

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

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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.

Color10-75 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.

Turbidity2-30 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 cyanide0.1-1 mg/L
Amenable cyanide0.1-1 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 oxygen1-20 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.

TOX300-1500 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-AAP0.5-5 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.

Perchlorate10-200 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 SiO₂50-250 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.

Sulfide2-10 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.

Sulfite10-250 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-MBAS0.2-1 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 CaCO₃650-1800 mg/L

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

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Miscellaneous Chemistry (continued)

pH

CRM Cat. #977	PT Cat. #577	M	QR Cat. #977QR
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One 250 mL whole-volume bottle is ready to analyze.

pH.....5-10 units

Boron

CRM Cat. #919	PT Cat. #886	Q	QR Cat. #919QR
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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 Cat. #769	PT Cat. #887	Q	QR Cat. #769QR
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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 Cat. #501	PT Cat. #587	M	QR Cat. #501QR
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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 Cat. #917	PT Cat. #881	M	QR Cat. #917QR
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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 Cat. #710	PT Cat. #830	M	QR Cat. #710QR
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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-Dichloroethane	1,1,1,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromomethane	cis-1,2-Dichloroethane	Tetrachloroethene
2-Butanone (MEK)	1,1-Dichloroethene	Toluene
n-Butylbenzene	trans-1,2-Dichloroethene	1,2,3-Trichlorobenzene
sec-Butylbenzene	1,3-Dichloropropane	1,2,4-Trichlorobenzene
tert-Butylbenzene	1,2-Dichloropropane	1,1,1-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	1,1,2-Trichloroethane
Carbon tetrachloride	cis-1,3-Dichloropropene	Trichloroethene
Chlorobenzene	1,1-Dichloropropene	Trichlorofluoromethane
Chlorodibromomethane	trans-1,3-Dichloropropene	1,2,3-Trichloropropane
Chloroethane	Ethylbenzene	1,2,4-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachlorobutadiene	1,3,5-Trimethylbenzene
Chloroform	Hexachloroethane	Vinyl acetate
Chloromethane	2-Hexanone	Vinyl chloride
2-Chlorotoluene	Isopropylbenzene	m&p Xylene
4-Chlorotoluene	p-Isopropyltoluene	o-Xylene
		Xylenes, total

1,4-Dioxane NEW PRODUCT

CRM Cat. #402	PT Cat. #597	B	QR Cat. #402QR
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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 Cat. #4452	PT Cat. #4450	Q	QR Cat. #4452QR
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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	

BTEX & MTBE in Water

CRM Cat. #760	PT Cat. #643	Q	QR Cat. #760QR
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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 BTEX compounds and MTBE at 10-300 µg/L after dilution.

Volatiles (continued)

Per-and Polyfluoroalkyl Substances (PFAS)

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

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-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF30UdS).....	100–500 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-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
Benzyl alcohol	Di-n-butyl phthalate	N-Nitrosodimethylamine
4-Bromophenyl phenyl ether	2,4-Dinitrotoluene	N-Nitroso-di-n-propylamine
Butyl benzyl phthalate	2,6-Dinitrotoluene	N-Nitrosodiphenylamine
Carbazole	Di-n-octyl phthalate	2,2'-Oxybis(1-Chloropropane)
4-Chloroaniline	bis(2-Ethylhexyl)phthalate	Pentachlorobenzene
bis(2-Chloroethoxy)methane	Fluoranthene	Phenanthrene
bis(2-Chloroethyl)ether	Fluorene	Pyrene
1-Chloronaphthalene	Hexachlorobenzene	Pyridine
	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 µg/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 2 mL 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

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



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	Diaminoatrazine	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.

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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Eric Negrey
IT Manager
Years with Waters: 1

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.

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



TRUST THE DMR-QA EXPERTS

Whether you are new to the U.S. EPA's Discharge Monitoring Report-Quality Assurance (DMR-QA) study, or are a seasoned participant, Waters ERA offers readily-accessible tools and a team of professionals to help you:

- Report data easily with access to eDATA tools
- Access NPDES data from eDATA at the close of study
- 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