

## 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 <sub>3</sub> .....	75–225 mg/L
Total hardness as CaCO <sub>3</sub> .....	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 <sub>3</sub> .....	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

<b>CRM</b> Cat. #676	<b>PT</b> Cat. #853	<b>B</b>	<b>QR</b> 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)

<b>CRM</b> Cat. #684	<b>PT</b> Cat. #852	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #5272	<b>PT</b> Cat. #5270	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #5262	<b>PT</b> Cat. #5260	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #1359	<b>PT</b> Cat. #1319	<b>B</b>	<b>QR</b> 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

<b>CRM</b> Cat. #695	<b>PT</b> Cat. #594	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #667	<b>PT</b> Cat. #558	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #696	<b>PT</b> Cat. #593	<b>M</b>	<b>QR</b> 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

<b>CRM</b> Cat. #983	<b>PT</b> Cat. #556	<b>M</b>	<b>QR</b> 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

**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.

#### Darren Sauer

Senior Customer Service  
Representative

Years with Waters ERA: 22



## 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 SiO<sub>2</sub>.....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<sup>-1</sup>

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
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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
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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
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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
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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
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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 (11Cl-PF3OUdS) .....	50-500 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) .....	50-500 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) .....	50-500 ng/L
4,8-dioxa-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 (11Cl-PF3OUdS) .....	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

# 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/Carbamoxylxime 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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## 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

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# 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:

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- Enhance sensitivity
- Accelerate throughput
- Ensure compliance

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# 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](http://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](http://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 <b>Q</b>	787QR	34
Heterotrophic Plate Count (WP)		935 <b>B</b>		34
Heterotrophic Plate Count (WS)	084	079 <b>M</b>	084QR	34
Massachusetts Ground Water Enterococci	081	077 <b>*</b>	—	34
Potable Water Coliform Microbe	694	080 <b>M</b>	085QR	34
Source Water Microbe	078	595 <b>Q</b>	078QR	34
Source Water Microbe - 9221	078A	595A <b>Q</b>	078AQR	34
Wastewater Coliform Microbe	083	576 <b>M</b>	786QR	34
Wastewater Coliform Microbe - 9221	083A	576A <b>M</b>	786AQR	34

## Water Supply PT Schedule 2020

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

## 2021

	Scheme #	Opens	Closes
<b>Q</b>	WS 294	Jan 11	Feb 25
	WS 295	Feb 8	Mar 25
	WS 296	Mar 8	Apr 22
<b>Q</b>	WS 297	Apr 5	May 20
	WS 298	May 10	Jun 24
	WS 299	Jun 7	Jul 22
<b>Q</b>	WS 300	Jul 12	Aug 26
	WS 301	Aug 9	Sep 23
	WS 302	Sep 7	Oct 22
<b>Q</b>	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.

