Chromium.....	40–300 mg/kg
Cobalt.....	5–50 mg/kg
Copper.....	40–1000 mg/kg
Iron.....	1000–50,000 mg/kg
Lead.....	50–250 mg/kg
Magnesium.....	1200–25,000 mg/kg
Manganese.....	100–2000 mg/kg
Mercury.....	1–50 mg/kg
Molybdenum.....	5–250 mg/kg
Nickel.....	40–250 mg/kg
Potassium.....	1400–25,000 mg/kg
Selenium.....	50–250 mg/kg
Silver.....	50–250 mg/kg
Sodium.....	150–15,000 mg/kg
Strontium.....	200–2000 mg/kg
Thallium.....	50–250 mg/kg
Vanadium.....	5–250 mg/kg
Zinc.....	70–1500 mg/kg

Physical Parameters

Corrosivity/pH in Soil

CRM Cat. #914	PT Cat. #875	Q	QR Cat. #914QR
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One 100 g soil standard in a screw-cap bottle. Use to measure corrosivity.

Corrosivity/pH.....	2–12 S.U.
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Ignitability/Flash Point

CRM Cat. #979	PT Cat. #874	Q	QR Cat. #979QR
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One standard packaged in three 30 mL bottles. Use to measure ignitability.

Ignitability/flashpoint.....	100–200 °F
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Oil & Grease in Soil

CRM Cat. #549	PT Cat. #867	Q	QR Cat. #549QR
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One screw-cap bottle containing 50 g of soil ready to analyze. Use with gravimetric method 9071B or infrared spectrometric analysis.

n-Hexane extractable material (O&G) (Gravimetric)	300-3000 mg/kg
n-Hexane extractable material (O&G) (Infrared)	300-3000 mg/kg

Inorganics

Anions in Soil

CRM Cat. #543	PT Cat. #873	Q	QR Cat. #543QR
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One 40 g soil standard in a screw-cap bottle designed for a DI water extraction procedure for all the anions listed below.

Bromide	10-100 mg/kg
Chloride	200-1000 mg/kg
Fluoride	25-500 mg/kg
Nitrate as N	25-500 mg/kg
Phosphate as P	25-500 mg/kg
Sulfate	25-2000 mg/kg

Cyanide in Soil

CRM Cat. #541	PT Cat. #621	Q	QR Cat. #541QR
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One 40 g soil standard in a screw-cap bottle for all distillation/colorimetric methods.

Total cyanide	20-200 mg/kg
Amenable cyanide	0-100 mg/kg

Nutrients in Soil

CRM Cat. #542	PT Cat. #869	Q	QR Cat. #542QR
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One 40 g soil standard in a screw-cap bottle. Use to analyze for all the nutrients listed below.

Ammonia as N	300-3000 mg/kg
Total Kjeldahl nitrogen as N	400-4000 mg/kg
Total organic carbon (TOC)	1000-20,000 mg/kg
Total phosphorus as P	300-3000 mg/kg

Nutrients in Sludge

CRM Cat. #545

One 40 g sludge standard in a screw-cap bottle is ready for analysis.

Ammonia as N	0.1-5% (w/w)
Total Kjeldahl nitrogen as N	2-10% (w/w)
Total organic carbon (TOC)	5-50% (w/w)
Total phosphorus as P	0.5-10% (w/w)

Volatiles in Soil

CRM Cat. #721	PT Cat. #623	Q	QR Cat. #721QR
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One 2 mL flame-sealed ampule in methanol requires spiking onto the provided ten grams of solid matrix before analysis. Use with EPA Methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 20-200 µg/kg (40-400 µg/kg for total xylenes, 80-1000 for selected ketones, and 100-1000 µg/kg for acetonitrile).

Acetone	1,3-Dichlorobenzene	1,1,2,2-Tetrachloroethane
Acetonitrile	1,4-Dichlorobenzene	Tetrachloroethene
Acrolein	Dichlorodifluoromethane	Toluene
Benzene	1,1-Dichloroethane	1,2,3-Trichlorobenzene
Bromobenzene	1,2-Dichloroethane	1,2,4-Trichlorobenzene
Bromochloromethane	1,1-Dichloroethylene	1,1,1-Trichloroethane
Bromodichloromethane	cis-1,2-Dichloroethylene	1,1,2-Trichloroethane
Bromoform	trans-1,2-Dichloroethylene	Trichloroethene
Bromomethane	1,2-Dichloropropane	Trichlorofluoromethane
2-Butanone (MEK)	1,3-Dichloropropane	1,2,3-Trichloropropane
n-Butylbenzene	2,2-Dichloropropane	1,2,4-Trimethylbenzene
sec-Butylbenzene	1,1-Dichloropropene	1,3,5-Trimethylbenzene
tert-Butylbenzene	cis-1,3-Dichloropropylene	Vinyl acetate
Carbon disulfide	trans-1,3-Dichloropropylene	Vinyl chloride
Carbon tetrachloride	Ethylbenzene	m&p-Xylene
Chlorobenzene	Hexachlorobutadiene	o-Xylene
Chlorodibromomethane	Hexachloroethane	Xylenes, total
Chloroethane	2-Hexanone	
2-Chloroethyl vinyl ether	Isopropylbenzene	
Chloroform	p-Isopropyltoluene	
Chloromethane	Methyl tert-butyl ether (MTBE)	
2-Chlorotoluene	4-Methyl-2-pentanone (MIBK)	
4-Chlorotoluene	Methylene chloride	
1,2-Dibromo-3-chloropropane (DBCP)	Naphthalene	
1,2-Dibromoethane (EDB)	Nitrobenzene	
Dibromomethane	n-Propylbenzene	
1,2-Dichlorobenzene	Styrene	
	1,1,1,2-Tetrachloroethane	

This standard is not compliant with the NELAC concentration for hexachloroethane, hexachlorobutadiene, and nitrobenzene. If a NELAC compliant sample is required for these analytes, use Ready-to-Use VOAs in Soil, or Base/Neutrals and Acids in Soil.

1,4-Dioxane in Soil

NEW PRODUCT

CRM Cat. #538	PT Cat. #461	B	QR Cat. #538QR
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One 2 mL flame-sealed ampule requires spiking onto the provided ten grams of solid matrix before analysis. Use with modified versions of EPA method 8260, 1624 or other applicable methods.

1,4-Dioxane	20-200 µg/kg
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Gasoline Range Organics (GRO) in Soil

CRM Cat. #763	PT Cat. #630	Q	QR Cat. #763QR
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One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100-2000 mg/kg. Use with purge and trap and modified EPA 8015 GC/FID Methods, or other applicable methods. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If a NELAC-compliant sample for these analytes is required, use Volatiles in Soil, Cat. #623 or BTEX & MTBE Soil, Cat. #633.

All ERA Soil PTs open quarterly (Q) or biannually (B), unless otherwise noted. Quarterly months are January, April, July, and October.

Volatiles (continued)

BTEX & MTBE in Soil

CRM Cat. #761	PT Cat. #633	QR Cat. #761QR
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One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes the analytes below at 20–200 µg/kg (40–400 µg/kg for total xylenes). Use with EPA Method 8021, or other applicable methods.

Benzene	Methyl tert-butyl ether (MTBE)	Xylenes, total
Ethylbenzene	Toluene	m&p Xylene
		o-Xylene

Ready-to-Use VOAs in Soil

CRM Cat. #924	PT Cat. #870	QR Cat. #924QR
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One 20 mL flame-sealed ampule containing 10 g of soil and 10 mL of methanol is ready to analyze. Use with EPA Methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 1000–20,000 µg/kg.

Acetone	1,2-Dibromoethane (EDB)	Methylene chloride
Acetonitrile	Dibromomethane	Naphthalene
Acrolein	1,2-Dichlorobenzene	Nitrobenzene
Benzene	1,3-Dichlorobenzene	n-Propylbenzene
Bromobenzene	1,4-Dichlorobenzene	Styrene
Bromochloromethane	Dichlorodifluoromethane	1,1,1,2-Tetrachloroethane
Bromodichloromethane	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	Tetrachloroethene
Bromomethane	1,1-Dichloroethene	Toluene
2-Butanone (MEK)	cis-1,2-Dichloroethylene	1,2,3-Trichlorobenzene
n-Butylbenzene	trans-1,2-Dichloroethylene	1,2,4-Trichlorobenzene
sec-Butylbenzene	1,2-Dichloropropane	1,1,1-Trichloroethane
tert-Butylbenzene	1,3-Dichloropropane	1,1,2-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	Trichloroethene
Carbon tetrachloride	1,1-Dichloropropene	Trichlorofluoromethane
Chlorobenzene	cis-1,3-Dichloropropylene	1,2,3-Trichlorobenzene
Chlorodibromomethane	trans-1,3-Dichloropropylene	1,2,4-Trimethylbenzene
Chloroethane	Ethylbenzene	1,3,5-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachlorobutadiene	Vinyl acetate
Chloroform	Hexachloroethane	Vinyl chloride
Chloromethane	2-Hexanone	m&p-Xylene
2-Chlorotoluene	Isopropylbenzene	o-Xylene
4-Chlorotoluene	p-Isopropyltoluene	Xylenes, total
1,2-Dibromo-3-chloropropane (DBCP)	Methyl tert-butyl ether (MTBE)	
	4-Methyl-2-pentanone (MIBK)	



Total Petroleum Hydrocarbons

Total Petroleum Hydrocarbons (TPH) in Soil #1

CRM Cat. #570	PT Cat. #632	QR Cat. #572QR
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One screw-top bottle with 50 g of soil to be analyzed for TPH. Use with EPA IR or Gravimetric Methods 8440, 9071B, or other applicable methods.

Non-polar extractable material (TPH) (Gravimetric)	300–3000 mg/kg
Non-polar extractable material (TPH) (IR)	300–3000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil #2

CRM Cat. #571	PT Cat. #632	QR Cat. #572QR
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One screw-top bottle with 50 g of soil to be analyzed for TPH in the presence of interfering fatty acids. Use with EPA IR or Gravimetric Methods 8440, 9071B, or other applicable methods.

Non-polar extractable material (TPH) (Gravimetric)	300–3000 mg/kg
Non-polar extractable material (TPH) (IR)	300–3000 mg/kg

TCLP

TCLP Volatiles

CRM Cat. #730	QR Cat. #730QR
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One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.05–2.0 mg/L.

Benzene	Chloroform	Tetrachloroethylene
2-Butanone (MEK)	1,4-Dichlorobenzene	Trichloroethylene
Carbon tetrachloride	1,2-Dichloroethane	Vinyl chloride
Chlorobenzene	1,1-Dichloroethylene	

TCLP Semivolatiles

CRM Cat. #737	QR Cat. #737QR
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One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.1–2.0 mg/L after dilution. All unspiked analytes are certified at <0.5 mg/L.

1,4-Dichlorobenzene	Hexachloroethane	Pentachlorophenol
2,4-Dinitrotoluene	2-Methylphenol	Pyridine
Hexachlorobenzene	3 & 4-Methylphenol	2,4,5-Trichlorophenol
Hexachlorobutadiene	Nitrobenzene	2,4,6-Trichlorophenol

TCLP Organochlorine Pesticides

CRM Cat. #732	QR Cat. #732QR
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One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.01–0.2 mg/L after dilution. All unspiked analytes are certified at <0.1 mg/L.

Endrin	Heptachlor epoxide	Methoxychlor
Heptachlor	gamma-BHC (Lindane)	

Nitroaromatics & Nitramines in Soil

CRM Cat. #920	PT Cat. #871	Q	QR Cat. #920QR
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Two flame-sealed ampules each containing 30 g of soil are ready to analyze. Use for EPA Methods 8330, 8091, or other applicable methods. Includes a subset of the analytes listed below at 1500-15,000 µg/kg.

4-Amino-2,6-dinitrotoluene	HMX	RDX
2-Amino-4,6-dinitrotoluene	Nitrobenzene	Tetryl
1,3-Dinitrobenzene	2-Nitrotoluene	1,3,5-Trinitrobenzene
2,4-Dinitrotoluene	3-Nitrotoluene	2,4,6-Trinitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene	

Per- & Polyfluoroalkyl Substances (PFAS) in Soil

NEW ANALYTES

CRM Cat. #604	PT Cat. #462	Q	QR Cat. #604QR
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One flame-sealed ampule containing 10 g of soil. The standard is certified for all analytes listed below. Each lot will be spiked with 6-12 of the analytes specified in the range of 20-100 µg/kg (40-100 µg/kg for HFPO-DA). Design is suitable for methods analyzing these components with LC-MS/MS techniques.

11-chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS).....	20-100 µg/kg
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS).....	20-100 µg/kg
4,8-dioxa-3H-perfluorononanoic acid (DONA).....	20-100 µg/kg
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA).....	20-100 µg/kg
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS).....	20-100 µg/kg
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS).....	20-100 µg/kg
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS).....	20-100 µg/kg
Hexafluoropropylene oxide dimer acid (HFPO-DA).....	40-100 µg/kg
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA).....	20-100 µg/kg
Perfluorobutanesulfonic acid (PFBS).....	20-100 µg/kg
Perfluorobutanoic acid (PFBA).....	20-100 µg/kg
Perfluorodecane sulfonic acid (PFDS).....	20-100 µg/kg
Perfluorodecanoic acid (PFDA).....	20-100 µg/kg
Perfluorododecanoic acid (PFDoA).....	20-100 µg/kg
Perfluoroheptane sulfonic acid (PFHpS).....	20-100 µg/kg
Perfluoroheptanoic acid (PFHpA).....	20-100 µg/kg
Perfluorohexanesulfonic acid (PFHxS).....	20-100 µg/kg
Perfluorohexanoic acid (PFHxA).....	20-100 µg/kg
Perfluorononane sulfonic acid (PFNS).....	20-100 µg/kg
Perfluorononanoic acid (PFNA).....	20-100 µg/kg
Perfluorooctane sulfonamide (PFOSAm).....	20-100 µg/kg
Perfluorooctanesulfonic acid (PFOS).....	20-100 µg/kg
Perfluorooctanoic acid (PFOA).....	20-100 µg/kg
Perfluoropentanoic acid (PFPeA).....	20-100 µg/kg
Perfluoropentane sulfonic acid (PFPeS).....	20-100 µg/kg
Perfluorotetradecanoic acid (PFTDA).....	20-100 µg/kg
Perfluorotridecanoic acid (PFTDA).....	20-100 µg/kg
Perfluoroundecanoic acid (PFUnDA).....	20-100 µg/kg

Low-Level PAHs in Soil

CRM Cat. #722	PT Cat. #625	Q	QR Cat. #722QR
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Two flame-sealed ampules each containing 30 g are ready to analyze. Use for EPA HPLC Method 8310, 8270 SIM, or other applicable method. Includes a subset of the analytes listed below at 50-1000 µg/kg.

Acenaphthene	Benzo(g,h,i)perylene	Fluorene
Acenaphthylene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene
Anthracene	Chrysene	Naphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Phenanthrene
Benzo(b)fluoranthene	Fluoranthene	Pyrene
Benzo(k)fluoranthene		

Diesel Range Organics (DRO) in Soil

CRM Cat. #765	PT Cat. #631	Q	QR Cat. #765QR
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One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel in the range 300-3000 mg/kg. Use with modified EPA Method 8015, or other applicable GC/FID methods.

Glycols in Soil

CRM Cat. #928	PT Cat. #463	Q	QR Cat. #928QR
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Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Methods 8015B, 8430, 1671, or other applicable method. Includes all the analytes listed below at 75-200 mg/kg.

Diethylene glycol	Propylene glycol	Triethylene glycol
Ethylene glycol	Tetraethylene glycol	

Base/Neutrals & Acids in Soil

CRM Cat. #727	PT Cat. #467	Q	QR Cat. #727QR
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Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Method 8270, or other applicable method. Includes a subset of the analytes listed below at 1000-15,000 µg/kg.

Acenaphthene	Dibenz(a,h)anthracene	2-Methylnaphthalene
Acenaphthylene	Dibenzofuran	2-Methylphenol
2-Amino-1-methylbenzene	Di-n-butyl phthalate	3 & 4-Methylphenol
(o-Toluidine)	1,2-Dichlorobenzene	Naphthalene
Aniline	1,3-Dichlorobenzene	2-Nitroaniline
Anthracene	1,4-Dichlorobenzene	3-Nitroaniline
Benidine	3,3'-Dichlorobenzidine	4-Nitroaniline
Benzoic acid	2,4-Dichlorophenol	Nitrobenzene
Benzo(a)anthracene	2,6-Dichlorophenol	2-Nitrophenol
Benzo(b)fluoranthene	Diethyl phthalate	4-Nitrophenol
Benzo(k)fluoranthene	2,4-Dimethylphenol	N-Nitrosodiethylamine
Benzo(g,h,i)perylene	Dimethyl phthalate	N-Nitrosodimethylamine
Benzo(a)pyrene	2,4-Dinitrophenol	N-Nitrosodiphenylamine
Benzyl alcohol	2,4-Dinitrotoluene	N-Nitroso-di-n-propylamine
4-Bromophenyl phenyl ether	2,6-Dinitrotoluene	2,2'-Oxybis(1-Chloropropane)
Butyl benzyl phthalate	Di-n-octyl phthalate	Pentachlorobenzene
Carbazole	bis(2-Ethylhexyl)phthalate	Pentachlorophenol
4-Chloroaniline	Fluoranthene	Phenanthrene
bis(2-Chloroethyl)ether	Fluorene	Phenol
bis(2-Chloroethoxy)methane	Hexachlorobenzene	Pyrene
4-Chloro-3-methylphenol	Hexachlorobutadiene	Pyridine
1-Chloronaphthalene	Hexachlorocyclopentadiene	1,2,4,5-Tetrachlorobenzene
2-Chloronaphthalene	Hexachloroethane	2,3,4,6-Tetrachlorophenol
2-Chlorophenol	Indeno(1,2,3-cd)pyrene	1,2,4-Trichlorobenzene
4-Chlorophenyl phenyl ether	Isophorone	2,4,5-Trichlorophenol
Chrysene	2-Methyl-4,6-dinitrophenol	2,4,6-Trichlorophenol

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Herbicides

Chlorinated Acid Herbicides in Soil

CRM
Cat. #723

PT
Cat. #626



QR
Cat. #723QR

Two flame-sealed ampules, each containing 30 g of soil are ready-to-use. Use with EPA Method 8151, or other applicable methods. Includes a subset of the analytes listed below at 100–1000 µg/kg (MCPA & MCPP 1000–10,000 µg/kg).

Acifluorfen	Dalapon	MCPP
Bentazon	Dicamba	4-Nitrophenol
Chloramben	3,5-Dichlorobenzoic acid	Pentachlorophenol
2,4-D	Dichlorprop	Picloram
2,4-DB	Dinoseb	2,4,5-T
Dacthal diacid (DCPA)	MCPA	2,4,5-TP (Silvex)

This standard is not compliant with the NELAC concentration for 4-Nitrophenol. If a NELAC compliant sample is required for this analyte, use Base/Neutrals and Acids in Soil.

PCBs

PCBs in Oil

CRM
Cat. #563

PT
Cat. #817



QR
Cat. #563QR

One 10 mL flame-sealed ampule is ready to analyze. Contains a different Aroclor, randomly selected from the list below at 10–50 mg/kg.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

PCBs in Oil Standards

PCBs in oil standards are sold individually in ready-to-use flame-sealed ampules with 5 g of oil. Use with EPA Methods 8082, EPA-600/4-81-045, Sept. 1982, or other applicable methods. LOW LEVEL standards contain an aroclor in the range 10–50 ppm. HIGH LEVEL standards contain an aroclor in the range 51–500 ppm.

CRM Cat. #	Concentration	Aroclor	Range
820	Low	1242	10–50 ppm
821	High	1242	51–500 ppm
826	Low	1248	10–50 ppm
827	High	1248	51–500 ppm
822	Low	1254	10–50 ppm
823	High	1254	51–500 ppm
824	Low	1260	10–50 ppm
825	High	1260	51–500 ppm

PCBs in Soil

CRM
Cat. #726

PT
Cat. #624



QR
Cat. #726QR

One screw-top bottle containing 50 grams of standard is ready to analyze. Use with EPA Method 8082, or other applicable methods. Each standard includes a different aroclor randomly selected from the list below at 1–50 mg/kg.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

PCBs in Soil Standards

PCBs in soil standards are sold individually in screw-top bottles containing 50 g of soil. Use with EPA Methods 8082, 4020, or other applicable methods. LOW LEVEL standards contain an aroclor in the range 0.5–50 ppm. HIGH LEVEL standards contain an aroclor in the range 51–500 ppm.

CRM Cat. #	Concentration	Aroclor	Range
490	Low	1242	0.5–50 ppm
491	High	1242	51–500 ppm
496	Low	1248	0.5–50 ppm
497	High	1248	51–500 ppm
492	Low	1254	0.5–50 ppm
493	High	1254	51–500 ppm
494	Low	1260	0.5–50 ppm
495	High	1260	51–500 ppm

Heidi Senft
Quality Analyst

Years with Waters ERA: 20



Darwin Baxter
Application Engineer

Years with Waters ERA: 12



Pesticides

Blank Soil

Organochlorine Pesticides in Soil

CRM Cat. #728	PT Cat. #468	Q	QR Cat. #728QR
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Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Method 8081, or other applicable methods. Includes a subset of the analytes listed below at 50–500 µg/kg.

Aldrin	4,4'-DDD	Endrin
alpha-BHC	4,4'-DDE	Endrin aldehyde
beta-BHC	4,4'-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide
alpha-Chlordane	Endosulfan II	Methoxychlor
gamma-Chlordane	Endosulfan sulfate	

Chlordane in Soil

CRM Cat. #725	PT Cat. #628	Q	QR Cat. #725QR
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One screw-top bottle containing 50 g of soil is ready to analyze. Use with EPA Method 8081, or other applicable methods. The standard contains technical chlordane at 100–1000 µg/kg.

Toxaphene in Soil

CRM Cat. #724	PT Cat. #627	Q	QR Cat. #724QR
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One screw-top bottle containing 50 g of soil is ready to analyze. Use with EPA Method 8081, or other applicable methods. The standard contains toxaphene at 200–2000 µg/kg.

Carbamate Pesticides in Soil

CRM Cat. #926	PT Cat. #879	Q	QR Cat. #926QR
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Two flame-sealed ampules, each containing 30 g of soil are ready to analyze. Use with EPA Methods 8318, 8321, or other applicable methods. Each standard contains a subset of the analytes listed below at 250–2500 µg/kg.

Aldicarb	Dioxacarb	Oxamyl
Aldicarb sulfone	Diuron	Promecarb
Aldicarb sulfoxide	3-Hydroxycarbofuran	Propham
Carbaryl	Methiocarb	Propoxur
Carbofuran	Methomyl	

Organophosphorus Pesticides (OPP) in Soil

CRM Cat. #925	PT Cat. #878	Q	QR Cat. #925QR
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Two flame-sealed ampules, each containing 30 g of soil are ready to analyze. Use with EPA Method 8141, or other applicable methods. Each standard contains a subset of the analytes listed below at 100–1000 µg/kg.

Azinphos-methyl (Guthion)	Dichlorvos (DDVP)	Phorate
Chlorpyrifos	Disulfoton	Ronnel
Demeton	Ethyl parathion (Parathion)	Stirophos (Tetrachlorovinphos)
Demeton O & S	Malathion	Terbufos
Diazinon	Methyl parathion	

Metals & Cyanide Blank Sand

CRM Cat. #058

One 40 g sand sample in a screw-cap bottle. The concentrations of all EPA/NELAC including the priority pollutant metal and cyanide analytes are below the CLP Required Detection Limits (CRDLs) except iron, which is <250 mg/kg.

Metals & Cyanide Blank Soil

CRM Cat. #057

One 40 g soil sample in a screw-cap bottle. The concentrations of all of the following analytes are below the CLP CRDLs: antimony, arsenic, beryllium, cadmium, cobalt, mercury, nickel, selenium, silver, sodium, thallium, and cyanide. The concentrations of the following analytes are below 10x the CLP CRDLs: barium, chromium, copper, lead, magnesium, potassium, and vanadium. The concentrations of manganese and zinc are <750 mg/kg. The concentration range for aluminum, calcium, and iron is 3000–25,000 mg/kg.



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UNDERGROUND STORAGE TANK

Our Underground Storage Tank (UST) products in water and soil matrices are purposefully designed to meet accreditation requirements for Petroleum Hydrocarbons analysis in various jurisdictions.

UST in Water PT Scheme Schedule 2020

	Scheme #	Opens	Closes
Q	WP 300	Jan 13	Feb 27
Q	WP 303	Apr 13	May 28
Q	WP 306	Jul 13	Aug 27
Q	WP 309	Oct 9	Nov 23

2021

	Scheme #	Opens	Closes
Q	WP 312	Jan 18	Mar 4
Q	WP 315	Apr 12	May 27
Q	WP 318	Jul 19	Sep 2
Q	WP 321	Oct 15	Nov 29

Soil (including UST in Soil) PT Schedule 2020

	Scheme #	Opens	Closes
Q	SOIL 109	Jan 20	Mar 5
Q	SOIL 110	Apr 20	Jun 4
Q	SOIL 111	Jul 20	Sep 3
Q	SOIL 112	Oct 16	Nov 30

2021

	Scheme #	Opens	Closes
Q	SOIL 113	Jan 25	Mar 11
Q	SOIL 114	Apr 19	Jun 3
Q	SOIL 115	Jul 26	Sep 9
Q	SOIL 116	Oct 22	Dec 6

Schedule subject to change - see Waters ERA's website at www.eraqc.com

Contents

Description	CRM	PT	QR	Page
Alaska BTEX in Soil	636	—	470QR	49
Alaska BTEX in Water	646	—	474QR	49
Alaska DRO in Soil	637	—	471QR	49
Alaska DRO in Water	647	—	475QR	49
Alaska GRO in Soil	635	—	469QR	49
Alaska GRO in Water	645	—	473QR	49
Alaska RRO in Soil	638	—	472QR	49
Arizona TPH in Soil	798	488 Q	798QR	49
BTEX & MTBE in Soil	761	633 Q	761QR	48
BTEX & MTBE in Water	760	643 Q	760QR	48
Diesel Range Organics in Soil	765	631 Q	765QR	48
Diesel Range Organics in Water	764	641 Q	764QR	48
Gasoline Range Organics in Soil	763	630 Q	763QR	48
Gasoline Range Organics in Water	762	640 Q	762QR	48
Massachusetts EPH in Soil	569	484 Q	569QR	50
Massachusetts VPH in Soil	568	483 Q	568QR	50
Massachusetts EPH in Water	567	482 Q	567QR	50
Massachusetts VPH in Water	566	481 Q	566QR	50

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

Description	CRM	PT	QR	Page
New Jersey EPH in Soil	564	464 B	564QR	50
Texas High-Level Fuels in Soil	797	479 Q	797QR	49
Texas High-Level Fuels in Water	795	477 Q	795QR	49
Texas Low-Level Fuels in Soil	796	478 Q	796QR	49
Texas Low-Level Fuels in Water	794	476 Q	794QR	49
Total Petroleum Hydrocarbons (TPH) in Soil #1	570	632 Q	572QR	48
Total Petroleum Hydrocarbons (TPH) in Soil #2	571	632 Q	572QR	48
Total Petroleum Hydrocarbons (TPH) in Water #1	600	642 Q	602QR	48
Total Petroleum Hydrocarbons (TPH) in Water #2	601	642 Q	602QR	48
Washington HEM/SGT-HEM	519	489 Q	519QR	50
Wisconsin Gasoline Range Organics (GRO/PVOC) in Water	773	649 Q	773QR	50
Wisconsin Diesel Range Organics (DRO) in Water	772	648 Q	772QR	50

QR: Similar to a Proficiency Test, a Quik Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. Quik Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

All Waters ERA UST PTs open quarterly (**Q**) unless otherwise noted. Quarterly months are January, April, July, and October.

B Waters ERA NJ EPH in Soil PT opens in April and October.

UST in Soil

BTEX & MTBE in Soil

CRM
Cat. #761

PT
Cat. #633



QR
Cat. #761QR

One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes all the BTEX compounds and MTBE at 20–200 µg/kg (40–400 µg/kg for total xylenes). Use with EPA Method 8021, or other applicable methods.

Gasoline Range Organics (GRO) in Soil

CRM
Cat. #763

PT
Cat. #630



QR
Cat. #763QR

One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100–2000 mg/kg. Use with purge and trap and modified EPA Method 8015, or other applicable GC/FID methods. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If a NELAC-compliant sample for these analytes is required, use Volatiles in Soil, Cat. #623 or BTEX & MTBE Soil, Cat. #633.

Diesel Range Organics (DRO) in Soil

CRM
Cat. #765

PT
Cat. #631



QR
Cat. #765QR

One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel in the range 300–3000 mg/kg. Use with modified EPA Method 8015, or other applicable GC/FID methods.

Total Petroleum Hydrocarbons (TPH) in Soil #1

CRM
Cat. #570

PT
Cat. #632



QR
Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for total petroleum hydrocarbons (TPH). Use with EPA IR, Gravimetric Methods 8440 and 9071B, or other applicable methods.

Non-polar extractable material (TPH) (Gravimetric).....300–3000 mg/kg
Non-polar extractable material (TPH) (IR)300–3000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil #2

CRM
Cat. #571

PT
Cat. #632



QR
Cat. #572QR

One screw-top bottle contains 50 g of soil with TPH in the presence of interfering fatty acids. Use with EPA Methods 8440, 9071B, or other applicable methods.

Non-polar extractable material (TPH) (Gravimetric).....300–3000 mg/kg
Non-polar extractable material (TPH) (IR)300–3000 mg/kg



UST in Water

BTEX & MTBE in Water

CRM
Cat. #760

PT
Cat. #643



QR
Cat. #760QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable methods. Includes all BTEX compounds and MTBE at 5–300 µg/L after dilution.

Gasoline Range Organics (GRO) in Water

CRM
Cat. #762

PT
Cat. #640



QR
Cat. #762QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with both purge and trap, and modified EPA Method 8015, or other applicable GC/FID methods to test for GRO at 400–4000 µg/L. Also use to test for BTEX in gasoline.

Diesel Range Organics (DRO) in Water

CRM
Cat. #764

PT
Cat. #641



QR
Cat. #764QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with modified EPA Method 8015, or other applicable GC/FID methods. Includes #2 Diesel Fuel at 800–6000 µg/L.

Total Petroleum Hydrocarbons (TPH) in Water #1

CRM
Cat. #600

PT
Cat. #642



QR
Cat. #602QR

One liter whole-volume bottle is ready to analyze for total petroleum hydrocarbons (TPH) without interfering fatty acids. Use with EPA Methods 418.1, 1664, 5520, or other applicable methods.

Total petroleum hydrocarbons.....20–200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #2

CRM
Cat. #601

PT
Cat. #642



QR
Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH in water in the presence of interfering fatty acids. Use with EPA Methods 418.1, 1664, 5520, 8440, or other applicable methods.

Total petroleum hydrocarbons.....20–200 mg/L



Laura Stone
Inorganic Chemist

Years with Waters ERA: 9

Alaska UST in Water

Alaska GRO in Water

CRM
Cat. #645

QR
Cat. #473QR

One 2 mL flame-sealed ampule. Use with method AK101 for unleaded regular gasoline at 100–500 µg/L after dilution.

Alaska DRO in Water

CRM
Cat. #647

QR
Cat. #475QR

One 2 mL flame-sealed ampule. Use with method AK102 for #2 Diesel Fuel at 800–2300 µg/L after dilution.

Alaska BTEX in Water

CRM
Cat. #646

QR
Cat. #474QR

One 2 mL flame-sealed ampule. Use with method AK101 for all BTEX analytes at 5–30 µg/L after dilution.

Alaska UST in Soil

Alaska GRO in Soil

CRM
Cat. #635

QR
Cat. #469QR

One 20 mL flame-sealed ampule with 10 g of soil and 10 mL of methanol with unleaded regular gasoline at 30–1500 mg/kg. Use with method AK101.

Alaska DRO in Soil

CRM
Cat. #637

QR
Cat. #471QR

One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel at 30–1500 mg/kg. Use with method AK102.

Alaska RRO in Soil

CRM
Cat. #638

QR
Cat. #472QR

One flame-sealed ampule with 20 g of soil with Residual Range Organic fuels at 150–2000 mg/kg. Use with method AK103.

Alaska BTEX in Soil

CRM
Cat. #636

QR
Cat. #470QR

One 2 mL flame-sealed ampule along with clean soil matrix for spiking. Use with method AK101 for all BTEX analytes at 5–100 mg/kg after spiking.

Arizona UST in Soil

Arizona TPH in Soil

CRM
Cat. #798

PT
Cat. #488



QR
Cat. #798QR

One ready-to-use flame-sealed ampule with 30 g of soil with Oil Range Organics and #2 Diesel Fuel. Use with method 8015AZ for TPH in the range 300–400 mg/kg. Also includes two carbon ranges.

Texas TPH in Water

All Texas TPH PT standards are designed for use with TNRCC 1005 method. The standards meet the requirements of all states that accredit for these methods including Texas, Louisiana, and Oklahoma.

Texas Low-Level Fuels (TPH) in Water

CRM
Cat. #794

PT
Cat. #476



QR
Cat. #794QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and #2 Diesel Fuel resulting in TPH in the range 5–10 mg/L.

Texas High-Level Fuels (TPH) in Water

CRM
Cat. #795

PT
Cat. #477



QR
Cat. #795QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and #2 Diesel Fuel resulting in TPH in the range 20–100 mg/L.

Texas TPH in Soil

Texas Low-Level Fuels (TPH) in Soil

CRM
Cat. #796

PT
Cat. #478



QR
Cat. #796QR

One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and #2 Diesel Fuel for TPH in the range 50–100 mg/kg.

Texas High-Level Fuels (TPH) in Soil

CRM
Cat. #797

PT
Cat. #479



QR
Cat. #797QR

One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and #2 Diesel Fuel for TPH in the range 1000–20,000 mg/kg.

CRM – Certified Reference Material
PT – Proficiency Testing
QR – Quik Response
RM – Reference Material

All Waters ERA UST PTs open quarterly (Q) unless otherwise noted. Quarterly months are January, April, July, and October.

Wisconsin GRO/PVOC/DRO Method UST

All Wisconsin UST PT standards are designed for use with Wisconsin GRO/PVOC or DRO Methods. The standards meet the requirements of all states that accredit for these methods including Wisconsin and Minnesota.

Wisconsin Gasoline Range Organics (GRO/PVOC) in Water

CRM
Cat. #773

PT
Cat. #649



QR
Cat. #773QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Includes ten gasoline range synthetic organic compounds as defined by Wisconsin. Use with Wisconsin GRO/PVOC Method.

Wisconsin Diesel Range Organics (DRO) in Water

CRM
Cat. #772

PT
Cat. #648



QR
Cat. #772QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Includes ten diesel range synthetic organic compounds in the range 200–600 µg/L. Use with the Wisconsin DRO Method.

Washington HEM/SGT-HEM Method UST

The Washington UST PT standard is designed for use with EPA Method 1664 for HEM/SGT-HEM.

Washington HEM/SGT-HEM

CRM
Cat. #519

PT
Cat. #489



QR
Cat. #519QR

One 5 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 1664 to measure HEM/SGT-HEM at 5–100 µg/L.

New Jersey EPH

The New Jersey EPH in Soil standard is designed for use with the NJ Extractable Petroleum Hydrocarbons Method.

New Jersey EPH in Soil

CRM
Cat. #564

PT
Cat. #464



QR
Cat. #564QR

One flame-sealed ampule with 20 g soil containing EPH in the range of 300–3000 mg/kg.

B The NJ EPH in Soil PT studies open in April and October.

Massachusetts Hydrocarbons in Water

All Massachusetts UST PT standards are designed for use with Massachusetts Volatile Petroleum Hydrocarbon or Extractable Petroleum Hydrocarbon Methods. The standards meet the requirements of all states that accredit for these methods including Massachusetts, North Carolina, and Washington when reporting the Massachusetts carbon ranges.

Massachusetts VPH in Water

CRM
Cat. #566

PT
Cat. #481



QR
Cat. #566QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 400–4000 µg/L. Use with the Massachusetts Volatile Petroleum Hydrocarbon Method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Water

CRM
Cat. #567

PT
Cat. #482



QR
Cat. #567QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 800–6000 µg/L. Use with the Massachusetts Extractable Petroleum Hydrocarbon Method for multiple carbon ranges and PAH compounds.

Massachusetts Hydrocarbons in Soil

Massachusetts VPH in Soil

CRM
Cat. #568

PT
Cat. #483



QR
Cat. #568QR

One flame-sealed ampule with 20 g soil with VPH fuels. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 100–2000 mg/kg. Use with the Massachusetts Volatile Petroleum Hydrocarbon Method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Soil

CRM
Cat. #569

PT
Cat. #484



QR
Cat. #569QR

One flame-sealed ampule with 20 g soil with EPH fuels. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 300–3000 mg/kg. Use with the Massachusetts Extractable Petroleum Hydrocarbon Method for multiple carbon ranges and PAH compounds.

CRM – Certified Reference Material
PT – Proficiency Testing
QR – Quik Response
RM – Reference Material

All Waters ERA UST PTs open quarterly (**Q**) unless otherwise noted. Quarterly months are January, April, July, and October.

WE FOCUS ON QUALITY AND SERVICE, SO YOU CAN FOCUS ON YOUR BUSINESS!

Unmatched Technical Expertise

As your Partner in Quality, our goal is to help you maintain successful PT performance, solve routine analysis challenges, and improve corrective actions. Whether it's organic and/or inorganic chemistry, microbiology, analytical instrumentation or methods, our experts are ready to help you with:

- Method interpretations
- Prep and analytical questions
- Instrumentation troubleshooting
- Quality control issues
- Calibration issues

World-Class Customer Service

Our customer service team understands that you are faced with a myriad of requirements to maintain your laboratory accreditation. Each of our representatives has helped solve questions from customers with the same types of challenges. Your dedicated customer service representative has the experience and knowledge to help you through every step of the process.

For more information, **contact our customer service team at 800.372.0122 / +1.303.431.8454. or email at info@eraqc.com.**



AIR & EMISSIONS

Matrices consisting of organic, inorganic, and particulate matter for testing emissions and ambient air. Standards are designed to meet regulations of the United States Environmental Protection Clean Air Act and may be used to satisfy PT requirements worldwide.

Air & Emissions PT Schedule 2020

	Scheme #	Opens	Closes
Q	AE 51	Jan 27	Mar 12
Q	AE 52	Apr 27	Jun 11
Q	AE 53	Jul 27	Sep 10
Q	AE 54	Oct 23	Dec 7

2021

	Scheme #	Opens	Closes
Q	AE 55	Jan 29	Mar 15
Q	AE 56	Apr 26	Jun 10
Q	AE 57	Jul 30	Sep 13
Q	AE 58	Oct 29	Dec 13

Schedule subject to change – see Waters ERA's website at www.eraqc.com

Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Description	CRM/ RM	PT	QR	Page
Aldehydes and Ketones on Sorbent	1114	1014 Q	1114QR	55
Ammonia in Impinger Solution	1145	1045 Q	1145QR	57
Chromium on Filter Paper	1131	1031 Q	1131QR	56
Fluoride in Impinger Solution	1141	1041 Q	1141QR	57
Hexavalent Chromium in Impinger Solution	1132	1032 Q	1132QR	56
Hydrogen Halides & Halogens in Impinger Solution	1140	1040 Q	1140QR	57
Lead in Impinger Solution	1130	1030 Q	1130QR	56
Lead on Filter Paper	1129	1029 Q	1129QR	56
Mercury in Impinger Solution	1128	1028 Q	1128QR	56
Mercury on Filter Paper	1127	1027 Q	1127QR	56
Metals on Filter Paper	1125	1025 Q	1125QR	56
Metals in Impinger Solution	1126	1026 Q	1126QR	56
Nitrogen Oxide in Impinger Solution	1142	1042 Q	1142QR	57
Organochlorine Pesticides on Polyurethane Foam	1111	1011 Q	1111QR	55
PAHs on Polyurethane Foam	1113	1013 Q	1113QR	55
Particulate Matter in Impinger Solution	1151	1051 Q	1151QR	57
Particulate Matter on Filter Paper	1150	1050 Q	1150QR	57
PCBs on Polyurethane Foam	1112	1012 Q	1112QR	55
Semivolatiles on Polyurethane Foam	1110	1010 Q	1110QR	55
Sulfur Dioxide in Impinger Solution	1143	1043 Q	1143QR	57
Sulfuric Acid & Sulfur Dioxide in Impinger Solution	1144	1044 Q	1144QR	57
Volatiles in Gas Cylinder	1100	1000 Q	1100QR	54
Volatiles on Sorbent	1101	1001 Q	1101QR	54

Q All Waters ERA Air & Emissions PTs open quarterly. Quarterly months are January, April, July, and October.

Volatiles

Volatiles in Gas Cylinder*

RM** Cat. #1100	PT Cat. #1000	Q	QR Cat. #1100QR
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One pressurized gas cylinder containing 87 L of gas at 1500 psig (103 bar) for use with EPA methods TO-14, TO-15, or other applicable methods. Contains at least 10 analytes, randomly selected from the list below, at 2-50 ppbv (4-100 ppbv) for Total Xylenes.

Acetone	1,1-Dichloroethane	Styrene
Benzene	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
Benzy chloride	1,1-Dichloroethylene	Tetrachloroethylene
Bromodichloromethane	cis-1,2-Dichloroethylene	Toluene
Bromoform	trans-1,2-Dichloroethylene	Trichloroethene
Bromomethane	1,2-Dichloropropane	1,2,4-Trichlorobenzene
1,3-Butadiene	cis-1,3-Dichloropropylene	1,1,1-Trichloroethane
2-Butanone (MEK)	trans-1,3-Dichloropropylene	1,1,2-Trichloroethane
Methyl tert-butyl ether (MTBE)	1,2-Dichlorotetrafluoroethane	Trichlorofluoromethane
Carbon disulfide	(Freon 114)	(Freon 11)
Carbon tetrachloride	Ethyl acetate	Trichlorotrifluoromethane
Chlorobenzene	Ethylbenzene	(Freon 113)
Chlorodibromomethane	p-Ethyltoluene	1,2,4-Trimethylbenzene
Chloroethane	n-Heptane	1,3,5-Trimethylbenzene
Chloroform	Hexachlorobutadiene	Vinyl bromide
Chloromethane	n-Hexane	Vinyl chloride
Cyclohexane	2-Hexanone	Xylenes, total
1,2-Dibromoethane (EDB)	Isopropyl alcohol	m&p-Xylene
1,2-Dichlorobenzene	Methylene chloride	o-Xylene
1,3-Dichlorobenzene	Methyl methacrylate	
1,4-Dichlorobenzene	4-Methyl-2-pentanone (MIBK)	
Dichlorodifluoromethane	Methyl tert-butyl ether (MTBE)	
(Freon 12)	Propylene	

*Volatiles in Gas Cylinder ships as dangerous goods.

** Reference Material (RM)

Volatiles on Sorbent

CRM Cat. #1101	PT Cat. #1001	Q	QR Cat. #1101QR
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One 2 mL flame-sealed ampule for spiking client-specific sorbent. Use with EPA Methods TO-17, 0030, 0031, or other applicable methods. Contains at least 24 analytes, randomly selected from the list below, at 50–2000 ng/sample (200–3000 ng/sample for Total Xylenes) after preparation.

Acetone	1,1-Dichloropropene	Methylene chloride
Acetonitrile	1,2-Dibromo-3-chloropropane (DBCP)	4-Methyl-2-pentanone (MIBK)
Acrolein	1,2-Dibromoethane (EDB)	Naphthalene
Acrylonitrile	Dibromomethane	Nitrobenzene
Benzene	1,2-Dichlorobenzene	n-Propylbenzene
Bromobenzene	1,3-Dichlorobenzene	Styrene
Bromochloromethane	1,4-Dichlorobenzene	1,1,2-Tetrachloroethane
Bromodichloromethane	Dichlorodifluoromethane	1,1,2,2-Tetrachloroethane
Bromoform	(Freon 12)	Tetrachloroethene
Bromomethane	1,1-Dichloroethane	Toluene
2-Butanone (MEK)	1,2-Dichloroethane	1,2,3-Trichlorobenzene
n-Butylbenzene	1,1-Dichloroethene	1,2,4-Trichlorobenzene
sec-Butylbenzene	cis-1,2-Dichloroethene	1,1,1-Trichloroethane
tert-Butylbenzene	trans-1,2-Dichloroethene	1,1,2-Trichloroethane
Carbon disulfide	1,2-Dichloropropane	Trichloroethylene
Carbon tetrachloride	cis-1,3-Dichloropropene	Trichlorofluoromethane
Chlorobenzene	trans-1,3-Dichloropropene	1,2,3-Trichloropropane
Chlorodibromomethane	Ethylbenzene	1,2,4-Trimethylbenzene
Chloroethane	Hexachlorobutadiene	1,3,5-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachloroethane	Vinyl acetate
Chloroform	2-Hexanone	Vinyl chloride
Chloromethane	Isopropylbenzene	Xylenes, total
2-Chlorotoluene	4-Isopropyltoluene	m&p-Xylene
4-Chlorotoluene	Methyl tert-butyl ether (MTBE)	o-Xylene
1,3-Dichloropropane		
2,2-Dichloropropane		

Stationary Source Audit Sample Program



ERA still offers audit sample products to support the SSAS program.

For more information, **contact us or visit**
<http://www.eraqc.com/Resources/StationarySourceAuditSampleProgram>.

Semivolatiles on Polyurethane Foam

CRM Cat. #1110	PT Cat. #1010	Q	QR Cat. #1110QR
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Two 2 mL flame-sealed ampules plus one polyurethane foam. Use with EPA Method 0010, or other applicable methods. Contains at least 42 analytes, randomly selected from the list below, at 10–225 µg/sample (200–1000 µg/sample for Benzidine) after preparation.

Acenaphthene	1,3-Dichlorobenzene	N-Nitroso-di-n-propylamine
Acenaphthylene	1,4-Dichlorobenzene	2,2'-Oxybis(1-chloropropane)
Aniline	3,3'-Dichlorobenzidine	Pentachlorobenzene
Anthracene	Diethyl phthalate	Phenanthrene
Benzidine	Dimethyl phthalate	Pyrene
Benzo(a)anthracene	2,4-Dinitrotoluene	Pyridine
Benzo(b)fluoranthene	2,6-Dinitrotoluene	o-Toluidine
Benzo(k)fluoranthene	Di-n-octyl phthalate	1,2,4,5-Tetrachlorobenzene
Benzo(g,h,i)perylene	Fluoranthene	1,2,4-Trichlorobenzene
Benzo(a)pyrene	Fluorene	Benzoic Acid
Benzyl alcohol	Hexachlorobenzene	4-Chloro-3-methylphenol
4-Bromophenyl phenyl ether	Hexachlorobutadiene	2-Chlorophenol
Butyl benzyl phthalate	Hexachlorocyclopentadiene	2,4-Dichlorophenol
Carbazole	Hexachloroethane	2,6-Dichlorophenol
4-Chloroaniline	Indeno(1,2,3-cd)pyrene	2,4-Dimethylphenol
Bis(2-chloroethoxy)methane	Isophorone	2,4-Dinitrophenol
Bis(2-chloroethyl)ether	Naphthalene	2-Methyl-4,6-dinitrophenol
Bis(2-ethylhexyl)phthalate	2-Methylnaphthalene	2-Methylphenol (o-Cresol)
1-Chloronaphthalene	2-Nitroaniline	4-Methylphenol (p-Cresol)
2-Chloronaphthalene	3-Nitroaniline	2-Nitrophenol
4-Chlorophenyl phenyl ether	4-Nitroaniline	4-Nitrophenol
Chrysene	Nitrobenzene	Pentachlorophenol
Dibenz(a,h)anthracene	N-Nitrosodiethylamine	Phenol
Dibenzofuran	N-Nitrosodimethylamine	2,3,4,6-Tetrachlorophenol
Di-n-butyl phthalate	(NDMA)	2,4,5-Trichlorophenol
1,2-Dichlorobenzene	N-Nitrosodiphenylamine	2,4,6-Trichlorophenol

Organochlorine Pesticides on Polyurethane Foam

CRM Cat. #1111	PT Cat. #1011	Q	QR Cat. #1111QR
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One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Methods TO-04A, TO-10A, or other applicable methods. Contains at least 16 analytes, randomly selected from the list below, at 1–20 µg/sample after preparation.

Aldrin	4,4'-DDD	Endrin
alpha-BHC	4,4'-DDE	Endrin aldehyde
beta-BHC	4,4'-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide (beta)
alpha-Chlordane	Endosulfan II	Methoxychlor
gamma-Chlordane	Endosulfan sulfate	

Brian Stringer
Principal Proficiency Testing
Technical Specialist
Years with Waters ERA: 17



PCBs on Polyurethane Foam

CRM Cat. #1112	PT Cat. #1012	Q	QR Cat. #1112QR
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One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Methods TO-04A, TO-10A, or other applicable methods. Contains one aroclor, randomly selected from the list below, at 2–10 µg/sample after preparation.

Aroclor 1016	Aroclor 1242	Aroclor 1260
Aroclor 1221	Aroclor 1248	
Aroclor 1232	Aroclor 1254	

PAHs on Polyurethane Foam

CRM Cat. #1113	PT Cat. #1013	Q	QR Cat. #1113QR
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One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Method TO-13A, or other applicable methods. Contains at least 13 analytes, randomly selected from the list below, at 10–200 µg/sample after preparation.

Acenaphthene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(a)pyrene	1-Methylnaphthalene
Anthracene	Chrysene	2-Methylnaphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Naphthalene
Benzo(b)fluoranthene	Fluoranthene	Phenanthrene
Benzo(k)fluoranthene	Fluorene	Pyrene

Aldehydes & Ketones on Sorbent

CRM Cat. #1114	PT Cat. #1014	Q	QR Cat. #1114QR
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One 2 mL flame-sealed ampule to be spiked onto sorbent. Use with EPA Method TO-11A, or other applicable methods. Contains at least four analytes, randomly selected from the list below, at 0.5–10 µg/sample after preparation.

Acetaldehyde	Crotonaldehyde	Propionaldehyde (Propanal)
Acetone	2,5-Dimethylbenzaldehyde	o-Tolualdehyde
Benzaldehyde	Formaldehyde	m-Tolualdehyde
2-Butanone (MEK)	Hexaldehyde (Hexanal)	p-Tolualdehyde
Butyraldehyde (Butanal)	Isovaleraldehyde	Valeraldehyde (Pentanal)

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Q All Waters ERA Air & Emissions PTs open quarterly. Quarterly months are January, April, July, and October.



Debby Updyke
Senior Proficiency Testing
Technical Specialist
Years with Waters ERA: 18

Metals

Metals on Filter Paper

CRM Cat. #1125	PT Cat. #1025	Q	QR Cat. #1125QR
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One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter ready for use with EPA Method 29 or other applicable methods.

Antimony.....	25–250 µg/filter
Arsenic.....	20–250 µg/filter
Barium.....	20–250 µg/filter
Beryllium.....	10–250 µg/filter
Cadmium.....	10–250 µg/filter
Chromium.....	15–250 µg/filter
Cobalt.....	10–250 µg/filter
Copper.....	10–250 µg/filter
Lead.....	20–350 µg/filter
Manganese.....	10–250 µg/filter
Nickel.....	20–250 µg/filter
Phosphorus.....	10–250 µg/filter
Selenium.....	20–250 µg/filter
Silver.....	30–250 µg/filter
Thallium.....	30–250 µg/filter
Zinc.....	20–250 µg/filter

Metals in Impinger Solution

CRM Cat. #1126	PT Cat. #1026	Q	QR Cat. #1126QR
-------------------	------------------	---	--------------------

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 29, or other applicable methods.

Antimony.....	0.25–20 µg/mL
Arsenic.....	0.2–20 µg/mL
Barium.....	0.15–25 µg/mL
Beryllium.....	0.05–20 µg/mL
Cadmium.....	0.1–20 µg/mL
Chromium.....	0.2–20 µg/mL
Cobalt.....	0.1–25 µg/mL
Copper.....	0.2–20 µg/mL
Lead.....	0.2–20 µg/mL
Manganese.....	0.1–20 µg/mL
Nickel.....	0.15–30 µg/mL
Phosphorus.....	0.15–25 µg/mL
Selenium.....	0.15–25 µg/mL
Silver.....	0.5–20 µg/mL
Thallium.....	0.15–25 µg/mL
Zinc.....	0.15–25 µg/mL

Mercury on Filter Paper

CRM Cat. #1127	PT Cat. #1027	Q	QR Cat. #1127QR
-------------------	------------------	---	--------------------

One 2 mL flame-sealed ampule containing approximately 2 mL of standard concentrate and a 50 mm polystyrene petri dish containing a single 47 mm glass fiber filter. Sample is ready for use with EPA Method 29, or other applicable methods.

Mercury.....	1–75 µg/filter
--------------	----------------

Mercury in Impinger Solution

CRM Cat. #1128	PT Cat. #1028	Q	QR Cat. #1128QR
-------------------	------------------	---	--------------------

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Methods 29, 101a, or other applicable methods.

Mercury.....	0.9–200 ng/mL
--------------	---------------

Lead on Filter Paper

CRM Cat. #1129	PT Cat. #1029	Q	QR Cat. #1129QR
-------------------	------------------	---	--------------------

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter spiked with lead ready-for-use with EPA Method 12 or other applicable methods.

Lead.....	20–350 µg/filter
-----------	------------------

Lead in Impinger Solution

CRM Cat. #1130	PT Cat. #1030	Q	QR Cat. #1130QR
-------------------	------------------	---	--------------------

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA Method 12, or other applicable methods.

Lead.....	0.2–120 µg/mL
-----------	---------------

Chromium on Filter Paper

CRM Cat. #1131	PT Cat. #1031	Q	QR Cat. #1131QR
-------------------	------------------	---	--------------------

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm fiber film filter for use with CARB Method 425, or other applicable methods.

Total chromium.....	1–20 µg/filter
Hexavalent chromium.....	1–20 µg/filter

Hexavalent Chromium in Impinger Solution

CRM Cat. #1132	PT Cat. #1032	Q	QR Cat. #1132QR
-------------------	------------------	---	--------------------

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA Method 0061/7199, or other applicable methods.

Hexavalent chromium.....	45–880 µg/L
--------------------------	-------------

Inorganics

Hydrogen Halides & Halogens in Impinger Solution

CRM Cat. #1140	PT Cat. #1040	Q	QR Cat. #1140QR
-------------------	------------------	----------	--------------------

Two impinger solution samples packaged in 15 mL screw-top vials containing approximately 14 mL of standard concentrate for use with EPA Methods 26, 26a, or other applicable methods.

Total halides.....	15-1500 mg/L
Total halogens.....	10-200 mg/L
Hydrogen chloride.....	5-500 mg/L
Hydrogen fluoride.....	5-500 mg/L
Hydrogen bromide.....	5-500 mg/L
Bromine.....	5-100 mg/L
Chlorine.....	5-100 mg/L

Fluoride in Impinger Solution

CRM Cat. #1141	PT Cat. #1041	Q	QR Cat. #1141QR
-------------------	------------------	----------	--------------------

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Methods 13a, 13b, 14, or other applicable methods.

Fluoride.....	1-50 mg/dscm
---------------	--------------

Nitrogen Oxide in Impinger Solution

CRM Cat. #1142	PT Cat. #1042	Q	QR Cat. #1142QR
-------------------	------------------	----------	--------------------

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 7, or other applicable methods.

Oxides of nitrogen (NOx).....	100-2000 mg/dscm
-------------------------------	------------------

Sulfur Dioxide in Impinger Solution

CRM Cat. #1143	PT Cat. #1043	Q	QR Cat. #1143QR
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One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 6 and Method 8, or other applicable methods.

Sulfur dioxide.....	50-2000 mg/dscm
---------------------	-----------------

Sulfuric Acid & Sulfur Dioxide in Impinger Solution

CRM Cat. #1144	PT Cat. #1044	Q	QR Cat. #1144QR
-------------------	------------------	----------	--------------------

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA Method 8, or other applicable methods.

Sulfuric acid.....	5-150 mg/dscm
--------------------	---------------

Ammonia in Impinger Solution

CRM Cat. #1145	PT Cat. #1045	Q	QR Cat. #1145QR
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One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA CTM 027, or other applicable methods.

Ammonium.....	0.1-10 mg/L
---------------	-------------

Particulate Matter on Filter Paper

CRM Cat. #1150	PT Cat. #1050	Q	QR Cat. #1150QR
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One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter ready for use with EPA Methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter.....	50-600 mg/filter
-------------------------	------------------

Particulate Matter in Impinger Solution

CRM Cat. #1151	PT Cat. #1051	Q	QR Cat. #1151QR
-------------------	------------------	----------	--------------------

One impinger solution sample packaged in a 250 mL polyethylene bottle containing approximately 250 mL of standard ready for use with EPA Methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter.....	140-675 mg/L
-------------------------	--------------

CRM – Certified Reference Material

PT – Proficiency Testing

QR – Quik Response

Q All Waters ERA Air & Emissions PTs open quarterly. Quarterly months are January, April, July, and October.

Colleen Chilson
Account Manager

Years with Waters ERA: 5



Tom Widera
Technical Manager

Years with Waters ERA: 20



RADIOCHEMISTRY

Matrices in soil, vegetation, air filters, and water for monitoring of radiochemicals.

Radiochemistry PT Schedule 2020

	Scheme #	Opens	Closes
Q	RAD 120	Jan 6	Feb 20
Q	RAD 121	Apr 6	May 21
Q	RAD 122	Jul 6	Aug 20
Q	RAD 123	Oct 2	Nov 16

2021

	Scheme #	Opens	Closes
Q	RAD 124	Jan 11	Feb 25
Q	RAD 125	Apr 5	May 20
Q	RAD 126	Jul 12	Aug 26
Q	RAD 127	Oct 8	Nov 22

MRAD PT Schedule 2020

Scheme #	Opens	Closes
MRAD 32	Mar 16	May 15
MRAD 33	Sep 14	Nov 13

2021

Scheme #	Opens	Closes
MRAD 34	Mar 22	May 21
MRAD 35	Sep 20	Nov 19

2 schemes per year – open for 60 days

Schedules are subject to change – see Waters ERA's website at www.eraqc.com

Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Description	CRM/ RM	PT	QR	Page
Air Filter Gross Alpha/Beta	607	801 *	607QR	62
Air Filter Radionuclides	606	800 *	606QR	62
Gamma Emitters	758	808 Q	758QR	60
Gross Alpha/Beta	759	809 Q	759QR	60
Iodine-131	750	810 Q	750QR	60
Naturals	751	811 Q	751QR	60
Radchem Lab Control & Matrix Spiking Solutions (LCS/MS)				61
Soil Radionuclides	608	802 *	608QR	62
Strontium-89/90	757	807 Q	757QR	60
Tritium	752	812 Q	752QR	60
Vegetation Radionuclides	609	803 *	609QR	62
Water Gross Alpha/Beta	615	805 *	615QR	63
Water Radionuclides	617	804 *	617QR	63
Water Tritium	616	806 *	616QR	63

Q All Waters ERA WS Radchem PTs open quarterly. Quarterly months are January, April, July, and October.

***** All Waters ERA MRAD PTs open in March and September.

WS Radchem

All Radchem standards are provided as convenient, easy-to-prepare concentrates except for tritium, which is provided as a whole-volume sample.

Gamma Emitters

CRM Cat. #758	PT Cat. #808	Q	QR Cat. #758QR
------------------	-----------------	---	-------------------

One 12 mL screw-top vial yields up to 2 liters after dilution.

Barium-133.....	10-100 pCi/L
Cesium-134.....	10-100 pCi/L
Cesium-137.....	20-240 pCi/L
Cobalt-60.....	10-120 pCi/L
Zinc-65.....	30-360 pCi/L

Gross Alpha/Beta

CRM Cat. #759	PT Cat. #809	Q	QR Cat. #759QR
------------------	-----------------	---	-------------------

One 12 mL screw-top vial yields up to 1 liter after dilution.

Gross alpha as thorium-230.....	7-75 pCi/L
Gross beta as cesium-137.....	8-75 pCi/L

Naturals

CRM Cat. #751	PT Cat. #811	Q	QR Cat. #751QR
------------------	-----------------	---	-------------------

One 12 mL screw-top vial yields up to 8 liters after dilution.

Radium-226.....	1-20 pCi/L
Radium-228.....	2-20 pCi/L
Uranium (Nat).....	2-70 pCi/L
Uranium (Nat) mass.....	3-104 µg/L

Tritium

CRM Cat. #752	PT Cat. #812	Q	QR Cat. #752QR
------------------	-----------------	---	-------------------

One 250 mL whole-volume bottle is ready to analyze as received. Includes tritium at 1000-24000 pCi/L.

Iodine-131

CRM Cat. #750	PT Cat. #810	Q	QR Cat. #750QR
------------------	-----------------	---	-------------------

One 12 mL screw-top vial yields up to 2 liters after dilution. Contains iodine-131 within the range 3-30 pCi/L. Due to short half-life, CRMs, PTs, and QRs are available only during January, April, July, and October.

Strontium-89/90

CRM Cat. #757	PT Cat. #807	Q	QR Cat. #757QR
------------------	-----------------	---	-------------------

One 12 mL screw-top vial yields up to 2 liters after dilution.

Strontium-89.....	10-70 pCi/L
Strontium-90.....	3-45 pCi/L



CRM – Certified Reference Material
PT – Proficiency Testing
QR – Quik Response

Q All Waters ERA WS Radchem PTs open quarterly. Quarterly months are January, April, July, and October.

Radchem Lab Control & Matrix Spiking (LCS/MS)

Radiochemistry LCS/MS standards are prepared according to your specifications at activity levels that enable you to directly fortify your batch laboratory control and matrix spike QC samples. These single-use spiking standards are verified, conveniently packaged in 2–20 mL glass vials, and very economical.

The direct benefits:

- Easy-to-use – LCS/MS spiking standards are ready-to-use – no dilutions are required.
- Reliable and consistent – Eliminate the possibility of errors from the contamination or repeated multiple dilutions of your primary stock standards.
- Independently verified – LCS/MS standards are analytically verified and traced to NIST SRMs where available.
- Save money – You no longer need to pay for microcuries of activity when you only need picocuries. You also eliminate the cost of activity loss for short-lived isotopes.
- Reduce analytical cost – You no longer need to spend valuable instrument time re-verifying standard stability. Order what you expect to use on a quarterly or annual basis – we'll do the verification.

The process is easy:

1. Select from any of the following carrier-free, single radionuclide standards.
2. Choose an activity up to the maximum listed in the table below.
3. Choose a convenient volume: 2 to 20 mL glass vials available.
4. For labs that analyze samples with more elevated activities, call for standard availability and pricing.

Single Radionuclide Spiking Standards

Cat. #	Radionuclide	Maximum Activity/Vial
AM241	Americium-241	40 pCi
BA133	Barium-133	400 pCi
CS134	Cesium-134	200 pCi
CS137	Cesium-137	400 pCi
CO60	Cobalt-60	200 pCi
GAB	Gross alpha/beta	30/40 pCi
GA	Gross alpha (Th-230)	30 pCi
GB	Gross beta (Cs-137)	40 pCi
PU238	Plutonium-238	40 pCi
PU239	Plutonium-239	40 pCi
RA226	Radium-226	20 pCi
RA228	Radium-228	Call
SR89	Strontium-89	200 pCi
SR90	Strontium-90	40 pCi
H3	Tritium	2000 pCi
UNAT	Uranium, natural	40 pCi
ZN65	Zinc-65	600 pCi

MRAD Solids

Soil Radionuclides

RM Cat. #608	PT Cat. #802	QR Cat. #608QR
-----------------	-----------------	-------------------

One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Actinium-228.....	500-5000 pCi/kg
Americium-241.....	50-2000 pCi/kg
Bismuth-212.....	500-5000 pCi/kg
Bismuth-214.....	500-5000 pCi/kg
Cesium-134.....	1000-10,000 pCi/kg
Cesium-137.....	1000-10,000 pCi/kg
Cobalt-60.....	1000-10,000 pCi/kg
Lead-212.....	500-5000 pCi/kg
Lead-214.....	500-5000 pCi/kg
Plutonium-238.....	50-2000 pCi/kg
Plutonium-239.....	50-2000 pCi/kg
Potassium-40.....	5000-50,000 pCi/kg
Strontium-90.....	500-10,000 pCi/kg
Thorium-234.....	500-5000 pCi/kg
Uranium-234.....	500-5000 pCi/kg
Uranium-238.....	500-5000 pCi/kg
Uranium (Nat).....	1000-10,000 pCi/kg
Uranium (Nat) mass.....	1500-15,000 µg/kg
Zinc-65.....	1000-10,000 pCi/kg

Vegetation Radionuclides

RM Cat. #609	PT Cat. #803	QR Cat. #609QR
-----------------	-----------------	-------------------

One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	50-5000 pCi/kg
Cesium-134.....	300-3000 pCi/kg
Cesium-137.....	300-3000 pCi/kg
Cobalt-60.....	300-3000 pCi/kg
Curium-244.....	50-5000 pCi/kg
Plutonium-238.....	50-5000 pCi/kg
Plutonium-239.....	50-5000 pCi/kg
Potassium-40.....	5000-50,000 pCi/kg
Strontium-90.....	500-10,000 pCi/kg
Uranium-234.....	50-5000 pCi/kg
Uranium-238.....	50-5000 pCi/kg
Uranium (Nat).....	100-10,000 pCi/kg
Uranium (Nat) mass.....	150-15,000 µg/kg
Zinc-65.....	300-3000 pCi/kg

MRAD Air Filter

Air Filter Radionuclides

RM Cat. #606	PT Cat. #800	QR Cat. #606QR
-----------------	-----------------	-------------------

One 47 mm diameter glass fiber filter contains the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	2-80 pCi/filter
Cesium-134.....	50-1500 pCi/filter
Cesium-137.....	50-1500 pCi/filter
Cobalt-60.....	50-1500 pCi/filter
Iron-55.....	50-1500 pCi/filter
Plutonium-238.....	2-80 pCi/filter
Plutonium-239.....	2-80 pCi/filter
Strontium-90.....	5-200 pCi/filter
Uranium-234.....	2-80 pCi/filter
Uranium-238.....	2-80 pCi/filter
Uranium (Nat).....	4-160 pCi/filter
Uranium (Nat) mass.....	6-240 µg/filter
Zinc-65.....	50-1500 pCi/filter

Air Filter Gross Alpha/Beta

RM Cat. #607	PT Cat. #801	QR Cat. #607QR
-----------------	-----------------	-------------------

One acrylic treated 47 mm diameter glass fiber filter contains the radionuclides listed below.

Gross alpha as thorium-230.....	5-100 pCi/filter
Gross beta as cesium-137.....	5-100 pCi/filter

Chad Lane
Chemist/RSO

Years with Waters ERA: 11



Leo Muñoz
Shipping Team Lead

Years with Waters ERA: 11



MRAD Water

Water Radionuclides

RM Cat. #617	PT Cat. #804	QR Cat. #617QR
-----------------	-----------------	-------------------

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	10-200 pCi/L
Cesium-134.....	100-3000 pCi/L
Cesium-137.....	100-3000 pCi/L
Cobalt-60.....	100-3000 pCi/L
Iron-55.....	100-3000 pCi/L
Plutonium-238.....	10-200 pCi/L
Plutonium-239.....	10-200 pCi/L
Strontium-90.....	50-1000 pCi/L
Uranium-234.....	10-200 pCi/L
Uranium-238.....	10-200 pCi/L
Uranium (Nat).....	20-400 pCi/L
Uranium (Nat) mass.....	30-600 µg/L
Zinc-65.....	100-3000 pCi/L

Water Gross Alpha/Beta

RM Cat. #615	PT Cat. #805	QR Cat. #615QR
-----------------	-----------------	-------------------

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the radionuclides below.

Gross alpha as thorium-230.....	10-200 pCi/L
Gross beta as cesium-137.....	10-200 pCi/L

Water Tritium

RM Cat. #616	PT Cat. #806	QR Cat. #616QR
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One 125 mL whole-volume bottle is ready to analyze as received.

Tritium.....	3000-30,000 pCi/L
--------------	-------------------



CRM – Certified Reference Material

PT – Proficiency Testing

QR – Quik Response

* All Waters ERA MRAD PTs open in March and September.

LOW-LEVEL CRMs

Synthetic drinking and wastewater matrices with low concentrations of analytes for testing water supply, drinking water, ground water, water pollution, or wastewater.

Save time diluting your standards or spending numerous hours producing them yourself with our low-level Certified Reference Materials (CRMs).

Our line of low-level CRMs are optimal for:

- Method development and validation
- System checks
- Evaluating limits of quantitation
- Minimum detection limit studies
- Detection verification
- Many other uses

Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

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RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Description	CRM	Page
Chlorine	1358	66
Color	1353	66
Common Inorganics	1249	66
Common Inorganics in Hard Water	1346	66
Common Inorganics in Soft Water	1347	66
Complex Nutrients in Hard Water	1241	68
Cyanide	1345	66
Demand	1354	66
	1242	66
Hexavalent Chromium	1248	67
High Solids	1355	67
Mercury	1341	67
Metals	1244	67
Organochlorine Pesticides	1253	68
	1374	68
Organophosphorus Pesticides	1256	68
PAHs	1254	69
PCB Congeners	1373	69
	1255	69
Semivolatiles	1372	69
Simple Nutrients	1240	68
Simple Nutrients in Hard Water	1348	68
Simple Nutrients in Soft Water	1349	68
Solids Concentrate	1243	67
Total Phenolics (4-AAP)	1250	67
Triazines, Urons, and Acid Herbicides	1375	69
	1257	69
Trihalomethanes	1371	69
Volatiles	1370	69

Inorganics

Chlorine

CRM
Cat. #1358

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Total chlorine..... 75–500 µg/L
Free chlorine..... 75–500 µg/L

Color

CRM
Cat. #1353

One 125 mL whole-volume bottle sample is ready to be analyzed.

Color..... 5–25 pc units

Common Inorganics

CRM
Cat. #1249

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity..... 20–120 mg/L
Calcium..... 2–50 mg/L
Chloride..... 25–500 mg/L
Conductivity..... 80–1,000 µmhos/cm
Fluoride..... 0.25–5 mg/L
Magnesium..... 1–25 mg/L
pH..... 5–10 units
Potassium..... 2–50 mg/L
Sodium..... 5–100 mg/L
Sulfate..... 2–50 mg/L
Total dissolved solids..... 60–750 mg/L
Total hardness..... 9–250 mg/L

Common Inorganics in Hard Water

CRM
Cat. #1346

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity..... 20–100 mg/L
Calcium..... 10–100 mg/L
Chloride..... 20–250 mg/L
Conductivity..... 130–1400 µmhos/cm
Fluoride..... 0.2–2 mg/L
Magnesium..... 2–10 mg/L
pH..... 5–10 units
Potassium..... 2–25 mg/L
Sodium..... 20–250 mg/L
Sulfate..... 20–250 mg/L
Total dissolved solids..... 100–1000 mg/L
Total hardness..... 30–300 mg/L

Common Inorganics in Soft Water

CRM
Cat. #1347

A 1 liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity..... 20–100 mg/L
Calcium..... 2–50 mg/L
Chloride..... 5–50 mg/L
Conductivity..... 25–300 µmhos/cm
Fluoride..... 0.2–2 mg/L
Magnesium..... 0.5–5 mg/L
pH..... 5–10 units
Potassium..... 1–10 mg/L
Sodium..... 5–50 mg/L
Sulfate..... 5–50 mg/L
Total dissolved solids..... 20–200 mg/L
Total hardness..... 5–75 mg/L

Cyanide

CRM
Cat. #1345

One 15 mL screw-cap vial yields up to 2 liters of sample.

Free cyanide..... 5–100 µg/L
Total cyanide..... 5–100 µg/L

Demand

CRM
Cat. #1354

One 15 mL screw-cap vial yields up to 2 liters of sample.

5-day BOD..... 2–25 mg/L
COD..... 2–25 mg/L
DOC..... 1–10 mg/L
TOC..... 1–10 mg/L

CRM
Cat. #1242

One 15 mL screw-cap vial spiking concentrate yields up to 2 liters of sample.

5-day BOD..... 5–75 mg/L
COD..... 10–150 mg/L
DOC..... 2–40 mg/L
TOC..... 2–40 mg/L



Stanley Dunlavy
EH & S Engineer

Years with Waters ERA: 19

Inorganics (continued)

High Solids

CRM
Cat. #1355

One 24 mL screw-cap vial with a powder concentrate yields 1 liter of solution.

Total dissolved solids..... 100-1000 mg/L
 Total suspended solids (TSS)..... 5-50 mg/L

Solids Concentrate

CRM
Cat. #1243

One 24 mL screw-cap vial concentrate yields up to 1 liter of sample.

Total dissolved solids..... 10-250 mg/L
 Total suspended solids (TSS)..... 5-50 mg/L

Total Phenolics (4-AAP)

CRM
Cat. #1250

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Total phenolics by 4-AAP..... 0.06-5 mg/L

Metals

Hexavalent Chromium

CRM
Cat. #1248

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Hexavalent chromium..... 5-100 µg/L

Mercury

CRM
Cat. #1341

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Mercury, total..... 0.1 to 1.2 µg/L

Metals (continued)

Metals

CRM
Cat. #1244

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Aluminum..... 200-4000 µg/L
 Antimony..... 95-900 µg/L
 Arsenic..... 70-900 µg/L
 Barium..... 100-2500 µg/L
 Beryllium..... 8-900 µg/L
 Boron..... 800-2000 µg/L
 Cadmium..... 8-750 µg/L
 Chromium, total..... 17-1000 µg/L
 Cobalt..... 28-1000 µg/L
 Copper..... 40-900 µg/L
 Iron..... 200-4000 µg/L
 Lead..... 70-3000 µg/L
 Manganese..... 70-4000 µg/L
 Molybdenum..... 60-600 µg/L
 Nickel..... 80-3000 µg/L
 Selenium..... 90-2000 µg/L
 Silver..... 26-600 µg/L
 Strontium..... 30-300 µg/L
 Thallium..... 60-900 µg/L
 Vanadium..... 55-2000 µg/L
 Zinc..... 100-2000 µg/L

The Industry Standard
for over 40 years



CRM – Certified Reference Material

Nutrients

Complex Nutrients in Hard Water

CRM
Cat. #1241

One 15 mL screw-cap vial spiking concentrate yields up to 2 liters of sample.

Total Kjeldahl nitrogen.....	0.5–5 mg/L
Total nitrogen.....	1–20 mg/L
Total phosphorus.....	0.5–5 mg/L

Simple Nutrients

CRM
Cat. #1240

Two 15 mL screw-cap vials yields up to 2 liters of sample.

Ammonia (N).....	1–20 mg/L
Nitrate (NO ₃).....	0.5–10 mg/L
Nitrite (NO ₂).....	0.5–5 mg/L
Total oxidised nitrogen.....	1–15 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L

Simple Nutrients in Hard Water

CRM
Cat. #1348

Two 15 mL screw-cap vial spiking concentrates and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Ammonium (NH ₄).....	0.1–1 mg/L
Nitrate (NO ₃).....	3–60 mg/L
Nitrite (NO ₂).....	0.1–1 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L
Total oxidised nitrogen (TON).....	3–60 mg/L

Simple Nutrients in Soft Water

CRM
Cat. #1349

Two 15 mL screw-cap vial spiking concentrates and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Ammonium (NH ₄).....	0.1–1 mg/L
Nitrate (NO ₃).....	3–60 mg/L
Nitrite (NO ₂).....	0.1–1 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L
Total oxidised nitrogen (TON).....	3–60 mg/L

Organics

Organochlorine Pesticides

CRM
Cat. #1374

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 10–150 ng/L (aldrin, dieldrin, heptachlor, and heptachlor epoxide at 2–40 ng/L).

Aldrin	4,4'-DDE	Heptachlor epoxide
alpha-BHC	4,4'-DDT	Hexachlorobenzene
beta-BHC	Dieldrin	Pentachlorobenzene
delta-BHC	Endosulfan I	Trifluralin
gamma-BHC (Lindane)	Endosulfan II	
2,4'-DDT	Endrin	
4,4'-DDD	Heptachlor	

CRM
Cat. #1253

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 100–2000 ng/L.

Aldrin	4,4'-DDD	Endrin
alpha-BHC	4,4'-DDE	Endrin aldehyde
beta-BHC	4,4'-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide (beta)
alpha-Chlordane	Endosulfan II	Methoxychlor
gamma-Chlordane	Endosulfan sulfate	Pentachlorobenzene

Organophosphorus Pesticides

CRM
Cat. #1256

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 100–1500 ng/L.

Azinphos-ethyl	Diazinon	Mevinphos
Azinphos-methyl	Dichlorvos	Parathion-ethyl
Chlorfenvinphos	Fenitrothion	Parathion-methyl
Chlorpyrifos	Fenthion	
Cypermethrin	Malathion	

Curtis Wood
Strategic Account Manager
Years with Waters ERA: 26



Jennifer Watson
Customer Service Representative
Years with Waters ERA: 9



PAHs

CRM
Cat. #1254

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 10–250 ng/L.

Acenaphthene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(a)pyrene	Naphthalene
Anthracene	Chrysene	Phenanthrene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Pyrene
Benzo(b)fluoranthene	Fluoranthene	
Benzo(k)fluoranthene	Fluorene	

PCB Congeners

CRM
Cat. #1373

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 5–100 ng/L.

PCB 28	PCB 118	PCB 153
PCB 52	PCB 138	PCB 180
PCB 101		

CRM
Cat. #1255

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 100–1500 ng/L.

PCB 28	PCB 118	PCB 180
PCB 52	PCB 138	
PCB 101	PCB 153	

Semivolatiles

CRM
Cat. #1372

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 2–50 ng/L (benzo(a)pyrene at 1–12 ng/L).

Acenaphthene	Chrysene	Fluorene
Acenaphthylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Anthracene	Di-n-butyl phthalate	Naphthalene
Benzo(a)anthracene	Diethyl phthalate	Phenanthrene
Benzo(b)fluoranthene	Dimethyl phthalate	Pyrene
Benzo(k)fluoranthene	Di-n-octyl phthalate	
Benzo(g,h,i)perylene	bis(2-Ethylhexyl)adipate	
Benzo(a)pyrene	bis(2-Ethylhexyl)phthalate	
Butylbenzylphthalate	Fluoranthene	

Triazines, Urons, and Acid Herbicides

CRM
Cat. #1375

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 10–150 ng/L.

2,4-D	Diuron	MCPB
AMPA	Glyphosate	MCP
Atrazine	Isoproturon	Propazine
Bentazon	Linuron	Simazine
Chlortoluron	MCPA	

CRM
Cat. #1257

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 100–1200 ng/L.

2,4-D	Diuron	MCPB
AMPA	Glyphosate	MCP
Atrazine	Isoproturon	Propazine
Bentazone	Linuron	Simazine
Chlortoluron	MCPA	

Trihalomethanes

CRM
Cat. #1371

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 10–100 µg/L.

Bromodichloromethane	Chlorodibromomethane
Bromoform	Chloroform

Volatiles

CRM
Cat. #1370

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 0.1–50 µg/L.

Benzene	Ethylbenzene	o-Xylene
Carbon tetrachloride	Methylene chloride	m-Xylene
Chlorobenzene	Styrene	p-Xylene
1,2-Dichlorobenzene	Tetrachloroethene	m+p-Xylene
1,4-Dichlorobenzene	Toluene	Xylenes, total
1,2-Dichloroethane	1,2,4-Trichlorobenzene	
1,1-Dichloroethylene	1,1,1-Trichloroethane	
cis-1,2-Dichloroethylene	1,1,2-Trichloroethane	
trans-1,2-Dichloroethylene	Trichloroethene	
1,2-Dichloropropane	Vinyl chloride	

CUSTOM STANDARDS



Standards manufactured to unique specifications available with a range of analytes, concentrations, and matrices.

Experience. Speed. Reliability.

Did you know that our chemists have prepared more than 20,000 unique custom standards?

Custom projects cover a range of analytes, concentrations, and matrices. Whether it is one standard or one hundred, our chemists regularly prepare standards for a range of needs and situations including managed methodology studies, project or site-specific matrices, project or sample-specific limits, and ultra-trace to percent level concentrations.

Examples of custom standards prepared:

- 10,000 mg/kg total organic carbon in soil
- Organic mercury in fish tissue
- Pesticides in freeze-dried spinach
- XRF metals in soil
- Speciated metal standards
- Organometallic standards

Certification of Custom Standards

Three options for certification of custom standards:

- Gravimetric/volumetric
- Analytical
- ISO 17034 certified reference materials*

**Option is based on Waters ERA's
ISO 17034 scope of accreditation.*

From Simple to Complex and Everything in Between

A custom standard containing any analyte from the following programs can be supplied:

- | | |
|---|---|
| ■ Clean Water Act (CWA) | ■ Standards Council of Canada (SCC) |
| ■ Safe Drinking Water Act (SDWA) | ■ Canadian Association for Laboratory Accreditation (CALA) |
| ■ Resource Conservation and Recovery Act (RCRA) | ■ Ontario Ministry of the Environment and Climate Change (MOECC) Safe Drinking Water Act (SDWA) |
| ■ Superfund Contract Laboratory Program (CLP) | |

To request a custom quotation, please visit us online at

www.eraqc.com/Resources/OrderForms

or email us at **info@eraqc.com**

Custom Standards

Performance Evaluation With Double-Blind Project

Gain a level of confidence with tangible evidence that your laboratory is meeting all quality objectives through a double-blind performance evaluation.

The key to evaluating the real performance of your laboratory is in finding the proper blend of realistic sample designs and accurate, stable analyte concentrations.

Here is how a performance evaluation program works:

1. Specify the matrices, analytes, and concentrations. If a stock standard is not available, we can design and prepare custom PE standards.
2. Send us your empty sample bottles, labels, chain-of-custody forms, and sample coolers.
3. We prepare, dilute (if necessary), and preserve the standards; fill your sample bottles; and, return the samples to you via overnight delivery service. You'll receive Waters ERA's certified values and performance acceptance limits (PALs) under separate sealed cover.

4. Integrate the standards into your sampling event or introduce them into your lab's routine sample load.
5. Your lab analyzes the blind PE standards along with routine samples.
6. Compare your lab's results to Waters ERA's certified values and performance acceptance limits.

We can help you design a double-blind project that matches your project-specific needs. Speak with a Waters ERA representative today to begin the process of understanding the real performance of your laboratory.

Tom Gilroy
North America Sales &
Customer Service Manager
Years with Waters ERA: 1



Matt Graves
Organic Chemist
Years with Waters ERA: 19



CUSTOM STANDARD QUOTATION REQUEST FORM



A Waters Company

Contact Name:	Date:	
Waters ERA Customer #:	Phone:	Fax:
Company Name:	Email:	
Bill to:	Ship to:	

☐ (shipping address is the same as billing address)

Date Needed:

Additional/Special Requirements (packaging, shipping, etc.):

	Analytes	CAS #	Concentrations	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Sample Description (for label):

Matrix/Solvent:

Preservative:

Mass/Volume per Container:

Number of Containers:

Intended Use (calibration, QC, etc.):

Prep/Analytical Method:

Select: Ready-to-use ☐ Concentrate ☐ Dilution Instructions:

Most custom standards are gravimetrically certified based on the manufacturing process.

Analytical verification may be available for your custom standard, depending upon the standard formulation. Contact Waters ERA to discuss pricing and availability.

- A Waters ERA representative will contact you within one business day to discuss your request.
- Waters ERA provides blind standards to help you evaluate your laboratory's performance. Call and speak with an ERA representative to learn more.

Email this form to info@eraqc.com or fax to 303.421.0159.

For immediate assistance with a customs quote, call Waters ERA at 800.372.0122 or 303.431.8454 and speak with a Waters ERA Customer Service Representative.

C0005 Oct 2019

CALIBRATION STANDARDS



A variety of inorganic standards including metals, anions, pH, and other common inorganics that can be used for primary calibration or to prepare second source calibration standards.



Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at www.eraqc.com/AboutERA/Accreditations.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Description	Page
AA/ICP Metals	78
Anions	77
Cations by Ion Chromatography - 100 mg/L	76
Cations by Ion Chromatography - 1000 mg/L	76
Chemical Oxygen Demand (COD) - 1000 mg/L	76
Flame AA Cations	78
Flame AA Trace Metals	78
ICP Trace Metals	78
ICP-MS Major Cations	77
ICP-MS Metals	77
ICP-MS Trace Metals	77
Inorganics - 1000 mg/L	76
Ion Chromatography	77
Ions - 1000 mg/L	76
MBAS/LAS Surfactants - 1000 mg/L	76
Metals - 1000 mg/L	77
pH Buffers	78
Phenol - 1000 mg/L	76
Sulfide - 1000 mg/L	76
Total Kjeldahl Nitrogen (TKN) - 1000 mg/L	76
Total Organic Carbon (TOC) - 1000 mg/L	76
Total Organic Halides (TOX) - 1000 mg/L	76

1000 mg/L Standards

Standards can be used for primary calibration or to prepare second source calibration check standards. They are analytically traceable to NIST SRM's where available, and are guaranteed stable for one year. The certification documentation includes manufacturing uncertainties, traceability summaries and densities to aid in performing gravimetric dilutions. The documentation for metal standards includes impurities.

Inorganics – 1000 mg/L

Chemical Oxygen Demand (COD)

500 mL Bottle
Cat. #974

125 mL Bottle
Cat. #042

One 1000 mg/L standard preserved with H₂SO₄ in an amber glass bottle.

Total Kjeldahl Nitrogen (TKN)

500 mL Bottle
Cat. #996

125 mL Bottle
Cat. #043

One 1000 mg/L standard preserved with HCl in a poly bottle.

MBAS/LAS Surfactants

Cat. #975

One 15 mL screw-cap vial with LAS at 1000 mg/L preserved with H₂SO₄.

Total Organic Carbon (TOC)

Cat. #978

One 500 mL amber glass bottles with TOC at 1000 mg/L preserved with H₂SO₄.

Total Organic Halides (TOX)

Cat. #976

One 2 mL flame-sealed ampule with TOX at 1000 mg/L in methanol.

Phenol

Cat. #982

One 500 mL amber glass bottle with phenol at 1000 mg/L preserved with H₂SO₄.

Sulfide

Cat. #999

One 10 mL flame-sealed ampule containing 1000 mg/L sulfide preserved with NaOH and zinc acetate.

Ions – 1000 mg/L

Parameter	Matrix	500 mL Bottle	125 mL Bottle
Acetate	H ₂ O	—	Cat. #78202
Ammonia as NH ₃	H ₂ O	Cat. #986	Cat. #044
Ammonia as N	H ₂ O	Cat. #985	Cat. #045
Bromate	H ₂ O	—	Cat. #065
Bromide	H ₂ O	Cat. #987	Cat. #046
Chlorate	H ₂ O	—	Cat. #066
Chloride	H ₂ O	Cat. #988	Cat. #047
Chlorite	H ₂ O	—	Cat. #067
Complex cyanide*	NaOH	Cat. #998	Cat. #049
Cyanide (free)	NaOH	Cat. #997	Cat. #048
Fluoride	H ₂ O	Cat. #989	Cat. #050
Iodide	H ₂ O	—	Cat. #78212
Nitrate as NO ₃	H ₂ O	Cat. #992	Cat. #051
Nitrate as N	H ₂ O	Cat. #991	Cat. #052
Nitrite as N	H ₂ O	Cat. #990	Cat. #053
Perchlorate	H ₂ O	—	Cat. #068
Phosphate as PO ₄	H ₂ O	Cat. #994	Cat. #060
Phosphate as P	H ₂ O	Cat. #993	Cat. #061
Sulfate	H ₂ O	Cat. #995	Cat. #062

*Dangerous good. Requires special shipping.

Cations by Ion Chromatography – 100 mg/L

Parameter	Matrix	125 mL Bottle
Ammonium as NH ₄	H ₂ O	Cat. #78102
Ammonium as N	H ₂ O	Cat. #78104

Cations by Ion Chromatography – 1000 mg/L

Parameter	Matrix	125 mL Bottle
Calcium	H ₂ O	Cat. #K10
Magnesium	H ₂ O	Cat. #K11

Metals – 1000 mg/L

Parameter	Matrix		125 mL Bottle
Aluminum	HNO ₃	DG	Cat. #011
Arsenic	HNO ₃	DG	Cat. #013
Beryllium	HNO ₃	DG	Cat. #015
Bismuth	HNO ₃	DG	Cat. #K01
Calcium	HNO ₃	DG	Cat. #018
Chromium	HNO ₃	DG	Cat. #020
Chromium VI	H ₂ O	—	Cat. #019
Cobalt	HNO ₃	DG	Cat. #021
Copper	HNO ₃	DG	Cat. #022
Iron	HNO ₃	DG	Cat. #023
Lead	HNO ₃	DG	Cat. #024
Lithium	HNO ₃	DG	Cat. #K04
Magnesium	HNO ₃	DG	Cat. #025
Manganese	HNO ₃	DG	Cat. #026
Mercury	HNO ₃	DG	Cat. #027
Molybdenum	HNO ₃	DG	Cat. #028
Nickel	HNO ₃	DG	Cat. #029
Phosphorus	HNO ₃	DG	Cat. #063
Potassium	HNO ₃	DG	Cat. #030
Selenium	HNO ₃	DG	Cat. #031
Silica	H ₂ O	—	Cat. #064
Silicon	HNO ₃	DG	Cat. #032
Silver	HNO ₃	DG	Cat. #033
Sodium	HNO ₃	DG	Cat. #034
Strontium	HNO ₃	DG	Cat. #035
Thallium	HNO ₃	DG	Cat. #036
Tin	HCl	DG	Cat. #037
Titanium	HCl	DG	Cat. #038
Vanadium	HNO ₃	DG	Cat. #039
Yttrium	HNO ₃	DG	Cat. #K08
Zinc	HNO ₃	DG	Cat. #040

DG – Dangerous good. Requires special shipping.

Other metals, concentrations,
and volumes are also available.

Call Waters ERA Customer Service
for more information.

ICP-MS Metals

These standards come with a Certificate of Traceability and Uncertainty. Use for initial as well as continuing calibration and tuning verification. Provided as convenient concentrates with densities allowing you to easily perform gravimetric dilutions.

ICP-MS Trace Metals

CRM

Cat. #TMS001*

One 125 mL screw-cap poly bottle preserved with HNO₃ and tartaric acid*

Aluminum.....	10.0 mg/L	Manganese.....	10.0 mg/L
Antimony.....	10.0 mg/L	Molybdenum.....	10.0 mg/L
Arsenic.....	10.0 mg/L	Nickel.....	10.0 mg/L
Barium.....	10.0 mg/L	Selenium.....	10.0 mg/L
Beryllium.....	10.0 mg/L	Silver.....	10.0 mg/L
Cadmium.....	10.0 mg/L	Thallium.....	10.0 mg/L
Chromium.....	10.0 mg/L	Thorium.....	10.0 mg/L
Cobalt.....	10.0 mg/L	Uranium.....	10.0 mg/L
Copper.....	10.0 mg/L	Vanadium.....	10.0 mg/L
Iron.....	10.0 mg/L	Zinc.....	10.0 mg/L
Lead.....	10.0 mg/L		

*Dangerous good. Requires special shipping.

ICP-MS Major Cations

CRM

Cat. #TMS002*

One 125 mL screw-cap poly bottle preserved with HNO₃*

Calcium.....	50.0 mg/L	Potassium.....	50.0 mg/L
Magnesium.....	50.0 mg/L	Sodium.....	50.0 mg/L

*Dangerous good. Requires special shipping.

Anions

Ion Chromatography

CRM

Cat. #981

One 15 mL screw-cap vial yields up to 200 mL after dilution. Designed to calibrate or verify IC calibrations.

Call for anion standards at lower levels.

Bromide.....	0.2–20 mg/L	Nitrate as N.....	0.2–20 mg/L
Chloride.....	0.2–20 mg/L	Phosphate as P.....	0.5–30 mg/L
Fluoride.....	0.1–10 mg/L	Sulfate.....	0.5–30 mg/L

AA/ICP Metals

All metals standards come with a Certificate of Traceability. The ICP Trace Metals standard also includes uncertainties. Use as initial as well as continuing calibration verification.

Flame AA Trace Metals

CRM
Cat. #508

One 24 mL screw-cap vial, preserved with HNO_3 , yields up to 500 mL after dilution. Designed for flame AA. Includes aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, strontium, thallium, vanadium, and zinc.

Flame AA Cations

CRM
Cat. #530

One 15 mL screw-cap vial, preserved with HNO_3 , yields up to 250 mL after dilution.

Use with ICP, IC, and AA methods.

Calcium.....	10–200 mg/L
Magnesium.....	10–200 mg/L
Potassium.....	5–100 mg/L
Sodium.....	10–250 mg/L

ICP Trace Metals

CRM
Cat. #524*

One 500 mL whole-volume standard, preserved with HNO_3 and HCl , is ready-to-use*

Aluminum.....	10.0 mg/L
Antimony.....	1.0 mg/L
Arsenic.....	1.0 mg/L
Barium.....	1.0 mg/L
Beryllium.....	1.0 mg/L
Bismuth.....	1.0 mg/L
Boron.....	1.0 mg/L
Cadmium.....	1.0 mg/L
Calcium.....	10.0 mg/L
Chromium.....	1.0 mg/L
Cobalt.....	1.0 mg/L
Copper.....	1.0 mg/L
Iron.....	10.0 mg/L
Lanthanum.....	10.0 mg/L
Lead.....	10.0 mg/L
Magnesium.....	10.0 mg/L
Manganese.....	1.0 mg/L
Molybdenum.....	1.0 mg/L
Nickel.....	1.0 mg/L
Phosphorus.....	1.0 mg/L
Potassium.....	10.0 mg/L
Selenium.....	10.0 mg/L
Sodium.....	10.0 mg/L
Strontium.....	1.0 mg/L
Tin.....	1.0 mg/L
Titanium.....	1.0 mg/L
Vanadium.....	1.0 mg/L
Zinc.....	1.0 mg/L

*Dangerous good. Requires special shipping.

pH Buffers

Our pH Buffers are analytically traceable to NIST SRMs, mercury free, guaranteed stable for at least one year after your receipt, and are supplied with a full certificate of analysis. Choose single bottles or convenient six-bottle cases.

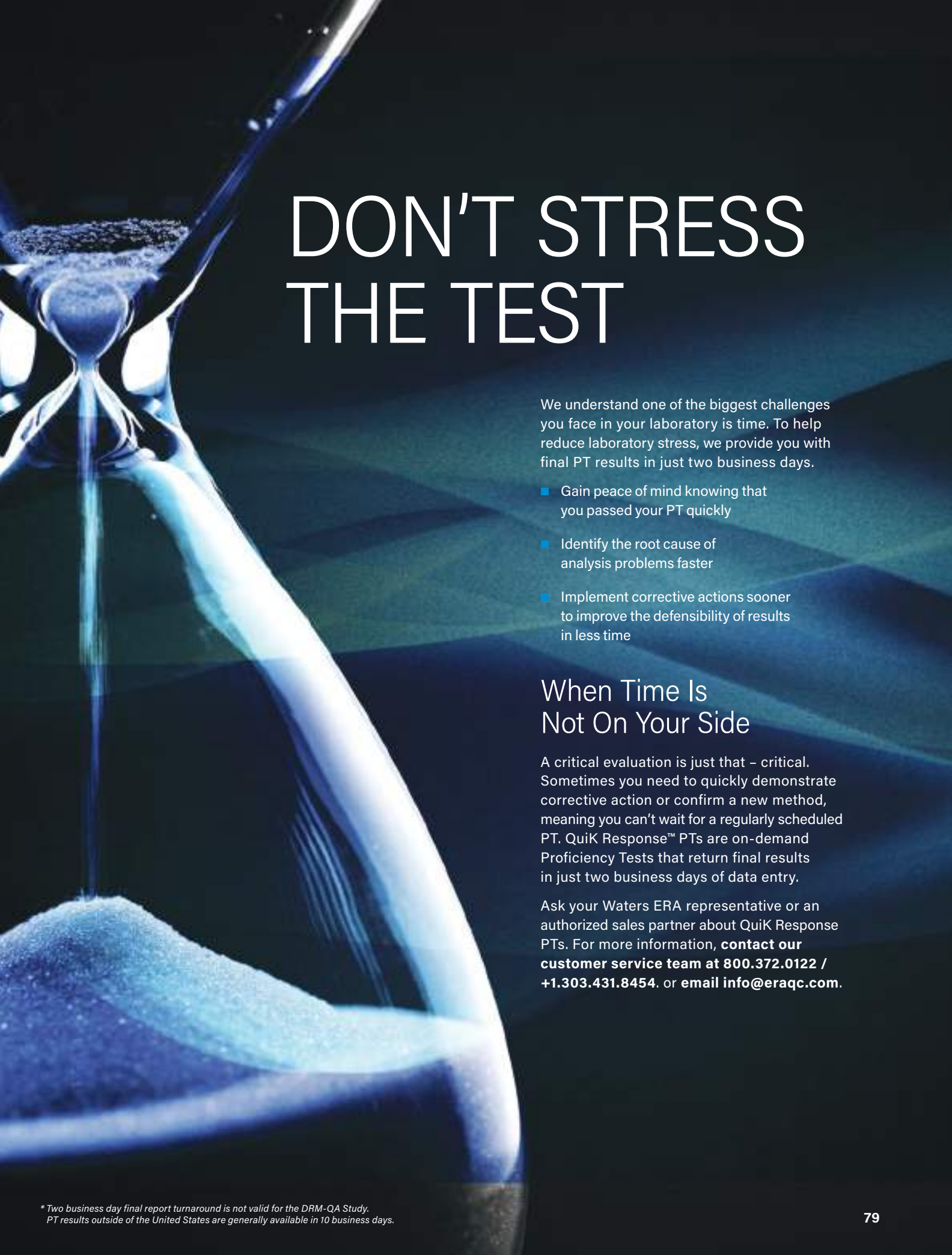
Value	Volume	Single Bottle	Six-Bottle Case
pH 4.00	1 pint	Cat. #127	Cat. #128
pH 7.00	1 pint	Cat. #131	Cat. #132
pH 10.00	1 pint	Cat. #135	Cat. #136
Case of 2 ea.	Pints		Cat. #141

Eric Schmidt
Production Technician
Years with Waters ERA: 26



Tony Ciacco
Chemist
Years with Waters ERA: 22





DON'T STRESS THE TEST

We understand one of the biggest challenges you face in your laboratory is time. To help reduce laboratory stress, we provide you with final PT results in just two business days.

- Gain peace of mind knowing that you passed your PT quickly
- Identify the root cause of analysis problems faster
- Implement corrective actions sooner to improve the defensibility of results in less time

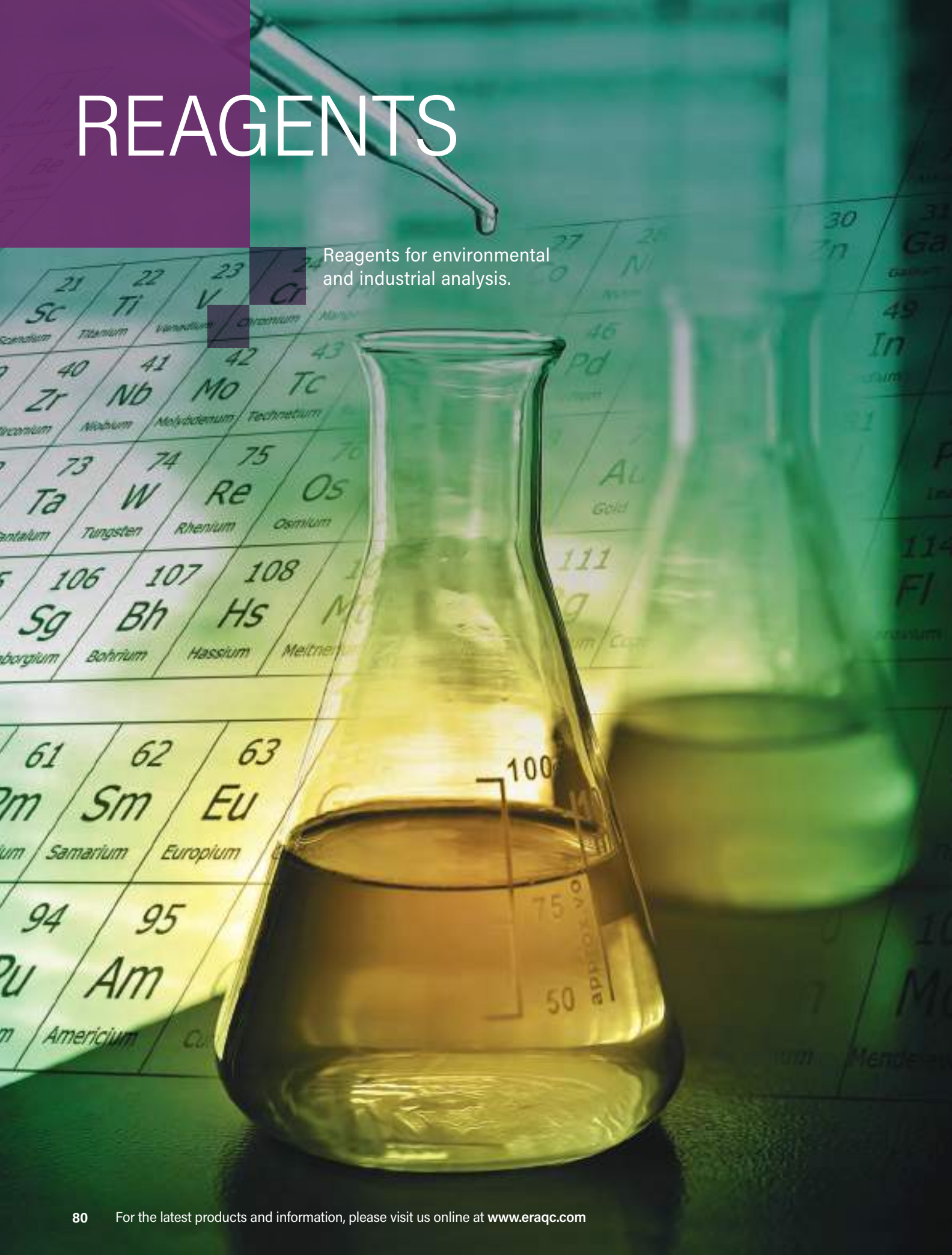
When Time Is Not On Your Side

A critical evaluation is just that – critical. Sometimes you need to quickly demonstrate corrective action or confirm a new method, meaning you can't wait for a regularly scheduled PT. QuiK Response™ PTs are on-demand Proficiency Tests that return final results in just two business days of data entry.

Ask your Waters ERA representative or an authorized sales partner about QuiK Response PTs. For more information, **contact our customer service team at 800.372.0122 / +1.303.431.8454. or email info@eraqc.com.**

REAGENTS

Reagents for environmental
and industrial analysis.



Contents

Description	Page
EDTA	82
Hydrochloric Acid	82
Miscellaneous	83
pH	82
Potassium Hydroxide	82
Silver Nitrate	83
Sodium Hydroxide	83
Sodium Thiosulfate	83
Sulfuric Acid	83

Reagents

Industrial reagents with tolerances of +/- 0.5%, and will hold the certified value lot-to-lot within 0.5%. Our reagents are shipped with a certificate of analysis and are homogeneous at a 95% confidence interval.

EDTA

0.01 M, 1 Gallon	Cat. #183160
0.02 M, 1 Gallon	Cat. #183212
0.1 M, 1 Liter	Cat. #183118
0.1 M, 1 Gallon	Cat. #183120*
0.1 M, 5 Gallon	Cat. #187525*

Hydrochloric Acid

0.01 N, 1 Liter	DG	Cat. #183026
0.01 N, 1 Gallon	DG	Cat. #183028*
0.01 N, 5 Gallon	DG	Cat. #187503*
0.1 N, 1 Liter	DG	Cat. #183030
0.1 N, 1 Liter, In IPA	DG	Cat. #184001
0.1 N, 2.5 Liter	DG	Cat. #183010*
0.1 N, 1 Gallon	DG	Cat. #183032
0.1 N, 5 Gallon	DG	Cat. #187506
0.25 N, 1 Liter	DG	Cat. #183034*
0.25 N, 1 Gallon	DG	Cat. #183036*
0.25 N, 5 Gallon	DG	Cat. #187507*
0.5 N, 1 Liter	DG	Cat. #183038*
0.5 N, 1 Gallon	DG	Cat. #183040
0.5 N, 5 Gallon	DG	Cat. #187508
0.65 N, 5 Gallon	DG	Cat. #183016
1.0 N, 1 Liter	DG	Cat. #183042
1.0 N, 1 Gallon	DG	Cat. #183044
1.0 N, 5 Gallon	DG	Cat. #187510*

DG – Dangerous good. Requires special shipping.



pH

pH 2 Buffer, No Color (1 Pint)	Cat. #183004
pH 2 Buffer, No Color (1 Liter)	Cat. #183184
pH 2 Buffer, No Color (1 Gallon)	Cat. #187027
pH 2 Buffer, No Color (5 Gallon)	Cat. #183186*
pH 4 Buffer, No Color (1 Pint)	Cat. #183005
pH 4 Buffer, No Color (1 Liter)	Cat. #183180
pH 4 Buffer, No Color (1 Gallon)	Cat. #183181*
pH 4 Buffer, No Color (5 Gallon)	Cat. #183182
pH 6 Concentrated Buffer, No Color (2.5 Liter)	Cat. #183012
pH 7 Buffer, No Color (1 Pint)	Cat. #183006
pH 7 Buffer, No Color (1 Liter)	Cat. #183187
pH 7 Concentrated Buffer, No Color (2.5 Liter)	Cat. #183013
pH 7 Buffer, No Color (1 Gallon)	Cat. #183188*
pH 7 Buffer, No Color (5 Gallon)	Cat. #183189
pH 10 Buffer, No Color (1 Pint)	Cat. #183007
pH 10 Buffer, No Color (1 Liter)	Cat. #183190
pH 10 Buffer, No Color (1 Gallon)	Cat. #183191*
pH 10 Buffer, No Color (5 Gallon)	Cat. #183192
pH 4 Buffer, Red (1 Gallon)	Cat. #187026
pH 4 Buffer, Red (5 Gallon)	Cat. #183217
pH 7 Buffer, Yellow (1 Gallon)	Cat. #187028
pH 7 Buffer, Yellow (5 Gallon)	Cat. #183218
pH 10 Buffer, Blue (1 Gallon)	Cat. #187029
pH 10 Buffer, Blue (5 Gallon)	Cat. #183219

Potassium Hydroxide

0.01 N, 1 Liter	DG	Cat. #183090
0.01 N, 1 Gallon	DG	Cat. #183092
0.01 N, 5 Gallon	DG	Cat. #187521*
0.1 N, 1 Liter	DG	Cat. #183094
In IPA, 0.1 N, 1 Gallon	DG	Cat. #183211*
0.1 N, 1 Gallon	DG	Cat. #183096*
0.1 N, 5 Gallon	DG	Cat. #187522
0.25 N, 1 Liter	DG	Cat. #183098*
0.25 N, 1 Gallon	DG	Cat. #183100*
0.25 N, 5 Gallon	DG	Cat. #187523*
0.5 N, 1 Liter	DG	Cat. #183102*
0.5 N, 1 Gallon	DG	Cat. #183104*
0.5 N, 5 Gallon	DG	Cat. #187524*

DG – Dangerous good. Requires special shipping.

* This item is a custom order product. Please contact us for ordering details.

Silver Nitrate

0.1 N, 1 Liter	DG	Cat. #183110*
0.1 N, 1 Gallon	DG	Cat. #183112*
0.25 N, 1 Liter	DG	Cat. #183114*
0.25 N, 1 Gallon	DG	Cat. #183116*

Sodium Hydroxide

0.01 N, 1 Liter	DG	Cat. #183070
0.01 N, 1 Gallon	DG	Cat. #183072*
0.01 N, 5 Gallon	DG	Cat. #187516*
0.1 N, 1 Liter	DG	Cat. #183074
0.1 N, 1 Gallon	DG	Cat. #183076
0.1 N, 5 Gallon	DG	Cat. #187517
0.25 N, 1 Liter	DG	Cat. #183078*
0.25 N, 1 Gallon	DG	Cat. #183080*
0.25 N, 5 Gallon	DG	Cat. #187518
0.5 N, 1 Gallon	DG	Cat. #183082*
0.5 N, 5 Gallon	DG	Cat. #187519
1.0 N, 1 Liter	DG	Cat. #183086
1.0 N, 1 Gallon	DG	Cat. #183088*
1.0 N, 5 Gallon	DG	Cat. #183156*

DG – Dangerous good. Requires special shipping.

Sodium Thiosulfate

0.0394 N, 1 Gallon	Cat. #182002
0.0394 N, 5 Gallon	Cat. #182003
0.1 N, 1 Liter	Cat. #183126
0.1 N, 1 Gallon	Cat. #183128
0.25 N, 1 Liter	Cat. #183130
0.25 N, 1 Gallon	Cat. #183132*

Sulfuric Acid

0.01 N, 1 Liter	DG	Cat. #183048
0.01 N, 1 Gallon	DG	Cat. #183049*
0.02 N, 1 Liter	DG	Cat. #183050
0.02 N, 1 Gallon	DG	Cat. #183052
0.02 N, 5 Gallon	DG	Cat. #187511
0.05 N, 1 Liter	DG	Cat. #183003*
0.1 N, 1 Liter	DG	Cat. #183054
0.1 N, 1 Gallon	DG	Cat. #183056*
0.1 N, 5 Gallon	DG	Cat. #187512*
0.2 N, 1 Liter	DG	Cat. #183058*
0.2 N, 1 Gallon	DG	Cat. #183060*
0.2 N, 5 Gallon	DG	Cat. #187514*
0.5 N, 1 Liter	DG	Cat. #183062*
0.5 N, 1 Gallon	DG	Cat. #183064*
1.0 N, 1 Liter	DG	Cat. #183066
1.0 N, 1 Gallon	DG	Cat. #183068*
1.0 N, 5 Gallon	DG	Cat. #187515

Miscellaneous

KOH 5 M, KCN 1 M, 5 Gallon	—	Cat. #183213
Manganese Standard, 40 g/L, 1 Liter	DG	Cat. #183008
Manganese Standard, 55 g/L, 1 Liter	DG	Cat. #183009
TISAB, Fluoride Buffer, 1 Gallon	—	Cat. #183162
Barium Perchlorate, 0.1 N, 1 Liter	—	Cat. #183017
Potassium Dichromate, 0.1 N, 1 Liter	DG	Cat. #183221
Potassium Permanganate, 0.1 N, 2.5 Liter	DG	Cat. #183001
Ferrous Ammonium Sulfate, 0.25 N, 1 Gallon	DG	Cat. #183011
Phenolphthalein, 0.5%, 1 Pint	DG	Cat. #183168*
Sodium Carbonate, 1.0 N, 1 Liter	—	Cat. #183172
Sodium Carbonate, 25 g/L, 10 Liter	—	Cat. #183002

DG – Dangerous good. Requires special shipping.

* This item is a custom order product. Please contact us for ordering details.

Matthew Seebeck
Quality Manager

Years with Waters ERA: 3



Kathie Paulling
Project Coordinator -
Customs, Reagents

Years with Waters ERA: 16



CHROMATOGRAPHIC AND SAMPLE CLEANUP PRODUCTS FROM WATERS

Sample Preparation

Sample concentration and cleanup

Oasis Sample Extraction Products

Analysis of water samples often requires concentration and cleanup of "dirty" or complex matrices. Oasis™ Solid-Phase Extraction (SPE) Products allow for simple and rapid method development. With the Oasis product line, you can expect robust SPE methods that provide reproducible results and high recoveries, without having to be concerned with sorbent drying or pH limitations.

Key features/benefits

- Greater capacity.
- Excellent stability over entire pH range.
- Cleanest extracts.
- Elimination of matrix effects.
- Reduction of ion suppression.
- Superior recovery, reproducibility, retention, and selectivity for a wide variety of compounds.
- Available in cartridges or high throughput, 96-well plates.



Oasis Sample Extraction Products.

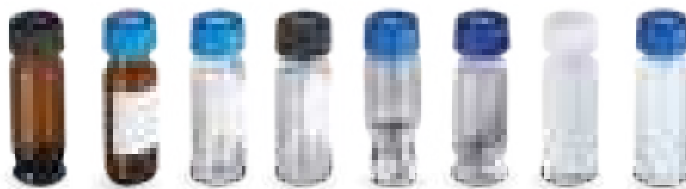
Certified cleanliness for ultra-trace level analysis

Vials

Waters Certified Vials are manufactured to exacting standards, tested and certified to give you confidence that the peaks you observe are representative of your sample, not your vials.

Key features/benefits

- Prevent ghost peaks stemming from contaminants.
- Eliminate unexplained masses in MS.
- Eliminate potential of needle damage due to tight dimensional specifications.



Waters Certified Vials.

Reduce interference and increase sensitivity for better quality results

Certified Sep-Pak SPE Cartridges

Sep-Pak™ SPE Cartridges are widely used by scientists for trace-level analysis in water samples. Manufactured using strict performance and cleanliness specifications and QC-tested for extractables and leachables, Certified Sep-Pak Sample Preparation Products reduce interference and increase sensitivity by eliminating contaminants introduced by the cartridge hardware and sorbents.

Key features/benefits

- Superior extracts for water sample residue analysis.
- Cleanliness and reproducibility needed for demanding sample preparation methods.
- Allows for accurate, high-quality water testing results.



Sep-Pak SPE Cartridges.

LC COLUMNS AND CONSUMABLES

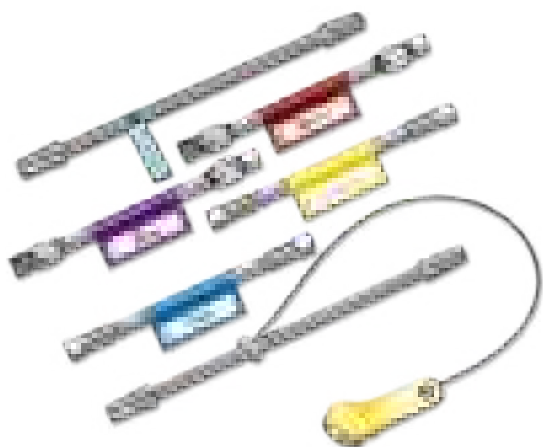
Maximize efficiency, ruggedness, and throughput

LC Columns

Featured in methods to meet regulatory requirements throughout the world, Waters columns provide cutting-edge performance. In addition to our complete selection of UHPLC, UPLC™, and HPLC column chemistries, Waters also provides application-specific columns for optimal specificity.

Key features/benefits

- Industry leading reliability and reproducibility.
- Wide range of general purpose and application specific columns.
- Uncompromised analytical performance.



UPLC, UHPLC, and HPLC Columns.

Standardize and simplify workflows

Analytical Standards and Reagents

Waters understands that the quality of the standards and reagents you use directly correlates to the quality of your results. Our standards are precisely formulated to ensure data comparability and defensibility over time, and provide absolute traceability to meet your quality assurance requirements.

Key features/benefits

- Saves costly validation time of standards and reagents.
- Easy and convenient formulations and packaging ensure accuracy of LC and LC-MS results over time.
- Optimized kits to keep your system operating at peak performance.



Waters Analytical Standards and Reagents.

Waters

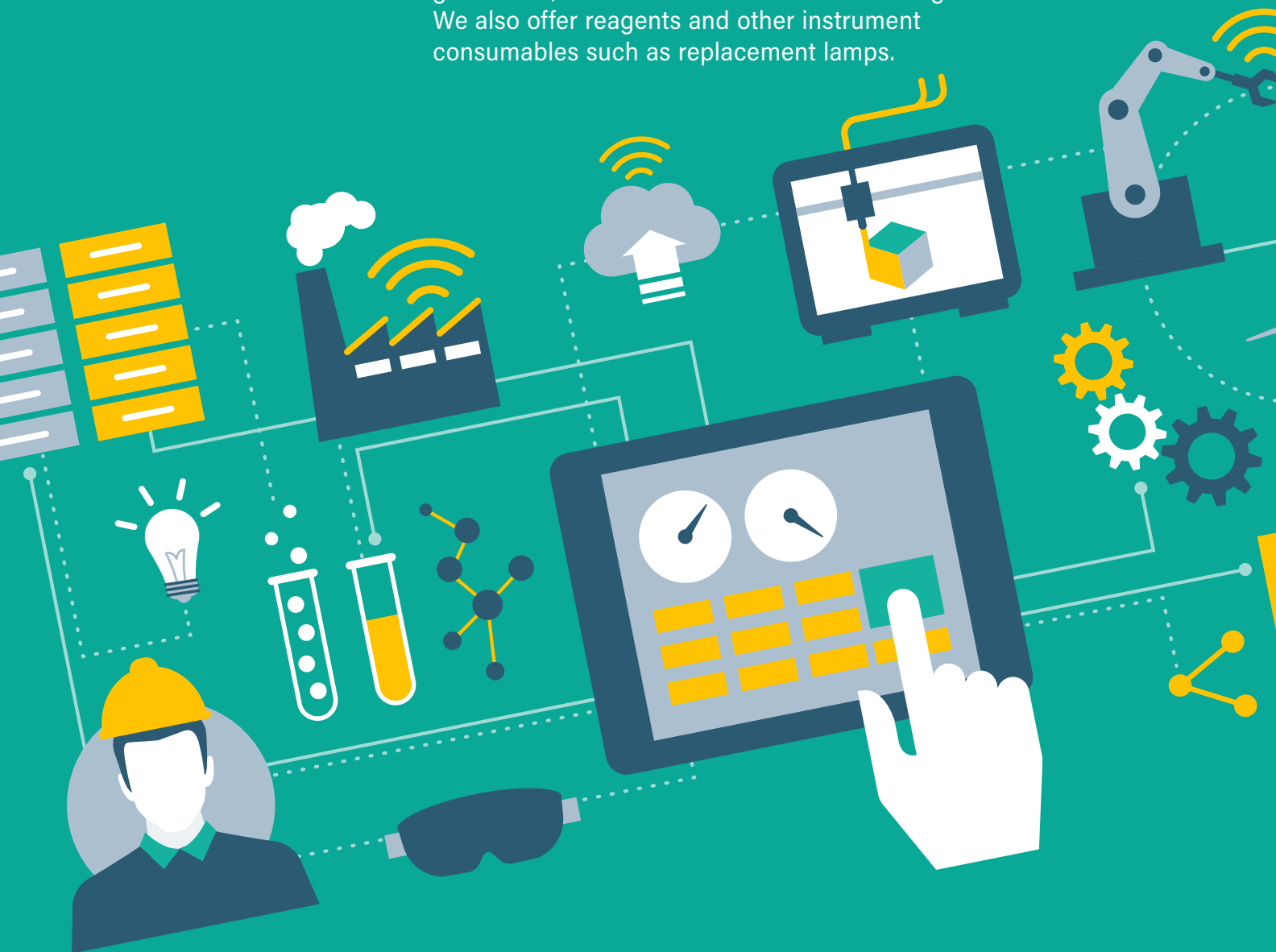
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www.waters.com, or call 800.252.HPLC (4752)

PROCESS WATER

Products intended for use in industrial or municipal settings where water quality parameters are being monitored continuously (by in-line, on-line, or at-line instrumentation), or by frequent and routine collection of samples for laboratory analysis.

Products in this section include calibration, system suitability, and conductivity solutions and kits for TOC, Conductivity, and Turbidity devices for ultra-pure water analysis including pharmaceutical, power generation, and semiconductor manufacturing. We also offer reagents and other instrument consumables such as replacement lamps.



Contents

Description	Page
Analytik Jena TOC	93
ANATEL TOC	88
Cleaning Validation Products	100
Conductivity Standards	103
Consumables	99
High-Purity Water	102
Inorganic Carbon	101
OI Analytical TOC	94
Other TOC Instruments	98
pH Buffers	102
Shimadzu TOC	96
Sievers TOC	91
Teledyne Tekmar TOC	97
Turbidity	101

ANATEL TOC

All of our ANATEL Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation. CRMs for the ANATEL PAT700 are formulated specifically for the unique technology inherent in that instrument and are packaged in ready-to-use RFID tagged bottles.

ANATEL PAT700

System Suitability

Sets - USP / EP	Cat. #	Availability
USP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 60 mL bottles. <i>Replaces ANATEL FG7018402</i>	18402	Ships in 1 business day

Calibration

Kits	Cat. #	Availability
Calibration Standards Kit Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 60 mL bottles. <i>Replaces ANATEL FG7019202</i>	19202	Ships in 1 business day

Conductivity

Kits	Cat. #	Availability
Conductivity Solution Kit Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 60 mL bottle. <i>Replaces ANATEL FG7002602</i>	02602	Ships in 1 business day

Validation

Kits	Cat. #	Availability
Validation Control Kit Includes (1) Blank, and (1) 0.50 mg/L C NIST Sucrose in 60 mL bottles. <i>Replaces ANATEL FG7019222</i>	19222	Ships in 1 business day
Validation Protocol Reagent Kit Includes (14) Blanks, (5) Conductivity Solutions, (1) Validation Control Kit, (2) Calibration Standards Kit, (1) System Suitability Set, (1) Excursion with Validation Kit, (1) 0.25 mg/L C NIST Sucrose, (1) 0.75 mg/L C NIST Sucrose, (1) USP Reagent Water Rw, (1) 0.50mg/L C USP 1,4-Benzoquinone, and (2) Excursion Bottles (all bottles are 60 mL). <u>Does not include NIST Traceable Resistor.</u> <i>Replaces ANATEL FG7019232</i>	19232	Ships in 5 business days

Consumables

	Cat. #	Availability
Replacement UV Lamp	20037	Ships in 1 business day
60 mL Pre-cleaned HDPE Bottles – Natural (case of 50) Case of 50: 60 mL Low TOC HDPE bottles with septa cap and dust cover.	25056	
Pre-Cleaned Caps w/Septa (100/pack)	25011	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

Lisa Berry
 Manufacturing Manager
 Years with Waters ERA: 28



The following CRMs are used for calibration and validation of the ANATEL A643 on-line TOC analyzer.

ANATEL A643

System Suitability

Sets - USP / EP	Cat. #	Availability
USP Bulk Water System Suitability Set Includes (2) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 60 mL bottles. <i>Replaces ANATEL FG5017601</i>	18400	Ships in 1 business day

Calibration

Kits	Cat. #	Availability
Calibration Standards Kit Includes (2) Blanks, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 60 mL bottles. <i>Replaces ANATEL FG7017401</i>	19200	Ships in 1 business day

Conductivity

Kits	Cat. #	Availability
Conductivity Solution Kit Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 60 mL bottle. <i>Replaces ANATEL FG5010401</i>	02610	Ships in 1 business day

Validation

Kits	Cat. #	Availability
Validation Control Kit Includes (2) Blanks, and (1) 0.50 mg/L C NIST Sucrose in 60 mL bottles. <i>Replaces ANATEL FG5017501</i>	19220	Ships in 1 business day
Validation Protocol Reagent Kit Includes (10) Blanks, (3) 0.25 mg/L C NIST Sucrose, (5) 0.50 mg/L C NIST Sucrose, (3) 0.75 mg/L C NIST Sucrose, (1) 100 µS/cm Conductivity Solution Kit, and (4) USP System Suitability Sets (all bottles are 60 mL). <i>Replaces reference materials portion of ANATEL FG5017701. Does not include NIST Traceable Resistor.</i>	19230	Ships in 5 business days
Validation Kit Includes (2) Blanks, and (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, (1) 0.750 mg/L C NIST Sucrose, (1) 100 µS/cm Conductivity Solution Kit, and (1) USP System Suitability Set in 60 mL bottles.	19210	Ships in 1 business day

Consumables

	Cat. #	Availability
Replacement UV Lamp <i>Replaces ANATEL FG6002601</i>	20036A	Ships in 1 business day
60 mL Pre-cleaned HDPE Bottles – Natural (case of 50) Case of 50: 60 mL Low TOC HDPE bottles with septa cap and dust cover.	25056	Ships in 1 business day
Pre-Cleaned Caps w/Septa (100/pack)	25011	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

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ANATEL TOC

ANATEL TOC600

The following CRMs are used for calibration and validation of the ANATEL TOC600 TOC analyzer.

System Suitability

Sets - USP / EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 125 mL bottles. <i>Replaces ANATEL FG5018036</i>	18036	Ships in 1 business day

Calibration

Kits	Cat. #	Availability
Calibration Standards Kit Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 125 mL bottles. <i>Replaces ANATEL FG5019201</i>	19201	Ships in 1 business day

Conductivity

Kits	Cat. #	Availability
Conductivity Solution Kit Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 125 mL bottle. <i>Replaces ANATEL FG5002601</i>	02601	Ships in 1 business day

Validation

Kits	Cat. #	Availability
Validation Control Kit Includes (1) Blank, and (1) 0.50 mg/L C NIST Sucrose in 125 mL bottles. <i>Replaces ANATEL FG5019221</i>	19221	Ships in 1 business day
Validation Protocol Reagent Kit Includes (3) TOC600 Calibration Kits, (1) TOC600 100 µS/cm Conductivity Solution Kit, (2) TOC600 Validation Control Kits, and (4) TOC600 USP System Suitability Sets (all bottles are 125 mL). <i>Replaces ANATEL FG5019231</i>	19231	Ships in 5 business days

Consumables

	Cat. #	Availability
Replacement UV Lamp <i>Replaces ANATEL FG6002601</i>	20036A	Ships in 1 business day

ANATEL A-1000

The following CRMs are used for calibration and validation of the ANATEL A-1000 TOC analyzer.

System Suitability

Sets - USP / EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 1000 mL HDPE bottles.	19030	Ships in 5 business days

The Industry Standard
for over 40 years



Adam Boersma
Software Applications
Developer

Years with Waters ERA: 1

Sievers 900, 5310 C, M9, and M5310 C



All of our Sievers Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

Contact Waters ERA at info@eraqc.com (USA) or ERA_Europe_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

System Suitability		
Sets - USP / EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. <i>Replaces Sievers CSTD 31004-01</i>	18000	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose, and (1) 8.0 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. <i>Replaces Sievers CSTD 90039-01</i>	18000J	Ships in 5 business days

Consumables		
	Cat. #	Availability
Replacement UV Lamp	20045	Ships in 1 business day
Replacement Pump Tubing	20060	Ships in 1 business day
Model 900/5310 C Resin Bed	20075	Ships in 1 business day
Service Kit for Sievers Model 900/5310C Annual Service Kit for Sievers Model 900/5310C includes Cat # 20075 (Replacement Resin Bed), Cat # 20045 (Replacement UV Lamp), and Cat # 20060 (Replacement Pump Tubing).	20095	Ships in 1 business day
Phosphoric Acid Reagent Cartridge -150 mL*	21010	Ships in 5 business days
Phosphoric Acid Reagent Cartridge - 300 mL*	21001	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge - 150 mL	21015	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge - 300 mL	21006	Ships in 5 business days
40 mL Ultra-Low TOC Vials, 80/case	25025	Ships in 1 business day
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days

* Dangerous good. Requires special shipping.

Calibration & Validation

Kits	Cat. #	Availability
Linearity Set Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose and (1) 0.75 mg/L C NIST Sucrose in 40 mL vials. <i>Replaces CSTD 31012-01</i>	19515	Ships in 5 business days
Calibration & Verification Set Includes (2) Blanks, (2) 1.0 mg/L IC NIST NaHCO ₃ , (1) 1.0 mg/L C NIST KHP, and (1) 1.0 mg/L C NIST Sucrose in 40 mL vials. <i>Replaces CSTD 90016-01</i>	19600	Ships in 1 business day
Multi-Point Calibration Set Includes (1) Blank, (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L C NIST KHP, and (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L IC NIST NaHCO ₃ in 40 mL vials. <i>Replaces CSTD 90000-01</i>	19610	Ships in 5 business days
Autoreagents Calibration Set Includes (1) Blank, (1) 25.0 mg/L C NIST KHP, (1) 25.0 mg/L IC NIST NaHCO ₃ , and (1) 50.0 mg/L C from Nicotinamide in 40 mL vials. <i>Replaces CSTD 90036-01</i>	19611	Ships in 5 business days
Autoreagents Calibration & Verification Set Includes (2) Blanks, (1) 25.0 mg/L C NIST KHP, (1) 25.0 mg/L IC NIST NaHCO ₃ , (1) 50.0 mg/L C from Nicotinamide, (1) 25.0 mg/L C NIST Sucrose, (1) 50.0 mg/L C NIST Sucrose, and (1) 50 mg/L IC NaHCO ₃ in 40 mL vials. <i>Replaces CSTD 90028-01</i>	19616	Ships in 5 business days
Specificity Verification Set Includes (1) Blank, (1) 0.50 mg/L C from Methanol, (1) 0.50 mg/L C from Nicotinamide, and (1) 0.50 mg/L C from KHP in 40 mL vials.	19615	Ships in 5 business days
Validation Set with Calibration & Verification Includes (28) 40 mL vials, (2) Blanks, (2) 1.0 mg/L C NIST KHP, (2) 1.0 mg/L IC NaHCO ₃ ; (1) Blank, (1) 0.50 mg/L C NIST Sucrose, (1) 0.50 mg/L IC NaHCO ₃ ; (2) Reagent Water Rw, (2) 0.50 mg/L C from USP Sucrose Rs and (2) 0.50 mg/L C from USP 1,4-Benzoquinone Rss; (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, (1) 0.75 mg/L C NIST Sucrose; (1) Reagent Water, (1) 0.50 mg/L C from USP Sucrose; (1) Blank; (1) 0.50 mg/L C from Methanol; (1) 0.50 mg/L C from Nicotinamide; (1) 0.50 mg/L C from NIST KHP; (1) Reagent Water Rw; (1) 0.50 mg/L C from USP Sucrose Rs; and (1) 0.50 mg/L C from USP 1,4-Benzoquinone Rss. <i>Replaces Sievers CSTD90025</i>	19617	Ships in 5 business days
Calibration Kit Includes (1) Blank, and (1) 1.0 mg/L IC NIST NaHCO ₃ , (1) 1.0 mg/L C NIST KHP in 40 mL vials. <i>Replaces CSTD 90001-01</i>	19620	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

SIEVERS

Sievers 500 RL

The following CRMs are designed to use on Sievers 500 RL TOC instruments for calibration, validation, and to satisfy regulatory requirements.

Contact Waters ERA at info@eraqc.com (USA) or ERA_Europe_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

System Suitability

Sets - USP / EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. <i>Replaces Sievers CSTD 74403</i>	15105	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. <i>Replaces Sievers CSTD 90039-01</i>	18000J	Ships in 5 business days

Consumables

	Cat. #	Availability
Replacement UV Lamp	20045	Ships in 1 business day
40 mL Ultra-Low TOC Vials, 80/case	25025	Ships in 1 business day
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

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Calibration & Validation

RL (Standard IOS) Single-Use CRMs

Kits	Cat. #	Availability
Single-Point Calibration Set Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial. <i>Replaces CSTD 74401</i>	15100	Ships in 5 business days
Single-Point Calibration/Verification Kit Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP in 40 mL glass vials, (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial, (1) Verification Blank, (1) 0.50 mg/L C NIST Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial. <i>Replaces CSTD 74612</i>	15101	Ships in 5 business days
Accuracy/Precision/Verification Set Includes (1) Verification Blank, (1) 0.5 mg/L C NIST Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial. <i>Replaces CSTD 74402</i>	15104	Ships in 5 business days
Linearity Set Includes (1) Linearity Blank, (1) each 0.25 mg/L, 0.50 mg/L, and 0.75 mg/L C NIST KHP in 40 mL glass vials. <i>Replaces CSTD 74406</i>	15106	Ships in 5 business days
Single-Point Calibration Set – TOC Only Includes (2) Calibration Blanks and (1) 1.5 mg/L C NIST KHP in 40 mL glass vials. <i>Replaces CSTD 74405</i>	15109	Ships in 5 business days
Accuracy/Precision/Verification Set – TOC Only Includes (1) Verification Blank and (1) 0.5 mg/L C NIST Sucrose in 40 mL glass vials. Conductivity standard is not included in this set. <i>Replaces CSTD 74407</i>	15110	Ships in 5 business days
Single-Point Calibration/Verification Set – TOC Only Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP, (1) Verification Blank, and (1) 0.50 mg/L C NIST Sucrose in 40 mL glass vials. Conductivity standards are not included in this set. <i>Replaces CSTD 74622</i>	15111	Ships in 5 business days

All of our Analytik Jena Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Analytik Jena TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. <i>For use with AJ multi N/C pharma HS and IL550</i>	18000	Ships in 1 business day
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. <i>For use with AJ multi N/C UV HS and IL500</i>	18004	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days
Sets - Low-Level System Suitability	Cat. #	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	18040	Ships in 5 business days

Calibration & Cleaning Validation

Kits	Cat. #	Availability
Cleaning Validation Kit Includes (1) Calibration Blank, (1) each 0.25 mg/L, 0.50 mg/L, 0.75 mg/L, and 1.0 mg/L C NIST Sucrose in 40 mL vials.	19901	Ships in 5 business days
Full TOC Calibration Kit Includes (1) Calibration Blank, (1) each 1.0 mg/L, 2.50 mg/L, 5.0 mg/L, 10.0 mg/L, 25.0 mg/L, 50.0 mg/L, and 100 mg/L C NIST KHP in 250 mL amber glass bottles.	19970	Ships in 5 business days
Limited TOC Calibration Kit Includes (1) Calibration Blank and (1) 0.6 mg/L C NIST Sucrose in 250 mL amber glass bottles.	19985	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

Anne Lang
Customer Service Representative
Years with Waters ERA: 1



Dale Shallenberger
Senior Buyer
Years with Waters ERA: 27



OI ANALYTICAL

The Certified Reference Materials (CRMs) listed below are commonly purchased for use with OI Analytical TOC instruments, including the very popular Aurora® model. All Waters ERA Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on OI Analytical TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18004	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days

Calibration & Validation

Kits	Cat. #	Availability
Ultra Low-Level CRMs Kit Includes (3) Calibration Blanks, (1) each 0.050 mg/L, 0.060 mg/L, 0.070 mg/L, 0.080 mg/L, 0.090 mg/L, 0.10 mg/L, 0.25 mg/L, 0.50 mg/L, and 1.0 mg/L C NIST KHP in 40 mL vials.	14203	Ships in 5 business days
Validation Set - Aurora Includes (6) Water Blanks, (1) 0.50 mg/L C NIST KHP, (3) 1.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 10.0 mg/L C NIST KHP, (1) 25.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP/50.0 mg/L IC NIST NaHCO ₃ , (4) 0.50 mg/L C USP Sucrose, and (1) 0.50 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	19007	Ships in 5 business days

Aurora is a registered trademark of Xylem, Incorporated.

Consumables

Kits	Cat. #	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

*Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.



Paul Fabrizio
Systems Engineer

Years with Waters ERA: 12

DRINKING WATER STANDARDS & CONSUMABLES

From Your Trusted Environmental Partner

Turbidity and total organic carbon (TOC) are two key indicators in the measurement of water quality. Whether it is environmental testing or municipal drinking water testing, accurate measurement of turbidity and TOC help ensure compliance with government regulations and are essential components of water treatment.

Ensure reliable water analyses.

Learn more at
**[www.eraqc.com/
TurbidityStandardsandConsumables](http://www.eraqc.com/TurbidityStandardsandConsumables)**

SHIMADZU

Certified Reference Materials (CRMs) listed are commonly purchased for use with Shimadzu TOC instruments. **Please specify at time of order whether you have a chemical or combustion Shimadzu TOC.** All of our Shimadzu Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Shimadzu TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18000	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days
Sets - Low-Level System Suitability	Cat. #	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	18040	Ships in 5 business days

Calibration & Validation

Kits	Cat. #	Availability
TOC-V and TOC-L Validation Kit Includes (1) Water Blank, and (2) 100.0 mg/L C NIST KHP in 125 mL amber glass bottles.	11002	Ships in 5 business days
TOC-V and TOC-L HS Validation Kit Includes (1) Water Blank, and (2) 10.0 mg/L C NIST KHP in 125 mL amber glass bottles.	11003	Ships in 5 business days
TOC-V and TOC-L Wet Chem Validation Kit Includes (3) Water Blanks, (2) 0.50 mg/L C NIST KHP, and (4) 1.0 mg/L C NIST KHP in 40 mL vials.	11004	Ships in 5 business days
TOC-V and TOC-L Multi Calibration Kit Includes (2) Calibration Blanks, (2) each 0.10 mg/L, 0.25 mg/L, 0.50 mg/L C NIST KHP, and (1) each 0.75 mg/L and 1.0 mg/L C NIST KHP in 40 mL vials.	11005	Ships in 5 business days

Consumables

Kits	Cat. #	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

*Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.



Loretta Baca
Customer Service
Representative

Years with Waters ERA: 1

TELEDYNE TEKMAR

All of our Teledyne Tekmar Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Teledyne Tekmar TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18000	Ships in 1 business day
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat. #	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days
Sets - Low-Level System Suitability	Cat. #	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	18040	Ships in 5 business days

Calibration & Validation

Kits	Cat. #	Availability
Ultra Low-Level CRMs Kit Includes (3) Calibration Blanks, and (1) each 0.050 mg/L, 0.060 mg/L, 0.070 mg/L, 0.080 mg/L, 0.090 mg/L, 0.10 mg/L, 0.25 mg/L, 0.50 mg/L, and 1.0 mg/L C NIST KHP in 40 mL vials.	14203	Ships in 5 business days
Validation Set - Phoenix Includes (2) Water Blanks, (3) 0.50 mg/L C NIST KHP, (6) 1.0 mg/L C NIST KHP, (1) 2.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 50.0 mg/L C NIST KHP, (1) 100 mg/L IC NIST NaHCO ₃ , (1) Reagent Water Rw, (1) 0.50 mg/L C USP Sucrose Rs, and (1) 0.50 mg/L C USP 1,4-Benzoquinone Rss in 40 mL vials.	19002	Ships in 5 business days
Validation Set - Phoenix Includes (5) Water Blanks, (1) 0.50 mg/L C NIST KHP, (5) 1.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 50.0 mg/L C NIST KHP, (1) 1.0 mg/L IC NIST NaHCO ₃ , (1) Reagent Water Rw, (1) 0.50 mg/L C USP Sucrose Rs, and (1) 0.50 mg/L C USP 1,4-Benzoquinone Rss in 40 mL vials.	19003	Ships in 5 business days
Validation Set - Fusion Includes 15 x 40 mL vials & 2 125 mL bottles: (4) TOC Blank, (3) 1.00 mg C/L NIST KHP, (1) 10.0 mg C/L NIST KHP, (1) 25.0 mg IC/L NaHCO ₃ , (1) Reagent Water Rw, (1) 0.500 mg/L C from USP Sucrose Rs, (1) 0.500 mg/L C from USP 1,4-Benzoquinone Rss, (1) Reagent Water Rw, (1) 8.0 mg/L C from USP Sucrose Rs, (1) 8.0 mg/L C from USP 1,4-Benzoquinone Rss, (1) 10.0 mg C/L NIST KHP - 125 mL, (1) 5.00 mg C/L NIST KHP - 125 mL	19004	Ships in 5 business days

Consumables

Reagents	Cat. #	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)	21019	Ships in 5 business days

*Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

Phoenix and Fusion are registered trademarks of Teledyne Technologies Incorporated.

Isabelle De Leon
Accounts Payable

Years with Waters ERA: 12



OTHER TOC INSTRUMENTS

All of our Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on various brands of TOC instruments for calibration and to satisfy regulatory requirements.

If you do not see your brand of TOC instrument listed below, please contact us for availability.

Swan Analytical and Comet Analytics

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 250 mL HDPE containers.	18055	Ships in 5 business days
Sets - USP	Cat. #	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose, and (1) 8.0 mg/L USP 1,4-Benzoquinone in 250 mL HDPE containers.	18056	Ships in 5 business days
Sets - Low-Level System Suitability	Cat. #	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 250 mL HDPE containers.	18059	Ships in 5 business days

Calibration & Other

Kits	Cat. #	Availability
Swan Calibration Kit Includes (1) Calibration Blank and (1) 1.0 mg/L C NIST Sucrose in 250 mL HDPE containers.	10035S	Ships in 5 business days
Swan Function Test Kit Includes (1) 20.0 mg/L C Sucrose and (1) 20.0 mg/L C 1,4-Benzoquinone in 125 mL HDPE containers.	19700	Ships in 5 business days

Calibration

Kits	Cat. #	Availability
Calibration Kit Includes (1) Calibration Blank and (1) each 0.25 mg/L, 0.50 mg/L, and 0.75 mg/L C NIST Sucrose in 60 mL HDPE containers.	19202	Ships in 1 business day

MembraPure

System Suitability

Sets - USP/EP	Cat. #	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 500 mL HDPE containers.	18140	Ships in 5 business days
Individual - USP Sterile Water (500 mL HDPE Container)	Cat. #	Availability
USP Reagent Water (Rw)	18144	Ships in 5 business days
8.0 mg/L C USP Sucrose (Rs)	18147	Ships in 5 business days
8.0 mg/L C USP 1,4-Benzoquinone (Rss)	18148	Ships in 5 business days

Calibration

Individual Standards (500 mL HDPE Container)	Cat. #	Availability
Calibration Blank	10110	Ships in 1 business day
0.5 mg/L C NIST Sucrose	10710	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

CONSUMABLES

Ever wonder what the USP means by: "Use labware and containers that have been scrupulously cleaned of organic residues"?

Just like the USP, we demand scrupulously cleaned vials for our TOC standards. All of our vials, whether glass or polymer, represent the most consistently clean sample vials available anywhere. They are the perfect vial for your purified water (PW) or water for injection (WFI) sample analysis.

We offer consumable products for various TOC instruments as detailed below.

Vials and Bottles

	Cat. #	Availability
40mL Ultra-Low TOC Glass Vials (80/case)	25025	Ships in 1 business day
60 mL Low TOC HDPE Bottle – Natural (50/case)	25056	Ships in 1 business day

UV Lamps

Replacement UV Lamps for ANATEL and Sievers models.

	Cat. #	Availability
ANATEL A643/TOC600	20036A	Ships in 1 business day
ANATEL PAT700	20037	Ships in 1 business day
Sievers 400/800	20040	Ships in 1 business day
Sievers 500/900	20045	Ships in 1 business day

Reagent Cartridges for Sievers

	Cat. #	Availability
Phosphoric Acid Reagent Cartridge for Sievers 800/900 (150 mL)*	21000	Ships in 5 business days
Phosphoric Acid Reagent Cartridge for Sievers 800/900 (300 mL)*	21001	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge for Sievers 800/900 (150 mL)	21005	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge for Sievers 800/900 (300 mL)	21006	Ships in 5 business days
Sievers Ion Exchange Resin Bed	20075	Ships in 1 business day
Sievers 900 Service Kit Includes resin bed, UV lamp and replacement tubing.	20095	Ships in 1 business day

*Dangerous goods.

Reagents

	Cat. #	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

*Dangerous goods.

Tubing

Replacement Pump Tubing for Sievers models.

	Cat. #	Availability
Sievers 400	20055	Ships in 1 business day
Sievers 800	20050	Ships in 1 business day
Sievers 900	20060	Ships in 1 business day

Filters

	Cat. #	Availability
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days
Fan Filter for Sievers 800	25040	Ships in 5 business days



Kate Lee
Process Water
Consumables Manager
Years with Waters ERA: 3

CLEANING VALIDATION

Waters ERA is the premier manufacturer of specialty cleaning validation products – coupons, certified clean sample vials and swabs for swab recovery studies as well as kits that can be customized to suit your laboratory, analyst and validation needs.

Sampling Kit with Vial and Swab

	Cat. #	Availability
Vial and Swab Sampling Kit – Small	CV10000TX	Ships in 5 business days
Includes (20) certified clean swabs and (10) certified clean vials.		
Vial and Swab Sampling Kit – Large	CV10005TX	Ships in 5 business days
Includes (160) certified clean swabs and (80) certified clean vials.		

Swabbing Templates

Pre-cleaned Teflon® square swabbing templates are a simple way to ensure accuracy and precision in your cleaning validation sampling. Each pack comes with a Certificate of Analysis for residual HPLC and TOC levels. Swabbing templates can be custom made to your needs. Stainless steel templates are available upon request. Call for pricing, availability, and custom sizing.

	Cat. #	Availability
16 cm ² (25/pack)	30028	Call for delivery
25 cm ² (25/pack)	30029	Call for delivery
100 cm ² (25/pack)	30032	Call for delivery

Swabs

Large polyester swabs with snap-off head for ultra-low interference levels.

	Cat. #	Availability
TOC Swabs (< 50.0 ppb TOC) Includes (20) swabs (1 total bag)	30033TX	Ships in 5 business days
TOC Swabs (< 50.0 ppb TOC) Includes (100) swabs (20/bag, 5 total bags)	30031TX	Ships in 5 business days
HPLC Swabs (Abs 254: 0.1 au max) Includes (100) swabs (50/bag, 2 total bags)	30030	Ships in 5 business days

Custom Coupons

Waters ERA can accommodate your custom requests for coupons of just about any size, shape or material. Please use the general catalog numbers below and provide the information at the bottom to your customer service representative.

	Cat. #	Availability
Polymer	30024	Call for delivery
Metal	30025	Call for delivery
Glass	30027	Call for delivery

Call 800.372.0122 or 303.431.8454 for a quote on your custom coupon needs in the U.S. Contact your sales partner or e-mail your inquiry to ERA_Europe_Sales@waters.com in Ireland. Please have the following information available:

Material	Metal, plastic, rubber, or glass type (stainless steel, polyethylene, etc.).
Grade	Specific grade of material (i.e., 316 stainless, HDPE or borosilicate glass).
Finish	Arguably the most important factor for metals. The finish refers to the surface roughness and is generally stated in units of "Ra". It is most often measured using a profilometer.
Coating	Some materials can be coated to offer desirable surface properties.
Etching	Some materials can be etched with serial numbers, swabbing areas or other information.
Dimensions	Size and shape of the coupon.
Quantity	The quantity of coupons needed.

REFERENCE STANDARDS

Inorganic Carbon

All of Waters ERA's Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation. Inorganic Carbon (IC) is derived from non-living sources and it exists in pharmaceutical waters as carbonate, bicarbonate, and dissolved carbon dioxide (CO₂). Whether your instrument quantifies IC as part of a differential calculation or removes it as part of a "non-purgeable" method of TOC determination, your instrument's ability to remove and/or measure IC must be validated. Below are the most commonly requested IC concentrations for calibration and validation of TOC instrumentation.

Individual CRMs for Inorganic Carbon

	Volume	Cat. #	Availability
0.5 mg/L IC from NIST NaHCO ₃	40 mL	15990	Ships in 1 business day
1.0 mg/L IC from NIST NaHCO ₃	40 mL	16000	Ships in 1 business day
5.0 mg/L IC from NIST NaHCO ₃	40 mL	16300	Ships in 1 business day
10.0 mg/L IC from NIST NaHCO ₃	40 mL	16600	Ships in 1 business day
25.0 mg/L IC from NIST NaHCO ₃	40 mL	16900	Ships in 1 business day
50.0 mg/L IC from NIST NaHCO ₃	40 mL	17130	Ships in 1 business day

Bulk sizes may be available for the Inorganic Carbon standards. Please contact your sales representative if you have questions about any products that are not listed in this publication.

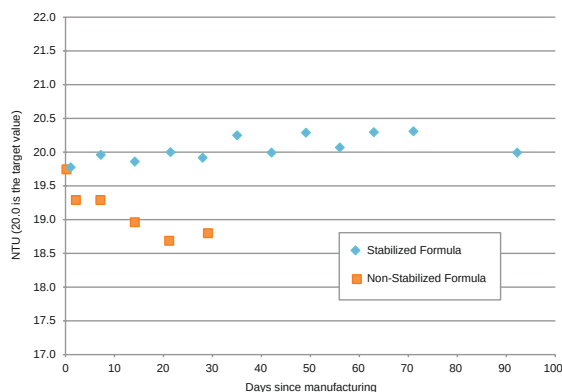
We make the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

Turbidity

Turbidity products are designed specifically for pharmaceutical turbidimetric validation, calibration and monitoring applications including performing particle content/concentration testing, monitoring for fermentation progress, or filter break monitoring.

Preparing a dilution of Formazin using only water results in a non-stabilized solution. In a very short period of time, non-stabilized solutions deviate from their target value. To ensure dilution and calibration accuracy, your turbidimeters should be calibrated using a stabilized Formazin solution.

In the following graph, data for both solutions were collected and recorded over time. Deviation from the target value within the stabilized formula was observed to be within the acceptable error measurement range. Deviation from the target value in the non-stabilized formula exceeded acceptable limits.



Formazin Turbidity Standards

	Volume	Cat. #	Availability
20 NTU	1 Liter	14510	Ships in 1 business day
4000 NTU	500 mL	14500	Ships in 1 business day
Replacement Lamp		20080	Ships in 1 business day



Custom turbidity products are available if you need a standard that is not listed here. Please contact us to inquire about custom turbidity reference materials.

REFERENCE STANDARDS

High-Purity Water

Certified Low-TOC Water suitable for use with your TOC or liquid chromatography system. All of our waters are prepared with the highest level of care throughout the Ion-Exchange-Filtration-RO-UV purification process. Our water must pass a rigorous testing scheme and we guarantee the analysis of each bottle as well as your satisfaction.

USP Purified – Certified Low-TOC Water

	Cat. #	Availability
USP Purified Low-TOC Water – 4 Liter	PW10000	Ships in 5 business days
USP Purified Low-TOC Water – 4 x 4 Liter Case	PW10005	Ships in 5 business days

pH Buffers

Three color-coded pH Buffers that are prepared under our ISO 17034 accreditation. The buffers are mercury free, guaranteed stable for one year, and they are analytically traceable to NIST Standard Reference Materials (SRMs). Waters ERA pH Buffers are designed for routine calibration and/or verification of pH meters and they are supplied with a full certificate of analysis.

pH Buffer Products in 500 mL HDPE Containers

	Cat. #	Availability
pH 4 (Red) 1 Bottle	127	Ships in 1 business day
pH 4 (Red) Case of 6 Bottles	128	Ships in 1 business day
pH 7 (Yellow) 1 Bottle	131	Ships in 1 business day
pH 7 (Yellow) Case of 6 Bottles	132	Ships in 1 business day
pH 10 (Blue) 1 Bottle	135	Ships in 1 business day
pH 10 (Blue) Case of 6 Bottles	136	Ships in 1 business day
(2) Each of pH 4, pH 7, and pH 10	141	Ships in 1 business day

For other pH buffers please contact us at 800.372.0122 and inquire about our custom pH buffers or our line of environmental reagents.

CONDUCTIVITY

Conductivity solutions and kits that support accurate, verifiable, and approved approaches to validating/verifying your conductivity sensors. Whether you are validating detection limits, determining accuracy and precision, or constructing a low-level linearity curve, Waters ERA has the conductivity products and services to support your efforts.

All Waters ERA Conductivity standards are manufactured in a water matrix, and are scrutinized under Waters ERA's ISO 17034 accreditation.

Conductivity Kits

	Cat. #	Availability
Conductivity Validation Kit – Multiple Use Includes (1) 25 µS/cm, (1) 100 µS/cm, (1) 146.93 µS/cm (Solution D), and (1) Reagent Blank for use with Solution D in 500 mL HDPE bottles.	02900	Ships in 5 business days
Solution 25 Test Kit Includes (1) 25 µS/cm standard in a 500 mL HDPE bottle and (5) pre-cleaned 125 mL HDPE wide-mouth bottles.	01100	Ships in 1 business day
Solution 25 Test Kit Includes (1) 25 µS/cm standard in a 1 Liter HDPE bottle and (5) pre-cleaned 125 mL HDPE wide-mouth bottles.	01001	Ships in 1 business day

Low-Level Conductivity (in HDPE bottles)

Our Low-Level conductivity is an excellent verification solution once you have calibrated your system using our ASTM Solution D.

	Cat. #	Availability
25 µS/cm (500 mL)	01300	Ships in 5 business days
25 µS/cm (1 Liter)	01200	Ships in 5 business days

Mid-Level Conductivity (in HDPE bottles)

Manufactured using NIST traceable materials and certified. This potassium chloride (KCl) solution is an excellent calibration or calibration verification solution. This solution is certified by analysis and it does not require the use of a reference blank for accurate calibration or validation.

	Cat. #	Availability
100 µS/cm (125 mL)	02600	Ships in 5 business days
100 µS/cm (250 mL)	02250	Ships in 5 business days
100 µS/cm in (500 mL)	02500	Ships in 5 business days
100 µS/cm (1 Liter)	02400	Ships in 5 business days

Mid-Level Conductivity ASTM Solution D (in HDPE bottles)

ASTM Solution D is the lowest level solution that can be made following a NIST protocol for conductivity solution preparations. This standard makes an excellent calibration or verification solution together with our 25 µS/cm solution. All Solution D products include an associated Reference Blank.

	Cat. #	Availability
Solution D at 146.93 µS/cm (1 Liter)	01700	Ships in 5 business days
Solution D at 146.93 µS/cm (500 mL)	01800	Ships in 5 business days
Solution D at 146.93 µS/cm (125 mL)	01900	Ships in 5 business days
Solution D Test Kit (1 Liter) Includes (1) Solution D, (1) Reference Blank, and (20) pre-cleaned 125 mL wide-mouth HDPE containers.	01500	Ships in 5 business days
Solution D Test Kit (500 mL) Includes (1) Solution D, (1) Reference Blank, and (10) pre-cleaned 125 mL wide-mouth HDPE containers.	01600	Ships in 5 business days

CONDUCTIVITY (continued)

High-Level Conductivity (in HDPE bottles)

ASTM Solutions C and D are prepared prescriptively from KCl and offer superior accuracy at mid- to high-levels for conductivity sensor validation and verification.

	Cat. #	Availability
ASTM Solution C at 1408.8 $\mu\text{S/cm}$ (125 mL)	01610	Ships in 5 business days
ASTM Solution C at 1408.8 $\mu\text{S/cm}$ (1 Liter)	01620	Ships in 5 business days
1000 $\mu\text{S/cm}$ (125 mL)	01410	Ships in 5 business days
1000 $\mu\text{S/cm}$ (500 mL)	01420	Ships in 5 business days
1000 $\mu\text{S/cm}$ (1 Liter)	01430	Ships in 5 business days
10,000 $\mu\text{S/cm}$ (125 mL)	01630	Ships in 5 business days
10,000 $\mu\text{S/cm}$ (1 Liter)	01640	Ships in 5 business days
100,000 $\mu\text{S/cm}$ (125 mL)	01650	Ships in 5 business days
100,000 $\mu\text{S/cm}$ (500 mL)	01655	Ships in 5 business days
100,000 $\mu\text{S/cm}$ (1 Liter)	01660	Ships in 5 business days
200,000 $\mu\text{S/cm}$ (125 mL)	01661	Ships in 5 business days
200,000 $\mu\text{S/cm}$ (500 mL)	01662	Ships in 5 business days
300,000 $\mu\text{S/cm}$ (125 mL)*	01663	Ships in 5 business days
300,000 $\mu\text{S/cm}$ (500 mL)*	01664	Ships in 5 business days
400,000 $\mu\text{S/cm}$ (125 mL)*	01665	Ships in 5 business days
400,000 $\mu\text{S/cm}$ (500 mL)*	01666	Ships in 5 business days
500,000 $\mu\text{S/cm}$ (125 mL)*	01667	Ships in 5 business days
500,000 $\mu\text{S/cm}$ (500 mL)*	01668	Ships in 5 business days

*Dangerous goods.

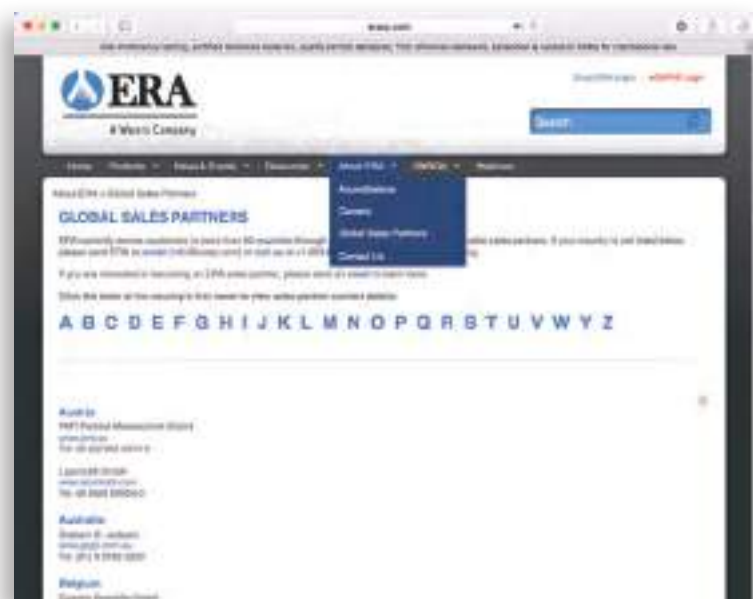


David Kilhefner
Operations Manager
Years with Waters ERA: 11



WATERS ERA GLOBAL DISTRIBUTORS AND SALES PARTNERS

Waters ERA currently serves customers in more than 80 countries through an extensive network of knowledgeable distributors and sales partners. Please visit www.eraqc.com/AboutERA/GlobalSalesPartners to find the name of an authorized distributor in your area or country. Click on the Global Sales Partner link in the About Waters ERA pull down menu. You may also request distributor information by sending an e-mail to ERA_Europe_Sales@waters.com in Europe or info@eraqc.com in the U.S. and the rest of the world. See our website for all of our best-in-class partners across the world.



Waters ERA Subscription Services

We can setup subscription orders to meet your specific needs if your internal quality control program requires regularly scheduled analyses for compliance monitoring or routine instrument maintenance. Subscriptions eliminate the need to place recurring orders. Products are delivered on a regular schedule and they will always be available when you need them. Some of the benefits include:

- Subscriptions can be designed to match your specific needs (e.g., weekly, monthly, etc.)
- Billing occurs for each individual shipment regardless of how you normally pay for vendor supplied materials
- Changes can be made if necessary during the length of the subscription
- You will have the maximum amount of expiration period for your required reference materials
- Subscriptions can be designed for custom products

Please contact Waters ERA to set up a subscription order or if you have any questions about these services.

Sylvia Lowe
Senior International
Customer Support

Years with Waters ERA: 18



Nicole Cotta
Director of
International Channels

Years with Waters ERA: 16



Catalog Number	Product Description	Page
011	Aluminum - 1000 mg/L, 125 mL	77
013	Arsenic - 1000 mg/L, 125 mL	77
015	Beryllium - 1000 mg/L, 125 mL	77
018	Calcium - 1000 mg/L, 125 mL	77
019	Chromium VI (hexavalent) - 1000 mg/L, 125 mL	77
020	Total Chromium - 1000 mg/L, 125 mL	77
021	Cobalt - 1000 mg/L, 125 mL	77
022	Copper - 1000 mg/L, 125 mL	77
023	Iron - 1000 mg/L, 125 mL	77
024	Lead - 1000 mg/L, 125 mL	77
025	Magnesium - 1000 mg/L, 125 mL	77
026	Manganese - 1000 mg/L, 125 mL	77
027	Mercury - 1000 mg/L, 125 mL	77
028	Molybdenum - 1000 mg/L, 125 mL	77
029	Nickel - 1000 mg/L, 125 mL	77
030	Potassium - 1000 mg/L, 125 mL	77
031	Selenium - 1000 mg/L, 125 mL	77
032	Silicon - 1000 mg/L, 125 mL	77
033	Silver - 1000 mg/L, 125 mL	77
034	Sodium - 1000 mg/L, 125 mL	77
035	Strontium - 1000 mg/L, 125 mL	77
036	Thallium - 1000 mg/L, 125 mL	77
037	Tin - 1000 mg/L, 125 mL	77
038	Titanium - 1000 mg/L, 125 mL	77
039	Vanadium - 1000 mg/L, 125 mL	77
040	Zinc - 1000 mg/L, 125 mL	77
042	Chemical Oxygen Demand (COD) - 1000 mg/L, 125 mL	76
043	Total Kjeldahl-Nitrogen (TKN) - 1000 mg/L, 125 mL	76
044	Ammonia as Ammonia (NH ₃) - 1000 mg/L, 125 mL	76
045	Ammonia as Nitrogen (N) - 1000 mg/L, 125 mL	76
046	Bromide - 1000 mg/L, 125 mL	76
047	Chloride - 1000 mg/L, 125 mL	76
048	Cyanide (free) - 1000 mg/L, 125 mL	76
049	Complex Cyanide - 1000 mg/L, 125 mL	76
050	Fluoride - 1000 mg/L, 125 mL	76
051	Nitrate as Nitrate (NO ₃) - 1000 mg/L, 125 mL	76
052	Nitrate as Nitrogen (N) - 1000 mg/L, 125 mL	76
053	Nitrite as Nitrogen (N) - 1000 mg/L, 125 mL	76
057	Metals & Cyanide Blank Soil	43
058	Metals & Cyanide Blank Sand	43
060	Phosphate as Phosphate (PO ₄) - 1000 mg/L, 125 mL	76
061	Phosphate as Phosphorous (P) - 1000 mg/L, 125 mL	76
062	Sulfate - 1000 mg/L, 125 mL	76
063	Phosphorus - 1000 mg/L, 125 mL	77
064	Silica - 1000 mg/L, 125 mL	77
065	Bromate - 1000 mg/L, 125 mL	76
066	Chlorate - 1000 mg/L, 125 mL	76
067	Chlorite - 1000 mg/L, 125 mL	76
068	Perchlorate - 1000 mg/L, 125 mL	76
070	Color	13
070QR	Color	13
071	Sulfide	13
071QR	Sulfide	13
077	Massachusetts Ground Water Enterococci	34

Catalog Number	Product Description	Page
078	Source Water Microbe	34
078QR	Source Water Microbe	34
078A	Source Water Microbe - 9221	34
078AQR	Source Water Microbe - 9221	34
079	Heterotrophic Plate Count	34
080	Potable Water Coliform Microbe	34
081	Enterococci	34
083	Wastewater Coliforms	34
083A	Wastewater Coliform Microbe - 9221	34
084	Heterotrophic Plate Count	34
084QR	Heterotrophic Plate Count	34
085QR	Potable Water Coliform Microbe (Only available as QR)	34
127	pH 4 Pt	78
128	pH 4 Pt - cs of 6	78
131	pH 7 Pt	78
132	pH 7 Pt - cs of 6	78
135	pH 10 Pt	78
136	pH 10 Pt - cs of 6	78
141	pH 4, 7, 10 Pt - cs of 6	78
160	Metals in Sewage Sludge	38
160QR	Metals in Sewage Sludge	38
212	Dissolved Oxygen	13
213	Dissolved Oxygen	13
213QR	Dissolved Oxygen	13
241	Solids	10
244	Sulfite	13
271	Glycols in Water	16
272	1,4-Dioxane	27
401	Glycols in Water	16
401QR	Glycols in Water	16
402	1,4-Dioxane	14
402QR	1,4-Dioxane	14
403	PFAS - Non Potable Water	15
403QR	PFAS - Non Potable Water	15
461	1,4-Dioxane	39
462	Per-and Polyfluoroalkyl Substances (PFAS) in Soil	41
463	Glycols in Soil	41
464	New Jersey EPH in Soil	50
467	Base/Neutrals & Acids in Soil	41
468	Organochlorine Pesticides in Soil	43
469QR	Alaska GRO in Soil (Only available as QR)	49
470QR	Alaska BTEX in Soil (Only available as QR)	49
471QR	Alaska DRO in Soil (Only available as QR)	49
472QR	Alaska RRO in Soil (Only available as QR)	49
473QR	Alaska GRO in Water (Only available as QR)	49
474QR	Alaska BTEX in Water (Only available as QR)	49
475QR	Alaska DRO in Water (Only available as QR)	49
476	Texas Low-Level Fuels (TPH) in Water	49
477	Texas High-Level Fuels (TPH) in Water	49
478	Texas Low-Level Fuels (TPH) in Soil	49
479	Texas High-Level Fuels (TPH) in Soil	49
481	Massachusetts VPH in Water	50
482	Massachusetts EPH in Water	50

Catalog Number	Product Description	Page
483	Massachusetts VPH in Soil	50
484	Massachusetts EPH in Soil	50
487	Nitrogen Pesticides	17
488	Arizona TPH in Soil	49
489	HEM/SGT-HEM	11
490	PCBs in Soil - 1242 Low	42
491	PCBs in Soil - 1242 High	42
492	PCBs in Soil - 1254 Low	42
493	PCBs in Soil - 1254 High	42
494	PCBs in Soil - 1260 Low	42
495	PCBs in Soil - 1260 High	42
496	PCBs in Soil - 1248 Low	42
497	PCBs in Soil - 1248 High	42
499	Solids	10
499QR	Solids	10
500	Trace Metals	12
500QR	Trace Metals	12
501	Total Residual Chlorine (TRC)	14
501QR	Total Residual Chlorine (TRC)	14
502	Cyanide & Phenol	13
502QR	Cyanide & Phenol	13
504	Oil & Grease	11
505	Simple Nutrients	10
505QR	Simple Nutrients	10
506	Minerals	10
506QR	Minerals	10
507	Hardness	10
507QR	Minerals	10
508	Flame AA Trace Metals	78
514	Mercury	12
514QR	Mercury	12
515	Total Phenolics (4-AAP)	13
515QR	Total Phenolics (4-AAP)	13
516	Demand	12
516QR	Demand	12
517	Tin & Titanium	12
517QR	Tin & Titanium	12
518	1 Liter Oil & Grease	11
518QR	1 Liter Oil & Grease	11
518QR	1 Liter Boston Round Oil & Grease	11
519	HEM/SGT-HEM	11
519QR	HEM/SGT-HEM	11
524	ICP Trace Metals	78
525	Complex Nutrients	10
525QR	Complex Nutrients	10
530	Flame AA Cations	78
534	Sulfite	13
534QR	Sulfite	13
538	1,4-Dioxane	39
538QR	1,4-Dioxane	39
540	Metals in Soil	38
540QR	Metals in Soil	38
541	Cyanide in Soil	39
541QR	Cyanide in Soil	39
542	Nutrients in Soil	39
542QR	Nutrients in Soil	39
543	Anions in Soil	39
543QR	Anions in Soil	39
544	TCLP Metals in Soil	38
544QR	TCLP Metals in Soil	38
545	Nutrients in Sludge	39
549	Oil & Grease (O&G) in Soil	39
549QR	Oil & Grease (O&G) in Soil	39

Catalog Number	Product Description	Page
551	Mercury	24
552	pH	26
555	Hardness	24
556	Cyanide	25
557	Organic Carbon	26
558	o-Phosphate Nutrients	25
562	EDB/DBCP/TCP	16
563	PCBs in Oil	42
563QR	PCBs in Oil	42
564	New Jersey EPH in Soil	50
564QR	New Jersey EPH in Soil	50
566	Massachusetts VPH in Water	50
566QR	Massachusetts VPH in Water	50
567	Massachusetts EPH in Water	50
567QR	Massachusetts EPH in Water	50
568	Massachusetts VPH in Soil	50
568QR	Massachusetts VPH in Soil	50
569	Massachusetts EPH in Soil	50
569QR	Massachusetts EPH in Soil	50
570	Total Petroleum Hydrocarbons (TPH) in Soil #1	40
571	Total Petroleum Hydrocarbons (TPH) in Soil #2	40
572QR	Total Petroleum Hydrocarbons (TPH) in Soil #2 (Only available as QR)	40
573	Tin & Titanium	12
574	Mercury	12
576	Wastewater Coliform Microbe	34
576A	Wastewater Coliform Microbe - 9221	34
577	pH	14
578	Demand	12
579	Complex Nutrients	10
580	Hardness	10
581	Minerals	10
582	1 Liter Boston Round Oil & Grease	11
582	1 Liter Oil & Grease	11
584	Simple Nutrients	10
586	Trace Metals	12
587	Total Residual Chlorine (TRC)	14
588	Cyanide & Phenol	13
589	Total Phenolics (4-AAP)	13
590	Metals	24
591	Inorganics	24
592	Turbidity	26
593	Residual Chlorine	25
594	Nitrite	25
595	Source Water Microbe	34
595A	Source Water Microbe - 9221	34
596	Low-Level 1,2,3-TCP	30
597	1,4-Dioxane	14
598	PFAS - Non Potable Water	15
600	Total Petroleum Hydrocarbons (TPH) in Water #1	11
601	Total Petroleum Hydrocarbons (TPH) in Water #2	11
602QR	Total Petroleum Hydrocarbons (TPH) in Water #1 (Only available as QR)	11
602QR	Total Petroleum Hydrocarbons (TPH) in Water #2 (Only available as QR)	11
604	Per-and Polyfluoroalkyl Substances (PFAS) in Soil	41

Catalog Number	Product Description	Page
604QR	Per-and Polyfluoroalkyl Substances (PFAS) in Soil	41
606	Air Filter Radionuclides	62
606QR	Air Filter Radionuclides	62
607	Air Filter Gross Alpha/Beta	62
607QR	Air Filter Gross Alpha/Beta	62
608	Soil Radionuclides	62
608QR	Soil Radionuclides	62
609	Vegetation Radionuclides	62
609QR	Vegetation Radionuclides	62
615	Water Gross Alpha/Beta	63
615QR	Water Gross Alpha/Beta	63
616	Water Tritium	63
616QR	Water Tritium	63
617	Water Radionuclides	63
617QR	Water Radionuclides	63
619	Metals in Sewage Sludge	38
620	Metals in Soil	38
621	Cyanide in Soil	39
623	Volatiles in Soil	39
624	PCBs in Soil	42
625	Low-Level PAHs in Soil	41
626	Chlorinated Acid Herbicides in Soil	42
627	Toxaphene in Soil	43
628	Chlordane in Soil	43
629	TCLP Metals in Soil	38
630	Gasoline Range Organics (GRO) in Soil	39
631	Diesel Range Organics (DRO) in Soil	41
632	Total Petroleum Hydrocarbons (TPH) in Soil #1	40
633	BTEX & MTBE in Soil	40
635	Alaska GRO in Soil	49
636	Alaska BTEX in Soil	49
637	Alaska DRO in Soil	49
638	Alaska RRO in Soil	49
640	Gasoline Range Organics (GRO) in Water	15
641	Diesel Range Organics (DRO) in Water	16
642	Total Petroleum Hydrocarbons (TPH) in Water #1	11
642	Total Petroleum Hydrocarbons (TPH) in Water #2	11
643	BTEX & MTBE in Water	14
645	Alaska GRO in Water	49
646	Alaska BTEX in Water	49
647	Alaska DRO in Water	49
648	Wisconsin Diesel Range Organics (DRO) in Water	50
649	Wisconsin Gasoline Range Organics (GRO/PVOC) in Water	50
658	Hexavalent Chromium	24
658QR	Hexavalent Chromium	24
660	Vanadium	24
660QR	Vanadium	24
661	Color	26
661QR	Color	26
662	UV 254 Absorbance	26
662QR	UV 254 Absorbance	26
663	Dioxin	30
663QR	Dioxin	30

Catalog Number	Product Description	Page
665	Organophosphorus Pesticides (OPP)	17
665QR	Organophosphorus Pesticides (OPP)	17
666	Mercury	24
666QR	Mercury	24
667	o-Phosphate Nutrients	25
667QR	o-Phosphate Nutrients	25
669	Organic Carbon	26
669QR	Organic Carbon	26
670	Total Organic Halides (TOX)	13
670QR	Total Organic Halides (TOX)	13
674	Nitrogen Pesticides	17
674QR	Nitrogen Pesticides	17
676	Chloral Hydrate	25
676QR	Chloral Hydrate	25
677	Low-Level Nitroaromatics & Nitramines	16
677QR	Low-Level Nitroaromatics & Nitramines	16
682	Low-Level 1,2,3-TCP	30
682QR	Low-Level 1,2,3-TCP	30
683	Unregulated Volatiles	27
683QR	Unregulated Volatiles	27
684	Haloacetic Acids (HAA)	25
684QR	Haloacetic Acids (HAA)	25
689	1,4-Dioxane	27
689QR	1,4-Dioxane	27
690	Semivolatiles #1	30
690QR	Semivolatiles #1	30
691	Semivolatiles #2 Herbicides	30
691QR	Semivolatiles #2 Herbicides	30
692	EDB/DBCP/TCP	16
692QR	EDB/DBCP/TCP	16
693	Hardness	24
693QR	Hardness	24
694	Potable Water Coliform Microbe	34
695	Nitrite	25
695QR	Nitrite	25
696	Residual Chlorine	25
696QR	Residual Chlorine	25
697	Metals	24
697QR	Metals	24
698	Inorganics	24
698QR	Inorganics	24
699	Turbidity	26
699QR	Turbidity	26
700	Toxaphene	28
700QR	Toxaphene	28
702	Halomethanes (THMs)	27
702QR	Halomethanes (THMs)	27
703	Regulated Volatiles	27
703QR	Regulated Volatiles	27
704	Chlorinated Acid Herbicides	30
704QR	Chlorinated Acid Herbicides	30
705	Chlordane	28
705QR	Chlordane	28
706	EDB/DBCP/TCP	30
706QR	EDB/DBCP/TCP	30
707	Carbamate/Carbamoxylxime Pesticides	28
707QR	Carbamate/Carbamoxylxime Pesticides	28

Catalog Number	Product Description	Page
708	PCBs as Decachlorobiphenyl	30
708QR	PCBs as Decachlorobiphenyl	30
709	Pesticides	28
709QR	Pesticides	28
710	Volatiles	14
710QR	Volatiles	14
711	Base/Neutrals	16
711QR	Base/Neutrals	16
712	Acids	16
712QR	Acids	16
713	Organochlorine Pesticides	17
713QR	Organochlorine Pesticides	17
715	Low-Level PAHs	16
715QR	Low-Level PAHs	16
716	Chlordane	17
716QR	Chlordane	17
717	Toxaphene	17
717QR	Toxaphene	17
718	Chlorinated Acid Herbicides	15
718QR	Chlorinated Acid Herbicides	15
721	Volatiles in Soil	39
721QR	Volatiles in Soil	39
722	Low-Level PAHs in Soil	41
722QR	Low-Level PAHs in Soil	41
723	Chlorinated Acid Herbicides in Soil	42
723QR	Chlorinated Acid Herbicides in Soil	42
724	Toxaphene in Soil	43
724QR	Toxaphene in Soil	43
725	Chlordane in Soil	43
725QR	Chlordane in Soil	43
726	PCBs in Soil	42
726QR	PCBs in Soil	42
727	Base/Neutrals & Acids in Soil	41
727QR	Base/Neutrals & Acids in Soil	41
728	Organochlorine Pesticides in Soil	43
728QR	Organochlorine Pesticides in Soil	43
729S	PCBs in Oil	15
729SQR	PCBs in Oil	15
730	TCLP Volatiles	40
730QR	TCLP Volatiles	40
731	PFAS Ground Water & Surface Water	28
731QR	PFAS Ground Water & Surface Water	28
732	TCLP Organochlorine Pesticides	40
732QR	TCLP Organochlorine Pesticides	40
734S	PCBs in Water	15
734SQR	PCBs in Water	15
735	PFAS Drinking Water	28
735QR	PFAS Drinking Water	28
737	TCLP Semivolatiles	40
737QR	TCLP Semivolatiles	40
739	Simple Nutrients	18
740	Trace Metals	18
741	Complex Nutrients	18
743	Demand	18
750	Iodine-131	60
750QR	Iodine-131	60
751	Naturals	60
751QR	Naturals	60
752	Tritium	60

Catalog Number	Product Description	Page
752QR	Tritium	60
757	Strontium-89/90	60
757QR	Strontium-89/90	60
758	Gamma Emitters	60
758QR	Gamma Emitters	60
759	Gross Alpha/Beta	60
759QR	Gross Alpha/Beta	60
760	BTEX & MTBE in Water	14
760QR	BTEX & MTBE in Water	14
761	BTEX & MTBE in Soil	40
761QR	BTEX & MTBE in Soil	40
762	Gasoline Range Organics (GRO) in Water	15
762QR	Gasoline Range Organics (GRO) in Water	15
763	Gasoline Range Organics (GRO) in Soil	39
763QR	Gasoline Range Organics (GRO) in Soil	39
764	Diesel Range Organics (DRO) in Water	16
764QR	Diesel Range Organics (DRO) in Water	16
765	Diesel Range Organics (DRO) in Soil	41
765QR	Diesel Range Organics (DRO) in Soil	41
769	Bromide	14
769QR	Bromide	14
770	Nitrite	10
770QR	Nitrite	10
772	Wisconsin Diesel Range Organics (DRO) in Water	50
772QR	Wisconsin Diesel Range Organics (DRO) in Water	50
773	Wisconsin Gasoline Range Organics (GRO/PVOC) in Water	50
773QR	Wisconsin Gasoline Range Organics (GRO/PVOC) in Water	50
775	Silica	13
775QR	Silica	13
776	Surfactants-MBAS	13
776QR	Surfactants-MBAS	13
777	Turbidity	13
777QR	Turbidity	13
779	pH	26
779QR	pH	26
784	Surfactants-MBAS	26
784QR	Surfactants-MBAS	26
785	Silica	26
785QR	Silica	26
786AQR	Wastewater Coliform Microbe - 9221	34
786QR	Wastewater Coliform Microbe	34
787QR	Enterococci	34
794	Texas Low-Level Fuels (TPH) in Water	49
794QR	Texas Low-Level Fuels (TPH) in Water	49
795	Texas High-Level Fuels (TPH) in Water	49
795QR	Texas High-Level Fuels (TPH) in Water	49
796	Texas Low-Level Fuels (TPH) in Soil	49
796QR	Texas Low-Level Fuels (TPH) in Soil	49

Catalog Number	Product Description	Page
797	Texas High-Level Fuels (TPH) in Soil	49
797QR	Texas High-Level Fuels (TPH) in Soil	49
798	Arizona TPH in Soil	49
798QR	Arizona TPH in Soil	49
800	Air Filter Radionuclides	62
801	Air Filter Gross Alpha/Beta	62
802	Soil Radionuclides	62
803	Vegetation Radionuclides	62
804	Water Radionuclides	63
805	Water Gross Alpha/Beta	63
806	Water Tritium	63
807	Strontium-89/91	60
808	Gamma Emitters	60
809	Gross Alpha/Beta	60
810	Iodine-131	60
811	Naturals	60
812	Tritium	60
817	PCBs in Oil	42
818	1 Liter Boston Round Oil & Grease	11
820	PCBs in Oil - 1242 Low	42
821	PCBs in Oil - 1242 High	42
822	PCBs in Oil - 1254 Low	42
823	PCBs in Oil - 1254 High	42
824	PCBs in Oil - 1260 Low	42
825	PCBs in Oil - 1260 High	42
826	PCBs in Oil - 1248 Low	42
827	PCBs in Oil - 1248 High	42
829	Chlorinated Acid Herbicides	15
830	Volatiles	14
831	Organochlorine Pesticides	17
832S	PCBs in Water	15
833	Base/Neutrals	16
834	Acids	16
835S	PCBs in Oil	15
836	Low-Level PAHs	16
837	Chlordane	17
838	Toxaphene	17
839	PCBs as Decachlorobiphenyl	30
840	Regulated Volatiles	27
841	Unregulated Volatiles	27
842	Halomethanes (THMs)	27
844	Toxaphene	28
845	Chlordane	28
846	Carbamate/Carbamoxylxime Pesticides	28
847	EDB/DBCP/TCP	30
848	Semivolatiles #1	30
849	Semivolatiles #2 Herbicides	30
850	Pesticides	28
851	Chlorinated Acid Herbicides	30
852	Haloacetic Acids (HAA)	25
853	Chloral Hydrate	25
854	Hexavalent Chromium	24
856	Vanadium	24
857	Dioxin	30
858	Uranium	24
859	Color	26
860	PCBs in Water Standards - Aroclor 1016	15
861	PCBs in Water Standards - Aroclor 1221	15

Catalog Number	Product Description	Page
862	PCBs in Water Standards - Aroclor 1232	15
863	PCBs in Water Standards - Aroclor 1242	15
864	PCBs in Water Standards - Aroclor 1248	15
865	PCBs in Water Standards - Aroclor 1254	15
866	PCBs in Water Standards - Aroclor 1260	15
867	Oil & Grease (O&G) in Soil	39
869	Nutrients in Soil	39
870	Ready-to-Use VOAs in Soil	40
871	Nitroaromatics & Nitramines in Soil	41
873	Anions in Soil	39
874	Ignitability/Flash Point	38
875	Corrosivity/pH in Soil	38
876	Hexavalent Chromium in Soil	38
878	Organophosphorus Pesticides (OPP) in Soil	43
879	Carbamate Pesticides in Soil	43
880	Enterococci	34
881	Low-Level Total Residual Chlorine (TRC)	14
882	Color	13
883	Settleable Solids	10
884	Volatile Solids	10
885	Acidity	13
886	Boron	14
887	Bromide	14
888	Nitrite	10
890	Silica	13
891	Sulfide	13
892	Surfactants-MBAS	13
893	Turbidity	13
895	Total Organic Halides (TOX)	13
896	Low-Level Mercury	12
898	Hexavalent Chromium	12
899	Carbamate Pesticides	17
900	Corrosivity	26
901	Surfactants-MBAS	26
902	Silica	26
903	Perchlorate	26
904	UV 254 Absorbance	26
905	Gasoline Additives	27
908	Carbamate Pesticides	17
908QR	Carbamate Pesticides	17
909	Gasoline Additives	27
909QR	Gasoline Additives	27
910	Perchlorate	26
910QR	Perchlorate	26
911	Settleable Solids	10
911QR	Settleable Solids	10
913	Volatile Solids	10
913QR	Volatile Solids	10
914	Corrosivity/pH in Soil	38
914QR	Corrosivity/pH in Soil	38
915	Acidity	13
915QR	Acidity	13
917	Low-Level Total Residual Chlorine (TRC)	14
917QR	Low-Level Total Residual Chlorine (TRC)	14
919	Boron	14

Catalog Number	Product Description	Page
919QR	Boron	14
920	Nitroaromatics & Nitramines in Soil	41
920QR	Nitroaromatics & Nitramines in Soil	41
921	Hexavalent Chromium in Soil	38
921QR	Hexavalent Chromium in Soil	38
924	Ready-to-Use VOAs in Soil	40
924QR	Ready-to-Use VOAs in Soil	40
925	Organophosphorus Pesticide (OPP) in Soil	43
925QR	Organophosphorus Pesticide (OPP) in Soil	43
926	Carbamate Pesticides in Soil	43
926QR	Carbamate Pesticides in Soil	43
928	Glycols in Soil	41
928QR	Glycols in Soil	41
929	PFAS Ground Water & Surface Water	28
930	Uranium	24
930QR	Uranium	24
931	Low-Level Mercury	12
931QR	Low-Level Mercury	12
932	Low-Level Nitroaromatics & Nitramines	16
934	Organophosphorus Pesticides (OPP)	17
935	Heterotrophic Plate Count	34
960	PFAS Drinking Water	28
974	Chemical Oxygen Demand (COD) - 1000 mg/L, 500 mL	76
975	MBAS/LAS Surfactants - 1000 mg/L	76
976	Total Organic Halides (TOX) - 1000 mg/L, 2 mL	76
977	pH	14
977QR	pH	14
978	Total Organic Carbon (TOC) - 1000mg/L, 500 mL	76
979	Ignitability/Flash Point	38
979QR	Ignitability/Flash Point	38
980	Corrosivity	26
980QR	Corrosivity	26
981	Ion Chromatography	77
982	Phenol - 1000mg/L, 500 mL	76
983	Cyanide	25
983QR	Cyanide	25
984	Hexavalent Chromium	12
984QR	Hexavalent Chromium	12
985	Ammonia as Nitrogen (N) - 1000 mg/L, 500 mL	76
986	Ammonia as Ammonia (NH ₃) - 1000 mg/L, 500 mL	76
987	Bromide - 1000 mg/L, 500 mL	76
988	Chloride - 1000 mg/L, 500 mL	76
989	Fluoride - 1000 mg/L, 500 mL	76
990	Nitrite as Nitrogen (N) - 1000 mg/L, 500 mL	76
991	Nitrate as Nitrogen (N) - 1000 mg/L, 500 mL	76
992	Nitrate as Nitrate (NO ₃) - 1000 mg/L, 500 mL	76
993	Phosphate as Phosphorous (P) - 1000 mg/L, 500 mL	76
994	Phosphate as Phosphate (PO ₄) - 1000 mg/L, 500 mL	76
995	Sulfate - 1000 mg/L, 500 mL	76

Catalog Number	Product Description	Page
996	Total Kjeldahl-Nitrogen (TKN) - 1000 mg/L, 500 mL	76
997	Cyanide (free) - 1000 mg/L, 500 mL	76
998	Complex Cyanide - 1000 mg/L, 500 mL	76
999	Sulfide 1000 mg/L, 10 mL	76
1000	Volatiles in Gas Cylinder	54
1001	Volatiles on Sorbent	54
1010	Semivolatiles on Polyurethane Foam	55
1011	Organochlorine Pesticides on Polyurethane Foam	55
1012	PCBs on Polyurethane Foam	55
1013	PAHs on Polyurethane Foam	55
1014	Aldehydes & Ketones on Sorbent	55
1025	Metals on Filter Paper	56
1026	Metals in Impinger Solution	56
1027	Mercury on Filter Paper	56
1028	Mercury in Impinger Solution	56
1029	Lead on Filter Paper	56
1030	Lead in Impinger Solution	56
1031	Chromium on Filter Paper	56
1032	Hexavalent Chromium in Impinger Solution	56
1040	Hydrogen Halides & Halogens in Impinger Solution	57
1041	Fluoride in Impinger Solution	57
1042	Nitrogen Oxide in Impinger Solution	57
1043	Sulfur Dioxide in Impinger Solution	57
1044	Sulfuric Acid & Sulfur Dioxide in Impinger Solution	57
1045	Ammonia in Impinger Solution	57
1050	Particulate Matter on Filter Paper	57
1051	Particulate Matter in Impinger Solution	57
1100	Volatiles in Gas Cylinder	54
1100QR	Volatiles in Gas Cylinder	54
1101	Volatiles on Sorbent	54
1101QR	Volatiles on Sorbent	54
1110	Semivolatiles on Polyurethane Foam	55
1110QR	Semivolatiles on Polyurethane Foam	55
1111	Organochlorine Pesticides on Polyurethane Foam	55
1111QR	Organochlorine Pesticides on Polyurethane Foam	55
1112	PCBs on Polyurethane Foam	55
1112QR	PCBs on Polyurethane Foam	55
1113	PAHs on Polyurethane Foam	55
1113QR	PAHs on Polyurethane Foam	55
1114	Aldehydes & Ketones on Sorbent	55
1114QR	Aldehydes & Ketones on Sorbent	55
1125	Metals on Filter Paper	56
1125QR	Metals on Filter Paper	56
1126	Metals in Impinger Solution	56
1126QR	Metals in Impinger Solution	56
1127	Mercury on Filter Paper	56
1127QR	Mercury on Filter Paper	56
1128	Mercury in Impinger Solution	56

Catalog Number	Product Description	Page
1128QR	Mercury in Impinger Solution	56
1129	Lead on Filter Paper	56
1129QR	Lead on Filter Paper	56
1130	Lead in Impinger Solution	56
1130QR	Lead in Impinger Solution	56
1131	Chromium on Filter Paper	56
1131QR	Chromium on Filter Paper	56
1132	Hexavalent Chromium in Impinger Solution	56
1132QR	Hexavalent Chromium in Impinger Solution	56
1140	Hydrogen Halides & Halogens in Impinger Solution	57
1140QR	Hydrogen Halides & Halogens in Impinger Solution	57
1141	Fluoride in Impinger Solution	57
1141QR	Fluoride in Impinger Solution	57
1142	Nitrogen Oxide in Impinger Solution	57
1142QR	Nitrogen Oxide in Impinger Solution	57
1143	Sulfur Dioxide in Impinger Solution	57
1143QR	Sulfur Dioxide in Impinger Solution	57
1144	Sulfuric Acid & Sulfur Dioxide in Impinger Solution	57
1144QR	Sulfuric Acid & Sulfur Dioxide in Impinger Solution	57
1145	Ammonia in Impinger Solution	57
1145QR	Ammonia in Impinger Solution	57
1150	Particulate Matter on Filter Paper	57
1150QR	Particulate Matter on Filter Paper	57
1151	Particulate Matter in Impinger Solution	57
1151QR	Particulate Matter in Impinger Solution	57
1240	Simple Nutrients	68
1241	Complex Nutrients in Hard Water	68
1242	Demand	66
1243	Solids Concentrate	67
1244	Metals	67
1248	Hexavalent Chromium	67
1249	Common Inorganics	66
1250	Total Phenolics (4-AAP)	67
1253	Organochlorine Pesticides	68
1254	PAHs	69
1255	PCB Congeners	69
1256	Organophosphorus Pesticides	68
1257	Triazines, Urons, and Acid Herbicides	69
1319	Ammonia as N	25
1341	Mercury	67
1345	Cyanide	66
1346	Common Inorganics in Hard Water	66
1347	Common Inorganics in Soft Water	66
1348	Simple Nutrients in Hard Water	68
1349	Simple Nutrients in Soft Water	68
1353	Color	66

Catalog Number	Product Description	Page
1354	Demand	66
1355	High Solids	67
1358	Chlorine	66
1359	Ammonia as N	25
1359QR	Ammonia as N	25
1370	Volatiles	69
1371	Trihalomethanes	69
1372	Semivolatiles	69
1373	PCB Congeners	69
1374	Organochlorine Pesticides	68
1375	Triazines, Urons, and Acid Herbicides	69
1500	Perchlorate	13
1501	Perchlorate	13
1501QR	Perchlorate	13
4013	QC Plus - Demand	19
4023	QC Plus - Nutrients	19
4030	Solids Concentrate	10
4032	Solids Concentrate	10
4032QR	Solids Concentrate	10
4033	QC Plus - Solids	20
4053	QC Plus - Minerals	19
4063	QC Plus - pH	19
4083	QC Plus - Total Phenolics	20
4093	QC Plus - Total Cyanide	20
4103	QC Plus - Total Residual Chlorine	20
4120	Oil & Grease Concentrate	11
4122	Oil & Grease Concentrate	11
4122QR	Oil & Grease Concentrate	11
4123	QC Plus - Oil & Grease	19
4183	QC Plus - Hexavalent Chromium	19
4400	Uranium	12
4402	Uranium	12
4402QR	Uranium	12
4423	QC Plus - Fluoride	19
4450	Volatile Aromatics	14
4452	Volatile Aromatics	14
4452QR	Volatile Aromatics	14
4880	PAH-GC & GCMS	16
4882	PAH-GC & GCMS	16
4882QR	PAH-GC & GCMS	16
4990	Lithium	12
4992	Lithium	12
4992QR	Lithium	12
5150	Solids Concentrate	24
5152	Solids Concentrate	24
5152QR	Solids Concentrate	24
5260	Inorganic Disinfection #2	25
5262	Inorganic Disinfection #2	25
5262QR	Inorganic Disinfection #2	25
5270	Inorganic Disinfection #1	25
5272	Inorganic Disinfection #1	25
5272QR	Inorganic Disinfection #1	25
14500	4000 NTU Formazin Turbidity Standard	101
14510	20 NTU Stabilized Turbidity Cal	101
20080	Replacement Lamp	101
78102	Ammonium as NH ₄ - 100 mg/L, 125 mL	76
78104	Ammonium as N - 100 mg/L, 125 mL	76
78202	Acetate - 1000 mg/L, 125 mL	76

Catalog Number	Product Description	Page
78212	Iodide - 1000 mg/L, 125 mL	76
182002	Sodium Thiosulfate 0.0394 N, 1 gallon	83
182003	Sodium Thiosulfate 0.0394 N, 5 gallons	83
183001	Potassium Permananate 0.1 N, 2.5 Liter	83
183002	Sodium Carbonate 25 g/L, 10 Liter	83
183003	Sulfuric Acid 0.05 N, 1L	83
183004	pH 2 Buffer, No Color, 1 Pint	82
183005	pH 4 Buffer, No Color, 1 Pint	82
183006	pH 7 Buffer, No Color, 1 Pint	82
183007	pH 10 Buffer, No Color, 1 Pint	82
183008	Manganese Std. 40 g/L, 1 liter	83
183009	Manganese Std. 55 g/L, 1 liter	83
183010	Hydrochloric Acid 0.1 N, 2.5 L	82
183011	Ferrous Ammonium Sulfate 0.25N, 1 Gallon	83
183012	pH 6 Buffer, Concentrated Buffer, No Color, 2.5 L	82
183013	pH 7 Buffer, Concentrated Buffer, No Color, 2.5 L	82
183016	Hydrochloric Acid 0.645 N, 5 gallon	82
183017	Barium Perchlorate 0.1 N, 1 liter	83
183026	Hydrochloric Acid 0.01 N, 1 liter	82
183028	Hydrochloric Acid 0.01 N, 1 gallon	82
183030	Hydrochloric Acid 0.1 N, 1 liter	82
183032	Hydrochloric Acid 0.1 N, 1 gallon	82
183034	Hydrochloric Acid 0.25 N, 1 liter	82
183036	Hydrochloric Acid 0.25 N, 1 gallon	82
183038	Hydrochloric Acid 0.5 N, 1 liter	82
183040	Hydrochloric Acid 0.5 N, 1 gallon	82
183042	Hydrochloric Acid 1.0 N, 1 liter	82
183044	Hydrochloric Acid 1.0 N, 1 gallon	82
183048	Sulfuric Acid 0.01 N, 1 liter	83
183049	Sulfuric Acid 0.01 N, 1 gallon	83
183050	Sulfuric Acid 0.02 N, 1 liter	83
183052	Sulfuric Acid 0.02 N, 1 gallon	83
183054	Sulfuric Acid 0.1 N, 1 liter	83
183056	Sulfuric Acid 0.1 N, 1 gallon	83
183058	Sulfuric Acid 0.2 N, 1 liter	83
183060	Sulfuric Acid 0.2 N, 1 gallon	83
183062	Sulfuric Acid 0.5 N, 1 liter	83
183064	Sulfuric Acid 0.5 N, 1 gallon	83
183066	Sulfuric Acid 1 N, 1 liter	83

Catalog Number	Product Description	Page
183068	Sulfuric Acid 1 N, 1 gallon	83
183070	Sodium Hydroxide 0.01 N, 1 liter	83
183072	Sodium Hydroxide 0.01 N, 1 gallon	83
183074	Sodium Hydroxide 0.1 N, 1 liter	83
183076	Sodium Hydroxide 0.1 N, 1 gallon	83
183078	Sodium Hydroxide 0.25 N, 1 liter	83
183080	Sodium Hydroxide 0.25 N, 1 gallon	83
183082	Sodium Hydroxide 0.50 N, 1 gallon	83
183086	Sodium Hydroxide 1.0 N, 1 liter	83
183088	Sodium Hydroxide 1.0 N, 1 gallon	83
183090	Potassium Hydroxide 0.01 N, 1 liter	82
183092	Potassium Hydroxide 0.01 N, 1 gallon	82
183094	Potassium Hydroxide 0.1 N, 1 liter	82
183096	Potassium Hydroxide 0.1 N, 1 gallon	82
183098	Potassium Hydroxide 0.25 N, 1 liter	82
183100	Potassium Hydroxide 0.25 N, 1 gallon	82
183102	Potassium Hydroxide 0.50 N, 1 liter	82
183104	Potassium Hydroxide 0.50 N, 1 gallon	82
183110	Silver Nitrate 0.1 N, 1 liter	83
183112	Silver Nitrate 0.1 N, 1 gallon	83
183114	Silver Nitrate 0.25 N, 1 liter	83
183116	Silver Nitrate 0.25 N, 1 gallon	83
183118	EDTA 0.1 M, 1 L	82
183120	EDTA 0.1 M, 1 gallon	82

Catalog Number	Product Description	Page
183126	Sodium Thiosulfate 0.1 N, 1 liter	83
183128	Sodium Thiosulfate 0.1 N, 1 gallon	83
183130	Sodium Thiosulfate 0.25 N, 1 Liter	83
183132	Sodium Thiosulfate 0.25 N, 1 gallon	83
183156	Sodium Hydroxide 1.0 N, 5 gallon	83
183160	EDTA 0.01 M, 1 gallon	82
183162	TISAB (Fluoride Buffer, 1 Gallon)	83
183168	Phenolphthalein 0.5%, 1 pint	83
183172	Sodium Carbonate 1.0 N, 1 Liter	83
183180	pH 4 Buffer, No Color, 1 Liter	82
183181	pH 4 Buffer, No Color, 1 gallon	82
183182	pH 4 Buffer, No Color, 5 gallon	82
183184	pH 2 Buffer, No Color, 1 Liter	82
183186	pH 2 Buffer, No Color, 5 gallon	82
183187	pH 7 Buffer, No Color, 1 Liter	82
183188	pH 7 Buffer, No Color, 1 gallon	82
183189	pH 7 Buffer, No Color, 5 gallon	82
183190	pH 10 Buffer, No Color, 1 Liter	82
183191	pH 10 Buffer, No Color, 1 gallon	82
183192	pH 10 Buffer, No Color, 5 gallon	82
183211	Potassium Hydroxide 0.1 N in IPA, 1 gallon	82
183212	EDTA 0.02 M, 1 gallon	82
183213	Potassium Hydroxide (KOH) 5M/KCN 1 M, 5 gallon	83
183217	pH 4 Buffer, Red, 5 Gallon	82
183218	pH 7 Buffer, Yellow, 5 Gallon	82
183219	pH 10 Buffer, Blue, 5 Gallon	82
183221	Potassium Dichromate 0.1 N, 1 Liter	83
184001	Hydrochloric Acid 0.1 N in IPA, 1 liter	82
187026	pH 4 Buffer, Red, 1 Gallon	82
187027	pH 2 Buffer, No Color, 1 gallon	82
187028	pH 7 Buffer, Yellow, 1 Gallon	82

Catalog Number	Product Description	Page
187029	pH 10 Buffer, Blue, 1 Gallon	82
187503	Hydrochloric Acid 0.01 N, 5 gallon	82
187506	Hydrochloric Acid 0.1 N, 5 gallon	82
187507	Hydrochloric Acid 0.25 N, 5 gallon	82
187508	Hydrochloric Acid 0.5 N, 5 gallon	82
187510	Hydrochloric Acid 1.0 N, 5 gallon	82
187511	Sulfuric Acid 0.02 N, 5 gallon	83
187512	Sulfuric Acid 0.1 N, 5 gallon	83
187514	Sulfuric Acid 0.2 N, 5 gallon	83
187515	Sulfuric Acid 1 N, 5 gallon	83
187516	Sodium Hydroxide 0.01 N, 5 gallon	83
187517	Sodium Hydroxide 0.1 N, 5 gallon	83
187518	Sodium Hydroxide 0.25 N, 5 gallon	83
187519	Sodium Hydroxide 0.50 N, 5 gallon	83
187521	Potassium Hydroxide 0.01 N, 5 gallon	82
187522	Potassium Hydroxide 0.1 N, 5 gallon	82
187523	Potassium Hydroxide 0.25 N, 5 gallon	82
187524	Potassium Hydroxide 0.50 N, 5 gallon	82
187525	EDTA 0.1 M, 5 gallon	82
K01	Bismuth	77
K08	Yttrium	77
K10	Cations by Ion Chromatography - 100 mg/L	76
K11	Cations by Ion Chromatography - 100 mg/L	76

A	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Acetate		76								
Acidity									13	
Acids							41		16	
Air Filter					62					
Aldehydes & Ketones	55									
Aluminum		77								
Americium-241					61					
Ammonia	57	76								
Ammonia as N									25	
Ammonium		76								
Anions		77					39			
Aromatics									16	
Arsenic		77								

B	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Barium					61					
Base/Neutrals							41		16	
Beryllium		77								
Biochemical Oxygen Demand (BOD)					See Demand					
Bismuth		77								
Boron									14	
Boston Round Oil & Grease									11	
Bromate		76								
Bromide		76							14	
BTEX & MTBE							40	48, 49	14	

C	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Calcium		76, 77								
Carbamate							43		17	28
Cations		76, 77, 78								
Cesium					61					
Chemical Oxygen Demand (COD)*		76								
Chloral Hydrate									25	
Chlorate		76								
Chlordane							43		17	28
Chloride		76								
Chlorinated Acid							42		15	30
Chlorine			66						14	25
Chlorite		76								
Chromium	56	77								
Cobalt		77								
Cobalt-60					61					
Color			66						13	26
Complex Cyanide		76								
Complex Nutrients			68						10, 18	
Copper		77								
Corrosivity							38			26
Cyanide		76	66				39, 43		13, 20	26

*See Demand

D	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Demand			66						12, 18, 19	
Diesel Range Organics (DRO)							41	48, 49	16	
1,4-Dioxane										27
Dioxin										30
Dissolved Oxygen									13	

E	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
EDB/DBCP/TCP									16	30
EDTA						82				
Massachusetts EPH								50		
New Jersey EPH								50		
Enterococci				34						

F	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Fluoride	57	76							19	

G	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Gamma Emitters					60					
Gasoline Additives										27
Gasoline Range Organics (GRO)							39	48, 49, 50	15	
Glycols							41		16	
Gross Alpha/Beta					60, 61, 62, 63					

H	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Haloacetic Acids (HAA)										25
Halomethanes (THMs)										27
Hardness									10, 18	24
HCl						82				
HEM/SGT-HEM									11	
Herbicides			69				41		15	30
Heterotrophic Plate Count				34						
Hexavalent Chromium	56		67				38		12, 19	24
Hydrogen Halides & Halogens	57									

I	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
ICP-MS Trace Metals/ Major Cations		77								
Ignitability/Flash Point							38			
Inorganic Disinfection										25
Inorganics	57	76	66, 67				39			24
Iodide		76								
Iodine-131					60					
Ion Chromatography		76, 77								
Iron		77								

L	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Lead	56	77								
Lithium		77							12	
Low-Level 1,2,3-TCP										30
Low-Level Mercury									12	
Low-Level Nitroaromatics & Nitramines									16	
Low-Level PAHs							41		16	
Low-Level Total Residual Chlorine (TRC)									14	

M	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Magnesium		76, 77								
Manganese		77				83				
Massachusetts Ground Water Enterococci				34						
Mercury	56	77	67						12	24
Metals	56	77, 78	67				38, 43			24
Minerals									12, 18	24
Molybdenum		77								

N	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Naturals					60					
Nickel		77								
Nitrate		76								
Nitrite		76							10	25
Nitroaromatics & Nitramines							41		16	
Nitrogen Oxide	57									
Nitrogen Pesticides									17	
Nutrients			68				39		10, 18, 19	25

O	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Oil & Grease							39		11, 18, 19	
Oil & Grease Concentrate									11	
o-Phosphate Nutrients										25
Organic Carbon										26
Organochlorine Pesticides	55		68				41, 43		17	
Organophosphorus Pesticides (OPP)			68				43		17	

P	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
PAHs	55		69				41		16	
Particulate Matter	57									
PCBs	55		69				42		15	30
Perchlorate		76				83			13	26, 30
Pesticides	55		68				41, 43		17	28
PFAS							41		15	28
pH		78				82	38		14, 18, 19	26
Phenol		76							13, 20	
Phosphate		76								
Phosphorus		77								
Plutonium					61					
Potable Water Coliform Microbe				34						
Potassium		77					82, 83			

Q	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
QC-Plus									19, 20	

R	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Radium					61					
Radionuclides					62, 63					
Ready-to-Use VOAs in Soil							40			
Regulated Volatiles										27
Residual Chlorine									14, 20	25
Residual Range Organic fuels (RRO)								49		

S	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Selenium		77								
Semivolatiles	55		69				40		16	30
Settleable Solids									10	
Silica		77							13	26
Silicon		77								
Silver		77								
Silver Nitrate						83				
Simple Nutrients			68						10, 18, 19	
Sodium		77				83				
Sodium Hydroxide						83				
Sodium Thiosulfate						83				
Solids/Solids Concentrate			67						10, 18, 20	24
Source Water Microbe				34						
Strontium		77			60, 61					
Sulfate		76								
Sulfide		76							13	
Sulfite									13	
Sulfur Dioxide	57									
Sulfuric Acid	57					83				
Surfactants-MBAS		76							13	26

T	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
TCLP							40			
Thallium		77								
Tin		77								
Tin & Titanium									12	
Titanium		77							12	
Total Cyanide									20	
Total Kjeldahl Nitrogen (TKN)		76								
Total Organic Carbon (TOC)		76*								
Total Organic Halides (TOX)		76							13	
Total Petroleum Hydrocarbons (TPH)							40	48, 49	11	
Total Phenolics			67						13, 20	
Total Residual Chlorine									14, 20	
Toxaphene							43		17	28
Trace Metals		77, 78							12, 18	24
Triazines, Urons, and Acid Herbicides			69							
Trihalomethanes			69							
Tritium					60, 61, 63					
Turbidity									13	26

*See Demand

U	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Unregulated Volatiles										27
Uranium					61				12	24
UV 248 Absorbance										26

V	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Vanadium		77								24
Volatiles	54		69				39, 40		14	27
Volatile Aromatics									14	
Volatile Solids									10	
VPH								50		

W	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Washington HEM/SGT-HEM								50		

Y	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Yttrium		77								

Z	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Zinc		77			61					

AE	Air & Emissions	RChem	Radiochemistry	WP	Water Pollution
Cal	Calibration	RGT	Reagents	WS	Water Supply
LLCRM	Low-Level CRMs	Soil	Soil		
MB	Microbiology	UST	Underground Storage Tank		

A	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Acenaphthene	55		69				41		16	30
Acenaphthylene	55		69				41		16	30
Acetaldehyde	55									
Acetate		76								
Acetone	54-55						39-40		14	
Acetonitrile	54						39-40		14	
Acidity as CaCO ₃									13	
Acifluorfen							42		15	30
Acrolein	54						39-40		14	
Acrylonitrile	54								14	
Actinium				62						
Alachlor									17	28
Aldicarb							43		17	28
Aldicarb sulfone							43		17	28
Aldicarb sulfide							43		17	28
Aldrin	55		68				43		17	28
Alkalinity			66						10, 18, 19	24
Aluminum		77-78	67				38		12, 18, 20	24
Americium-241					62-63					
Ametryn									17	
2-Amino-1-methylbenzene (o-Toluidine)							41		16	
4-Amino-2,6-dinitrotoluene							41		16	
2-Amino-4,6-dinitrotoluene							41		16	
Ammonia as N		76	68				39		10, 18, 19	
Ammonia as NH ₃		76								
Ammonium	57		68							
Ammonium as N	76									
Ammonium as NH ₄		76	68							
tert-Amyl methyl ether (TAME)										27
Anilazine									17	
Aniline	55						41		16	
Anthracene	57		69				41		16	30
Antimony	56	77-78	67				38		12, 18, 20	24
Aroclor	55						42		15	30
Arsenic	56	77-78	67				38		12, 18, 20	24
Atraton									17	
Atrazine			69						17	28
Azinphos-methyl (Guthion)			68				42		17	

B	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Barium	56	77-78	67		60-61		38		12, 18, 20	24
Barium Perchlorate						83				
Baygon									17	28
Bentazon			69				41		15	30
Benzaldehyde	55									
Benzene	54		69				39-40		14	27
Benzidine	55						41		16	
Benzo(a)anthracene	55		69				41		16	30
Benzo(a)pyrene	55		69				41		16	30
Benzo(b)fluoranthene	55		69				41		16	30
Benzo(g,h,i)perylene	55		69				41		16	30
Benzo(k)fluoranthene	55		69				41		16	30
Benzoic acid							41		15, 16	
Benzyl alcohol	55						41		16	
Beryllium	56	77-78	67				38		12, 18, 20	24
alpha-BHC	55		68				43		17	
beta-BHC	55		68				43		17	
delta-BHC	55		68				43		17	
gamma-BHC (Lindane)	55		70				42-45		17	28
Biochemical oxygen demand (BOD)			66						12, 18, 19	
Bismuth		77-78			62					
Boron		78	67				38		12, 14, 18	24
Bromacil									17	28
Bromate		76								25
Bromide	57	76					39		14	25
Bromine	57									
Bromobenzene							39-40		14	27

B (continued)	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Bromochloroacetic acid										25
Bromochloromethane							39-40		14	27
Bromodichloromethane	54		69				39-40		14	27
Bromoform	54		69				39-40		14	27
Bromomethane	54						39-40		14	27
4-Bromophenyl phenyl ether	55						41		16	
BTEX							39	48-49	15	
BTEX & MTBE							39	48	14	
Butachlor									17	28
2-Butanone (MEK)	54-55						39-40		14	
tert-Butyl Alcohol										27
Butylate									17	
Butyl benzyl phthalate	55						41		16	30
Butyraldehyde (butanal)	55									
2,2'-Oxybis (1-Chloropropane)							41			

C	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Cadmium	56	77-78	67				38		12, 18, 20	24
Calcium		77-78	66				38		10, 18, 19	24
Calcium hardness as CaCO ₃									10, 18, 19	24
Carbaryl							43		17	28
Carbazole	55						41		16	
Carbofuran							43		17	28
Carbon disulfide	54						39-40		14	
Carbon tetrachloride	54		69				39-40		14	27
Carbophenothion									17	
Chemical oxygen demand (COD)		76	66						12, 18, 19	
Chloral Hydrate										25
Chloramben							41		15	29
Chlorate		76								25
Chlordane	55						43		17	28
Chlorfenvinphos			68							
alpha-Chlordane									17	
gamma-Chlordane									17	
Chloride		76-77	66				39		10, 18, 19	24
Chlorine	57		66							25
Chlorite		76								25
4-Chloro-3-methylphenol	55						41		16	
4-Chloroaniline	55						41		16	
Chlorobenzene	54		69				39-40		14	27
Chlorodibromomethane	54		69				39-40		14	27
Chloroethane	54						39-40		14	27
bis(2-Chloroethoxy)methane	55						41		16	
2-Chloroethyl vinyl ether	54						38-40		14	
bis(2-chloroethyl)ether	55						41		16	
Chloroform	54		69				39-40		14	27
Chloromethane	54						39-40		14	27
1-Chloronaphthalene	55						41		16	
2-Chloronaphthalene	55						41		16	
2-Chlorophenol	55						41		16	
4-Chlorophenyl phenyl ether	55						41		16	
2-Chlorotoluene	54						39-40		14	27
2-Chlorotoluene	54						39-40		14	27
Chlorpyrifos			68				43		17	26
Chlortoluron			69							
Chromium	56	77-78	67				38		12, 18, 20	24
Chrysene	55		69				41		16	30
Cobalt	56	77-78	67		61, 62, 63		38		12, 18, 20	
Coliforms				34						
Color			66						13	26
Specific conductance at 25 °C									10, 18	24
Conductivity			66						19	
Copper	56	77-78	67				38		12, 18, 20	24
Corrosivity										26
Corrosivity/pH							38			
Crotonaldehyde	55									
Curium					64					
Cyanazine									17	
Cyanide		76	66				39		13, 20	25
Cyclohexane	54									
Cypermethrin			68							

D	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
2,4-D			69				41		15	30
Dacthal diacid (DCPA)							41		15	30
Dalapon							42		15	30
2,4-DB							41		15	30
4,4'-DDD	57		68				43		17	
4,4'-DDE	55		70				43		17	
2,4-DDT			68							
4,4'-DDT	55		68				43		17	
Decachlorobiphenyl										30
Deethyl atrazine									17	
Deisopropyl atrazine									17	
Demeton O & S							43		17	
Diaminotrazine									17	
Diazinon			68				43		17	28
Dibenz(a,h)anthracene	55		69				41		16	30
Dibenzofuran	55						41		16	
1,2-Dibromo-3-chloropropane (DBCP)	54						39-40		14-16	30
Dibromoacetic Acid										25
1,2-Dibromoethane (EDB)	54						39-40		14-16	
Dibromomethane	54						39-40		14	27
Dicamba							41		15	30
Dichloroacetic Acid										25
1,2-Dichlorobenzene	54-55		69				39-41		14, 16	27
1,3-Dichlorobenzene	54-55						39-41		14, 16	27
1,4-Dichlorobenzene	54-55		69				41		14, 16	30
3,3'-Dichlorobenzidine	55						41		16	
3,5-Dichlorobenzoic Acid										30
Dichlorodifluoromethane	54						39-40		14	27
1,1-Dichloroethane	54						39-40		14	27
1,1-Dichloroethene	54		69				39-40		14	
1,2-Dichloroethane	54		69				39-40		14	27
cis-1,2-Dichloroethene	54		69						14	
trans-1,2-Dichloroethene	54		69						14	
1,1-Dichloroethylene	54		69				39-40			27
cis-1,2-Dichloroethylene	54		69				39-40			27
trans-1,2-Dichloroethylene	54		69				39-40			27
2,4-Dichlorophenol	55						41		16	
2,6-Dichlorophenol	55						41		16	
1,2-Dichloropropane	54		69				39-40		14	27
1,3-Dichloropropane							39-40		14	27
2,2-Dichloropropane							39-40		14	27
1,1-Dichloropropene							39-40		14	27
cis-1,3-Dichloropropene	54								14	27
trans-1,3-Dichloropropene	54								14	27
cis-1,3-Dichloropropylene	54						39-40			
trans-1,3-Dichloropropylene	54						39-40			
1,2-Dichlorotetrafluoroethane	54									
Dichlorprop							41		15	30
Dichlorvos (DDVP)			68				43		17	
1,1-Dichloroethylene	56		72				42, 43			30
Dieldrin	55		68				43		17	28
Diesel range organics (DRO)							41	48, 49, 50	16	
Diethylene glycol							41		16	
Diethyl phthalate	55		69				41		16	30
Di-isopropylether (DIPE)										27
Dimethoate									17	
Dimethyl phthalate	55		69				41		16	30
2,5-Dimethylbenzaldehyde	55									
2,4-Dimethylphenol	55						41		16	
Di-n-butyl phthalate	55		69				41		16	30
1,3-Dinitrobenzene							41		16	
2,4-Dinitrophenol	55						41		16	
2,4-Dinitrotoluene	55						41		16	
2,6-Dinitrotoluene	55						41		16	
Di-n-octyl phthalate	55		69				41		16	30
Dinoseb							41		15	30
Dioxacarb							43			
1,4-Dioxane							39		14	27
Dioxathion									17	
Dioxin										30
Diquat										30
Dissolved organic carbon (DOC)			66							26
Dissolved Oxygen										13
Disulfoton							43			17
Diuron							43			17

E	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
E. coli				34						
Endosulfan I and II	55		68				43		17	
Endosulfan sulfate	55		68				43		17	
Endothall										30
Endrin	55		68				43		17	28
Endrin aldehyde	55		68				43		17	
Endrin ketone	55		68				43		17	
EPTC (Eptam)									17	
Ethion									17	
Ethoprop									17	26
Ethyl tert-butyl ether (ETBE)										27
Ethylbenzene	54		69				39-40		14	27
Ethylene dibromide (EDB)										30
Ethylene glycol							41		16	
bis(2-Ethylhexyl)adipate			69							30
bis(2-Ethylhexyl)phthalate	55		69				41		16	30
p-Ethyltoluene	54									

F	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Famphur									17	
Fecal Coliform WP				34						
Fecal Coliform WP				34						
Fenitrothion			68							
Fenthion			68							
Ferrous Ammonium Sulfate						83				
Flashpoint							38			
Fluoranthene	55		69				41		16	30
Fluorene	55		69				41		16	30
Fluoride	57	76-77	66				39		10, 18, 19	24
Fluoride Buffer						83				
Fluorotrichloromethane										27
Fonofos									17	
Formaldehyde	55								14	
Free Residual Chlorine									14	25

G	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Gasoline range organics (GRO)							39	48, 50	15	
Glyphosate			69							30
Gross Alpha					60, 62, 63					
Gross Alpha/Beta					60, 62, 63					
Gross Beta					60, 62, 63					

H	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Halides	57								13	
Halogens	57									
HEM								50	13	
Heptachlor	55		68				40-43		17	28
Heptachlor epoxide	55		68				40-43		17	28
n-Heptane	54									
Heterotrophic				37						
Hexachlorobenzene	55		68				40, 41		16	28
Hexachlorobutadiene	54-55						40-41		14, 16	27
Hexachlorocyclopentadiene	55						41		16	28
Hexachloroethane	55						40-41		14, 16	
Hexaldehyde (hexanal)	55									
n-Hexane	54						39			
n-Hexane extractable material							39			
2-Hexanone	54						39, 40		14	
Hexavalent chromium	56		67				38		14, 21	24
Hexazinone									17	
HMX							41		16	
Hydrogen bromide	57									
Hydrogen chloride	57									
Hydrogen fluoride	57									
3-Hydroxycarbofuran							43		17	28

AE	Air & Emissions	RChem	Radiochemistry	WP	Water Pollution
Cal	Calibration	RGT	Reagents	WS	Water Supply
LLCRM	Low-Level CRMs	Soil	Soil		
MB	Microbiology	UST	Underground Storage Tank		

I	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Ignitability/Flashpoint							38			
Indeno(1,2,3-cd)pyrene	55		69				41		16	30
Iodide		76								
Iron		77, 78	67		62, 63		38, 43		12, 18, 20	24
Isophorone	55						41		16	
Isopropylbenzene	54						39, 40		14	27
Isopropyltoluene	54						39, 40		14	27
Isovaleraldehyde	55									
Isovaleraldehyde	57									

L	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Lanthanum		78								
Lead	56	77, 78	67		62		38, 43		12, 18, 20	24
Lithium		77							12	

M	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Magnesium		76, 77, 78	66				38, 43		10, 18, 19	24
Malathion			68				43		17	
Manganese	55	77, 78	67		62, 63	83	38, 43		12, 18, 20	24
MBAS-Surfactants		76							13	26
MCPA			69				42		15	
MCPB			69							
MCPP							42		15	
Mercury	56	77	67				38, 43		12, 20	24
Metals & Cyanide Blank Sand							43			
Metals & Cyanide Blank Soil							43			
Methiocarb							43		17	28
Methomyl							45		17	28
Methoxychlor	55		68				40, 43		17	28
Methyl ethyl ketone (MEK)	55, 55						39, 40		17	27
Methyl tert-butyl ether (MTBE)	54						39, 40		14	27
4-Methyl-2-pentanone (MIBK)	54						39, 40		14	
2-Methyl-4,6-dinitrophenol	55						41		16	
Methylene chloride	54		69				39, 40		14	27
1-Methylnaphthalene									16	
2-Methylnaphthalene	55						41		16	
2-Methylphenol	55						40, 41		16	
3 & 4-Methylphenol							40, 41		16	
2-Methylphenol (o-Cresol)	55									
4-Methylphenol (p-Cresol)	55									
Metolachlor									17	28
Metribuzin									17	28
Mevinphos			68							
Molinate (Ordram)										28
Molybdenum		77, 78	67				38		12, 18, 20	24
Monochloroacetic Acid										25

N	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Naphthalene	54, 55		69				39, 40, 41		14, 16	27, 30
Napropamide									17	
Nickel	56	77, 78	67				38, 43		12, 18, 20	24
Nitrate as N		76, 77					38, 43		10, 18	24
Nitrate as NO ₃		76	68							
Nitrate plus nitrite as N									10, 18	24
Nitrite as N		76							10, 18	24
Nitrite as NO ₂			68							
2-Nitroaniline	55						41		16	
3-Nitroaniline	55						41		16	
4-Nitroaniline	55						41		16	
Nitrobenzene	54, 55						39, 40, 41		14, 16	
2-Nitrophenol	55						41		16	
4-Nitrophenol	55						41		15, 16	30
n-Butylbenzene							39-40		14	27
N-Nitrosodiethylamine	55						41		16	

N (continued)	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
N-Nitrosodimethylamine (NDMA)	55						41		16	
N-Nitroso-di-n-propylamine	55						41		16	
N-Nitrosodiphenylamine	55						41		16	
2-Nitrotoluene							41		16	
3-Nitrotoluene							41		16	
4-Nitrotoluene							41		16	

O	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Oil & Grease							39		11, 18, 19	
ortho-Phosphate as P									10, 11, 19	27
Organophosphorus Pesticides			68				43		17	28
Oxamyl							43		17	28
Oxides of nitrogen	57									
2,2'-Oxybis(1-Chloropropane)									16	

P	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Paraquat										30
Parathion			68				43		17	
Particulate matter	57									
PCB 28			69							
PCB 52			69							
PCB 101			69							
PCB 118			69							
PCB 138			69							
PCB 153			69							
PCB 180			69							
PCBs in Oil							42		15	
PCBs in Soil							42			
PCBs in Water									15	30
Pentachlorobenzene	55		68				41		16	
Pentachlorophenol	55						40, 41		15, 16	30
Petroleum Hydrocarbons Fuels							40	48, 50	11	
Perchlorate		76								26
PFAS Analytes							43		15	30
pH		78	66			82	38		14, 18, 19	26
Phenanthrene	55		69				41		16	30
Phenol	55	76					41		13, 16	
Phenolphthalein						83				
Phorate							43		17	
Phosmet									17	
ortho-Phosphate as P									10, 18, 19	25
Phosphate as P		76, 77					39			
Phosphate as PO ₄		76								
Phosphorus	56	77, 78	68							
Picloram							42		15	30
Plutonium					61, 62, 63					
Potassium		77, 78	66		62		38		10, 18, 19	24
Potassium Cyanide (KCN)						83				
Potassium Dichromate						83				
Potassium Hydroxide (KOH)						82, 83				
Potassium Permanganate						82				
Promecarb							43			
Prometon									17	28
Prometryn									17	
Pronamide									17	
Propachlor									17	28
Propazine									17	
Propham							43		17	
Propionaldehyde (propanal)	55									
Propoxur							43			
n-Propylbenzene	55						39, 40		14	27
Propylene	54									
Propylene glycol							41		16	
Pyrene	55		69				41		16	30
Pyridine	55						40, 41		16	

R	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Radium					60, 61					
RDX							41		16	
Residual Range Organic (RRO)								49		
Rommel							43		17	

S	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
sec-Butylbenzene							39, 40		14	27
Selenium	56	77, 78	67				38		12, 18, 20	24
Settleable solids									10	
SGT-HEM								50	11	
Silica		77							11, 13	26
Silicon		77								
Silver	56	77, 78	67				38, 43		12, 18, 20	24
Silver Nitrate					83					
Simazine			69						17	28
Sodium		77, 78	66				38, 42		10, 18, 19	24
Sodium Carbonate					83					
Sodium Hydroxide					83					
Sodium Thiosulfate					83					
Strophos (tetrachlorovinphos)						43			17	
Strontium		77, 78	67		60, 61, 62, 63		38		12, 18, 20	
Styrene	54		69				39, 40		14	27
Sulfate		76, 77	66				39		10, 18, 19	24
Sulfur dioxide	57									
Sulfuric acid	57									

T	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
2,4,5-T									15	30
Terbacil									17	
Terbufos							43		17	
Tert-Butylbenzene									14	
1,2,4,5-Tetrachlorobenzene	55						39, 40		16	
1,1,1,2-Tetrachloroethane	54						41		14	27
1,1,2,2-Tetrachloroethane	54						41		14	27
Tetrachloroethene	54		69				39		14	
Tetrachloroethylene	54						40		14	27
2,3,4,6-Tetrachlorophenol	55						41		16	
Tetraethylene glycol							41		16	
Tetryl							41		16	
Thallium	56	77, 78	67				38, 43		12, 18, 20	24
Thiobencarb										28
Thorium		77			60, 62, 63					
Tin		77, 78					38		12	
Titanium		77, 78					38		12, 20	
TISAB					83					
Tolualdehyde	55									
Toluene	54		69				39, 40		14	27
o-Toluidine	55						41		16	
Total Coliform WP									34	
Total Coliform WS									342	
Total dissolved solids			66, 67						10, 18, 19, 20	24
Total hardness			66						10, 18, 19	24
Total Kjeldahl Nitrogen		76	68				39		10, 18, 19	
Total Nitrogen			68							
Total Organic Carbon (TOC)		76	66				39		12, 18, 19	
Total Organic Halides (TOX)		76							13	
Total Oxidized Nitrogen (TON)			68							
Total Phenolics (4-AAP)			67						13, 20	
Total Phosphorus			68				39		10, 18, 19	
Total solids at 105 °C									10, 18, 20	24
Total suspended solids (TSS)			67						10, 18, 20	24
Total volatile solids									10	

T (continued)	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Toxaphene							43		17	28
2,4,5-TP (Silvex)							41		15	30
TPH							40	48, 49	11	
Trichloroacetic Acid										25
1,2,3-Trichlorobenzene	54						39, 40		14	27
1,2,4-Trichlorobenzene	54, 55		69				39, 40, 41		14, 16	27
1,1,1-Trichloroethane	54		69				39, 40		14	27
1,1,2-Trichloroethane	54		69				39, 40		14	27
Trichloroethene	54		69				39, 40		14	
Trichloroethylene	54						40			27
Trichlorofluoromethane	54						39, 40		14	27
2,4,5-Trichlorophenol	55						40, 41		16	
2,4,6-Trichlorophenol	55						40, 41		16	
1,2,3-Trichloropropane	54						39		14, 16	27, 28, 30
Trichlorotrifluoromethane	54									
Triethylene glycol							41		16	
Trifluralin			68						17	28
1,2,4-Trimethylbenzene	54						39, 40		14	27
1,3,5-Trimethylbenzene	54						39, 40		14	27
1,3,5-Trinitrobenzene							41		16	
2,4,6-Trinitrotoluene							41		16	
Tritium					60, 61, 63					
Turbidity									13	26

U	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Uranium		77			60, 61, 62, 63		38		12	24
UV 254 Absorbance										26

V	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Valeraldehyde (pentanal)	55									
Vanadium		77, 78	67				38, 43		12, 18, 20	24
Vinyl acetate	54						39		14	
Vinyl bromide	54									
Vinyl chloride	54		69				39, 40		14	27

X	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Xylenes, total	54		69				39, 40		14	27

Y	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Yttrium		77								

Z	AE	Cal	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Zinc	56	77, 78	67		60, 61, 62, 63		38, 43		12, 18	24

AE	Air & Emissions	RChem	Radiochemistry	WP	Water Pollution
Cal	Calibration	RGT	Reagents	WS	Water Supply
LLCRM	Low-Level CRMs	Soil	Soil		
MB	Microbiology	UST	Underground Storage Tank		

A	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Accuracy/Precision Sets						92									
Autoreagent Sets					91										

B	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Bottles												99			

C	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Calibration Kits	88	89	90	90	91	92	93	94	98		98				
Caps	88	89													
Cleaning Validation							93						100		
Conductivity Kits	88	89	90		91	92									103
Conductivity - High-Level															103
Conductivity - Low-Level															103
Conductivity - Mid-Level															103
Conductivity - Mid-Level ASTM Solution															103
Conductivity- High Level															104
Consumables	88	89	90		91	92		94				99			
Custom Coupons													100		

F	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Filters					91	92						99			
Function Test Kit									98						
Full Cal Kit							93								

H	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
High-Purity Water Reference Standards														102	

I	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Inorganic Carbon CRMs														102	N/A
Individual CRMs														102	N/A

L	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Limited Cal Kit							93								
Linearity Sets					91	92									
Multipoint Cal Sets					91										

P	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
pH Buffer Products														102	

R	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Reagents					91			94				99			
Reagent Cartridges					91			94				99			
Resin Beds					91										

S	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Sampling Kit w/Vial and Swab													100		
Specificity Sets					91	92									
Service Kits					91										
Swabs													100		
Swabbing Templates													100		
System Suitability Kits	88	89	90	90	91	92	93	94	98	98	98				

T	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Tubing					91	92						99		101	
Turbidity Standards														101	
Turbidimeter Replacement Lamp														101	

U	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Ultra Low CRM Kits								94							
UV Lamps	88	89	90		91	92						99			

V	ANATEL PAT700	ANATEL A643	ANATEL TOC600	ANATEL A-1000	SIEVERS 900, 5310 C, M9, M5310 C	SIEVERS 500	ANALYTIK JENA	OI ANALYTICAL	SWAN	LIGHTHOUSE	MEMBRAPURE	CONSUMABLES	CLEANING VALIDATION	REFERENCE STANDARDS	CONDUCTIVITY
Validation Kits	88	89	90		91	92		94							
Vials	88	89			91	92						99			

A - C

A	4-AAP	4 - Aminoantipyrine
	A2LA	American Association for Laboratory Accreditation
	AE	Air & emissions
B	BCH	Benzene hexachloride
	BOD	Biochemical oxygen demand
	BTEX	Benzene, toluene, ethylbenzene, and xylenes
C	CALA	Canadian Association for Laboratory Accreditation
	CFU	Colony-forming unit
	CLP	Contract laboratory program
	COD	Chemical oxygen demand
	CofA	Certificate of analysis
	CRDL	Contract required detection limit
	CRM	Certified reference material
	CVAFS	Cold vapor atomic fluorescence spectroscopy
	CVAA	Cold vapor atomic absorption
	CWA	Clean Water Act

D - F

D	DBCP	Dibromochloropropane
	DI	Deionized
E	EDB	Ethylene dibromide also known as 1,2-Dibromoethane
	EDD	Electronic data deliverable
	ELAP	Environmental Laboratory Accreditation Program
	EPA	Environmental Protection Agency
	EPTIS	European Proficiency Testing Information System
	ERA	Environmental Resource Associates
F	FAQ	Frequently asked question
	FID	Flame ionization detector
	FoPT	Field of Proficiency Testing

G - I

G	GC	Gas chromatography
H	HCH	Hexachlorocyclohexane
	HEM	Hexane extractable material
	HMX	Nitroamine high explosive
	HPC	Heterotrophic plate count
	HPLC	High performance liquid chromatography
I	IC	Ion chromatography
	ICP	Inductively coupled plasma
	IR	Infrared
	ISE	Ion selective electrode
	ISO	International Organization for Standardization

L - N

L	LAS	Linear alkylbenzene sulphonates
	LIMS	Laboratory information management system
M	MBAS	Methylene blue active substances
	MCPA	2-methyl-4-chlorophenoxyacetic acid
	MCPP	Mecoprop (chlorophenoxy herbicide)
	MEK	Methyl ethyl ketone
	MF	Membrane filtration
	mg	Milligrams
	mg/dscm	Milligrams per dry standard cubic meter
	MIBK	Methyl isobutyl ketone
	MOE	Ministry of the Environment (Ontario)
	MPN	Most probable number
	MRAD	Multi-media radiochemistry
	MTBE	Methyl tert-butyl ether

N	NELAC	National Environmental Laboratory Accreditation Conference
	NELAP	National Environmental Laboratory Accreditation Program
	NIST	National Institute of Standards and Technology (U.S.)
	NPDES	National Pollutant Discharge Elimination System
	NQA	National Quality Assurance
	NTU	Nephelometric turbidity unit

O - Q

O	OES	Optical emission spectrometry
P	PAH	Polycyclic aromatic hydrocarbons
	PC units	Platinum-cobalt
	PCB	Polychlorinated biphenyls
	pci/kg	Picocuries per kilogram
	PE	Performance evaluation
	pg	Picogram
	PT	Proficiency test(ing)
	PUF	Polyurethane foam
Q	QC	Quality control
	QR	QuiK Response

R - T

R	RCRA	Resource Conservation and Recovery Act
	RDX	Research department explosive (an explosive nitroamine)
	RM	Reference material
	RTU	Ready-to-use
S	SCC	Standards Council of Canada
	SDWA	Safe Drinking Water Act
	SGTheM	Silica gel treated hexane extractable materials
	SI unit	International System of units
	SPE	Solid-phase extraction
	SU	Standard units
T	TCDD	Tetrachlorodibenzo-p-dioxin
	TCLP	Toxicity characteristic leaching procedure
	TCP	Trichloropropane
	TKN	Total Kjeldahl (kel'dahl) Nitrogen
	TNI	The NELAC Institute
	TOC	Total organic carbon
	TOX	Total organic halides
	TPH	Total petroleum hydrocarbons
	TSS	Total suspended solids

U - Z

U	UCMR	Unregulated contaminant monitoring rule
	UKAS	United Kingdom Accreditation Service
	µmhos	Micromhos (measure of electrical conductivity of a solution)
	UPLC	Ultra performance liquid chromatography
V	VOA	Volatile organic analysis
	VOC	Volatile organic compounds
W	WP	Water pollution
	WS	Water supply
	WWTP	Wastewater treatment plant
Z	Z-score	Statistical measurement of a score's relationship to the mean in a group of scores

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