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

2026 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 133**	Jan 26	Mar 12
Q	**SOIL 134**	Apr 27	Jun 11
Q	**SOIL 135**	Jul 27	Sep 10
Q	**SOIL 136**	Oct 23	Dec 7

2027 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 137**	Jan 25	Mar 11
Q	**SOIL 138**	Apr 26	Jun 10
Q	**SOIL 139**	Jul 26	Sep 9
Q	**SOIL 140**	Oct 22	Dec 6

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

Contents

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

All Waters ERA Soil PTs open quarterly (Q) or bianually (B), unless otherwise noted.

Biannual months are January and July.

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 eraqc.com/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.

Metals

Metals in Soil

CRM	PT	Q	QR
Cat. #540	Cat. #620		Cat. #540QR

One 30 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	5000–50000 mg/kg
Lead	40–400 mg/kg
Lithium	50–250 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	PT	Q	QR
Cat. #921	Cat. #876		Cat. #921QR

One 40 g standard in a screw-cap bottle for use with all promulgated hexavalent chromium methods.

Hexavalent chromium	40–300 mg/kg

TCLP Metals in Soil

CRM	PT	Q	QR
Cat. #544	Cat. #629		Cat. #544QR

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	PT	Q	QR
Cat. #160	Cat. #619		Cat. #160QR

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	PT	Q	QR
Cat. #914	Cat. #875		Cat. #914QR

One 100 g soil standard in a screw-cap bottle. Use to measure corrosivity.

Corrosivity/pH	2–12 S.U.

Ignitability/Flash Point

CRM	PT	Q	QR
Cat. #979	Cat. #874		Cat. #979QR

One standard packaged in three 30 mL bottles. Use to measure ignitability.

Ignitability/flashpoint	100–200 °F

Oil & Grease

Oil & Grease in Soil

CRM	PT	Q	QR
Cat. #549	Cat. #867		Cat. #549QR

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	PT	Q	QR
Cat. #543	Cat. #873		Cat. #543QR

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
Nitrite as N	0–500 mg/kg
Nitrate + Nitrite as N	0–2000 mg/kg
Phosphate as P	25–500 mg/kg
Sulfate	25–2000 mg/kg

Cyanide in Soil

CRM	PT	Q	QR
Cat. #541	Cat. #621		Cat. #541QR

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	PT	Q	QR
Cat. #542	Cat. #869		Cat. #542QR

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	RM	–	QR
–	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

Volatiles in Soil

CRM	PT	Q	QR
Cat. #721	Cat. #623		Cat. #721QR

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).

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

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

CRM	PT	B	QR
Cat. #538	Cat. #461		Cat. #538QR

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 ug/kg

Gasoline Range Organics (GRO) in Soil

CRM	PT	Q	QR
Cat. #763	Cat. #630		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 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.

Volatiles (continued)

BTEX & MTBE in Soil

CRM	PT	Q	QR
Cat. #761	Cat. #633		Cat. #761QR

One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes the anlaytes 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	PT	Q	QR
Cat. #924	Cat. #870		Cat. #924QR

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)	4-Methyl-2-pentanone (MIBK)
Acetonitrile	Dibromomethane	Methylene chloride
Acrolein	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	1,1-Dichloroethene	Tetrachloroethene
2-Butanone (MEK)	cis-1,2-Dichloroethylene	Toluene
n-Butylbenzene	trans-1,2-Dichloroethylene	1,2,3-Trichlorobenzene
sec-Butylbenzene	1,2-Dichloropropane	1,2,4-Trichlorobenzene
tert-Butylbenzene	1,3-Dichloropropane	1,1,1-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	1,1,2-Trichloroethane
Carbon tetrachloride	1,1-Dichloropropene	Trichloroethene
Chlorobenzene	cis-1,3-Dichloropropylene	Trichlorofluoromethane
Chlorodibromomethane	trans-1,3-Dichloropropylene	1,2,3-Trichlorobenzene
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
1,2-Dibromo-3-chloropropane (DBCP)	Methyl tert-butyl ether (MTBE)	Xylenes, total

Total Petroleum Hydrocarbons

Total Petroleum Hydrocarbons (TPH) in Soil #1

CRM	PT	Q	QR
Cat. #570	Cat. #632		Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for TPH. Use with EPA IR or Gravimetric Methods 8440, 9071B.

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	PT	Q	QR
Cat. #571	Cat. #632		Cat. #572QR

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.

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

TCLP

TCLP Volatiles

CRM	PT	–	QR
Cat. #730	–		Cat. #730QR

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	PT	–	QR
Cat. #737	–		Cat. #737QR

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	PT	–	QR
Cat. #732	–		Cat. #732QR

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)	

Semivolatiles

Nitroaromatics & Nitramines in Soil

CRM	PT	Q	QR
Cat. #920	Cat. #871		Cat. #920QR

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

PFAS in Soil

CRM	PT	Q	QR
Cat. #603	Cat. #465		Cat. #603QR

One flame-sealed ampule containing 10 g of soil. The standard is certified for all analytes listed below. Each lot will be spiked with a minimum of 24 analytes. Design is suitable for methods analyzing these components with LC-MS/MS techniques.

Perfluorobutanoic acid, PFBA ..... 5–50 µg/kg
Perfluoropentanoic acid, PFPeA ..... 5–50 µg/kg
Perfluorohexanoic acid, PFHxA ..... 5–50 µg/kg
Perfluoroheptanoic acid, PFHpA ..... 5–50 µg/kg
Perfluorooctanoic acid, PFOA ..... 5–50 µg/kg
Perfluorononanoic acid, PFNA ..... 5–50 µg/kg
Perfluorodecanoic acid, PFDA ..... 5–50 µg/kg
Perfluoroundecanoic acid, PFUdA ..... 5–50 µg/kg
Perfluorododecanoic acid, PFDoA ..... 5–50 µg/kg
Perfluorotridecanoic acid, PFTrDA ..... 5–50 µg/kg
Perfluorotetradecanoic acid, PFTeDA ..... 5–50 µg/kg
Perfluorobutanesulfonic acid, PFBS ..... 5–50 µg/kg
Perfluoropentanesulfonic acid, PFPeS ..... 5–50 µg/kg
Perfluorohexanesulfonic acid, PFHxS ..... 5–50 µg/kg
Perfluoroheptanesulfonic acid, PFHpS ..... 5–50 µg/kg
Perfluorooctanesulfonic acid, PFOS ..... 5–50 µg/kg
Perfluorononanesulfonic acid, PFNS ..... 5–50 µg/kg
Perfluorodecanesulfonic acid, PFDS ..... 5–50 µg/kg
Perfluorododecanesulfonic acid, PFDoS ..... 5–50 µg/kg
4:2 fluorotelomersulfonic acid, 4:2 FTS ..... 5–50 µg/kg
6:2 fluorotelomersulfonic acid, 6:2 FTS ..... 5–50 µg/kg
8:2 fluorotelomersulfonic acid, 8:2 FTS ..... 5–50 µg/kg
Perfluorooctanesulfonamide, PFOSA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamide, NEtFOSA ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamide, NMeFOSA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE ..... 5–50 µg/kg
3-Perfluoropropyl propanoic acid, 3:3 FTCA ..... 5–50 µg/kg
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3 FTCA ..... 5–50 µg/kg
3-Perfluoroheptyl propanoic acid, 7:3 FTCA ..... 5–50 µg/kg
Hexafluoropropylene oxide dimer acid, HFPO-DA ..... 5–50 µg/kg
4,8-dioxa-3H-perfluorononanoic acid, ADONA ..... 5–50 µg/kg
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS ..... 5–50 µg/kg
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS ..... 5–50 µg/kg
Perfluoro-4-methoxybutanoic acid, PFMBA ..... 5–50 µg/kg
Perfluoro-3-methoxypropanoic acid, PFMPA ..... 5–50 µg/kg
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA ..... 5–50 µg/kg
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA ..... 5–50 µg/kg

Low-Level PAHs in Soil

CRM	PT	Q	QR
Cat. #722	Cat. #625		Cat. #722QR

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

Diesel Range Organics (DRO) in Soil

CRM	PT	Q	QR
Cat. #765	Cat. #631		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.

Diethylene glycol
Ethylene glycol
Propylene glycol
Tetraethylene glycol
Triethylene glycol

Glycols in Soil

CRM	PT	Q	QR
Cat. #928	Cat. #463		Cat. #928QR

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.

Semivolatiles (continued)

Base/Neutrals & Acids in Soil

CRM	PT	Q	QR
Cat. #727	Cat. #467		Cat. #727QR

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 500–15,000 ug/kg.

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

Herbicides

Chlorinated Acid Herbicides in Soil

CRM	PT	Q	QR
Cat. #723	Cat. #626		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
Bentazon
Chloramben
2,4-D
2,4-DB
Dacthal diacid (DCPA)
Dalapon
Dicamba
3,5-Dichlorobenzoic acid
Dichlorprop
Dinoseb
MCPA
MCPP
4-Nitrophenol
Pentachlorophenol
Picloram
2,4,5-T
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	PT	Q	QR
Cat. #563	Cat. #817		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 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

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

NEW!

PCB Congeners in Soil

CRM	PT	Q	QR
Cat. #5988	Cat. #2994		Cat. #5988QR

One flame-sealed ampule containing 10 g of soil. The standard is certified for 18 analytes spiked at 2–20 µg/kg. The sample is designed for GC/MS methods for analyzing soil, specifically EPA Method 1668 and EPA Method 1628.

2,4,4'-Trichlorobiphenyl (28)
2,2',5,5'-Tetrachlorobiphenyl (52)
3,3',4,4'-Tetrachlorobiphenyl (101)
3,4,4',5-Tetrachlorobiphenyl (81)
2,2',4,5,5'-Pentachlorobiphenyl (77)
2,3,3',4,4'-Pentachlorobiphenyl (123)
2,3,4,4',5-Pentachlorobiphenyl (118)
2,3',4,4',5-Pentachlorobiphenyl (114)
2,3',4,4',5'-Pentachlorobiphenyl (153)
3,3',4,4',5-Pentachlorobiphenyl (105)
2,2',3,4,4',5'-Hexachlorobiphenyl (138)
2,2',4,4',5,5'-Hexachlorobiphenyl (126)
2,3,3',4,4',5-Hexachlorobiphenyl (167)
2,3,3',4,4',5'-Hexachlorobiphenyl (156)
2,3',4,4',5,5'-Hexachlorobiphenyl (157)
3,3',4,4',5,5'-Hexachlorobiphenyl (180)
2,2',3,4,4',5,5'-Heptachlorobiphenyl (169)
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)

Learn more about Soil products

PCBs (continued)

PCBs in Soil

CRM	PT	Q	QR
Cat. #726	Cat. #624		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

Pesticides

Organochlorine Pesticides in Soil

CRM	PT	Q	QR
Cat. #728	Cat. #468		Cat. #728QR

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
trans-Chlordane	Endosulfan sulfate	

Chlordane in Soil

CRM	PT	Q	QR
Cat. #725	Cat. #628		Cat. #725QR

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	PT	Q	QR
Cat. #724	Cat. #627		Cat. #724QR

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	PT	B	QR
Cat. #926	Cat. #879		Cat. #926QR

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	PT	Q	QR
Cat. #925	Cat. #878		Cat. #925QR

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	

Blank Soil

Metals & Cyanide Blank Sand

CRM	PT	–	QR
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	PT	–	QR
Cat. #057	–		–

One 40 g soil sample in a screw-cap bottle. The concentrations of all of the following analytes are below the CLP CRDL's: antimony, arsenic, beryllium, cadmium, cobalt, mercury, nickel, selenium, silver, sodium, thallium, and cyanide. The concentrations of the following analytes are below 10x the CLP CRDL's: 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.

PFAS Secondary Source Standard

Standard is suitable for various applications, including Internal Calibration Verification (ICV), Laboratory Control Sample (LCS), Matrix Spike (MS), and Limit of Quantitation (LOQ) studies.

NEW!

Wastewater/Solids

CRM
Cat. #PFAS10001

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 44 analytes at 25–625 ng/mL. The standard is suitable for matrices to include, but not limited to, wastewater and solids and compatible with methods EPA 1633 and 1633A, EPA 8327, ASTM D8421-21, ASTM D7979, and other comparable methods.

Perfluorobutanoic acid, PFBA	100 ng/mL
Perfluoropentanoic acid, PFPeA	50 ng/mL
Perfluorohexanoic acid, PFHxA	25 ng/mL
Perfluoroheptanoic acid, PFHpA	25 ng/mL
Perfluorooctanoic acid, PFOA	25 ng/mL
Perfluorononanoic acid, PFNA	25 ng/mL
Perfluorodecanoic acid, PFDA	25 ng/mL
Perfluoroundecanoic acid, PFUdA	25 ng/mL
Perfluorododecanoic acid, PFDoA	25 ng/mL
Perfluorotridecanoic acid, PFTrDA	25 ng/mL
Perfluorotetradecanoic acid, PFTeDA	25 ng/mL
Perfluorobutanesulfonic acid, PFBS	25 ng/mL
Perfluoropentanesulfonic acid, PFPeS	25 ng/mL
Perfluorohexanesulfonic acid, PFHxS	25 ng/mL
Perfluoroheptanesulfonic acid, PFHpS	25 ng/mL
Perfluorooctanesulfonic acid, PFOS	25 ng/mL
Perfluorononanesulfonic acid, PFNS	25 ng/mL
Perfluorodecanesulfonic acid, PFDS	25 ng/mL
Perfluorododecanesulfonic acid, PFDoS	25 ng/mL
4:2 fluorotelomersulfonic acid, 4:2FTS	100 ng/mL
6:2 fluorotelomersulfonic acid, 6:2FTS	100 ng/mL
8:2 fluorotelomersulfonic acid, 8:2FTS	100 ng/mL
Perfluorooctanesulfonamide, PFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	25 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	25 ng/mL
N-ethyl perfluorooctanesulfonamide, NEtFOSA	25 ng/mL
N-methyl perfluorooctanesulfonamide, NMeFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE	250 ng/mL
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE	250 ng/mL
3-Perfluoropropyl propanoic acid, 3:3FTCA	125 ng/mL
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3FTCA	625 ng/mL
3-Perfluoroheptyl propanoic acid, 7:3FTCA	625 ng/mL
Hexafluoropropylene oxide dimer acid, HFPO-DA	100 ng/mL
4,8-dioxa-3H-perfluorononanoic acid, ADONA	100 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	100 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	100 ng/mL
Perfluoro-4-methoxybutanoic acid, PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid, PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	50 ng/mL
Pentafluoropropanoic acid, PFPrA	100 ng/mL
2H-perfluoro-2-octenoic acid, FHUEA	100 ng/mL
2H-perfluoro-2-decenoic acid, FOUEA	100 ng/mL
Bis(trifluoromethane)sulfonamide	100 ng/mL

With eDATA: BOD, COD, and TOC can be as easy as CSV!

Your time is valuable and should be spent doing more important things than manually entering PT results. Achieve piece of mind knowing that transcription errors are eliminated when you upload your PT results to Waters ERA's online PT data management portal – eDATA.

eDATA allows you to:

- Identify failures and risks to your accreditation
- Review your performance and evaluate overall results
- Investigate root cause and evaluate corrective actions
- Proactively monitor analyte risk to identify possible future non-conformances

LEARN MORE AT
eraqc.com/edata