



Environmental

Proficiency Testing and Reference Materials

2015-2016

GLOBAL CATALOG



Waters

THE SCIENCE OF WHAT'S POSSIBLE.®



We are pleased to present the 2015/2016 ERA Environmental Product Catalog.

With over 50 years of market leadership, Waters is committed to the development, production, and manufacture of the highest quality consumable products to solve our customers' most difficult challenges and enable continued success.

We are driven by our core mission: to develop enabling technologies that are the industry standard for performance, reproducibility, and quality. At ERA, we are dedicated to setting the industry standard for helping laboratories prove and improve data defensibility by delivering the highest quality Proficiency Testing experience.

With our comprehensive list of globally recognized accreditations, including ISO 9001, ISO/IEC Guide 34, ISO/IEC 17043, and ISO/IEC 17025 you can be assured that we have independent oversight of our internal processes. You will receive the best products available – allowing you to meet or exceed your laboratories quality objectives time-and-time again. To learn more about how we can help you achieve your objectives for quality, variety, and reliability visit www.eraqc.com.

A handwritten signature in black ink, reading "Michael J. Yelle". The signature is fluid and cursive, with the first name being the most prominent.

Michael J. Yelle
Vice President, Consumables Business Unit
Waters Corporation
Milford, MA, U.S.A.

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For More Than 35 Years,
the Industry Standard

Dependable Quality and Experience You Can Trust

We understand how important Proficiency Testing (PT) is to your accreditation. Your accreditation is your license to do business. We also understand that quality goes beyond simply being accredited.

Your customers' trust in the defensibility of the data you provide is fundamental to the success of your laboratory. That's why we are focused on providing you with purposefully designed, enabling tools and services to help you:

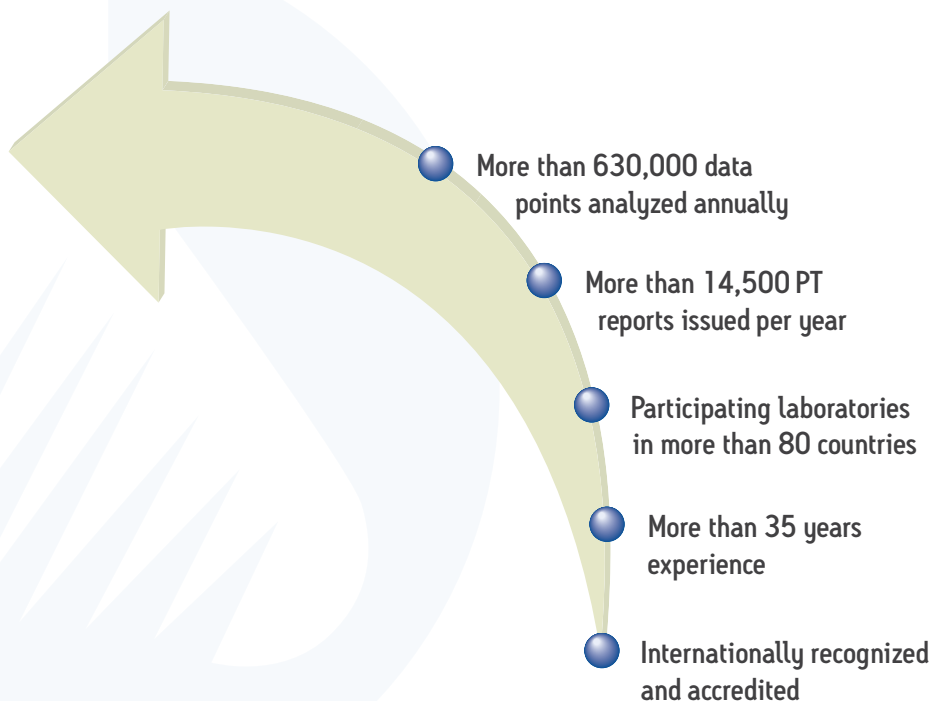
- Continuously improve the reliability of data you deliver to your customers
- Cost-effectively meet your accreditation goals

That's why more laboratories trust ERA as their partner in data defensibility, and why ERA has been the Industry Standard for over 35 years.

Your Partner in Data Defensibility

- Expert guidance for every step of the PT process
- Help understanding and navigating the myriad of regulatory requirements
- Greater confidence in your results
- Single source for your PT and Certified Reference Materials

The Industry Standard



QuiK Response PT

Critical evaluations are just that – critical. ERA's QuiK Response™ PTs are on demand PTs that return your final results in just two business days of entering your data. With QuiK Response, gone are the days of waiting for the PT closing date and then waiting weeks for final results.

No wondering. No worries. Just results. Fast.

If you need to quickly demonstrate corrective action or confirm a new method, and you cannot wait for a regularly scheduled PT scheme, then speak with your ERA Customer Service Representative or an authorized sales partner about QuiK Response PTs.



ISO/IEC GUIDE 34:2009



REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17043:2010



PROFICIENCY TESTING PROVIDER
CERTIFICATE NO. 1539.01

ISO/IEC 17025:2005



CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02



ISO 9001:2008
CERTIFICATE NO. 10551

2015 PROFICIENCY TESTING SCHEME SCHEDULE

Water Supply

	Scheme #	Opens	Closes
Q	WS 222	Jan 5	Feb 19
	WS 223	Feb 9	Mar 26
	WS 224	Mar 2	Apr 16
Q	WS 225	Apr 6	May 21
	WS 226	May 4	Jun 18
	WS 227	Jun 8	Jul 23
Q	WS 228	Jul 6	Aug 20
	WS 229	Aug 3	Sep 17
	WS 230	Sep 8	Oct 23
Q	WS 231	Oct 5	Nov 19
	WS 232	Nov 6	Dec 21
	WS 233	Dec 7	Jan 21, 2016

Water Pollution (Including UST in Water)

	Scheme #	Opens	Closes
Q	WP 240	Jan 12	Feb 26
	WP 241	Feb 16	Apr 2
	WP 242	Mar 9	Apr 23
Q	WP 243	Apr 13	May 28
	WP 244	May 11	Jun 25
	WP 245	Jun 15	Jul 30
Q	WP 246	Jul 13	Aug 27
	WP 247	Aug 10	Sep 24
	WP 248	Sep 14	Oct 29
Q	WP 249	Oct 16	Nov 30
	WP 250	Nov 13	Dec 28
	WP 251	Dec 14	Jan 28, 2016

For International purchase only: Clean Water and Effluent PT schemes are designed to meet the requirements of the European Union Water Framework Directive. Concentrations are not compliant with US TNI Fields of Proficiency Testing table requirements for accreditation.

Clean Water

	Scheme #	Opens	Closes
	CW 15	Mar 4	Apr 3
	CW 16	Sep 9	Oct 9

Effluent

	Scheme #	Opens	Closes
	EF 15	Mar 4	Apr 3
	EF 16	Sep 9	Oct 9

Soil (Including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 89	Jan 19	Mar 5
Q	SOIL 90	Apr 20	Jun 4
Q	SOIL 91	Jul 20	Sep 3
Q	SOIL 92	Oct 19	Dec 3

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 100	Jan 5	Feb 19
Q	RAD 101	Apr 6	May 21
Q	RAD 102	Jul 6	Aug 20
Q	RAD 103	Oct 5	Nov 19

MRAD

	Scheme #	Opens	Closes
	MRAD 22	Mar 16	May 15
	MRAD 23	Sep 21	Nov 20

2 schemes per year – open for 60 days

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 31	Jan 26	Mar 12
Q	AE 32	Apr 27	Jun 11
Q	AE 33	Jul 27	Sep 10
Q	AE 34	Oct 26	Dec 10

DMR-QA

These products are specifically targeted for US customers holding NPDES Permits

	Scheme #	Opens	Closes
	DMR-QA 35	EST Mar 16	TBD

▶▶▶ QuiK Response PT

Need PT results fast? ERA's QuiK Response PTs are available on demand, 52 weeks a year. Plus, with QuiK Response, you receive final results in just two business days. Contact your ERA Customer Service Representative or an authorized ERA sales partner to place your QuiK Response order.

The Industry Standard

2016 PROFICIENCY TESTING SCHEME SCHEDULE

Water Supply

	Scheme #	Opens	Closes
Q	WS 234	Jan 11	Feb 25
	WS 235	Feb 8	Mar 24
	WS 236	Mar 1	Apr 15
Q	WS 237	Apr 4	May 19
	WS 238	May 9	Jun 23
	WS 239	Jun 6	Jul 21
Q	WS 240	Jul 11	Aug 25
	WS 241	Aug 8	Sep 22
	WS 242	Sep 6	Oct 21
Q	WS 243	Oct 7	Nov 21
	WS 244	Nov 1	Dec 16
	WS 245	Dec 5	Jan 19, 2017

Water Pollution (Including UST in Water)

	Scheme #	Opens	Closes
Q	WP 252	Jan 18	Mar 3
	WP 253	Feb 15	Mar 31
	WP 254	Mar 7	Apr 21
Q	WP 255	Apr 11	May 26
	WP 256	May 16	Jun 30
	WP 257	Jun 13	Jul 28
Q	WP 258	Jul 18	Sep 1
	WP 259	Aug 15	Sep 29
	WP 260	Sep 12	Oct 27
Q	WP 261	Oct 14	Nov 28
	WP 262	Nov 7	Dec 22
	WP 263	Dec 12	Jan 26, 2017

For International purchase only: Clean Water and Effluent PT schemes are designed to meet the requirements of the European Union Water Framework Directive. Concentrations are not compliant with US TNI Fields of Proficiency Testing table requirements for accreditation.

Clean Water

	Scheme #	Opens	Closes
	CW 17	Mar 9	Apr 8
	CW 18	Sep 7	Oct 7

Effluent

	Scheme #	Opens	Closes
	EF 17	Mar 9	Apr 8
	EF 18	Sep 7	Oct 7

Soil (Including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 93	Jan 25	Mar 10
Q	SOIL 94	Apr 18	Jun 2
Q	SOIL 95	Jul 25	Sep 8
Q	SOIL 96	Oct 17	Dec 1

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 104	Jan 11	Feb 25
Q	RAD 105	Apr 4	May 19
Q	RAD 106	Jul 11	Aug 25
Q	RAD 107	Oct 7	Nov 21

MRAD

	Scheme #	Opens	Closes
	MRAD 24	Mar 14	May 13
	MRAD 25	Sep 19	Nov 18

2 schemes per year – open for 60 days

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 35	Jan 29	Mar 14
Q	AE 36	Apr 25	Jun 9
Q	AE 37	Jul 29	Sep 12
Q	AE 38	Oct 24	Dec 8

DMR-QA

These products are specifically targeted for US customers holding NPDES Permits

	Scheme #	Opens	Closes
	DMR-QA 36	EST Mar 18	TBD

QuiK Response PT

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What is a Certified Reference Material?

A Certified Reference Material (CRM) is a standard with known concentrations or assigned values of specified analytes. The standard has a known uncertainty, homogeneity, and stability and assigned values of the analytes are traceable to an independent reference. A CRM is accompanied by an authenticated certificate of analysis.

Uses for Certified Reference Materials

- Development of a new analytical method
- Root cause analysis
- Analyst training and demonstration of capability
- Independent calibration verification

What is a Proficiency Test?

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.

Uses for Proficiency Testing

- Independent validation of your laboratory's measurement processes
- Compliance to accreditation requirements
- Expand scope of accreditation to include a new method
- Inter-laboratory performance comparison

What is a QuiK Response?

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.

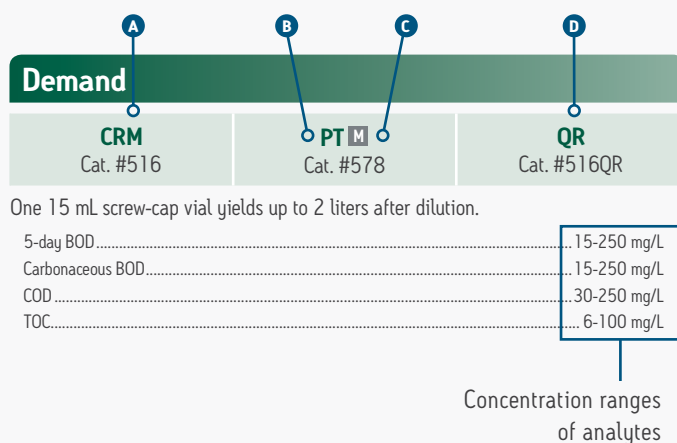
QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

QuiK Response PT

Uses for QuiK Response

- Demonstrate corrective action after a failed proficiency test
- Expand scope of accreditation to include a new method
- Document and validate the effectiveness of corrective actions

Ordering Your Standards



A CRM

Certified Reference Material – a sample with known concentrations of one or more analytes.

B PT

Proficiency Test – a sample with unknown concentrations of one or more analytes.

C Frequency of scheduled scheme

M = monthly or **Q** = quarterly

D QR

QuiK Response – a sample with unknown concentrations of one or more analytes. QR PTs are available anytime, 52 weeks a year.

Confidence

As your partner in data defensibility, our experts are here to help your lab succeed by providing you with the tools you need to improve your quality.

MEET THE EXPERTS WEBINAR SERIES

Monthly webcast by our senior scientists designed to help you:

- Ensure your successful Proficiency Testing (PT) performance
- Solve routine analysis challenges
- Improve root cause analysis and corrective action

Register via our bi-monthly e-newsletter. To sign up or view previous newsletters, visit www.eraqc.com/newsevents/newsletterarchive.

Or, contact your ERA Customer Service Representative for more information.

Previous webcasts include:

- CRMs and How They Relate to ISO 17025 Accreditation Outcomes
- Improving Root Cause and Corrective Action
- Analysis Tips for Radiochemistry
- DMR-QA Preparedness, Analysis Tips for TSS
- DMR-QA Preparedness, Analysis Tips for pH
- DMR-QA Preparedness, Analysis Tips for BOD
- SSAS Changes: Your Questions Answered
- Keys to Improved PT Results on Your Waste Water Microbiology Samples
- Creating a Robust and Sustainable Quality Assurance Program
- Take Control with Control Charting

To view a previously recorded webcast, visit www.eraqc.com/resources/webinars

“The webinar was full of good information. I’ve really appreciated ERA making these webinars available. I particularly found this one and the recent one on Root Cause analysis to be helpful. Thanks to ERA for having them accessible after the original presentations.”

> *Quality Manager, Wyoming*

“I thought the class was excellent and, for us, timely. It showed us that we are on the right track, but have some work to do.”

> *Chemistry Supervisor, Wyoming*

“I found the seminar to be very helpful, and gathered some good tips.”

> *Assistant Laboratory Director, New York*

“Thank you so much, the webinar was very informative. I will certainly attend another webinar when offered.”

> *QA Manager, Texas*



WATER POLLUTION

Matrices with high concentrations of analytes for testing water pollution or waste water. Standards are based on requirements of the United States Environmental Protection Agency Clean Water Act and may be used to satisfy PT requirements worldwide.



2015 Water Pollution PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 240	Jan 12	Feb 26
	WP 241	Feb 16	Apr 2
	WP 242	Mar 9	Apr 23
Q	WP 243	Apr 13	May 28
	WP 244	May 11	Jun 25
	WP 245	Jun 15	Jul 30
Q	WP 246	Jul 13	Aug 27
	WP 247	Aug 10	Sep 24
	WP 248	Sep 14	Oct 29
Q	WP 249	Oct 16	Nov 30
	WP 250	Nov 13	Dec 28
	WP 251	Dec 14	Jan 28, 2016

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

2016 Water Pollution PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 252	Jan 18	Mar 3
	WP 253	Feb 15	Mar 31
	WP 254	Mar 7	Apr 21
Q	WP 255	Apr 11	May 26
	WP 256	May 16	Jun 30
	WP 257	Jun 13	Jul 28
Q	WP 258	Jul 18	Sep 1
	WP 259	Aug 15	Sep 29
	WP 260	Sep 12	Oct 27
Q	WP 261	Oct 14	Nov 28
	WP 262	Nov 7	Dec 22
	WP 263	Dec 12	Jan 26, 2017

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

Description	CRM	PT	QR	Page
Acidity	915	885 Q	915QR	16
Acids	712	834 M	712QR	18
Boron	919	886 Q	919QR	16
Base/Neutrals	711	833 M	711QR	18
Bromide	769	887 Q	769QR	16
BTEX & MTBE	760	643 Q	760QR	17
Carbamate Pesticides	908	899 Q	908QR	19
Chlordane	716	837 M	716QR	19
Chlorinated Acid Herbicides	718	829 M	718QR	17
Color	070	882 Q	070QR	15
Complex Nutrients	525	579 M	525QR	12
Cyanide & Phenol	502	588 M	502QR	15
Demand	516	578 M	516QR	13
Diesel Range Organics (DRO) in Water	764	641 Q	764QR	18
EDB/DBCP/TCP	692	562 Q	692QR	18
Gasoline Range Organics (GRO)	762	640 Q	762QR	17
Glycols in Water	401	271 Q	401QR	18
Hardness	507	580 M	507QR	12
HEM/SGT-HEM	519	489 Q	519QR	13
Hexavalent Chromium	984	898 M	984QR	14
Lithium	4992	4990 *	4992QR	14
Low-Level Mercury	931	896 Q	931QR	14
Low-Level Nitroaromatics & Nitramines	677	932 Q	677QR	18
Low-Level PAHs	715	836 Q	715QR	18
Low-Level Total Residual Chlorine (TRC)	917	881 M	917QR	16
Mercury	514	574 M	514QR	14
Minerals	506	581 M	506QR	12
Nitrite	770	888 M	770QR	12
Nitrogen Pesticides	674	487 Q	674QR	19

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

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

***** WP Lithium PTs open in February and August. WP Sulfite PTs open in January and July.

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

Description	CRM	PT	QR	Page
Oil & Grease	see page 13 for options			
Organochlorine Pesticides	713	831 M	713QR	19
Organophosphorous Pesticides	665	934 Q	665QR	19
PAHs-GC/GCMS	4882	4880 Q	4882QR	18
PCBs in Oil	729S	835S M	729SQR	17
PCBs in Water	734S	832S M	734SQR	17
pH	977	577 M	977QR	12
QC Plus	see pages 21-22 for options			
Ready-to-Use CRMS	see page 20 for options			
Settleable Solids	911	883 M	911QR	12
Silica	775	890 Q	775QR	15
Simple Nutrients	505	584 M	505QR	12
Solids	499	241 M	499QR	12
Solids Concentrate	4032	4030 M	4032QR	12
Surfactants-MBAS	776	892 Q	776QR	15
Sulfide	071	891 M	071QR	15
Sulfite	534	244 *	534QR	15
Tin & Titanium	517	573 M	517QR	14
Total Organic Halides (TOX)	670	895 Q	670QR	15
Total Phenolics (4-AAP)	515	589 M	515QR	15
Total Residual Chlorine (TRC)	501	587 M	501QR	16
Toxaphene	717	838 M	717QR	19
TPH in Water	600/601	642 Q	602QR	13
Trace Metals	500	586 M	500QR	14
Turbidity	777	893 M	777QR	15
Uranium	4402	4400 Q	4402QR	14
Volatile Aromatics	4452	4450 Q	4452QR	17
Volatiles	710	830 M	710QR	17
Volatile Solids	913	884 M	913QR	12

QuiK Response PT

Need PT results fast? Available 52 weeks a year, QuiK Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

MINERALS/SOLIDS

Minerals

CRM	PT M	QR
Cat. #506	Cat. #581	Cat. #506QR

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	PT M	QR
Cat. #507	Cat. #580	Cat. #507QR

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

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

pH	5-10 units
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Settleable Solids

CRM	PT M	QR
Cat. #911	Cat. #883	Cat. #911QR

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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Volatile Solids

CRM	PT M	QR
Cat. #913	Cat. #884	Cat. #913QR

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	PT M	QR
Cat. #4032	Cat. #4030	Cat. #4032QR

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	PT M	QR
Cat. #499	Cat. #241	Cat. #499QR

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	PT M	QR
Cat. #505	Cat. #584	Cat. #505QR

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	PT M	QR
Cat. #525	Cat. #579	Cat. #525QR

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	PT M	QR
Cat. #770	Cat. #888	Cat. #770QR

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.

Oil & Grease 20-200 mg/bottle

Oil & Grease Concentrate

CRM
Cat. #4122

PT M
Cat. #4120

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.

Oil & Grease 20-200 mg/L

1 Liter Oil & Grease

CRM
Cat. #518

PT M
Cat. #582

QR
Cat. #518QR

One liter whole-volume glass bottle with a 33-430 thread is ready to analyze. For gravimetric and IR analyses.

Oil & Grease 20-200 mg/L

1 Liter Boston Round Oil & Grease

CRM
Cat. #818

PT M
Cat. #582

QR
Cat. #818QR

One liter whole-volume glass bottle with a 33-400 thread is ready to analyze. For gravimetric and IR analyses.

Oil & Grease 20-200 mg/L

HEM/SGT-HEM

CRM
Cat. #519

PT Q
Cat. #489

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

CRM
Cat. #600

PT Q
Cat. #642

QR
Cat. #602QR

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

Total Petroleum Hydrocarbons 20-200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water

CRM
Cat. #601

PT Q
Cat. #642

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 418.1, 1664, 5520, or other applicable method.

Total Petroleum Hydrocarbons 20-200 mg/L

DEMAND

Demand

CRM
Cat. #516

PT M
Cat. #578

QR
Cat. #516QR

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	PT ^M	QR
Cat. #500	Cat. #586	Cat. #500QR

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	200-4,000 µg/L
Antimony	90-900 µg/L
Arsenic	90-900 µg/L
Barium	100-2,500 µg/L
Beryllium	50-500 µg/L
Boron	800-2,000 µg/L
Cadmium	100-1,000 µg/L
Chromium	100-1,000 µg/L
Cobalt	100-1,000 µg/L
Copper	100-1,000 µg/L
Iron	200-4,000 µg/L
Lead	100-1,500 µg/L
Manganese	200-2,000 µg/L
Molybdenum	60-600 µg/L
Nickel	200-2,000 µg/L
Selenium	100-1,000 µg/L
Silver	100-1,000 µg/L
Strontium	50-500 µg/L
Thallium	80-800 µg/L
Vanadium	50-2,000 µg/L
Zinc	300-2,000 µg/L



Mercury

CRM	PT ^M	QR
Cat. #514	Cat. #574	Cat. #514QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Analyze for total mercury.
Mercury, total..... 3-30 µg/L

Low-Level Mercury

CRM	PT ^Q	QR
Cat. #931	Cat. #896	Cat. #931QR

One 5 mL flame-sealed ampule yields up to 4 liters after dilution. Use with EPA 1631, or other sensitive mercury analysis methods.

Mercury, total..... 20-100 ng/L

ERA Low-Level Mercury is also available during February and March WPPT schemes.

Hexavalent Chromium

CRM	PT ^M	QR
Cat. #984	Cat. #898	Cat. #984QR

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

Tin and Titanium

CRM	PT ^M	QR
Cat. #517	Cat. #573	Cat. #517QR

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

Tin..... 200-2,000 µg/L
Titanium 60-300 µg/L

Uranium

CRM	PT ^Q	QR
Cat. #4402	Cat. #4400	Cat. #4402QR

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

Uranium 25-200 µg/L

Lithium

CRM	PT [*]	QR
Cat. #4992	Cat. #4990	Cat. #4992QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Designed for the Ohio VAP program.

Lithium..... 50-500 µg/L

^{*} ERA WP Lithium PTs open in February and August.

PHYSICAL PROPERTY

Color

CRM	PT	QR
Cat. #070	Cat. #882	Cat. #070QR

One 125 mL whole-volume bottle is ready to analyze. Use with EPA methods 110.1, 110.2, and 110.3, Standard Methods 2120B, 2120C, 2120E, or other applicable method.

Color..... 10-75 PC units

Turbidity

CRM	PT	QR
Cat. #777	Cat. #893	Cat. #777QR

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

Turbidity..... 2-30 NTU

MISCELLANEOUS CHEMISTRY

Cyanide & Phenol

CRM	PT	QR
Cat. #502	Cat. #588	Cat. #502QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. The CRM is also certified for Phenol at 0.05-5 mg/L. For a Total Phenolics PT, order Cat #589.

Total Cyanide..... 0.1-1 mg/L
Amenable Cyanide..... 0.1-1 mg/L

Total Organic Halides (TOX)

CRM	PT	QR
Cat. #670	Cat. #895	Cat. #670QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total organic halides with adsorption pyrolysis titrimetric methods.

TOX..... 300-1,500 µg/L

Total Phenolics (4-AAP)

CRM	PT	QR
Cat. #515	Cat. #589	Cat. #515QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total phenolic compounds by 4-AAP methods.

Total Phenolics by 4-AAP..... 0.5-5 mg/L

Silica

CRM	PT	QR
Cat. #775	Cat. #890	Cat. #775QR

One 60 mL poly bottle yields up to 1 liter after dilution. Analyze for silica as SiO₂ with colorimetric or ICP methods.

Silica as SiO₂..... 50-250 mg/L

Sulfide

CRM	PT	QR
Cat. #071	Cat. #891	Cat. #071QR

One 10 mL flame-sealed ampule yields up to 1 liter after dilution. Preserved sample is guaranteed stable. Analyze for sulfide by titrimetric or colorimetric methods or ISE.

Sulfide..... 2-10 mg/L

Sulfite

CRM	PT	QR
Cat. #534	Cat. #244	Cat. #534QR

One 10 mL concentrate yields up to 2 liters after dilution.

Sulfite..... 10-250 mg/L

ERA WP Sulfite PTs open in January and July.

Surfactants-MBAS

CRM	PT	QR
Cat. #776	Cat. #892	Cat. #776QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Analyze for Surfactants-MBAS with EPA method 425.1, or other applicable method.

Surfactants-MBAS..... 0.2-1 mg/L

MISCELLANEOUS CHEMISTRY

Acidity

CRM

Cat. #915

PT Q

Cat. #885

QR

Cat. #915QR

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 CaCO_3650-1,800 mg/L

Boron

CRM

Cat. #919

PT Q

Cat. #886

QR

Cat. #919QR

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

Boron.....800-2000 µg/L

Bromide

CRM

Cat. #769

PT Q

Cat. #887

QR

Cat. #769QR

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

Bromide.....1-10 mg/L

Total Residual Chlorine (TRC)

CRM

Cat. #501

PT M

Cat. #587

QR

Cat. #501QR

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

Total Residual Chlorine.....0.5-3 mg/L

Low-Level Total Residual Chlorine (TRC)

CRM

Cat. #917

PT M

Cat. #881

QR

Cat. #917QR

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

Total Residual Chlorine.....75-250 µg/L



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Statistics

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Customer Number
E667501

Welcome to eData

eDATA 2.0: The Next Evolution of PT Informatics Arrives in 2015.

QR-021714TE9
(03/05/2014 - 04/04/2014)

GENERATE EXECUTION REPORT



SOIL-83(08/01/2014 - 09/12/2014)

Study begins in
65 days

VIEW REPORTS



WP-221(08/08/2014 - 09/19/2014)

Study begins in
72 days

VIEW REPORTS

VOLATILES

Volatiles

CRM Cat. #710	PT M Cat. #830	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	(DBCP)	4-Methyl-2-pentanone (MIBK)
Acetonitrile	1,2-Dibromoethane (EDB)	Methylene chloride
Acrolein	Dibromomethane	Naphthalene
Acrylonitrile	1,2-Dichlorobenzene	Nitrobenzene
Benzene	1,3-Dichlorobenzene	n-Propylbenzene
Bromobenzene	1,4-Dichlorobenzene	Styrene
Bromochloromethane	Dichlorodifluoromethane	1,1,1,2-Tetrachloroethane
Bromodichloromethane	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	Tetrachloroethene
Bromomethane	cis-1,2-Dichloroethene	Toluene
2-Butanone (MEK)	1,1-Dichloroethene	1,2,3-Trichlorobenzene
n-Butylbenzene	trans-1,2-Dichloroethene	1,2,4-Trichlorobenzene
sec-Butylbenzene	1,3-Dichloropropane	1,1,1-Trichloroethane
tert-Butylbenzene	1,2-Dichloropropane	1,1,2-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	Trichloroethene
Carbon tetrachloride	cis-1,3-Dichloropropene	Trichlorofluoromethane
Chlorobenzene	1,1-Dichloropropene	1,2,3-Trichloropropane
Chlorodibromomethane	trans-1,3-Dichloropropene	1,2,4-Trimethylbenzene
Chloroethane	Ethylbenzene	1,3,5-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachlorobutadiene	Vinyl acetate
Chloroform	Hexachloroethane	Vinyl chloride
Chloromethane	2-Hexanone	m&p Xylene
2-chlorotoluene	Isopropylbenzene	o-Xylene
4-chlorotoluene	p-Isopropyltoluene	Xylenes, total
1,2-Dibromo-3-chloropropane	Methyl tert-butyl ether (MTBE)	

Volatile Aromatics

CRM Cat. #4452	PT Q Cat. #4450	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 5-300 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 Q Cat. #643	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 5-300 µg/L after dilution.

Gasoline Range Organics (GRO) in Water

CRM Cat. #762	PT Q Cat. #640	QR Cat. #762QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with both purge & trap and modified EPA 8015 GC/FID methods or other applicable methods to test for GRO at 400-4,000 µg/L. Also use to test for BTEX in gasoline.

HERBICIDES

Chlorinated Acid Herbicides

CRM Cat. #718	PT M Cat. #829	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 or other applicable methods 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 13) for these compounds in the EPA/NELAC range.

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

PCBs

PCBs in Water

CRM Cat. #734S	PT M Cat. #832S	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 Oil

CRM Cat. #729S	PT M Cat. #835S	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 12-50 mg/kg.

Aroclor 1016	Aroclor 1254	Aroclor 1260
Aroclor 1242		

SEMIVOLATILES

Base/Neutrals

CRM	PT M	QR
Cat. #711	Cat. #833	Cat. #711QR

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 200-1,000 µg/L).

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

Acids

CRM	PT M	QR
Cat. #712	Cat. #834	Cat. #712QR

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	PT Q	QR
Cat. #764	Cat. #641	Cat. #764QR

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 800-6,000 µg/L.

EDB/DBCP/TCP

CRM	PT M	QR
Cat. #692	Cat. #562	Cat. #692QR

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 15-150 µg/L.

1,2-Dibromo-3-chloropropane (DBCP)	15-150 µg/L
1,2-Dibromoethane (EDB)	10-120 µg/L
1,2,3-Trichloropropane (TCP)	15-150 µg/L

Glycols in Water

RM	PT Q	QR
Cat. #401	Cat. #271	Cat. #401QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA methods 8015B, 8430, 1671, or other applicable method.

Diethylene glycol	Propylene glycol	Triethylene glycol
Ethylene glycol	Tetraethylene glycol	

Low-Level Nitroaromatics & Nitramines

CRM	PT Q	QR
Cat. #677	Cat. #932	Cat. #677QR

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	PT Q	QR
Cat. #715	Cat. #836	Cat. #715QR

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	PT Q	QR
Cat. #4882	Cat. #4880	Cat. #4882QR

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

PESTICIDES

Organochlorine Pesticides

CRM	PT M	QR
Cat. #713	Cat. #831	Cat. #713QR

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	

Nitrogen Pesticides

CRM	PT Q	QR
Cat. #674	Cat. #487	Cat. #674QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA methods 619, 633, 8141, 8270, or other applicable method. Contains a subset of the analytes listed below at 2-20 µg/L.

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

As your partner in defensible data, we are dedicated to ensuring your successful PT performance by helping you solve analytical challenges and improve root cause analysis and corrective action.

Chlordane

CRM	PT M	QR
Cat. #716	Cat. #837	Cat. #716QR

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	PT M	QR
Cat. #717	Cat. #838	Cat. #717QR

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	PT Q	QR
Cat. #908	Cat. #899	Cat. #908QR

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

Organophosphorus Pesticides (OPP)

CRM	PT Q	QR
Cat. #665	Cat. #934	Cat. #665QR

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 O & S	Ethoprop	Phosmet
Diazinon	Ethyl Parathion (Parathion)	Ronnel
Dichlorvos (DDVP)	Famphur	Stirophos (tetrachlorovinphos)
Dimethoate	Fonofos	Terbufos

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	200-1,200 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. Use with electrometric methods.

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 13.

Oil & 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 or ICP-MS methods.

Aluminum	200-4,000 µg/L
Antimony	90-900 µg/L
Arsenic	90-900 µg/L
Barium	100-2,500 µg/L
Beryllium	50-500 µg/L
Boron	800-2,000 µg/L
Cadmium	100-1,000 µg/L
Chromium	100-1,000 µg/L
Cobalt	100-1,000 µg/L
Copper	100-1,000 µg/L
Iron	200-4,000 µg/L
Lead	100-1,500 µg/L
Manganese	200-2,000 µg/L
Molybdenum	60-600 µg/L
Nickel	200-2,000 µg/L
Selenium	100-1,000 µg/L
Silver	100-1,000 µg/L
Strontium	50-500 µg/L
Thallium	80-800 µg/L
Vanadium	50-2,000 µg/L
Zinc	300-2,000 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

ERA's 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 Reference Materials (RM) 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

RM

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

RM

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

RM

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

RM

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

RM

Cat. #4123

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

Oil & Grease	10.0-100 mg/L
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QC Plus – pH

RM

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

RM

Cat. #4423

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

Fluoride	5-20 mg/L
----------------	-----------



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 24 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 vial with screw-cap yields up to 2 liters of solution after dilution.

Total Residual Chlorine.....	0.100-1.00 mg/L
------------------------------	-----------------

QC Plus – Trace Metals

CRM

Cat. #4073

Two 15 mL screw-cap vials to be diluted together to yield up to 2 liters of sample.

Aluminum.....	50.0-200 µg/L
Antimony.....	10.0-300 µg/L
Arsenic.....	10.0-250 µg/L
Barium.....	50.0-500 µg/L
Beryllium.....	5.00-100 µg/L
Boron.....	50.0-250 µg/L
Cadmium.....	5.00-100 µg/L
Chromium.....	15.0-500 µg/L
Cobalt.....	25.0-500 µg/L
Copper.....	15.0-500 µg/L
Iron.....	25.0-500 µg/L
Lead.....	50.0-500 µg/L
Manganese.....	50.0-500 µg/L
Mercury.....	0.500-5.00 µg/L
Molybdenum.....	20.0-500 µg/L
Nickel.....	50.0-500 µg/L
Selenium.....	10.0-100 µg/L
Silver.....	10.0-100 µg/L
Strontium.....	50.0-500 µg/L
Thallium.....	10.0-250 µg/L
Tin.....	200-1000 µg/L
Titanium.....	10.0-100 µg/L
Vanadium.....	50.0-250 µg/L
Zinc.....	25.0-250 µg/L



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- Lead Operator, Virginia

DMR-QA

The DMR-QA Proficiency Testing scheme, targeted towards customers holding NPDES permits, is designed to meet the requirements of the United States Environmental Protection annual DMR-QA program. Due to the duration of the DMR-QA study, these standards are not NELAC compliant. If you need NELAC compliant standards, please participate in one of our WP studies.



2015 DMR-QA PT Scheme Schedule

	Scheme #	Opens	Closes
	DMR-QA 35	EST Mar 16	TBD
Q	WP 240	Jan 12	Feb 26
	WP 241	Feb 16	Apr 2
	WP 242	Mar 9	Apr 23
Q	WP 243	Apr 13	May 28
	WP 244	May 11	Jun 25

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

2016 DMR-QA PT Scheme Schedule

	Scheme #	Opens	Closes
	DMR-QA 36	EST Mar 18	TBD
Q	WP 252	Jan 18	Mar 3
	WP 253	Feb 15	Mar 31
	WP 254	Mar 7	Apr 21
Q	WP 255	Apr 11	May 26
	WP 256	May 16	Jun 30

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

Description	CRM	PT	QR	Page
DMR-QA Sets	see page 28 for options			
Complex Nutrients	525	579	525QR	27
Demand	516	578	516QR	26
Hardness/TSS	507	580	507QR	26
Hexavalent Chromium	984	898	984QR	26
Low-Level Mercury	931	896	931QR	26
Low-Level Total Residual Chlorine (TRC)	917	881	917QR	27
Mercury	514	574	514QR	26
Minerals	506	581	506QR	26
Nitrite	770	888	770QR	27
Oil & Grease	see page 27 for options			
pH	977	577	977QR	26

CRM – Certified Reference Material

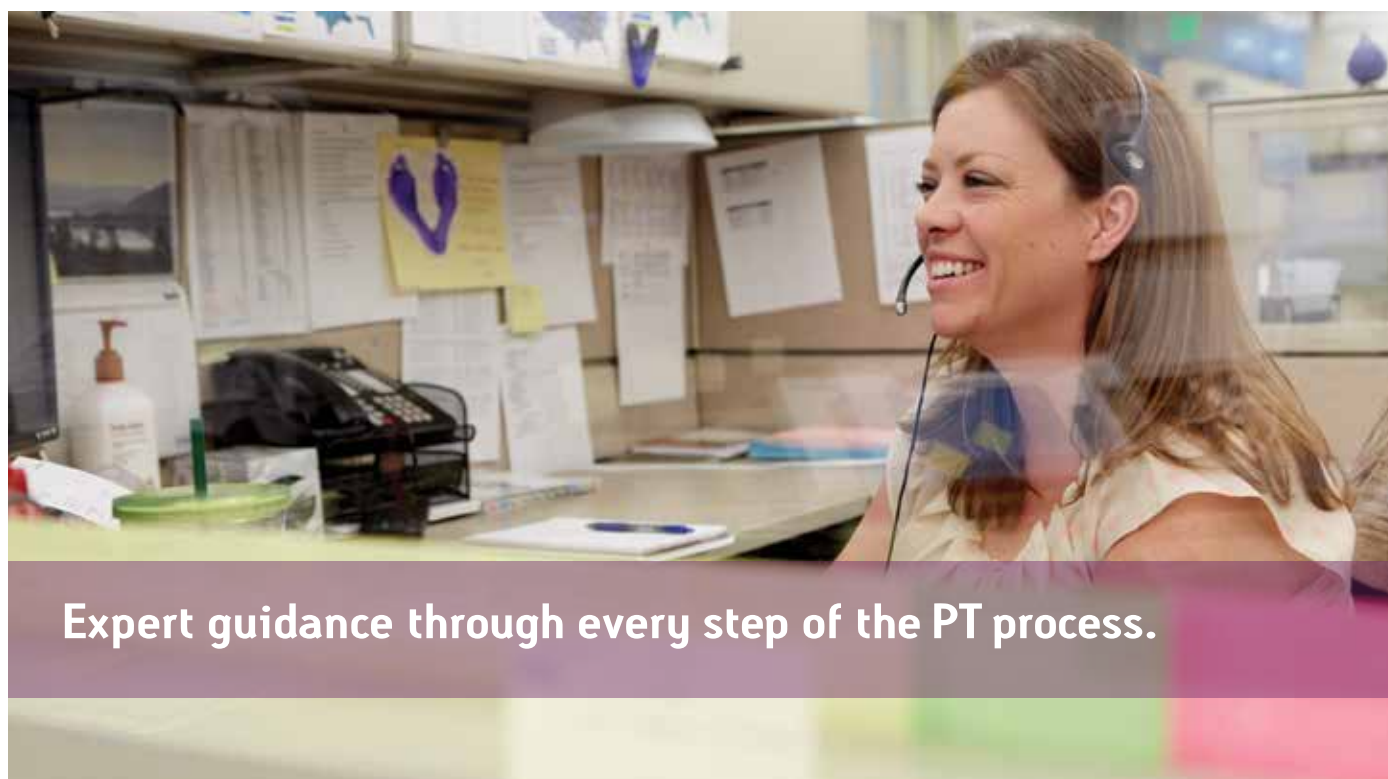
PT – Proficiency Testing

QR – QuiK Response

Description	CRM	PT	QR	Page
Settleable Solids	911	883	911QR	28
Simple Nutrients	505	584	505QR	27
Solids	499	241	499QR	26
Solids Concentrate	4032	4030	4032QR	26
Cyanide & Phenol	502	588	502QR	27
Total Phenolics (4-AAP)	515	589	515QR	28
Total Residual Chlorine (TRC)	501	587	501QR	27
Trace Metals	500	586	500QR	26
Turbidity	777	893	777QR	28
Wastewater Coliform Microbe	083	576	786QR	28
Whole Effluent Toxicity (WET)	see page 29 for options			

QuiK Response PT

Need PT results fast? Available 52 weeks a year, QuiK Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.



Expert guidance through every step of the PT process.

Trace Metals

CRM	PT	QR
Cat. #500	Cat. #586	Cat. #500QR

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

Aluminum	200-4,000 µg/L
Antimony	90-900 µg/L
Arsenic	90-900 µg/L
Barium	100-2,500 µg/L
Beryllium	50-500 µg/L
Boron	800-2,000 µg/L
Cadmium	100-1,000 µg/L
Chromium	100-1,000 µg/L
Cobalt	100-1,000 µg/L
Copper	100-1,000 µg/L
Iron	200-4,000 µg/L
Lead	100-1,500 µg/L
Manganese	200-2,000 µg/L
Molybdenum	60-600 µg/L
Nickel	200-2,000 µg/L
Selenium	100-1,000 µg/L
Silver	100-1,000 µg/L
Strontium	50-500 µg/L
Thallium	80-800 µg/L
Vanadium	50-2,000 µg/L
Zinc	300-2,000 µg/L

Hexavalent Chromium

CRM	PT	QR
Cat. #984	Cat. #898	Cat. #984QR

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

Hexavalent chromium	90-900 µg/L
---------------------	-------------

Mercury

CRM	PT	QR
Cat. #514	Cat. #574	Cat. #514QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Analyze for total mercury.

Mercury, total	3-30 µg/L
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Low-Level Mercury

CRM	PT	QR
Cat. #931	Cat. #896	Cat. #931QR

One 5 mL flame-sealed ampule yields up to 4 liters after dilution. Use with EPA1631, or other sensitive CVAA methods.

Mercury, total	20-100 ng/L
----------------	-------------

Demand

CRM	PT	QR
Cat. #516	Cat. #578	Cat. #516QR

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

Solids Concentrate

CRM	PT	QR
Cat. #4032	Cat. #4030	Cat. #4032QR

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

Total solids at 105 °C	140-800 mg/L
Total dissolved solids at 180 °C	140-800 mg/L
Total Suspended Solids	20-100 mg/L

Solids

CRM	PT	QR
Cat. #499	Cat. #241	Cat. #499QR

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	20-100 mg/L

pH

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

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

pH	5-10 units
----	------------

Minerals

CRM	PT	QR
Cat. #506	Cat. #581	Cat. #506QR

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	200-1,200 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/TSS

CRM	PT	QR
Cat. #507	Cat. #580	Cat. #507QR

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

Simple Nutrients

CRM	PT	QR
Cat. #505	Cat. #584	Cat. #505QR

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	PT	QR
Cat. #525	Cat. #579	Cat. #525QR

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

Oil & Grease Concentrate

CRM	PT	QR
Cat. #4122	Cat. #4120	Cat. #4122QR

One 24 mL screw-cap vial yields up to 2 liters after dilution. Use with EPA method 1664.

Oil & Grease	20-200 mg/L
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Cyanide & Phenol

CRM	PT	QR
Cat. #502	Cat. #588	Cat. #502QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Analyze for total cyanide using distillation followed by colorimetric, titrimetric or ISE methods. The CRM is also certified for Phenol at 0.05-5 mg/L. For a Total Phenolics PT, order Cat. #589.

Total Cyanide	0.1-1 mg/L
Amenable Cyanide	0.1-1 mg/L

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“The State loves the clear and concise format of the reports, and my Supervisor loves the ‘Hey, you passed’ certificate! What could you do better? Nothing... you do it all!”

— DMR-QA Customer, Lab Technician, Vermont



Nitrite

CRM	PT	QR
Cat. #770	Cat. #888	Cat. #770QR

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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Total Residual Chlorine (TRC)

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

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

Total Residual Chlorine	0.5-3 mg/L
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1 Liter Oil & Grease

CRM	PT	QR
Cat. #518	Cat. #582	Cat. #518QR

One liter whole-volume glass bottle with a 33-430 thread is ready to analyze.

For SPE compatible QC (33-400 thread), use Cat #818 1 liter Boston Round Oil & Grease. Please specify if for SPE compatible PT.

Oil & Grease	20-200 mg/L
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Low-Level Total Residual Chlorine (TRC)

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

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

Total Residual Chlorine	50-250 µg/L
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Total Phenolics (4-AAP)

CRM	PT	QR
Cat. #515	Cat. #589	Cat. #515QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total phenolic compounds by 4-AAP methods.

Total phenolics by 4-AAP 0.05-5 mg/L

Settleable Solids

CRM	PT	QR
Cat. #911	Cat. #883	Cat. #911QR

One 60 mL poly bottle with a solid yields 1 liter after dilution. Use with EPA method 160.5 and Standard Methods 2540F.

Settleable solids 5-50 mL/L

Turbidity

CRM	PT	QR
Cat. #777	Cat. #893	Cat. #777QR

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

Turbidity 2-30 NTU

Wastewater Coliform Microbe

CRM	PT	QR
Cat. #083	Cat. #576	Cat. #786QR

Includes one lyophilized quantitative standard for use with all Clean Water Act quantitative methods, including MF and MPN. Total Coliforms, Fecal Coliforms and E. coli, are present in the range of 20-2,400 CFU/100 mL or MPN/100 mL.

The CRM standard contains two samples, one quantitative positive and one blank.

DMR-QA SETS**DMR-QA Mini Set #1**

CRM	PT
Cat. #102	Cat. #186

Set includes Hardness/TSS, pH, and TRC.

DMR-QA Mini Set #2

CRM	PT
Cat. #103	Cat. #187

Set includes Demand, Hardness/TSS, and pH.

DMR-QA Mini Set #3

CRM	PT
Cat. #104	Cat. #188

Set includes Demand, Hardness/TSS, pH, and TRC.

DMR-QA Mini Set #4

CRM	PT
Cat. #106	Cat. #189

Set includes Demand, Hardness/TSS, Simple Nutrients, pH, and TRC.

DMR-QA Mini Set #5

CRM	PT
Cat. #6151	Cat. #6150

Set includes Solids Concentrate, pH, and TRC.

DMR-QA Mini Set #6

CRM	PT
Cat. #6161	Cat. #6160

Set includes Demand, Solids Concentrate, and pH.

DMR-QA Mini Set #7

CRM	PT
Cat. #6171	Cat. #6170

Set includes Demand, Solids Concentrate, TRC, and pH.

DMR-QA Mini Set #8

CRM	PT
Cat. #6181	Cat. #6180

Set includes Demand, Simple Nutrients, Solids Concentrate, pH, and TRC.

DMR-QA Complete Set

CRM	PT
Cat. #108	Cat. #174

Set includes Hardness/TSS, pH, Oil & Grease, Trace Metals, Mercury, Demand, Simple Nutrients, Complex Nutrients, Total Cyanide, Total Phenolics, Total Residual Chlorine, Minerals, Settleable Solids, Nitrite, Turbidity, and Hexavalent Chromium.

WHOLE EFFLUENT TOXICITY

Description	USEPA Test Code	USEPA Method Code	CRM	PT	QR
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Fathead Minnow (*Pimephales promelas*)

48-hour acute, non-renewal, 25 °C, MHSF.	13	2000	AQC002	WET002	AQC002QR
48-hour acute, non-renewal, 25 °C, 20% DMW.	14	2000	AQC003	WET003	AQC003QR
7-day short-term chronic, daily renewal, 25 °C, MHSF.	15	1000	AQC004	WET004	AQC004QR
7-day short-term chronic, daily renewal, 25 °C, 20% DMW.	16	1000	AQC005	WET005	AQC005QR

Ceriodaphnia Dubia

48-hour acute, daily renewal, 25 °C, MHSF.	19	2002	AQC008	WET008	AQC008QR
48-hour acute, daily renewal, 25 °C, 20% DMW.	20	2002	AQC009	WET009	AQC009QR
7-day short-term chronic, daily renewal, 25 °C, MHSF.	21	1002	AQC010	WET010	AQC010QR
7-day short-term chronic, daily renewal, 25 °C, 20% DMW.	22	1002	AQC011	WET011	AQC011QR

Daphnia Magna

48-hour acute, non-renewal, 25 °C, MHSF.	32	2021	AQC012	WET012	AQC012QR
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Daphnia Pulex

48-hour acute, non-renewal, 25 °C, MHSF.	38	2021	AQC015	WET015	AQC015QR
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Mysid (*Mysidopsis bahia*)

48-hour acute, non-renewal, 25 °C, 40 fathoms seawater.	42	2007	AQC016	WET016	AQC016QR
7-day short-term chronic, daily renewal, 25 °C, 40 fathoms seawater.	43	1007	AQC017	WET017	AQC017QR

Inland Silverside (*Menidia beryllina*)

48-hour acute, non-renewal, 25 °C, 40 fathoms seawater.	44	2006	AQC018	WET018	AQC018QR
7-day short-term chronic daily renewal, 25 °C, 40 fathoms seawater.	45	1006	AQC013	WET013	AQC013QR

Sheepshead Minnow (*Cyprinodon variegatus*)

48-hour acute, non-renewal, 25 °C, 40 fathoms seawater.	46	2004	AQC019	WET019	AQC019QR
7-day short-term chronic, daily renewal, 25 °C, 40 fathoms seawater.	47	1004	AQC020	WET020	AQC020QR

WATER Supply

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



2015 Water Supply PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WS 222	Jan 5	Feb 19
	WS 223	Feb 9	Mar 26
	WS 224	Mar 2	Apr 16
Q	WS 225	Apr 6	May 21
	WS 226	May 4	Jun 18
	WS 227	Jun 8	Jul 23
Q	WS 228	Jul 6	Aug 20
	WS 229	Aug 3	Sep 17
	WS 230	Sep 8	Oct 23
Q	WS 231	Oct 5	Nov 19
	WS 232	Nov 6	Dec 21
	WS 233	Dec 7	Jan 21, 2016

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

2016 Water Supply PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WS 234	Jan 11	Feb 25
	WS 235	Feb 8	Mar 24
	WS 236	Mar 1	Apr 15
Q	WS 237	Apr 4	May 19
	WS 238	May 9	Jun 23
	WS 239	Jun 6	Jul 21
Q	WS 240	Jul 11	Aug 25
	WS 241	Aug 8	Sep 22
	WS 242	Sep 6	Oct 21
Q	WS 243	Oct 7	Nov 21
	WS 244	Nov 1	Dec 16
	WS 245	Dec 5	Jan 19, 2017

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

Description	CRM	PT	QR	Page
Carbamates/ Carbamoxylxime Pesticides	707	846 M	707QR	36
Chloral Hydrate	676	853 *	676QR	35
Chlordane	705	845 M	705QR	36
Chlorinated Acid Herbicides	704	851 M	704QR	37
Color	661	859 Q	661QR	34
Corrosivity	980	900 Q	980QR	34
Cyanide	983	556 M	983QR	34
Dioxin	663	857 Q	663QR	37
EDB/DBCP/TCP	706	847 M	706QR	36
Gasoline Additives	909	905 Q	909QR	35
Hardness	693	555 M	693QR	32
Haloacetic Acids (HAA)	684	852 M	684QR	35
Halomethanes (THMs)	702	842 M	702QR	35
Hexavalent Chromium	658	854 Q	658QR	32
Inorganics	698	591 M	698QR	32
Inorganic Disinfection #1	5272	5270 M	5272QR	33
Inorganic Disinfection #2	5262	5260 M	5262QR	33
Mercury	666	551 M	666QR	32
Metals	697	590 M	697QR	32

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

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

***** ERA Chloral Hydrate PTs open in January and July.

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

Description	CRM	PT	QR	Page
Nitrite	695	594 M	695QR	33
Organic Carbon	669	557 M	669QR	34
o-Phosphate Nutrients	667	558 M	667QR	33
PCBs as Decachlorobiphenyl	708	839 Q	708QR	37
Perchlorate	910	903 Q	910QR	34
Pesticides	709	850 M	709QR	36
pH	779	552 M	779QR	32
Regulated Volatiles	703	840 M	703QR	35
Residual Chlorine	696	593 M	696QR	34
Semivolatiles #1	690	848 M	690QR	37
Semivolatiles #2 Herbicides	691	849 M	691QR	37
Silica	785	902 Q	785QR	34
Solids Concentrate	5152	5150 M	5152QR	32
Surfactants-MBAS	784	901 Q	784QR	34
Toxaphene	700	844 M	700QR	36
Turbidity	699	592 M	699QR	34
Unregulated Volatiles	683	841 M	683QR	35
Uranium	930	858 Q	930QR	32
UV 254 Absorbance	662	904 Q	662QR	34
Vanadium	660	856 Q	660QR	32

QuiK Response PT

Need PT results fast? Available 52 weeks a year, QuiK Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

MINERALS/SOLIDS

Hardness

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

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

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

Inorganics

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

One 500 mL whole-volume bottle is ready to analyze. The CRM is also certified for Sodium. For a Sodium PT, order Hardness, Cat. #555.

Alkalinity as CaCO ₃	25-200 mg/L
Chloride	20-160 mg/L
Fluoride	1-8 mg/L
Nitrate as N	3-10 mg/L
Nitrate plus nitrite as N	3-10 mg/L
Potassium	10-40 mg/L
Specific conductance at 25 °C	130-1,300 µmhos/cm
Sulfate	25-250 mg/L
Total dissolved solids (TDS) at 180 °C	100-1,000 mg/L

pH

CRM	PT M	QR
Cat. #779	Cat. #552	Cat. #779QR

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

pH	5-10 units
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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	100-1,000 mg/L
Total solids (TS) at 105 °C	123-1,100 mg/L
Total suspended solids (TSS)	23-100 mg/L



The Industry Standard

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	130-1,000 µg/L
Antimony	6-50 µg/L
Arsenic	5-50 µg/L
Barium	500-3,000 µg/L
Beryllium	2-20 µg/L
Boron	800-2,000 µg/L
Cadmium	2-50 µg/L
Chromium	10-200 µg/L
Copper	50-2,000 µg/L
Iron	100-1,800 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	50-1,000 µg/L
Zinc	200-2,000 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.

Mercury, total	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

Inorganic Disinfection #1

CRM	PT ^M	QR
Cat. #5272	Cat. #5270	Cat. #5272QR

One 24 mL screw-cap vial yields up to 4 liters after dilution.

Chlorate..... 60-180 µg/L
Chlorite..... 100-1,000 µg/L

Inorganic Disinfection #2

CRM	PT ^M	QR
Cat. #5262	Cat. #5260	Cat. #5262QR

One 24 mL screw-cap vial yields up to 4 liters after dilution.

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

NUTRIENTS

Nitrite

CRM	PT ^M	QR
Cat. #695	Cat. #594	Cat. #695QR

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

Nitrite as N..... 0.4-2 mg/L

o-Phosphate Nutrients

CRM	PT ^M	QR
Cat. #667	Cat. #558	Cat. #667QR

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

ortho-Phosphate as P..... 0.5-5.5 mg/L

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All ERA WS PTs open monthly (^M) or quarterly (^Q) unless otherwise noted.

MISCELLANEOUS INORGANIC

Residual Chlorine

CRM Cat. #696	PT M Cat. #593	QR Cat. #696QR
-------------------------	--------------------------	--------------------------

One 2 mL flame-sealed ampule yields up to 2 liters after dilution.

Total Residual Chlorine.....	0.5-3 mg/L
Free Residual Chlorine.....	0.5-3 mg/L

Cyanide

CRM Cat. #983	PT M Cat. #556	QR Cat. #983QR
-------------------------	--------------------------	--------------------------

One 15 mL screw-cap vial yields up to 2 liters after dilution. Source material is free cyanide.

Total Cyanide	0.1-0.5 mg/L
---------------------	--------------

Organic Carbon

CRM Cat. #669	PT M Cat. #557	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 Q Cat. #903	QR Cat. #910QR
-------------------------	--------------------------	--------------------------

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

Perchlorate.....	4-20 µg/L
------------------	-----------

Silica

CRM Cat. #785	PT Q Cat. #902	QR Cat. #785QR
-------------------------	--------------------------	--------------------------

One 60 mL poly bottle yields 1 liter after dilution.

Silica as SiO ₂	5-75 mg/L
----------------------------------	-----------

Surfactants-MBAS

CRM Cat. #784	PT Q Cat. #901	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 Q Cat. #859	QR Cat. #661QR
-------------------------	--------------------------	--------------------------

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

Color.....	10-75 PC units
------------	----------------

Corrosivity

CRM Cat. #980	PT Q Cat. #900	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 M Cat. #592	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 Q Cat. #904	QR Cat. #662QR
-------------------------	--------------------------	--------------------------

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

UV 254 Absorbance.....	0.05-0.7 cm ⁻¹
------------------------	---------------------------

DISINFECTION BY-PRODUCTS

Chloral Hydrate

CRM	PT 	QR
Cat. #676	Cat. #853	Cat. #676QR

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.

 ERA WS Chloral Hydrate PTs open in January and July.

Haloacetic Acids (HAA)

CRM	PT 	QR
Cat. #684	Cat. #852	Cat. #684QR

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

VOLATILE ORGANICS

Gasoline Additives

CRM	PT 	QR
Cat. #909	Cat. #905	Cat. #909QR

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

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

Halomethanes (THMs)

CRM	PT 	QR
Cat. #702	Cat. #842	Cat. #702QR

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

Bromodichloromethane	Chlorodibromomethane	Chloroform
Bromoform		

Regulated Volatiles

CRM	PT 	QR
Cat. #703	Cat. #840	Cat. #703QR

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

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

Unregulated Volatiles

CRM	PT 	QR
Cat. #683	Cat. #841	Cat. #683QR

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

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

All ERA WS PTs open monthly () or quarterly () unless otherwise noted.

PESTICIDES

Pesticides

CRM	PT M	QR
Cat. #709	Cat. #850	Cat. #709QR

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		

Chlordane

CRM	PT M	QR
Cat. #705	Cat. #845	Cat. #705QR

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	PT M	QR
Cat. #700	Cat. #844	Cat. #700QR

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.

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Carbamate/Carbamoxyl oxime Pesticides

CRM	PT M	QR
Cat. #707	Cat. #846	Cat. #707QR

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		

EDB/DBCP/TCP

CRM	PT M	QR
Cat. #706	Cat. #847	Cat. #706QR

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)

SEMIVOLATILE ORGANICS

HERBICIDES

Dioxin

CRM	PT 	QR
Cat. #663	Cat. #857	Cat. #663QR

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 µg/L.

PCBs as Decachlorobiphenyl

CRM	PT 	QR
Cat. #708	Cat. #839	Cat. #708QR

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 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

Semivolatiles #1

CRM	PT 	QR
Cat. #690	Cat. #848	Cat. #690QR

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 35) for this compound in the EPA/NELAC range.

Chlorinated Acid Herbicides

CRM	PT 	QR
Cat. #704	Cat. #851	Cat. #704QR

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
Bentazone	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	PT 	QR
Cat. #691	Cat. #849	Cat. #691QR

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		



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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.

Source Water
Microbe
Proficiency Testing Material
Catalog No. 595
Study WS 195
6195-071

2015 Water Pollution PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 240	Jan 12	Feb 26
	WP 241	Feb 16	Apr 2
	WP 242	Mar 9	Apr 23
Q	WP 243	Apr 13	May 28
	WP 244	May 11	Jun 25
	WP 245	Jun 15	Jul 30
Q	WP 246	Jul 13	Aug 27
	WP 247	Aug 10	Sep 24
	WP 248	Sep 14	Oct 29
Q	WP 249	Oct 16	Nov 30
	WP 250	Nov 13	Dec 28
	WP 251	Dec 14	Jan 28, 2016

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

2016 Water Pollution PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 252	Jan 18	Mar 3
	WP 253	Feb 15	Mar 31
	WP 254	Mar 7	Apr 21
Q	WP 255	Apr 11	May 26
	WP 256	May 16	Jun 30
	WP 257	Jun 13	Jul 28
Q	WP 258	Jul 18	Sep 1
	WP 259	Aug 15	Sep 29
	WP 260	Sep 12	Oct 27
Q	WP 261	Oct 14	Nov 28
	WP 262	Nov 7	Dec 22
	WP 263	Dec 12	Jan 26, 2017

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

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

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

STATE-SPECIFIC MICROBIOLOGY

Description	CRM	PT	QR	Page
Enterococci	081	880	787QR	39
Massachusetts Ground Water Enterococci	081	077	—	39
Wastewater Coliform Microbe	083	576	786QR	39

wp MICROBIOLOGY

Wastewater Coliform Microbe

CRM Cat. #083	PT Cat. #576	QR Cat. #786QR
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Each PT sample is one lyophilized quantitative standard for use with all Clean Water Act quantitative methods, including MF and MPN.

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 20-2,400 CFU/100 mL or MPN/100 mL.

Enterococci

CRM Cat. #081	PT Cat. #880	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 20-1,000 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.

Massachusetts Ground Water Enterococci

CRM Cat. #081	PT Cat. #077
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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 2 lyophilized samples- one quantitative positive and one blank.

Massachusetts Ground Water Enterococci PT is available any time.

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WS MICROBIOLOGY

2015 Water Supply PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WS 222	Jan 5	Feb 19
	WS 223	Feb 9	Mar 26
	WS 224	Mar 2	Apr 16
Q	WS 225	Apr 6	May 21
	WS 226	May 4	Jun 18
	WS 227	Jun 8	Jul 23
Q	WS 228	Jul 6	Aug 20
	WS 229	Aug 3	Sep 17
	WS 230	Sep 8	Oct 23
Q	WS 231	Oct 5	Nov 19
	WS 232	Nov 6	Dec 21
	WS 233	Dec 7	Jan 21, 2016

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

2016 Water Supply PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WS 234	Jan 11	Feb 25
	WS 235	Feb 8	Mar 24
	WS 236	Mar 1	Apr 15
Q	WS 237	Apr 4	May 19
	WS 238	May 9	Jun 23
	WS 239	Jun 6	Jul 21
Q	WS 240	Jul 11	Aug 25
	WS 241	Aug 8	Sep 22
	WS 242	Sep 6	Oct 21
Q	WS 243	Oct 7	Nov 21
	WS 244	Nov 1	Dec 16
	WS 245	Dec 5	Jan 19, 2017

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

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QR – QuiK Response

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



Description	CRM	PT	QR	Page
Heterotrophic Plate Count	084	079 M	084QR	41
Potable Water Coliform Microbe	694	080 M	085QR	41
Source Water Microbe	078	595 Q	078QR	41

Heterotrophic Plate Count

CRM
Cat. #084

PT **M**
Cat. #079

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 **M**
Cat. #080

QR
Cat. #085QR

Each sample set consists of lyophilized standards for the presence or absence analysis of Total Coliform, Fecal Coliform, 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 **Q**
Cat. #595

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.



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SOIL

Matrices designed to fulfill requirements for monitoring soil and solid matrices. Dried and homogenized standards of soil and sewage sludge designed to meet the United States Resource Conservation and Recovery Act and may be used to satisfy PT requirements worldwide.

2015 Soil PT Scheme Schedule

	Scheme #	Opens	Closes
Q	SOIL 89	Jan 19	Mar 5
Q	SOIL 90	Apr 20	Jun 4
Q	SOIL 91	Jul 20	Sep 3
Q	SOIL 92	Oct 19	Dec 3

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

2016 Soil PT Scheme Schedule

	Scheme #	Opens	Closes
Q	SOIL 93	Jan 25	Mar 10
Q	SOIL 94	Apr 18	Jun 2
Q	SOIL 95	Jul 25	Sep 8
Q	SOIL 96	Oct 17	Dec 1

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

Description	CRM	PT	QR	Page
Anions in Soil	543	873 Q	543QR	45
Base/Neutrals & Acids in Soil	727	467 Q	727QR	48
BTEX & MTBE in Soil	761	633 Q	761QR	46
Carbamate Pesticides in Soil	926	879 Q	926QR	49
Chlordane in Soil	725	628 Q	725QR	49
Chlorinated Acid Herbicides in Soil	723	626 Q	723QR	48
Corrosivity/pH in Soil	914	875 Q	914QR	45
Cyanide in Soil	541	621 Q	541QR	45
Diesel Range Organics (DRO) in Soil	765	631 Q	765QR	48
Gasoline Range Organics (GRO) in Soil	763	630 Q	763QR	46
Glycols in Soil	928	463 Q	928QR	48
Hexavalent Chromium in Soil	921	876 Q	921QR	44
Ignitability/Flash Point	979	874 Q	979QR	45
Low-Level PAHs in Soil	722	625 Q	722QR	48
Metals & Cyanide Blank Sand	058	—	—	51
Metals & Cyanide Blank Soil	057	—	—	51
Metals in Sewage Sludge	160	619 Q	160QR	44

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

All ERA Soil PTs open quarterly (**Q**) unless otherwise noted.

Description	CRM	PT	QR	Page
Metals in Soil	540	620 Q	540QR	44
Nitroaromatics & Nitramines in Soil	920	871 Q	920QR	48
Nutrients in Sludge	545	—	—	45
Nutrients in Soil	542	869 Q	542QR	45
Oil & Grease in Soil	549	867 Q	549QR	45
Organochlorine Pesticides in Soil	728	468 Q	728QR	49
Organophosphorus Pesticides (OPP) in Soil	925	878 Q	925QR	49
PCBs in Soil	726	624 Q	726QR	48
PCBs in Oil	see page 50 for options			
PCBs in Soil	see page 50 for options			
PCBs in Water	see page 50 for options			
Ready-to-use VOAs in Soil	924	870 Q	924QR	46
TCLP Metals in Soil	544	629 Q	544QR	44
TCLP Organochlorine Pesticides	732	—	732QR	47
TCLP Semivolatiles	737	—	737QR	47
TCLP Volatiles	730	—	730QR	47
Toxaphene in Soil	724	627 Q	724QR	49
TPH in Soil	570/571	632 Q	572QR	47
Volatiles in Soil	721	623 Q	721QR	46



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METALS

Metals in Soil

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

Aluminum	1,000-25,000 mg/kg
Antimony	80-300 mg/kg
Arsenic	40-400 mg/kg
Barium	100-1,000 mg/kg
Beryllium	40-400 mg/kg
Boron	80-800 mg/kg
Cadmium	40-400 mg/kg
Calcium	1,500-25,000 mg/kg
Chromium	40-400 mg/kg
Cobalt	40-400 mg/kg
Copper	40-400 mg/kg
Iron	1,000-50,000 mg/kg
Lead	40-400 mg/kg
Magnesium	1,200-25,000 mg/kg
Manganese	100-2,000 mg/kg
Mercury	1-35 mg/kg
Molybdenum	30-300 mg/kg
Nickel	40-500 mg/kg
Potassium	1,400-25,000 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	75-250 mg/kg
Titanium	10-2,000 mg/kg
Uranium	1.0-250 mg/kg
Vanadium	40-400 mg/kg
Zinc	100-1,000 mg/kg

Hexavalent Chromium in Soil

CRM Cat. #921	PT Q Cat. #876	QR 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
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TCLP Metals in Soil

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

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

Metals in Sewage Sludge

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

One 40 g sludge standard in a screw-cap bottle to be analyzed for the metals listed below.

Aluminum	1,000-50,000 mg/kg
Antimony	80-300 mg/kg
Arsenic	50-400 mg/kg
Barium	250-2,000 mg/kg
Beryllium	30-200 mg/kg
Cadmium	40-300 mg/kg
Calcium	5,000-70,000 mg/kg
Chromium	40-300 mg/kg
Cobalt	5-50 mg/kg
Copper	40-1,000 mg/kg
Iron	1,000-50,000 mg/kg
Lead	50-250 mg/kg
Magnesium	1,200-25,000 mg/kg
Manganese	100-2,000 mg/kg
Mercury	1-50 mg/kg
Molybdenum	5-250 mg/kg
Nickel	40-250 mg/kg
Potassium	1,400-25,000 mg/kg
Selenium	50-250 mg/kg
Silver	50-250 mg/kg
Sodium	150-15,000 mg/kg
Strontium	200-2,000 mg/kg
Thallium	50-250 mg/kg
Vanadium	5-250 mg/kg
Zinc	70-1,500 mg/kg



PHYSICAL PARAMETERS

Corrosivity/pH in Soil

CRM	PT 	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 	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 	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) 300-3,000 mg/kg
n-Hexane Extractable Material (O&G) (Infrared) 300-3,000 mg/kg

INORGANICS

Anions in Soil

CRM	PT 	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 200-1,000 mg/kg
Fluoride 25-500 mg/kg
Nitrate as N 25-500 mg/kg
Phosphate as P 25-500 mg/kg
Sulfate 25-2,000 mg/kg

Cyanide in Soil

CRM	PT 	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 	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 300-3,000 mg/kg
Total Kjeldahl Nitrogen as N 400-4,000 mg/kg
Total Organic Carbon (TOC) 1,000-20,000 mg/kg
Total phosphorus as P 300-3,000 mg/kg

Nutrients in Sludge

CRM
Cat. #545

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

Ammonia as N 0.1-5% (w/w)
Total Kjeldahl Nitrogen as N 2-10% (w/w)
Total Organic Carbon (TOC) 5-50% (w/w)
Total phosphorus as P 0.5-10% (w/w)

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VOLATILES

Volatiles in Soil

CRM Cat. #721	PT Q Cat. #623	QR Cat. #721QR
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One 2 mL flame-sealed ampule in methanol requires spiking onto the provided ten grams of solid matrix before analysis. Use with EPA methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 20-200 µg/kg (40-400 µg/kg for total xylenes, 80-1000 for selected ketones, and 200-1,000 µg/kg for acetonitrile).

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

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.

Gasoline Range Organics (GRO) in Soil

CRM Cat. #763	PT Q Cat. #630	QR Cat. #763QR
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One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100-2,000 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.

BTEX & MTBE in Soil

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

Benzene	Methyl tert-butyl ether (MTBE)	Xylenes, total
Ethylbenzene	Toluene	

Ready-to-Use VOAs in Soil

CRM Cat. #924	PT Q Cat. #870	QR Cat. #924QR
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One 20 mL flame-sealed ampule containing 10 g of soil and 10 mL of methanol is ready to analyze. Use with methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 1,000-20,000 µg/kg.

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



TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons (TPH) in Soil

CRM	PT 	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, or other applicable methods.

Non-polar Extractable Material (TPH) (Gravimetric).....	300-3,000 mg/kg
Non-polar Extractable Material (TPH) (IR)	300-3,000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil

CRM	PT 	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, or other applicable methods.

Non-polar Extractable Material (TPH) (Gravimetric).....	300-3,000 mg/kg
Non-polar Extractable Material (TPH) (IR)	300-3,000 mg/kg

▶▶▶ Quik Response PT

Need PT results fast? Available 52 weeks a year, Quik Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

TCLP

TCLP Volatiles

CRM	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	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	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 <0.01 mg/L.

Endrin	Heptachlor epoxide	Methoxychlor
Heptachlor	gamma-BHC (Lindane)	

The Industry Standard

All ERA Soil PTs open quarterly () unless otherwise noted.

SEMIVOLATILES

Nitroaromatics & Nitramines in Soil

CRM Cat. #920	PT Q Cat. #871	QR Cat. #920QR
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Two flame-sealed ampules each containing 30 g of soil are ready to analyze. Use for EPA methods 8330, 8091, or other applicable methods. Includes a subset of the analytes listed below at 1,500-15,000 µg/kg.

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

Low-Level PAHs in Soil

CRM Cat. #722	PT Q Cat. #625	QR Cat. #722QR
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Two flame-sealed ampules each containing 30 g are ready to analyze. Use for EPA HPLC method 8310, 8270 SIM, or other applicable method. Includes a subset of the analytes listed below at 50-1,000 µg/kg.

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

Diesel Range Organics (DRO) in Soil

CRM Cat. #765	PT Q Cat. #631	QR Cat. #765QR
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One flame-sealed ampule with 20 g of soil spiked with #2 Diesel fuel in the range 300-3,000 mg/kg. Use with modified EPA 8015, or other applicable GC/FID methods.

HERBICIDES

Chlorinated Acid Herbicides in Soil

CRM Cat. #723	PT Q Cat. #626	QR Cat. #723QR
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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 100-1,000 µg/kg (MCPA & MCPP 1,000-10,000 µg/kg).

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

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

Glycols in Soil

RM Cat. #928	PT Q Cat. #463	QR Cat. #928QR
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Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA methods 8015B, 8430, 1671, or other applicable method.

Diethylene glycol	Propylene glycol	Triethylene glycol
Ethylene glycol	Tetraethylene glycol	

Base/Neutrals & Acids in Soil

CRM Cat. #727	PT Q Cat. #467	QR Cat. #727QR
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Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA method 8270, or other applicable method. Includes a subset of the analytes listed below at 1,000-15,000 µg/kg.

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

PCBS

PCBs in Soil

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

PESTICIDES

Organochlorine Pesticides in Soil

CRM	PT 	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
gamma-Chlordane	Endosulfan sulfate	

Chlordane in Soil

CRM	PT 	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 200-1,000 µg/kg.

Toxaphene in Soil

CRM	PT 	QR
Cat. #724	Cat. #627	Cat. #724QR

One screw-top bottle containing 50 g of soil is ready to analyze. Use with method 8081, or other applicable methods. The standard contains toxaphene at 200-2,000 µg/kg.

Carbamate Pesticides in Soil

CRM	PT 	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 250-2,500 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 	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 100-1,000 µg/kg.

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



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SOIL

PCBs in Soil

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.

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

OIL

PCBs in Oil

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.

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

WATER

PCBs in Water

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.

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

The Industry Standard



BLANK SOIL



Metals & Cyanide Blank Sand

CRM

Cat. #058

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

Metals & Cyanide Blank Soil

CRM

Cat. #057

One 40 g soil sample in a screw-cap bottle. The concentrations of all of the following analytes are below the CLP 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 3,000-25,000 mg/kg.



Develop a custom standard with ERA for situations when an off-the-shelf standard is not an option.

UNDERGROUND STORAGE TANK

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

2015 UST in Water PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 240	Jan 12	Feb 26
Q	WP 243	Apr 13	May 28
Q	WP 246	Jul 13	Aug 27
Q	WP 249	Oct 16	Nov 30

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

2016 UST in Water PT Scheme Schedule

	Scheme #	Opens	Closes
Q	WP 252	Jan 18	Mar 3
Q	WP 255	Apr 11	May 26
Q	WP 258	Jul 18	Sep 1
Q	WP 261	Oct 14	Nov 28

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

CRM – Certified Reference Material

PT – Proficiency Testing

QR – Quik Response

All ERA UST PTs open quarterly (**Q**) unless otherwise noted.

*ERA Alaska PTs are available at any time.

Description	CRM	PT	QR	Page
Alaska BTEX in Water	646*	474	* —	55
Alaska DRO in Water	647*	475	* —	55
Alaska GRO in Water	645*	473	* —	55
BTEX & MTBE in Water	760	643	Q 760QR	54
Diesel Range Organics in Water	764	641	Q 764QR	54
Gasoline Range Organics in Water	762	640	Q 762QR	54
Massachusetts EPH in Water	567	482	Q 567QR	57
Massachusetts VPH in Water	566	481	Q 566QR	57
Texas High-Level Fuels in Water	795	477	Q 795QR	56
Texas Low-Level Fuels in Water	794	476	Q 794QR	56
Total Petroleum Hydrocarbons (TPH) in Water	600/601	642	Q 602QR	54
Washington HEM/SGT-HEM	519	489	Q 519QR	56
Wisconsin DRO	772	648	Q 772QR	56
Wisconsin GRO/PVOC	773	649	Q 773QR	56

*Reference Material [RM]

2015 Soil PT Scheme Schedule

	Scheme #	Opens	Closes
Q	SOIL 89	Jan 19	Mar 5
Q	SOIL 90	Apr 20	Jun 4
Q	SOIL 91	Jul 20	Sep 3
Q	SOIL 92	Oct 19	Dec 3

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

2016 Soil PT Scheme Schedule

	Scheme #	Opens	Closes
Q	SOIL 93	Jan 25	Mar 10
Q	SOIL 94	Apr 18	Jun 2
Q	SOIL 95	Jul 25	Sep 8
Q	SOIL 96	Oct 17	Dec 1

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

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

All ERA UST PTs open quarterly (**Q**) unless otherwise noted.

* ERA Alaska PTs are available at any time. ERA New Jersey EPH in Soil PT studies open in April and October.

Description	CRM	PT	QR	Page
Alaska BTEX in Soil	636*	470	* —	55
Alaska DRO in Soil	637*	471	* —	55
Alaska GRO in Soil	635*	469	* —	55
Alaska RRO in Soil	638*	472	* —	55
Arizona TPH in Soil	798	488	Q 798QR	55
BTEX & MTBE in Soil	761	633	Q 761QR	54
Diesel Range Organics in Soil	765	631	Q 765QR	54
Gasoline Range Organics in Soil	763	630	Q 763QR	54
Massachusetts EPH in Soil	569	484	Q 569QR	57
Massachusetts VPH in Soil	568	483	Q 568QR	57
New Jersey EPH in Soil	564	464	* 564QR	57
Texas High-Level Fuels in Soil	797	479	Q 797QR	56
Texas Low-Level Fuels in Soil	796	478	Q 796QR	56
Total Petroleum Hydrocarbons (TPH) in Soil	570/571	632	Q 572QR	54

*Reference Material [RM]

QuiK Response PT

Need PT results fast? Available 52 weeks a year, QuiK Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

All ERA UST PTs open quarterly (**Q**) unless otherwise noted.

UST IN SOIL

BTEX & MTBE in Soil

CRM Cat. #761	PT Q Cat. #633	QR Cat. #761QR
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One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes all the BTEX compounds and MTBE at 20-200 µg/kg (40-400 µg/kg for Total Xylenes). Use with EPA method 8021, or other applicable methods.

Gasoline Range Organics (GRO) in Soil

CRM Cat. #763	PT Q Cat. #630	QR Cat. #763QR
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One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100-2,000 mg/kg. Use with purge and trap and modified EPA 8015, or other applicable GC/FID methods. Also use to test for BTEX in gasoline.

Diesel Range Organics (DRO) in Soil

CRM Cat. #765	PT Q Cat. #631	QR Cat. #765QR
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One flame-sealed ampule with 20 g of soil spiked with #2 Diesel fuel in the range 300-3,000 mg/kg. Use with modified EPA 8015, or other applicable GC/FID methods.

Total Petroleum Hydrocarbons (TPH) in Soil

CRM Cat. #570	PT Q Cat. #632	QR Cat. #572QR
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One screw-top bottle with 50 g of soil to be analyzed for total petroleum hydrocarbons (TPH). Use with EPA IR, gravimetric methods 8440 and 9071B, or other applicable methods.

Non-polar Extractable Material (TPH) (Gravimetric).....300-3,000 mg/kg
Non-polar Extractable Material (TPH) (IR)300-3,000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil

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

Non-polar Extractable Material (TPH) (Gravimetric).....300-3,000 mg/kg
Non-polar Extractable Material (TPH) (IR)300-3,000 mg/kg

UST IN WATER

BTEX & MTBE in Water

CRM Cat. #760	PT Q Cat. #643	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 methods. Includes all BTEX compounds and MTBE at 5-300 µg/L after dilution.

Gasoline Range Organics (GRO) in Water

CRM Cat. #762	PT Q Cat. #640	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, or other applicable GC/FID methods to test for GRO at 400-4,000 µg/L. Also use to test for BTEX in gasoline.

Diesel Range Organics (DRO) in Water

CRM Cat. #764	PT Q Cat. #641	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, or other applicable GC/FID methods. Includes #2 Diesel at 800-6,000 µg/L.

Total Petroleum Hydrocarbons (TPH) in Water

CRM Cat. #600	PT Q Cat. #642	QR Cat. #602QR
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One liter whole-volume bottle is ready to analyze for total petroleum hydrocarbons (TPH) without interfering fatty acids. Use with EPA methods 418.1, 1664, 5520, or other applicable methods.

Total Petroleum Hydrocarbons.....20-200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water

CRM Cat. #601	PT Q Cat. #642	QR Cat. #602QR
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One liter whole-volume bottle is ready to analyze for TPH in water in the presence of interfering fatty acids. Use with EPA methods 418.1, 1664, 5520, 8440, or other applicable methods.

Total Petroleum Hydrocarbons.....20-200 mg/L

ALASKA UST IN WATER

Alaska GRO in Water

RM

Cat. #645

PT *

Cat. #473

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

Alaska DRO in Water

RM

Cat. #647

PT *

Cat. #475

One 2 mL flame-sealed ampule. Use with method AK102 for No. 2 Diesel at 800-2,300 µg/L after dilution.

Alaska BTEX in Water

RM

Cat. #646

PT *

Cat. #474

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

* ERA Alaska UST PTs are available at any time.

ALASKA UST IN SOIL

Alaska GRO in Soil

RM

Cat. #635

PT *

Cat. #469

One 20 mL flame-sealed ampule with 10 g of soil and 10 mL of methanol with unleaded regular gasoline at 30-1,500 mg/kg. Use with method AK101.

Alaska DRO in Soil

RM

Cat. #637

PT *

Cat. #471

One flame-sealed ampule with 20 g of soil spiked with No. 2 Diesel fuel at 30-1,500 mg/kg. Use with method AK102.

Alaska RRO in Soil

RM

Cat. #638

PT *

Cat. #472

One flame-sealed ampule with 20 g of soil with Residual Range Organic fuels at 150-2,000 mg/kg. Use with method AK103.

Alaska BTEX in Soil

RM

Cat. #636

PT *

Cat. #470

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

ARIZONA UST IN SOIL

Arizona TPH in Soil

CRM

Cat. #798

PT **Q**

Cat. #488

QR

Cat. #798QR

One ready-to-use flame-sealed ampule with 30 g of soil with Oil Range Organics and No. 2 Diesel fuel. Use with method 8015AZ for TPH in the range 300-400 mg/kg. Also includes two carbon ranges.

The Industry Standard



All ERA UST PTs open quarterly (**Q**) unless otherwise noted.

TEXAS TPH IN WATER

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

Texas Low-Level Fuels (TPH) in Water

CRM Cat. #794	PT Q Cat. #476	QR Cat. #794QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and No. 2 Diesel Fuel resulting in TPH in the range 5-10 mg/L.

Texas High-Level Fuels (TPH) in Water

CRM Cat. #795	PT Q Cat. #477	QR Cat. #795QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and No. 2 Diesel Fuel resulting in TPH in the range 20-100 mg/L.

TEXAS TPH IN SOIL

Texas Low-Level Fuels (TPH) in Soil

CRM Cat. #796	PT Q Cat. #478	QR Cat. #796QR
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One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and No. 2 Diesel Fuel for TPH in the range 50-100 mg/kg.

Texas High-Level Fuels (TPH) in Soil

CRM Cat. #797	PT Q Cat. #479	QR Cat. #797QR
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One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and No. 2 Diesel Fuel for TPH in the range 1,000-20,000 mg/kg.

WISCONSIN GRO/PVOC/DRO METHOD UST

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

Wisconsin Gasoline Range Organics (GRO/PVOC) in Water

CRM Cat. #773	PT Q Cat. #649	QR Cat. #773QR
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One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Includes ten gasoline range synthetic organic compounds as defined by Wisconsin. Use with Wisconsin GRO/PVOC method.

Wisconsin Diesel Range Organics (DRO) in Water

CRM Cat. #772	PT Q Cat. #648	QR Cat. #772QR
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One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Includes ten Diesel range synthetic organic compounds in the range 200-600 µg/L. Use with the Wisconsin DRO method.

WASHINGTON HEM/SGT-HEM METHOD UST

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

Washington HEM/SGT-HEM

CRM Cat. #519	PT Q Cat. #489	QR Cat. #519QR
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One 5 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA method 1664 to measure HEM/SGT-HEM at 5-100 mg/L.

NEW JERSEY EPH

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

New Jersey EPH in Soil

CRM	PT*	QR
Cat. #564	Cat. #464	Cat. #564QR

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

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



MASSACHUSETTS HYDROCARBONS IN WATER

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

Massachusetts VPH in Water

CRM	PT Q	QR
Cat. #566	Cat. #481	Cat. #566QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 400-4,000 µg/L. Use with the Massachusetts Volatile Petroleum Hydrocarbon method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Water

CRM	PT Q	QR
Cat. #567	Cat. #482	Cat. #567QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 800-6,000 µg/L. Use with the Massachusetts Extractable Petroleum Hydrocarbon method for multiple carbon ranges and PAH compounds.

MASSACHUSETTS HYDROCARBONS IN SOIL

Massachusetts VPH in Soil

CRM	PT Q	QR
Cat. #568	Cat. #483	Cat. #568QR

One flame-sealed ampule with 20 g soil with VPH fuels. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 100-2,000 mg/kg. Use with the Massachusetts Volatile Petroleum Hydrocarbon method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Soil

CRM	PT Q	QR
Cat. #569	Cat. #484	Cat. #569QR

One flame-sealed ampule with 20 g soil with EPH fuels. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 300-3,000 mg/kg. Use with the Massachusetts Extractable Petroleum Hydrocarbon method for multiple carbon ranges and PAH compounds.

All ERA UST PTs open quarterly (Q) unless otherwise noted.

AIR & EMISSIONS

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



2015 Air & Emissions PT Scheme Schedule

	Scheme #	Opens	Closes
Q	AE 31	Jan 26	Mar 12
Q	AE 32	Apr 27	Jun 11
Q	AE 33	Jul 27	Sep 10
Q	AE 34	Oct 26	Dec 10

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

2016 Air & Emissions PT Scheme Schedule

	Scheme #	Opens	Closes
Q	AE 35	Jan 29	Mar 14
Q	AE 36	Apr 25	Jun 9
Q	AE 37	Jul 29	Sep 12
Q	AE 38	Oct 24	Dec 8

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

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CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

Q All ERA Air & Emissions PTs open quarterly.

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Particulate Matter in Impinger Solution	1151	1051 Q	1151QR	63
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Sulfur Dioxide in Impinger Solution	1143	1043 Q	1143QR	63
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Volatiles on Sorbent	1101*	1001 Q	1101QR	60

*Reference Material [RM]



QuiK Response PT

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VOLATILES

Volatiles in Gas Cylinder*

CRM Cat. #1100	PT Q Cat. #1000	QR Cat. #1100QR
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One pressurized gas cylinder containing 25 liter of gas at 500 psig (34 bar) for use with EPA methods TO-14, TO-15, or other applicable methods. Contains at least 10 analytes, randomly selected from the list below, at 2-30 ppbv (4-60 ppbv for Total Xylenes).

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

Volatiles on Sorbent

RM Cat. #1101	PT Q Cat. #1001	QR Cat. #1101QR
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One 2 mL flame-sealed ampule for spiking client-specific sorbent. Use with EPA methods TO-17, 0030, 0031, or other applicable methods. Contains at least 24 analytes, randomly selected from the list below, at 50-2,000 ng/sample (200-3,000 ng/sample for Total Xylenes) after preparation.

Acetone	1,2-Dibromoethane (EDB)	4-Methyl-2-pentanone (MIBK)
Acetonitrile	Dibromomethane	Methyl tert-butyl ether (MTBE)
Acrolein	1,2-Dichlorobenzene	Naphthalene
Acrylonitrile	1,3-Dichlorobenzene	Styrene
Benzene	1,4-Dichlorobenzene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	Dichlorodifluoromethane (Freon 12)	1,1,2,2-Tetrachloroethane
Bromoform	1,1-Dichloroethane	Tetrachloroethene
Bromomethane	1,2-Dichloroethane	Toluene
2-Butanone (MEK)	1,1-Dichloroethene	1,2,4-Trichlorobenzene
Carbon disulfide	cis-1,2-Dichloroethene	1,1,1-Trichloroethane
Carbon tetrachloride	trans-1,2-Dichloroethene	1,1,2-Trichloroethane
Chlorobenzene	1,2-Dichloropropene	Trichloroethylene
Chlorodibromomethane	cis-1,3-Dichloropropene	Trichlorofluoromethane
Chloroethane	trans-1,3-Dichloropropene	1,2,3-Trichloropropane
2-Chloroethyl vinyl ether	Ethylbenzene	Vinyl acetate
Chloroform	Hexachlorobutadiene	Vinyl chloride
Chloromethane	2-Hexanone	Xylenes, total
1,2-Dibromo-3-chloropropane (DBCP)	Methylene chloride	

*Volatiles in Gas Cylinder ships as dangerous goods.



SEMIVOLATILES

Semivolatiles on Polyurethane Foam

CRM Cat. #1110	PT Q Cat. #1010	QR Cat. #1110QR
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Two 2 mL flame-sealed ampules plus one polyurethane foam. Use with EPA method 0010, or other applicable methods. Contains at least 42 analytes, randomly selected from the list below, at 10–225 µg/sample (200–1,000 µg/sample for Benzidine) after preparation.

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

Organochlorine Pesticides on Polyurethane Foam

CRM Cat. #1111	PT Q Cat. #1011	QR Cat. #1111QR
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One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA methods TO-04A, TO-10A, or other applicable methods. Contains at least 16 analytes, randomly selected from the list below, at 0.5–20 µg/sample after preparation.

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

PCBs on Polyurethane Foam

CRM Cat. #1112	PT Q Cat. #1012	QR Cat. #1112QR
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One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA methods TO-04A, TO-10A, or other applicable methods. Contains one Aroclor, randomly selected from the list below, at 1–15 µg/sample after preparation.

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

PAHs on Polyurethane Foam

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

Acenaphthene	Benzo(g,h,i)perylene	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		

Aldehydes & Ketones on Sorbent

CRM Cat. #1114	PT Q Cat. #1014	QR Cat. #1114QR
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One 2 mL flame-sealed ampule to be spiked onto sorbent. Use with EPA method TO-11A, or other applicable methods. Contains at least 4 analytes, randomly selected from the list below, at 0.5–10 µg/sample after preparation.

Acetaldehyde	Crotonaldehyde	Propionaldehyde (propanal)
Acetone	2,5-Dimethylbenzaldehyde	o-Tolualdehyde
Benzaldehyde	Formaldehyde	m-Tolualdehyde
2-Butanone (MEK)	Hexaldehyde (hexanal)	p-Tolualdehyde
Butyraldehyde (butanal)	Isovaleraldehyde	Valeraldehyde (pentanal)

METALS

Metals on Filter Paper

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

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

Metals in Impinger Solution

CRM Cat. #1126	PT Q Cat. #1026	QR Cat. #1126QR
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One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA method 29, or other applicable methods.

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

Mercury on Filter Paper

CRM Cat. #1127	PT Q Cat. #1027	QR Cat. #1127QR
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One 2 mL flame-sealed ampule containing approximately 2 mL of standard concentrate and a 50 mm polystyrene petri dish containing a single 47 mm glass fiber filter. Sample is ready for use with EPA method 29, or other applicable methods.

Mercury.....	1-75 µg/filter
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Mercury in Impinger Solution

CRM Cat. #1128	PT Q Cat. #1028	QR Cat. #1128QR
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One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA methods 29, 101a, or other applicable methods.

Mercury.....	0.9-200 ng/mL
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Lead on Filter Paper

CRM Cat. #1129	PT Q Cat. #1029	QR Cat. #1129QR
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One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter spiked with lead ready-for-use with EPA method 12 or other applicable methods.

Lead.....	20-350 µg/filter
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Lead in Impinger Solution

CRM Cat. #1130	PT Q Cat. #1030	QR Cat. #1130QR
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One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA method 12, or other applicable methods.

Lead.....	0.2-120 µg/mL
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Chromium on Filter Paper

CRM Cat. #1131	PT Q Cat. #1031	QR Cat. #1131QR
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One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm fiber film filter for use with CARB method 425, or other applicable methods.

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

Hexavalent Chromium in Impinger Solution

CRM Cat. #1132	PT Q Cat. #1032	QR Cat. #1132QR
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One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA method 0061/7199, or other applicable methods.

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

Hydrogen Halides & Halogens
in Impinger Solution

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

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

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

Fluoride in Impinger Solution

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

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

Fluoride	1-50 mg/dscm
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Nitrogen Oxide in Impinger Solution

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

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

Oxides of nitrogen (NO _x)	100-2000 mg/dscm
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Sulfur Dioxide in Impinger Solution

CRM	PT Q	QR
Cat. #1143	Cat. #1043	Cat. #1143QR

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA method 6, or other applicable methods.

Sulfur dioxide	50-2000 mg/dscm
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Sulfuric Acid & Sulfur Dioxide
in Impinger Solution

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

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

Sulfuric acid	5-150 mg/dscm
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Ammonia in Impinger Solution

CRM	PT Q	QR
Cat. #1145	Cat. #1045	Cat. #1145QR

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA CTM 027, or other applicable methods.

Ammonium	0.1-10 mg/L
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Particulate Matter on Filter Paper

CRM	PT Q	QR
Cat. #1150	Cat. #1050	Cat. #1150QR

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter ready for use with EPA methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter	50-600 mg/filter
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Particulate Matter in Impinger Solution

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

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

Particulate matter	140-675 mg/L
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All ERA Air & Emissions PTs open quarterly (Q).

RADIOCHEMISTRY

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



2015 Radiochemistry PT Scheme Schedule

	Scheme #	Opens	Closes
Q	RAD 100	Jan 5	Feb 19
Q	RAD 101	Apr 6	May 21
Q	RAD 102	Jul 6	Aug 20
Q	RAD 103	Oct 5	Nov 19

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

2016 Radiochemistry PT Scheme Schedule

	Scheme #	Opens	Closes
Q	RAD 104	Jan 11	Feb 25
Q	RAD 105	Apr 4	May 19
Q	RAD 106	Jul 11	Aug 25
Q	RAD 107	Oct 7	Nov 21

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

CRM – Certified Reference Material

PT – Proficiency Testing

QR – Quik Response

Q All ERA Radiochem PTs open quarterly.

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

Description	CRM	PT	QR	Page
Gamma Emitters	758	808 Q	758QR	66
Gross Alpha/Beta	759	809 Q	759QR	66
Iodine-131	750	810 Q	750QR	66
Naturals	751	811 Q	751QR	66
Strontium-89/90	757	807 Q	757QR	66
Tritium	752	812 Q	752QR	66

2015 MRAD PT Scheme Schedule

	Scheme #	Opens	Closes
*	MRAD 22	Mar 16	May 15
*	MRAD 23	Sep 21	Nov 20

2 studies per year – open for 60 days
Schedule subject to change – see ERA's website at www.eraqc.com

2016 MRAD PT Scheme Schedule

	Scheme #	Opens	Closes
*	MRAD 24	Mar 14	May 13
*	MRAD 25	Sep 19	Nov 18

2 studies per year – open for 60 days
Schedule subject to change – see ERA's website at www.eraqc.com

CRM – Certified Reference Material

PT – Proficiency Testing

QR – QuiK Response

Q All ERA WS Radchem PTs open quarterly.

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

Description	CRM	PT	QR	Page
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Water Radionuclides	617	804 *	617QR	69
Water Tritium	616	806 *	616QR	69

QuiK Response PT

Need PT results fast? Available 52 weeks a year, QuiK Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

Your source for the most accurate, reliable, realistic, and convenient tools for evaluating and improving the performance of your methods.



WS RADCHEM

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

Gamma Emitters

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

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

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

Gross Alpha/Beta

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

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

Gross Alpha as Thorium-230.....	7-75 pCi/L
Gross Beta as Cesium-137.....	8-75 pCi/L

Naturals

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

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

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

Tritium

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

One 250 mL whole-volume bottle is ready to analyze as received. Includes Tritium at 1,000-24,000 pCi/L.

Iodine-131

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

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

Strontium-89/90

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

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

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



RADCHEM LAB CONTROL & MATRIX SPIKING (LCS/MS)

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

The direct benefits:

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

The process is easy:

1. Select from any of the following carrier-free, single radionuclide standards.
2. Choose an activity up to the maximum listed in the table below.
3. Choose a convenient volume: 2 to 20 mL glass vials available.
4. For labs that analyze samples with more elevated activities, call for standard availability and pricing.
5. We will prepare the standards to your specifications and ship within 72 hours.

Single Radionuclide Spiking Standards

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

MRAD SOLIDS

Soil Radionuclides

CRM Cat. #608	PT * Cat. #802	QR Cat. #608QR
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One 500 cc standard includes the alpha, beta and gamma emitting radionuclides listed below.

Actinium-228.....	500-5,000 pCi/kg
Americium-241.....	50-2,000 pCi/kg
Bismuth-212.....	500-5,000 pCi/kg
Bismuth-214.....	500-5,000 pCi/kg
Cesium-134.....	1,000-10,000 pCi/kg
Cesium-137.....	1,000-10,000 pCi/kg
Cobalt-60.....	1,000-10,000 pCi/kg
Lead-212.....	500-5,000 pCi/kg
Lead-214.....	500-5,000 pCi/kg
Manganese-54.....	1,000-10,000 pCi/kg
Plutonium-238.....	50-2,000 pCi/kg
Plutonium-239.....	50-2,000 pCi/kg
Potassium-40.....	5,000-50,000 pCi/kg
Strontium-90.....	500-10,000 pCi/kg
Thorium-234.....	500-5,000 pCi/kg
Uranium-234.....	500-5,000 pCi/kg
Uranium-238.....	500-5,000 pCi/kg
Uranium (Nat).....	1,000-10,000 pCi/kg
Uranium (Nat) mass.....	1,500-15,000 µg/kg
Zinc-65.....	1,000-10,000 pCi/kg

Vegetation Radionuclides

CRM Cat. #609	PT * Cat. #803	QR Cat. #609QR
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One 500 cc standard includes the alpha, beta and gamma emitting radionuclides listed below.

Americium-241.....	50-5,000 pCi/kg
Cesium-134.....	300-3,000 pCi/kg
Cesium-137.....	300-3,000 pCi/kg
Cobalt-60.....	300-3,000 pCi/kg
Curium-244.....	50-5,000 pCi/kg
Manganese-54.....	300-3,000 pCi/kg
Plutonium-238.....	50-5,000 pCi/kg
Plutonium-239.....	50-5,000 pCi/kg
Potassium-40.....	5,000-50,000 pCi/kg
Strontium-90.....	500-10,000 pCi/kg
Uranium-234.....	50-5,000 pCi/kg
Uranium-238.....	50-5,000 pCi/kg
Uranium (Nat).....	100-10,000 pCi/kg
Uranium (Nat) mass.....	150-15,000 µg/kg
Zinc-65.....	300-3,000 pCi/kg

MRAD AIR FILTER

Air Filter Radionuclides

CRM Cat. #606	PT * Cat. #800	QR Cat. #606QR
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One 47 mm diameter glass fiber filter contains the alpha, beta and gamma emitting radionuclides listed below.

Americium-241.....	2-80 pCi/filter
Cesium-134.....	50-1,500 pCi/filter
Cesium-137.....	50-1,500 pCi/filter
Cobalt-60.....	50-1,500 pCi/filter
Iron-55.....	50-1,500 pCi/filter
Manganese-54.....	50-1,500 pCi/filter
Plutonium-238.....	2-80 pCi/filter
Plutonium-239.....	2-80 pCi/filter
Strontium-90.....	5-200 pCi/filter
Uranium-234.....	2-80 pCi/filter
Uranium-238.....	2-80 pCi/filter
Uranium (Nat).....	4-160 pCi/filter
Uranium (Nat) mass.....	6-240 µg/filter
Zinc-65.....	50-1,500 pCi/filter

Air Filter Gross Alpha/Beta

CRM Cat. #607	PT * Cat. #801	QR Cat. #607QR
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One acrylic treated 47 mm diameter glass fiber filter contains the radionuclides listed below.

Gross Alpha as Thorium-230.....	5-100 pCi/filter
Gross Beta as Cesium-137.....	5-100 pCi/filter

MRAD WATER

Water Radionuclides

CRM	PT*	QR
Cat. #617	Cat. #804	Cat. #617QR

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

Americium-241.....	10-200 pCi/L
Cesium-134.....	100-3,000 pCi/L
Cesium-137.....	100-3,000 pCi/L
Cobalt-60.....	100-3,000 pCi/L
Iron-55.....	100-3,000 pCi/L
Manganese-54.....	100-3,000 pCi/L
Plutonium-238.....	10-200 pCi/L
Plutonium-239.....	10-200 pCi/L
Strontium-90.....	50-1,000 pCi/L
Uranium-234.....	10-200 pCi/L
Uranium-238.....	10-200 pCi/L
Uranium (Nat).....	20-400 pCi/L
Uranium (Nat) mass.....	30-600 µg/L
Zinc-65.....	100-3,000 pCi/L

Water Gross Alpha/Beta

CRM	PT*	QR
Cat. #615	Cat. #805	Cat. #615QR

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

Gross Alpha as Thorium-230.....	10-200 pCi/L
Gross Beta as Cesium-137.....	10-200 pCi/L

Water Tritium

CRM	PT*	QR
Cat. #616	Cat. #806	Cat. #616QR

One 125 mL whole volume bottle ready to analyze as received.

Tritium.....	3,000-30,000 pCi/L
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* All ERA MRAD PTs open in March and September.

LOW-LEVEL CRMs

New in 2015!

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

Save time diluting your standards or spending numerous hours producing them yourself with our new low-level CRMs.

Our new line of low-level CRMs are optimal for:

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

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CRM – Certified Reference Material

INORGANICS

Chlorine

CRM

Cat. #1358

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

Total Chlorine.....	75-500 µg/L
Free Chlorine.....	75-500 µg/L

Color

CRM

Cat. #1353

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

Color.....	5-25 pc units
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Common Inorganics

CRM

Cat. #1249

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

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

Common Inorganics in Hard Water

CRM

Cat. #1346

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

Alkalinity.....	25-200 mg/L
Calcium.....	10-100 mg/L
Chloride.....	20-250 mg/L
Conductivity.....	130-1400 µmhos/cm
Fluoride.....	0.2-2 mg/L
Magnesium.....	2-10 mg/L
pH.....	5-10 units
Potassium.....	2-25 mg/L
Sodium.....	20-250 mg/L
Sulfate.....	20-250 mg/L
Total dissolved solids.....	100-1,000 mg/L
Total Hardness.....	30-300 mg/L

Common Inorganics in Soft Water

CRM

Cat. #1347

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

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

Cyanide

CRM

Cat. #1345

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

Free Cyanide.....	5-100 µg/L
Total Cyanide.....	5-100 µg/L

Demand

CRM

Cat. #1354

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

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

Demand

CRM

Cat. #1242

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

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

INORGANICS

High Solids

CRM
Cat. #1355

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

Total dissolved solids..... 100-1,000 mg/L
Total suspended solids (TSS)..... 5-50 mg/L

Inorganic Disinfection By-products

CRM
Cat. #1343

Two 24 mL screw-cap vials yield up to 2 liters of sample each.

Bromate..... 1-12 µg/L
Bromide..... 5-100 µg/L
Chlorate..... 5-100 µg/L
Chlorite..... 5-100 µg/L

Solids Concentrate

CRM
Cat. #1243

One 24 mL screw-cap vial concentrate makes 1 liter of sample.

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

Total Phenolics (4-AAP)

CRM
Cat. #1250

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

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

METALS

Hexavalent Chromium

CRM
Cat. #1248

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

Hexavalent chromium..... 10-200 µg/L

Mercury

CRM
Cat. #1341

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

Mercury, total..... 0.1 to 1.2 µg/L

Metals

CRM
Cat. #1340

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

Aluminum..... 25-500 µg/L
Antimony..... 1-20 µg/L
Arsenic..... 1-25 µg/L
Barium..... 100-2,000 µg/L
Beryllium..... 1-20 µg/L
Boron..... 100-2,000 µg/L
Cadmium..... 1-20 µg/L
Chromium..... 5-100 µg/L
Cobalt..... 2-50 µg/L
Copper..... 200-5,000 µg/L
Iron..... 25-500 µg/L
Lead..... 1-25 µg/L
Lithium..... 50-1,000 µg/L
Manganese..... 5-100 µg/L
Molybdenum..... 5-100 µg/L
Nickel..... 1-25 µg/L
Selenium..... 1-12 µg/L
Silver..... 10-200 µg/L
Strontium..... 50-1,000 µg/L
Thallium..... 2-50 µg/L
Tin..... 100-2,000 µg/L
Vanadium..... 2-50 µg/L
Zinc..... 100-2,000 µg/L

The Industry Standard



METALS

Metals

CRM

Cat. #1244

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

Aluminum	200-4,000 µg/L
Antimony	95-900 µg/L
Arsenic	70-900 µg/L
Barium	100-2,500 µg/L
Beryllium	8-900 µg/L
Boron	800-2,000 µg/L
Cadmium	8-750 µg/L
Chromium, total	17-1,000 µg/L
Cobalt	28-1,000 µg/L
Copper	40-900 µg/L
Iron	200-4,000 µg/L
Lead	70-3,000 µg/L
Manganese	70-4,000 µg/L
Molybdenum	60-600 µg/L
Nickel	80-3,000 µg/L
Selenium	90-2,000 µg/L
Silver	26-600 µg/L
Strontium	30-300 µg/L
Thallium	60-900 µg/L
Vanadium	55-2,000 µg/L
Zinc	100-2,000 µg/L

NUTRIENTS

Complex Nutrients in Hard Water

CRM

Cat. #1241

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

Total Kjeldahl Nitrogen	1-15 mg/L
Total Nitrogen	1-20 mg/L
Total Phosphorus	0.5-5 mg/L

Complex Nutrients in Soft Water

CRM

Cat. #1351

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

Total Kjeldahl Nitrogen	0.5-5 mg/L
Total Phosphorus	0.5-5 mg/L

Simple Nutrients

CRM

Cat. #1240

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

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

Simple Nutrients in Hard Water

CRM

Cat. #1348

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

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

Simple Nutrients in Soft Water

CRM

Cat. #1349

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

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

ORGANICS

Herbicides

CRM

Cat. #1376

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

2,4-DB	Ioxynil
Bromoxynil	Monuron
Dicamba	Propyzamide
Dichlorprop	Triclopyr

Organochlorine Pesticides

CRM

Cat. #1374

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

2,4-DDT	Endosulfan I
4,4'-DDD	Endosulfan II
4,4'-DDE	Endrin
4,4'-DDT	Gamma BHC (Lindane)
Aldrin	Heptachlor
Alpha BHC	Heptachlor epoxide
Beta BHC	Hexachlorobenzene
Delta BHC	Pentachlorobenzene
Dieldrin	Trifluralin

Organochlorine Pesticides

CRM

Cat. #1253

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-2,000 ng/L.

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

Organophosphorus Pesticides

CRM

Cat. #1256

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,500 ng/L.

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

PAHs

CRM

Cat. #1254

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

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

PCB Congeners

CRM

Cat. #1373

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

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

PCB Congeners

CRM

Cat. #1255

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,500 ng/L.

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

Semivolatiles

CRM

Cat. #1372

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

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

Triazines, Urons and Acid Herbicides

CRM

Cat. #1375

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

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

Trihalomethanes

CRM

Cat. #1371

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

Bromodichloromethane	Chlorodibromomethane
Bromoform	Chloroform

Triazines, Urons and Acid Herbicides

CRM

Cat. #1257

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,200 ng/L.

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



ERA's technical experts are here to help you improve root cause analysis and corrective action.

ORGANICS

Volatiles

CRM
Cat. #1370

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

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

Volatiles

CRM
Cat. #1251

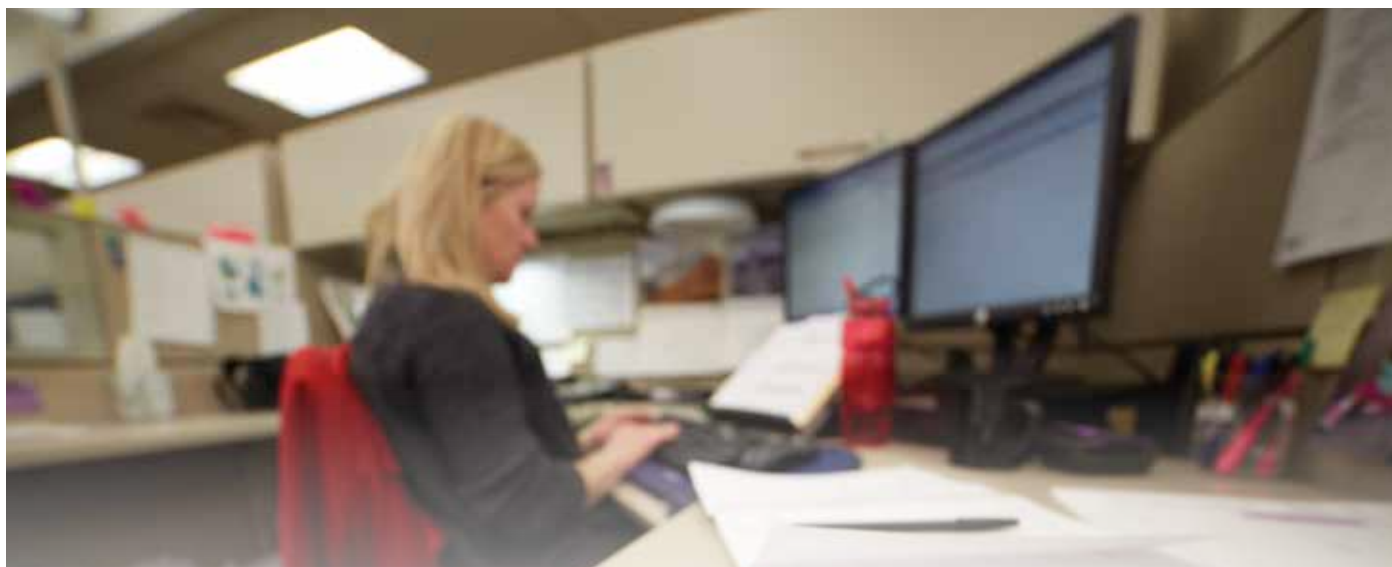
One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 1-300 µg/L.

Acetone	1,2-Dibromoethane (EDB)	4-Methyl-2-pentanone (MIBK)
Acetonitrile	Dibromomethane	Methyl tert-butyl ether (MTBE)
Acrolein	1,2-Dichlorobenzene	Naphthalene
Acrylonitrile	1,3-Dichlorobenzene	Styrene
Benzene	1,4-Dichlorobenzene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	Dichlorodifluoromethane	1,1,2,2-Tetrachloroethane
Bromoform	1,1-Dichloroethane	Tetrachloroethene
Bromomethane	1,2-Dichloroethane	Toluene
2-Butanone (MEK)	1,1-Dichloroethene	1,2,4-Trichlorobenzene
Carbon disulfide	cis-1,2-Dichloroethene	1,1,1-Trichloroethane
Carbon tetrachloride	trans-1,2-Dichloroethene	1,1,2-Trichloroethane
Chlorobenzene	1,2-Dichloropropane	Trichloroethene
Chlorodibromomethane	cis-1,3-Dichloropropene	Trichlorofluoromethane
Chloroethane	trans-1,3-Dichloropropene	(Freon 11)
2-Chloroethyl vinyl ether	Ethylbenzene	1,2,3-Trichloropropane
Chloroform	Hexachlorobutadiene	Vinyl acetate
Chloromethane	2-Hexanone	Vinyl chloride
1,2-Dibromo-3-chloropropane (DBCP)	Methylene Chloride	Xylenes, total

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The Industry Standard



All ERA WS PTs open monthly (M) or quarterly (Q) unless otherwise noted.

CLEAN WATER

For International purchase only: Synthetic drinking water matrices with low concentrations of analytes for testing water supply, drinking water, or ground water. Standards are designed to meet the requirements of the European Union Water Framework Directive. Concentrations are not compliant with US TNI Fields of Proficiency Testing table requirements for accreditation.



2015 Clean Water PT Scheme Schedule

Scheme #	Opens	Closes
CW 15	Mar 4	Apr 3
CW 16	Sep 9	Oct 9

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

2016 Clean Water PT Scheme Schedule

Scheme #	Opens	Closes
CW 17	Mar 9	Apr 8
CW 18	Sep 7	Oct 7

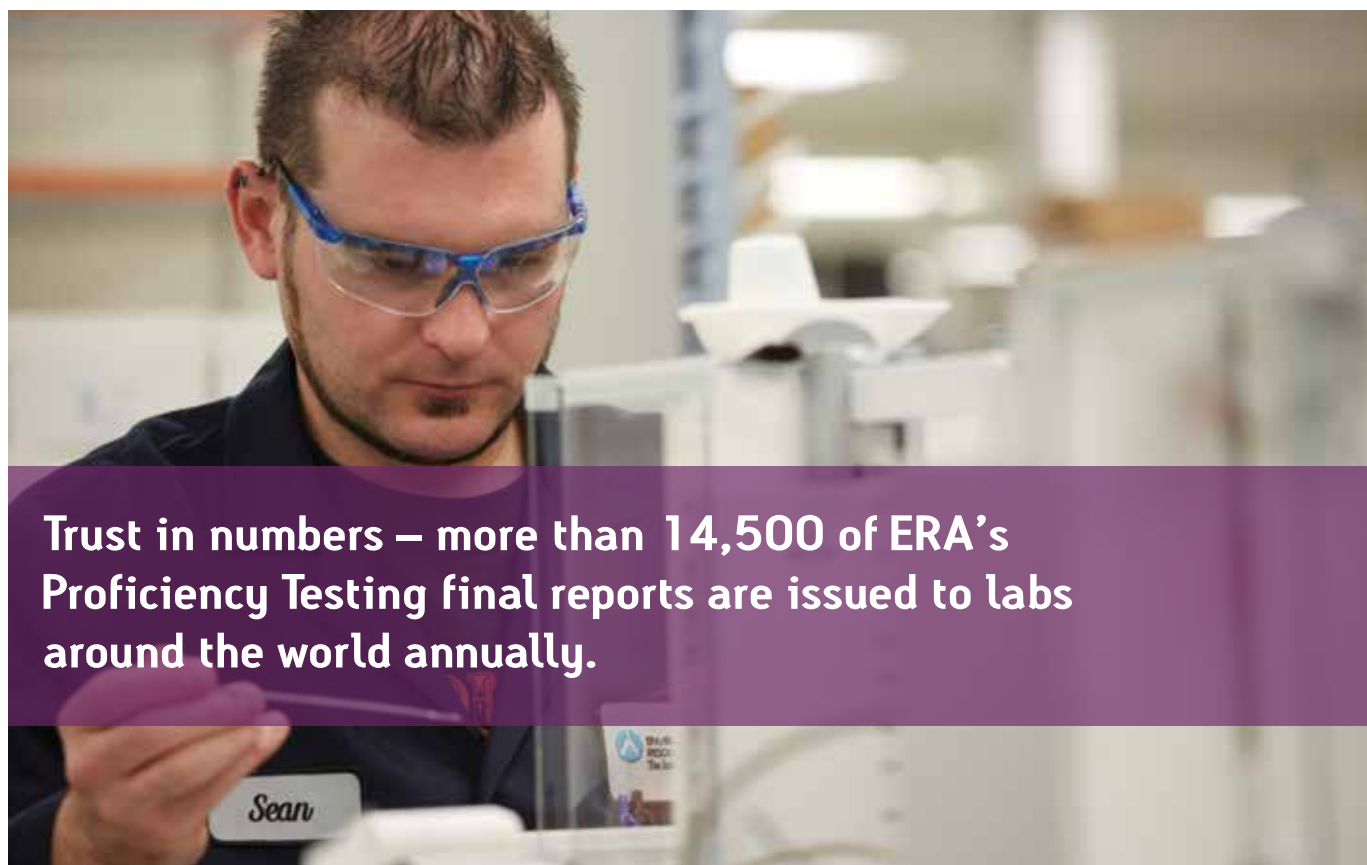
Schedule subject to change – see ERA's website at www.eraqc.com

Description	CRM	PT	Page
Chlorine	1358	1318	80
Color	1353	1313	80
Common Inorganics in Hard Water	1346	1306	80
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Cyanide	1345	1305	80
Demand	1354	1314	80
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Inorganic Disinfection By-products	1343	1303	80

Description	CRM	PT	Page
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CRM – Certified Reference Material

PT – Proficiency Testing



Trust in numbers – more than 14,500 of ERA's Proficiency Testing final reports are issued to labs around the world annually.

INORGANICS

Inorganic Disinfection By-products

CRM

Cat. #1343

PT

Cat. #1303

Two 24 mL screw-cap vials yield up to 2 liters of sample.

Bromate.....	1-12 µg/L
Bromide.....	5-100 µg/L
Chlorate.....	5-100 µg/L
Chlorite.....	5-100 µg/L

Cyanide

CRM

Cat. #1345

PT

Cat. #1305

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

Free Cyanide.....	5-100 µg/L
Total Cyanide.....	5-100 µg/L

Common Inorganics in Hard Water

CRM

Cat. #1346

PT

Cat. #1306

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

Alkalinity.....	25-200 mg/L
Calcium.....	10-100 mg/L
Chloride.....	20-250 mg/L
Conductivity.....	130-1400 µmhos/cm
Fluoride.....	0.2-2 mg/L
Magnesium.....	2-10 mg/L
pH.....	5-10 units
Potassium.....	2-25 mg/L
Sodium.....	20-250 mg/L
Sulfate.....	20-250 mg/L
Total dissolved solids.....	100-1,000 mg/L
Total Hardness.....	30-300 mg/L

Common Inorganics in Soft Water

CRM

Cat. #1347

PT

Cat. #1307

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

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

Color

CRM

Cat. #1353

PT

Cat. #1313

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

Color.....	5-25 pc units
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Demand

CRM

Cat. #1354

PT

Cat. #1314

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

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

High Solids

CRM

Cat. #1355

PT

Cat. #1315

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

Total dissolved solids.....	100-1,000 mg/L
Total suspended solids (TSS).....	5-50 mg/L

Chlorine

CRM

Cat. #1358

PT

Cat. #1318

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

Total Chlorine.....	75-500 µg/L
Free Chlorine.....	75-500 µg/L

METALS

Metals

CRM	PT
Cat. #1340	Cat. #1300

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

Aluminum	25-500 µg/L
Antimony	1-20 µg/L
Arsenic	1-25 µg/L
Barium	100-2,000 µg/L
Beryllium	1-20 µg/L
Boron	100-2,000 µg/L
Cadmium	1-20 µg/L
Chromium	5-100 µg/L
Cobalt	2-50 µg/L
Copper	200-5,000 µg/L
Iron	25-500 µg/L
Lead	1-25 µg/L
Lithium	50-1,000 µg/L
Manganese	5-100 µg/L
Molybdenum	5-100 µg/L
Nickel	1-25 µg/L
Selenium	1-12 µg/L
Silver	10-200 µg/L
Strontium	50-1,000 µg/L
Thallium	2-50 µg/L
Tin	100-2,000 µg/L
Vanadium	2-50 µg/L
Zinc	100-2,000 µg/L

Mercury

CRM	PT
Cat. #1341	Cat. #1301

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

Mercury, total	0.1 to 1.2 µg/L
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NUTRIENTS

Simple Nutrients in Hard Water

CRM	PT
Cat. #1348	Cat. #1308

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

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

Simple Nutrients in Soft Water

CRM	PT
Cat. #1349	Cat. #1309

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

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

Complex Nutrients in Soft Water

CRM	PT
Cat. #1351	Cat. #1311

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

Total Kjeldahl Nitrogen	0.5-5 mg/L
Total Phosphorus	0.5-5 mg/L

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ORGANICS

Volatiles

CRM	PT
Cat. #1370	Cat. #1330

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

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

Trihalomethanes

CRM	PT
Cat. #1371	Cat. #1331

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

Bromodichloromethane	Chlorodibromomethane
Bromoform	Chloroform

Semivolatiles

CRM	PT
Cat. #1372	Cat. #1332

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

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

PCB Congeners

CRM	PT
Cat. #1373	Cat. #1333

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

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

Organochlorine Pesticides

CRM	PT
Cat. #1374	Cat. #1334

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

2,4-DDT	Endosulfan I
4,4'-DDD	Endosulfan II
4,4'-DDE	Endrin
4,4'-DDT	Gamma BHC (Lindane)
Aldrin	Heptachlor
Alpha BHC	Heptachlor epoxide
Beta BHC	Hexachlorobenzene
Delta BHC	Hexachlorobenzene
Dieldrin	Trifluralin

Triazines, Urons, and Acid Herbicides

CRM	PT
Cat. #1375	Cat. #1335

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

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

Herbicides

CRM	PT
Cat. #1376	Cat. #1336

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

2,4-DB	Ioxynil
Bromoxynil	Monuron
Dicamba	Propyzamide
Dichloroprop	Trichlopyr

The Industry Standard





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EFFLUENT

For International purchase only: Synthetic wastewater matrices with appropriate concentrations of analytes for testing water pollution or wastewater. Standards are designed to meet the requirements of the European Union Water Framework Directive. Concentrations are not compliant with US TNI Fields of Proficiency Testing table requirements for accreditation.



2015 Effluent PT Scheme Schedule

Scheme #	Opens	Closes
EF 15	Mar 4	Apr 3
EF 16	Sep 9	Oct 9

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

2016 Effluent PT Scheme Schedule

Scheme #	Opens	Closes
EF 17	Mar 9	Apr 8
EF 18	Sep 7	Oct 7

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

Description	CRM	PT	Page
Common Inorganics	1249	1209	85
Complex Nutrients in Hard Water	1241	1201	85
Demand	1242	1202	85
Hexavalent Chromium	1248	1208	86
Metals	1244	1204	86
Organochlorine Pesticides	1253	1213	87
Organophosphorus Pesticides	1256	1216	87
PAHs	1254	1214	87
PCB Congeners	1255	1215	87
Simple Nutrients	1240	1200	85
Solids Concentrate	1243	1203	85
Total Phenolics (4-AAP)	1250	1210	85
Triazines, Urons and Acid Herbicides	1257	1217	87
Volatiles	1251	1211	87

CRM – Certified Reference Material

PT – Proficiency Testing

INORGANICS

Common Inorganics

CRM	PT
Cat. #1249	Cat. #1209

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

Alkalinity	20-120 mg/L
Calcium	2-50 mg/L
Chloride	25-500 mg/L
Conductivity	80-1,000 µmhos/cm
Fluoride	0.25-5 mg/L
Magnesium	1-25 mg/L
pH	5-10 units
Potassium	2-50 mg/L
Sodium	5-100 mg/L
Sulfate	2-50 mg/L
Total Dissolved Solids	60-750 mg/L
Total Hardness	9-250 mg/L

Complex Nutrients in Hard Water

CRM	PT
Cat. #1241	Cat. #1201

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

Total Kjeldahl Nitrogen	1-15 mg/L
Total Nitrogen	1-20 mg/L
Total Phosphorus	0.5-5 mg/L

Solids Concentrate

CRM	PT
Cat. #1243	Cat. #1203

One 24 mL screw-cap vial concentrate makes 1 liter of sample.

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

Simple Nutrients

CRM	PT
Cat. #1240	Cat. #1200

Two 15 mL screw-cap vials spiking concentrate makes up to 2 liters of sample.

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

Demand

CRM	PT
Cat. #1242	Cat. #1202

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

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

Total Phenolics (4-AAP)

CRM	PT
Cat. #1250	Cat. #1210

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

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

Metals

CRM Cat. #1244	PT Cat. #1204
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One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample.

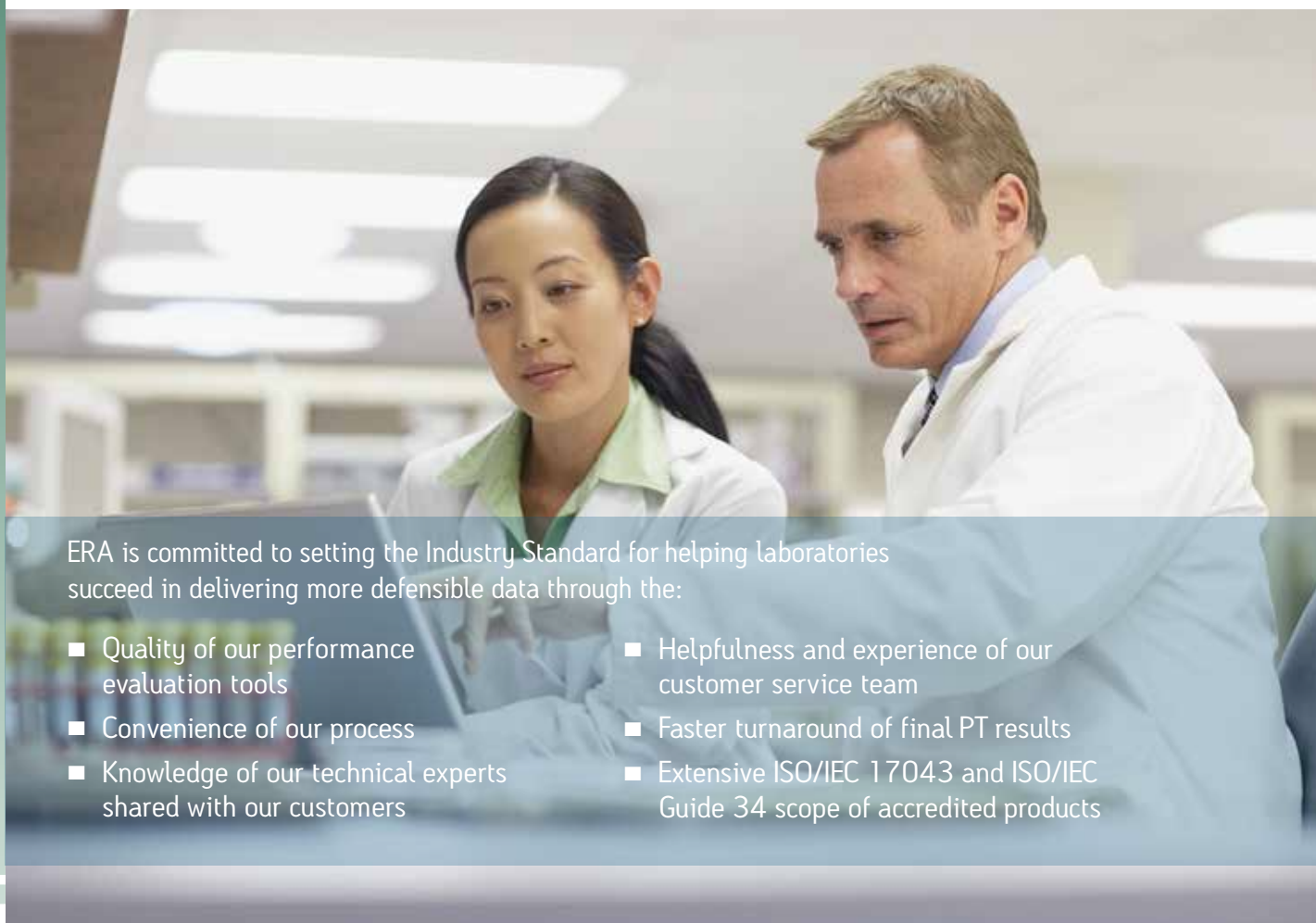
Aluminum	200-4,000 µg/L
Antimony	95-900 µg/L
Arsenic	70-900 µg/L
Barium	100-2,500 µg/L
Beryllium	8-900 µg/L
Boron	800-2,000 µg/L
Cadmium	8-750 µg/L
Chromium, total	17-1,000 µg/L
Cobalt	28-1,000 µg/L
Copper	40-900 µg/L
Iron	200-4,000 µg/L
Lead	70-3,000 µg/L
Manganese	70-4,000 µg/L
Molybdenum	60-600 µg/L
Nickel	80-3,000 µg/L
Selenium	90-2,000 µg/L
Silver	26-600 µg/L
Strontium	30-300 µg/L
Thallium	60-900 µg/L
Vanadium	55-2,000 µg/L
Zinc	100-2,000 µg/L

Hexavalent Chromium

CRM Cat. #1248	PT Cat. #1208
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One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample.

Hexavalent chromium	10-200 µg/L
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ORGANICS

Volatiles

CRM Cat. #1251	PT Cat. #1211
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One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 5-300 µg/L.

Acetone	cis-1,2-Dichloroethene
Acetonitrile	trans-1,2-Dichloroethene
Acrolein	1,2-Dichloropropane
Acrylonitrile	cis-1,3-Dichloropropene
Benzene	trans-1,3-Dichloropropene
Bromodichloromethane	Ethylbenzene
Bromoform	Hexachlorobutadiene
Bromomethane	2-Hexanone
2-Butanone (MEK)	Methylene chloride
Carbon disulfide	4-Methyl-2-pentanone (MIBK)
Carbon tetrachloride	Methyl tert-butyl ether (MTBE)
Chlorobenzene	Naphthalene
Chlorodibromomethane	Styrene
Chloroethane	1,1,1,2-Tetrachloroethane
2-Chloroethyl vinyl ether	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Chloromethane	Toluene
1,2-Dibromo-3-chloropropane (DBCP)	1,2,4-Trichlorobenzene
1,2-Dibromoethane (EDB)	1,1,1-Trichloroethane
Dibromomethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Trichlorofluoromethane (Freon 11)
1,4-Dichlorobenzene	1,2,3-Trichloropropane
Dichlorodifluoromethane	Vinyl acetate
1,1-Dichloroethane	Vinyl chloride
1,2-Dichloroethane	Xylenes, total
1,1-Dichloroethene	

PAHs

CRM Cat. #1254	PT Cat. #1214
-------------------	------------------

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

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

PCB Congeners

CRM Cat. #1255	PT Cat. #1215
-------------------	------------------

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,500 ng/L.

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

Organophosphorus Pesticides

CRM Cat. #1256	PT Cat. #1216
-------------------	------------------

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,500 ng/L.

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

Organochlorine Pesticides

CRM Cat. #1253	PT Cat. #1213
-------------------	------------------

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-2,000 ng/L.

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

Triazines, Urons and Acid Herbicides

CRM Cat. #1257	PT Cat. #1217
-------------------	------------------

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 100-1,200 ng/L.

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

Quik Response PT

Need PT results fast? Available 52 weeks a year, Quik Response PTs are on demand PTs that return final results within minutes of submitting your data online. In the US, please call ERA customer service at 800-372-0122 or 303-431-8454 to order. Outside of the US, please contact your authorized ERA sales partner to order.

CUSTOM STANDARDS

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

EXPERIENCE. SPEED. RELIABILITY.

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

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

Examples of custom standards prepared by ERA custom chemists:

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

Certification of Custom Standards

ERA offers three options for certification of custom standards:

- Gravimetric/volumetric
- Analytical
- ISO Guide 34 certified reference materials*

**Option is based on ERA's ISO Guide 34 scope of accreditation*

FROM SIMPLE TO COMPLEX AND EVERYTHING IN BETWEEN

ERA can supply you with a custom standard containing any analyte from the following programs:

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

CUSTOM STANDARDS

Performance Evaluation With Double-Blind Project

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

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

Here is how a performance evaluation program works:

1. Specify the matrices, analytes, and concentrations. If a stock standard is not available, we can design and prepare custom PE standards.
2. Send us your empty sample bottles, labels, chain-of-custody forms, and sample coolers.
3. We prepare, dilute (if necessary) and preserve the standards, fill your sample bottles, and return the samples to you via overnight delivery service. You'll receive ERA's certified values and performance acceptance limits (PALs) under separate sealed cover.
4. Integrate the standards into your sampling event or introduce them into your lab's routine sample load.
5. Your lab analyzes the blind PE standards along with routine samples.
6. Compare your lab's results to ERA's certified values and performance acceptance limits.

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

CUSTOM STANDARD QUOTATION REQUEST FORM



A Waters Company

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

☐ (shipping address is the same as billing address)

Date Needed:

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

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

Sample Description (for label):

Matrix/Solvent:

Preservative:

Mass/Volume per Container:

Number of Containers:

Intended Use (calibration, QC, etc.):

Prep/Analytical Method:

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

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

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

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

Email this form to info@eraqc.com or fax to 303-421-0159.

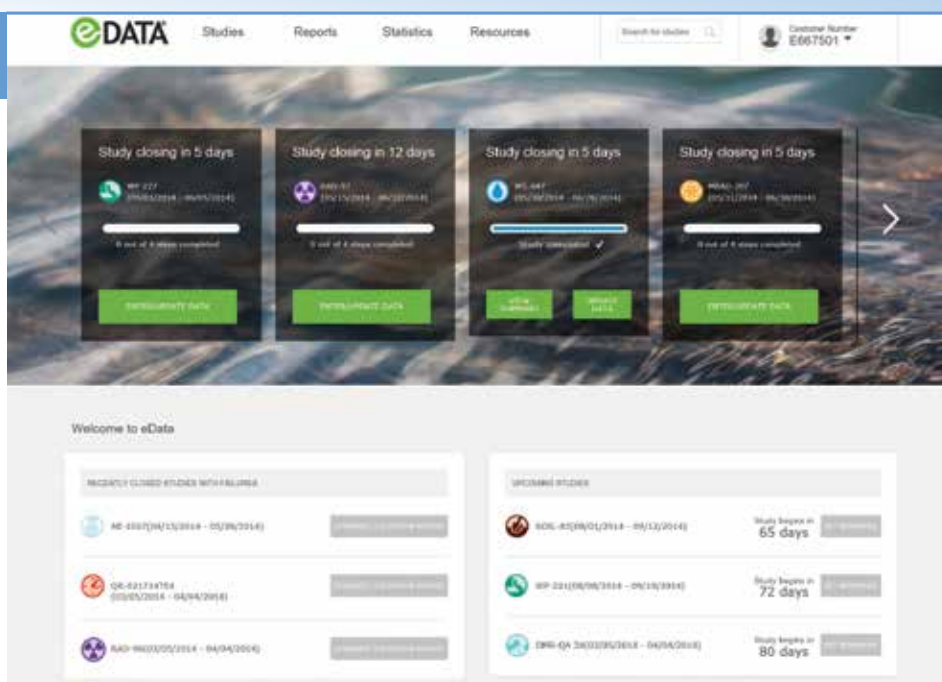
For immediate assistance with a Customs quote, call ERA at 800-372-0122 or 303-431-8454 and speak with an ERA Customer Service Representative.

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eDATA 2.0: New in 2015

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CALIBRATION STANDARDS

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

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Description	Page
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1000 MG/L STANDARDS

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

INORGANICS — 1000 MG/L

Chemical Oxygen Demand (COD)

500 mL Bottle
Cat. #974

125 mL Bottle
Cat. #042

One 1,000 mg/L standard preserved with H₂SO₄ in an amber glass bottle.

Total Kjeldahl Nitrogen (TKN)

500 mL Bottle
Cat. #996

125 mL Bottle
Cat. #043

One 1,000 mg/L standard preserved with HCl in a poly bottle.

MBAS/LAS Surfactants

Cat. #975

One 15 mL screw-cap vial with LAS at 1,000 mg/L preserved with H₂SO₄.

Total Organic Carbon (TOC)

Cat. #978

One 500 mL amber glass bottles with TOC at 1,000 mg/L preserved with H₂SO₄.

Total Organic Halides (TOX)

Cat. #976

One 2 mL flame-sealed ampule with TOX at 1,000 mg/L in Methanol.

Phenol

Cat. #982

One 500 mL amber glass bottle with Phenol at 1,000 mg/L preserved with H₂SO₄.

Sulfide

Cat. #999

One 10 mL flame-sealed ampule containing 1,000 mg/L sulfide preserved with NaOH and zinc acetate.

IONS — 1000 MG/L

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

CATIONS BY ION CHROMATOGRAPHY — 100 MG/L

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

CATIONS BY ION CHROMATOGRAPHY — 1000 MG/L

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

METALS – 1000 MG/L

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

* Other metals, concentrations, and volumes are also available.
Call ERA customer service for more information.

DG – Dangerous Good, requires special shipping.

ICP-MS METALS

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

ICP-MS Trace Metals

CRM

Cat. #TMS001*

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

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

*Dangerous Good, requires special shipping.

ICP-MS Major Cations

CRM

Cat. #TMS002*

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

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

*Dangerous Good, requires special shipping.

ANIONS

Ion Chromatography

CRM

Cat. #981

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

Call for anion standards at lower levels.

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

AA/ICP METALS

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

Flame AA Trace Metals

CRM

Cat. #508

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

Flame AA Cations

CRM

Cat. #530

One 15 mL screw-cap vial, unpreserved, yields up to 250 mL after dilution. Use with ICP, IC, and AA methods.

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

ICP Trace Metals

CRM

Cat. #524*

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

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

*Dangerous Good, requires special shipping.

pH BUFFERS

ERA Cal pH Buffers are directly traceable to NIST SRMs, mercury free, guaranteed stable for at least one year after your receipt, and are supplied with a full certificate of analysis. Choose single bottles or convenient 6-bottle cases.

Value	Volume	Single Bottle	Case of 6 Bottles
pH 4.00	1 pint	Cat. #127	Cat. #128
pH 7.00	1 pint	Cat. #131	Cat. #132
pH 10.00	1 pint	Cat. #135	Cat. #136
Case of 2 ea.	Pints		Cat. #141

*Calibration standards preserved with HNO_3 and/or HCl are required to ship as a dangerous good.

REAGENTS

Reagents for environmental and industrial analysis.



Description	Page
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Miscellaneous	99
pH	98

Description	Page
Potassium Hydroxide	98
Silver Nitrate	98
Sodium Hydroxide	99
Sodium Thiosulfate	99
Sulfuric Acid	99

REAGENTS

ERA manufactures industrial reagents with tolerances of $\pm 0.5\%$, and will hold the certified value lot to lot within 0.5% . Our reagents are shipped with a certificate of analysis and are homogeneous at a 95% confidence interval.

EDTA

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

Iodine

0.0473 N, 1 Gallon	Cat. #183134
0.0473 N, 4 x 1 Gallon Case	Cat. #182001
0.1 N, 1 Liter	Cat. #183136
0.1 N, 1 Gallon	Cat. #183138

HCl

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

DG – Dangerous Good, requires special shipping.



pH

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

Potassium Hydroxide

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

DG – Dangerous Good, requires special shipping.

Silver Nitrate

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

DG – Dangerous Good, requires special shipping.



ERA: The Industry Standard

Sodium Hydroxide

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

DG – Dangerous Good, requires special shipping.

Sodium Thiosulfate

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

Sulfuric Acid

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

DG – Dangerous Good, requires special shipping.

Miscellaneous

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

DG – Dangerous Good, requires special shipping.

A	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Acetate		93											
Acidity												16	
Acids										48		18	
Aldehydes & Ketones	61												
Aluminum		94											
Americium-241							67						
Ammonia	63	93											
Ammonium		93											
Anions		94								45			
Aromatics												17	
Arsenic		94											

B	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Barium							67	99					
Base/Neutrals										48		18	
Beryllium		94											
Biochemical Oxygen Demand (BOD)									See Demand				
Bismuth		94											
Boron												16	
Boston Round Oil & Grease												13	
Bromate		93											
Bromide		93										16	
BTEX & MTBE										46	54	17	

C	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Calcium		93-94											
Carbamate										49		19	36
Cations		93-95											
Ceriodaphnia dubia				29									
Cesium							67						
Chemical Oxygen Demand (COD)		93*											
Chloral Hydrate												35	
Chlorate		93											
Chlordane										49		19	36
Chloride		93											
Chlorinated Acid										48		17	37
Chlorine			80	27		71				22	16	34	
Chlorite		93											
Chromium	62	94											
Cobalt		94											
Cobalt-60							67						
Coliform				28		41							
Color			80			71						15	34
Complex Nutrients			81	27	85	73						12, 20	
Copper		94											
Corrosivity										45			34
Cyanide		93	80	27		71				45, 51	15, 22	34	

*See Demand

D	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Daphnia magna				29									
Daphnia pulex				29									
Demand			80	26	85	71						13, 20, 21	
Diesel Range Organics (DRO)										48	54, 56	18	
Dioxin						77							37
DMR-QA Sets				28									

E	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
EDB/DBCP/TCP													36
EDTA									97	52-53			
EPH											57		
Enterococci							39						

F	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Fathead Minnow (Pimephales promelas)				29									
Fluoride	63	93							88			21	

G	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Gamma Emitters								66					
Gasoline Additives													35
Gasoline Range Organics (GRO)										46	54, 56	17	
Glycols										48		18	
Gross Alpha/Beta								66-69					

H	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Haloacetic Acids (HAA)													35
Halomethanes (THMs)													35
Hardness			80	26, 28	85	71						12, 20	32
HCl									97				
HEM/SGT-HEM											56	13	
Herbicides			82		85-87	74				48		17	37
Heterotrophic Plate Count							41						
Hexavalent Chromium	62			26	86	72				44		14, 21	32
Hydrogen Halides & Halogens	63												

I	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
ICP-MS Trace Metals/ Major Cations		94											
Ignitability/Flash Point										45			
Inland Silverside (Menidia bergyllina)				29									
Inorganic Disinfection			80			72							33
Inorganics	63	93	80		85	71-72				45			32
Iodide		93											
Iodine									97				
Iodine-131								66					
Ion Chromatography		93-94											
Iron		94											

L	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Lead	62												
Lithium		94										14	

M	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Magnesium		93-94											
Manganese		94							99				
Mercury	62	94	81	26		72						14	32
Metals	62	94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Minerals				26								12, 21	32
Molybdenum		94											
Mysid (Mysidopsis bahia)				29									

N	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Naturals								66					
Nickel		94											
Nitrate		93							98				
Nitrite		93		27									33
Nitroaromatics & Nitramines										48		18	
Nitrogen Oxide	63												
Nitrogen Pesticides													
Nutrients			81	27	85	71-73				45		12, 20, 21	33

O	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Oil & Grease				27						45		13, 20, 21	
o-Phosphate Nutrients													33
Organic Carbon		93											34
Organochlorine Pesticides	61		82		87	74				47, 49		19	
Organophosphorus Pesticides (OPP)					87	74				49		19	

P	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
PAHs	61				87	74				48		18	
Particulate Matter	63												
PCBs	61		82		87	74				48, 50		17	37
Perchlorate		93							99				34
Pesticides	61		82		87	74				47, 49		19	36
pH		95		26					98	45		12, 20, 21	32
Phenol		93		27								15	
Phosphate		93											
Phosphorus		94											
Plutonium								67					
Potable Water Coliform Microbe							41						
Potassium		94							98-99				

Q	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
QC-Plus												21-22	

R	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Radium								67					
Radionuclides								68-69					
Ready-to-Use VOAs in Soil										46			
Regulated Volatiles													35
Residual Chlorine				27								16, 22	34
Residual Range										55			
Organic fuels (RRO)													

S	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Selenium		94											
Semivolatiles	61		82			74				47-48		18	37
Settleable Solids				29								12	
Sheepshead Minnow (Cyprinodon variegatus)				29									
Silica		94										15	34
Silicon		94											
Silver		94											
Silver Nitrate									98				
Simple Nutrients			81	27	85	73						12, 20	
Sodium		94							99				
Sodium Hydroxide									99				
Sodium Thiosulfate									99				
Solids/Solids Concentrate			80	26	85	72						12	32
Source Water Microbe							41						
Strontium		94						66, 67					
Sulfate		93											
Sulfide		93										15	
Sulfite												15	
Sulfur Dioxide	63												
Sulfuric Acid	63							99					
Surfactants-MBAS		93										15	34

T	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
TCLP										47			
Thallium		94											
Tin		94											
Tin & Titanium												14	
Titanium		94										14	
Total Cyanide												22	
Total Kjeldahl Nitrogen (TKN)		93											
Total Organic Carbon (TOC)		93*											
Total Organic Halides (TOX)		93										15	
Total Petroleum Hydrocarbons (TPH)										47	54	13	
Total Phenolics				28	85	72						15, 22	
Total Residual Chlorine				27								16, 22	
Toxaphene										49		19	36
Trace Metals		94-95		26								14, 20, 22	32
Triazines, Urons, and Acid Herbicides	82	87	75										
Trihalomethanes	82		75										
Tritium								66, 67, 69					
Turbidity				28								15	34

*See Demand

U	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Unregulated Volatiles													35
Uranium								67				14	32
UV 254 Absorbance													34

V	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Vanadium		94											32
Volatiles	60		82		87	76				46		17	35
VPH											57		

Y	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Yttrium		94											

Z	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Zinc		94						67					

AE	Air & Emissions	RChem	Radiochemistry
Cal	Calibration	RGT	Reagents
CW	Clean Water	Soil	Soil
DMR	DMR-QA	UST	Underground Storage Tank
EF	Effluent	WP	Water Pollution
LLCRM	Low-Level CRMs	WS	Water Supply
MB	Microbiology		

A	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Acenaphthene	61		82		87	74				48		18	37
Acenaphthylene	61		82		87	74				48		18	37
Acetaldehyde	61												
Acetate		93											
Acetone	60-61				87	76				46		17	
Acetonitrile	60				87	76				46		17	
Acidity as CaCO ₃												16	
Acifluorfen										48		17	37
Acrolein	60				87	76				46		17	
Acrylonitrile	60				87	76						17	
Actinium							68						
Alachlor												19	36
Aldicarb										49		19	36
Aldicarb sulfone										49		19	36
Aldicarb sulfoxide										49		19	34
Aldrin	61		82		87	74				49		19	34
Alkalinity			80	26	85	71						12, 20, 21	32
Aluminum		94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Americium-241							68-69						
Ametryn												19	
2-Amino-1-methylbenzene (o-Toluidine)										48		18	
4-Amino-2,6-dinitrotoluene										48		18	
2-Amino-4,6-dinitrotoluene										48		18	
Ammonia as N		93		27		73				45		12, 20	
Ammonia as NH ₃		69											
Ammonium	63												
Ammonium as N		93											
Ammonium as NH ₄		93	81			73							
tert-Amyl methyl ether (TAME)													35
4-Androstene-3,17-dione						77							37
Anilazine												19	
Aniline	61									48		18	
Anthracene	61		82		87	74				48		18	37
Antimony	62	94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Aroclor	61									48, 50		17	37
Arsenic	62	94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Atraton										50		19	
Atrazine			82		87	75						19	36
Azinphos					87	74				49		19	

B	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Barium	62	94-95	81	26	86	72-73		66		44, 51		14, 20, 22	32
Barium Perchlorate									99				
Baygon												19	36
Bentazone			82		87	75				48		17	37
Benzaldehyde	61												
Benzene	60		82		87	75				46		17	35
Benzidine	61									48		18	
Benzo(a)anthracene	61		82		87	74				48		18	37
Benzo(a)pyrene	61		82		87	74				48		18	37
Benzo(b)fluoranthene	61		82		87	74				48		18	37
Benzo(g,h,i)perylene	61		82		87	74				48		18	37
Benzo(k)fluoranthene	61		82		87	74				48		18	37
Benzoic acid	61									48		18	37
Benzyl alcohol	61									48		18	
Beryllium	62	94-95	81	26	86	72, 73				44, 51		14, 20, 22	32
alpha-BHC	61				87	74				49		19	
beta-BHC	61				87	74				49		19	
delta-BHC	61				87	74				49		19	
gamma-BHC (Lindane)	61				87	74				47, 49		19	36
Biochemical oxygen demand (BOD)			80	26	85	71						13, 20, 21	
Bismuth		94-95					68						
Boron		95	81	26	86	72-73				44		14, 16, 20	32
Bromacil												19	36
Bromate		93	80			72							33
Bromide	60, 63	93	80			72				45		16	33, 36
Bromine	63												
Bromobenzene										46		17	35
Bromochloroacetic acid													35
Bromochloromethane										46		17	35

B (continued)	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Bromodichloromethane	60		82		87	75				46		17	35
Bromoform	60		82		87	75				46		17	35
Bromomethane	60		82		87	77				46		17	35
4-Bromophenyl phenyl ether	61									48		18	
Bromoxynil			82			74							
BTEX										46	54, 55	17	
BTEX & MTBE										46	52-54	17	
Butachlor												19	36
2-Butanone (MEK)	60-61				87					46-47		17	
tert-Butyl Alcohol													35
Butylate												19	
Butylbenzene										46		17	35
Butyl benzyl phthalate	61									48		18	37
Butyraldehyde (butanal)	61												
bis(2-chloroisopropyl)ether	61									48		18	

C	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Cadmium	62	94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Calcium		93-95	80	26	85	71				44, 51		12, 21, 20	32, 34
Calcium hardness as CaCO ₃				26								12, 20, 21	32
Carbaryl										49		19	36
Carbazole	61									48		18	
Carbofuran										49		19	36
Carbon disulfide	60				87	75				46		17	
Carbon tetrachloride	60		82		87	75				46-47		17	35
Carbophenothion												19	
Ceriodaphnia dubia				29									
Chemical oxygen demand (COD)		93	80	26	85	71						13, 20, 21	
Chloral Hydrate													35
Chloramben										48		17	37
Chlorate		93	80			72							33
Chlordane	61				87	74				48-49		19	36
Chlorfenvinphos					87	74							
Chloride		93-94	80	26	85	71				45		12, 20, 21	32
Chlorine	63		80			71							
Chlorite		93	80			72							33
4-Chloro-3-methylphenol	61									48		18	
4-Chloroaniline	61									48		18	
Chlorobenzene	60		82		87	75				46-47		17	35
Chlorodibromomethane	60		82		87	75				46		17	35
Chloroethane	60		82		87	75				46		17	35
bis(2-Chloroethoxy)methane	61									48		18	
2-Chloroethyl vinyl ether	60				87	75				46		17	
bis(2-chloroethyl)ether	61									48		18	
Chloroform	60		82		87	76				46-47		17	35
Chloromethane	60				87	75				46		17	35
1-Chloronaphthalene	61									48		18	
2-Chloronaphthalene	61									48		18	
2-Chlorophenol	61									48		18	
4-Chlorophenyl phenyl ether	61									48		18	
Chlorotoluene										46, 48		17	35
Chlorpyrifos					87	74				49		19	
Chlortoluron			82		87	75							
Chromium	62	94-95	81	26		72				44, 51		14, 20, 22	32
Chrysene	61		82		87	74				48		18	37
Cobalt	62	94-95	81	26	86	72-73		66, 68		44, 51		14, 20, 22	
Coliforms				28									
Color			80			71						15	34
Specific conductance at 25 °C				26								12, 20	32
Conductivity			80		85	71						21	
Copper	62	94-95	81	26	86	72-73				44, 51		14, 20, 22	32
Corrosivity													34
Corrosivity/pH										45			
Crotonaldehyde	61												
Curium							68						
Cyanazine												19	
Cyanide		93	80	27-28		71				45, 51		15, 22	34
Cyclohexane	60												
Cypermethrin					87	74							

D	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
2,4-D			82		87	75				48		17	37
Dacthal diacid (DCPA)										48		17	37
Dalapon										48		17	37
Daphnia magna				29									
Daphnia pulex				29									
2,4-DB			82			74				48		17	37
4,4'-DDD	61		82		87	74				49		19	
4,4'-DDE	61		82		87	74				49		19	
2,4-DDT			82			74							
4,4'-DDT	61		82		87	74				49		19	
Decachlorobiphenyl													37
Demeton O & S									49		19		
Diaminotriazine											19		
Diazinon					87	74				49		19	36
Dibenz(a,h)anthracene	61		82		87	74				48		18	37
Dibenzofuran	61									48		18	
1,2-Dibromo-3-chloropropane (DBCP)	60				87	76				46	17-18	36	
Dibromoacetic Acid													35
1,2-Dibromoethane (EDB)	60				87	76				46	17-18		
Dibromomethane	60		82		87	76				46		17	35
Dicamba			82			74				48		17	37
Dichloroacetic Acid													35
1,2-Dichlorobenzene	60-61		82		87	76				46, 48	17-18	35	
1,3-Dichlorobenzene	60-61				87	76				46, 48	17-18	35	
1,4-Dichlorobenzene	60-61		82		87	76				46, 48	17-18	35	
3,3'-Dichlorobenzidine	61									48		18	
3,5-Dichlorobenzoic Acid										48		17	37
Dichlorodifluoromethane	60				87	76				46		17	35
1,1-Dichloroethane	60				87	76						17	35
1,1-Dichloroethene	60				87	76				46		17	
1,2-Dichloroethane	60		82		87	76				46-47		17	35
cis-1,2-Dichloroethene	60				87	76						17	
trans-1,2-Dichloroethene	60				87	76						17	
1,1-Dichloroethylene	60					76				46-47			35
cis-1,2-Dichloroethylene	60				82					46			35
trans-1,2-Dichloroethylene			82			76				46			35
2,4-Dichlorophenol	61									48		18	
2,6-Dichlorophenol	61									48		18	
1,2-Dichloropropane	60		82		87	76				46		17	35
1,3-Dichloropropane					87					46		17	35
2,2-Dichloropropane					87					46		17	35
1,1-Dichloropropene										46		17	35
cis-1,3-Dichloropropene	60				87	76						17	35
trans-1,3-Dichloropropene	60				87	76						17	35
cis-1,3-Dichloropropylene	60									46			
trans-1,3-Dichloropropylene	60									46			
1,2-Dichlorotetrafluoroethane	60												
Dichloroprop			82			74				48		17	37
Dichlorvos (DDVP)					87	74				49		19	
1,1-Dichloroethylene	60		82			76				46-47			35
Dieldrin	61		82		87	74				49		19	36
Diesel range organics (DRO)										48	52, 54, 56	18	
Diethylene glycol										48		18	
Diethyl phthalate	61		82			74				48		18	37
Di-isopropylether (DIPE)													35
Dimethoate												19	
Dimethyl phthalate	61		82			74				48		18	37
2,5-Dimethylbenzaldehyde	61												
2,4-Dimethylphenol	61									48		18	
Di-n-butyl phthalate	61		82			74				48		18	37
1,3-Dinitrobenzene										48		18	
2,4-Dinitrophenol	61									48		18	
2,4-Dinitrotoluene	61									47-48		18	
2,6-Dinitrotoluene	61									48		18	
Di-n-octyl phthalate	61		82			74				48		18	37
Dinoseb										48		17	37
Dioxacarb										49			
Dioxathion												19	
Dioxin													37
Diquat													37
Dissolved organic carbon (DOC)			80		85	71							37
Disulfoton										49		19	
Diuron										49		19	

E	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
E. coli				28			39, 41						
Endosulfan	61		82		87	74				49		19	
Endosulfan sulfate	61				87	74				49		19	
Endothall													37
Endrin	61				87	74				47, 49		19	36
Endrin aldehyde	61				87	74				49		19	
Endrin ketone	61				87	74				49		19	
EPTC (Eptam)												19	
Ethion												19	
Ethoprop												19	
Ethyl tert-butyl ether (ETBE)													35
Ethylbenzene	60		82		87	76				46		17	35
Ethylene dibromide (EDB)													36
Ethylene glycol										48		18	
bis(2-Ethylhexyl)adipate			82			74							37
bis(2-Ethylhexyl)phthalate	61		82			74				48		18	37
p-Ethyltoluene	60												

F	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Famphur												19	
Fathead minnow (Pimephales promelas)				29									
Fenitrothion					87	74							
Fenthion					87	74							
Ferrous Ammonium Sulfate									99				
Fluoranthene	61		82		87	74				48		18	37
Fluorene	61		82		87	74				48		18	37
Fluoride	63	93-94	80	26	85	71				45		12, 20, 21	32
Fluoride Buffer									99				
Fluorotrichloromethane													35
Fonofos												19	
Formaldehyde	61												
Free Residual Chlorine													34

G	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Gasoline range organics (GRO)										46	54, 56	17	
Glyphosate			82		87	75							37
Gross Alpha/Beta								64-69					
Gross Beta								66-69					

H	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Halides	63											15	
Halogens	63												
HEM											56	13	
Heptachlor	61		82		87	74				47, 49		19	36
Heptachlor epoxide	61		82		87	74				47, 49		19	36
n-Heptane	60												
Heterotrophic							41						
Hexachlorobenzene	61		82			74				47-48		18	36
Hexachlorobutadiene	60-61				87	76				46-48		17, 18	35
Hexachlorocyclopentadiene	61									48		18	36
Hexachloroethane	61									46-48		17, 18	
Hexaldehyde (hexanal)	61												
n-Hexane	60									45			
n-Hexane extractable material										45			
2-Hexanone	60				87	76				46		17	
Hexavalent chromium	59, 62			26, 28	86	70, 72				44		14, 21	32
Hexazinone												19	
HMX										48		18	
Hydrogen bromide	63												
Hydrogen chloride	63												
Hydrogen fluoride	63												
3-Hydroxycarbofuran										49		19	36

AE Air & Emissions

Cal Calibration

CW Clean Water

DMR DMR-QA

EF Effluent

LLCRM Low-Level CRMs

MB Microbiology

RChem Radiochemistry

RGT Reagents

Soil Soil

UST Underground Storage Tank

WP Water Pollution

WS Water Supply

I	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Ignitability/Flashpoint										45			
Indeno(1,2,3-cd)pyrene	61		82		87	74				48		18	37
Inland silverside (Menidia beryllina)				29									
Iodide		93											
Ioxynil			82			74							
Iron		94-95	81	26	86	72-73		68-69		44		14, 20, 22	32
Isophorone	61									48		18	
Isopropylbenzene										46		17	35
Isopropyltoluene										46		17	35
Isovaleraldehyde	61												

L	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Lanthanum		95											
Lead	62	94-95	81	26	86	72, 73		68		44, 51		14, 20, 22	32
Lithium		94	81			72						14	

M	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Magnesium		93-95	80	26	85	71				44, 51		12, 20, 21	32
Malathion					87	74				49		19	
Manganese	62	94, 95	81	26	86	72, 73		68-69	99	44, 51		14, 20, 22	32
MBAS-Surfactants		93										15	34
MCPA			82		87	75				48		17	
MCPB			82		87	75							
MCPBP										48		17	
Mercury	62	94	81	26, 28		72				44, 51		14, 22	32
Metals & Cyanide Blank Sand										51			
Metals & Cyanide Blank Soil										51			
Methiocarb										49		19	36
Methomyl										49		19	36
Methoxychlor	61				87	74				47, 49		19	36
Methyl ethyl ketone (MEK)	60, 61				87	76				46, 47		17	
Methyl tert-butyl ether (MTBE)	60				87	76				46		17	35
4-Methyl-2-pentanone (MIBK)	60				87	76				46		17	
2-Methyl-4,6-dinitrophenol	61									48		18	
Methylene chloride	60		82		87	76				46		17	35
2-Methylnaphthalene	61									48		18	
2-Methylphenol										47, 48		18	
3 & 4-Methylphenol										47, 48			
2-Methylphenol (o-Cresol)	61												
4-Methylphenol (p-Cresol)	61												
Metolachlor												19	36
Metribuzin												19	36
Mevinphos					87	74							
Molinate (Ordram)													36
Molybdenum		94, 95	81	26	86	72, 73				44		14, 20, 22	32
Monochloroacetic Acid													35
Monuron			82			74							
Mysid (Mysidopsis bahia)				29									

N	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Naphthalene	60, 61		82		87	74, 76				46, 48		17, 18	35, 37
Napropamide												19	
Nickel	62	94, 95	81	26	86	72-73				44		14, 20, 22	32
Nitrate as N		93, 94		27						45		12, 20, 21	32
Nitrate as NO ₃		93	81		85	73							
Nitrate plus nitrite as N				27								12, 20	32
Nitrite as N		93		27								12	33
Nitrite as NO ₂		93	81		85	73							
2-Nitroaniline	61									48		18	
3-Nitroaniline	61									48		18	
4-Nitroaniline	61									48		18	
Nitrobenzene	61									46-48		17, 18	
2-Nitrophenol	61									48		18	
4-Nitrophenol	61									48		18	
N-Nitrosodiethylamine	61									48		18	

N (continued)	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
N-Nitrosodimethylamine (NDMA)	61									48		18	
N-Nitroso-di-n-propylamine	61									48		18	
N-Nitrosodiphenylamine	61									48		18	
2-Nitrotoluene										48		18	
3-Nitrotoluene										48		18	
4-Nitrotoluene										48		18	

O	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Oil & Grease				27, 28						45		13, 20, 21	
ortho-Phosphate as P				27								12, 20, 21	33
Organophosphorus Pesticides					87	74				49		19	36
Oxamyl										49		19	36
Oxides of nitrogen	63												

P	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Paraquat													37
Parathion					87	74				49		19	
Particulate matter	63												
PCB 28			82		87	74							
PCB 52			82		87	74							
PCB 101			82		87	74							
PCB 118			82		87	74							
PCB 138			82		87	74							
PCB 153			82		87	74							
PCB 180			82		87	74							
PCBs in Oil										50		17	
PCBs in Soil										48, 50			
PCBs in Water										50		17	
Pentachlorobenzene	61		82		87	74				48		18	
Pentachlorophenol	61									48, 49		17, 18	37
Petroleum Hydrocarbons Fuels										47	54, 57	13	
Perchlorate		93											34
pH		95	80	26, 28	85	71			98	45		12, 16, 20, 21	32
Phenanthrene	61		82		87	74				48		18	37
Phenol	61	93		27						48		15, 18	
Phenolphthalein									99				
Phorate										49		19	
Phosmet												19	
ortho-Phosphate as P				27								12, 20, 21	33
Phosphate as P		93, 94								45			
Phosphate as PO ₄		93											
Phosphorus	62	94, 95	81		85	73							
Picloram										48		17	37
Plutonium							67-69						
Potassium		94, 95	80	26	85	71		68		44		12, 20, 21	32
Potassium Cyanide (KCN)									99				
Potassium Dichromate									99				
Potassium Hydroxide (KOH)									98				
Potassium Permanganate									99				
Promecarb										49			
Prometon												19	36
Prometryn												19	
Pronamide												19	
Propachlor												19	36
Propazine												19	
Propham										49		19	
Propionaldehyde (propanal)	61												
Propoxur										49			
n-Propylbenzene										46		17	35
Propylene	60												
Propylene glycol										48		18	
Propyzamide			82			74							
Pyrene	61		82		87	74				48		18	37
Pyridine	61									47, 48		18	

R	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Radium								66-67					
RDX										48		18	
Residual Range Organic (RRO)										55			
Ronnel										49		19	

S	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
sec-Butylbenzene										46		17	35
Selenium	62	94-95	81	26	86	72, 73				44, 51		14, 20, 22	32
Settleable solids				28								17	
SGT-HEM										56		13	
Sheepshead minnow (Cyprinodon variegatus)				29									
Silica		94										13, 15	34
Silicon		94											
Silver	62	94, 95	81	26	86	72, 73				44, 51		14, 20, 22	32
Silver Nitrate								98					
Simazine			82		87	75						19	36
Sodium		94, 95	80	26	85	71				44, 51		12, 20, 21	32
Sodium Carbonate								99					
Sodium Hydroxide								99					
Sodium Thiosulfate								99					
Stirophos (tetrachlorovinphos)										49		19	
Strontium		94, 95	81	26	86	72, 73	66-69			44		14, 20, 22	
Styrene	60		82		87	76				46		17	35
Sulfate		93-94	80	26	85	71				45		12, 20, 21	32
Sulfur dioxide	63												
Sulfuric acid	63												

T	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Terbacil												19	
Terbufos										49		19	
1,2,4,5-Tetrachlorobenzene	61									48		18	
1,1,1,2-Tetrachloroethane	60				87	76				46		17	37
1,1,2,2-Tetrachloroethane	60				87	76				46		17	37
Tetrachloroethene	60		82		87	76				46		17	
Tetrachloroethylene	60									47			37
2,3,4,6-Tetrachlorophenol	61									48		18	
Tetraethylene glycol										48		18	
Tetryl										48		18	
Thallium	62	94, 95	81	26	86	72, 73				44		14, 20, 22	32
Thiobencarb													36
Thorium		94					66, 68, 69						
Tin		94, 95	81			72				44		14, 22	
Titanium		94								44		14, 22	
TISAB								99					
Tolualdehyde	61												
Toluene	60		82		87	76				46		17	35
o-Toluidine	61									48		18	
Total dissolved solids			80	26	85	71, 72						12, 20, 21, 22	32
Total hardness			80	26	85	71						12, 20	32
Total Kjeldahl Nitrogen		93	81	27	85	73				45		12, 20, 21	
Total Nitrogen					85	73							
Total Organic Carbon (TOC)		93	80	26	85	71				45		13, 20, 21	34
Total Organic Halides (TOX)		93										15	
Total Oxidized Nitrogen (TON)			81		85	73							
Total Phenolics (4-AAP)				28	85	72						15, 22	
Total Phosphorus			81	27	85	73				45		12, 20, 21	
Total solids at 105°C				26								12, 20, 22	32
Total suspended solids (TSS)			80	26	85	72						12, 20, 22	32
Total volatile solids												12	

T (continued)	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Toxaphene										49		19	36
2,4,5-TP (Silvex)										48		17	37
TPH										47	54-56	13	
Trichlopyr			82			74							
Trichloroacetic Acid													35
1,2,3-Trichlorobenzene										46		17	35
1,2,4-Trichlorobenzene	60, 61		82		87	76				46, 48		17, 18	35
1,1,1-Trichloroethane	60		82		87	76				46		17	35
1,1,2-Trichloroethane	60		82		87	76				46		17	35
Trichloroethene			82		87	76				46		17	
Trichloroethylene	60												
Trichlorofluoromethane	60				87	76				46		17	35
2,4,5-Trichlorophenol	61									47, 48		18	
2,4,6-Trichlorophenol	61									47, 48		18	
1,2,3-Trichloropropane	60				87	76				46		17, 18	35, 36
Trichlorotrifluoromethane	60												
Triethylene glycol										48		18	
Trifluralin			82			74						19	36
1,2,4-Trimethylbenzene	60									46		17	35
1,3,5-Trimethylbenzene	60									46		17	35
1,3,5-Trinitrobenzene										48		18	
2,4,6-Trinitrotoluene										48		18	
Tritium								66, 67, 69					
Turbidity				28								15	34

U	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Uranium		94						66-69		44		14, 19	32
UV 254 Absorbance													34

V	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Valeraldehyde (pentanal)	61												
Vanadium		94, 95	81	26	86	72, 73				44, 51		14, 20, 22	32
Vinyl acetate	60				87	76				46		17	
Vinyl bromide	60												
Vinyl chloride	60		82		87	76				46, 47		17	35

X	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Xylenes, total	60		82		87	76				46	54	17	37

Y	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Yttrium		94											

Z	AE	Cal	CW	DMR	EF	LLCRM	MB	RChem	RGT	Soil	UST	WP	WS
Zinc	62	94, 95	81	26	86	72, 73		66-69		44, 51		14, 20, 22	32

AE Air & Emissions

Cal Calibration

CW Clean Water

DMR DMR-QA

EF Effluent

LLCRM Low-Level CRMs

MB Microbiology

RChem Radiochemistry

RGT Reagents

Soil Soil

UST Underground Storage Tank

WP Water Pollution

WS Water Supply

A–C

A	4-AAP	4 - Aminoantipyrine
	A2LA	American Association for Laboratory Accreditation
	AE	Air & emissions
B	BCH	Benzene hexachloride
	BOD	Biochemical oxygen demand
	BTEX	Benzene, toluene, ethylbenzene, and xylenes
C	CALA	Canadian Association for Laboratory Accreditation
	CFU	Colony-forming unit
	CLP	Contract laboratory program
	COD	Chemical oxygen demand
	CoA	Certificate of analysis
	CRDL	Contract required detection limit
	CRM	Certified reference material
	CVAFS	Cold vapour atomic fluorescence spectroscopy
	CVAA	Cold vapor atomic absorption
	CW	Clean water
	CWA	Clean Water Act

D–F

D	DBCP	Dibromochloropropane
	DI	Deionized
E	EDB	Ethylene dibromide also known as 1,2-Dibromoethane
	EDD	Electronic data deliverable
	EF	Effluent
	ELAP	Environmental Laboratory Accreditation Program
	EPA	Environmental Protection Agency
	EPTIS	European Proficiency Testing Information System
	ERA	Environmental Resource Associates
F	FAQ	Frequently asked question
	FID	Flame ionization detector
	FoPT	Field of Proficiency Testing

G–I

G	GC	Gas chromatography
H	HCH	Hexachlorocyclohexane
	HEM	Hexane extractable material
	HMX	Nitroamine high explosive
	HPC	Heterotrophic plate count
	HPLC	High performance liquid chromatography
I	IC	Ion chromatography
	ICP	Inductively coupled plasma
	IR	Infrared
	ISE	Ion selective electrode
	ISO	International Organization for Standardization

L–N

L	LAS	Linear alkylbenzene sulphonates
	LIMS	Laboratory information management system
M	MBAS	Methylene blue active substances
	MCPA	2-methyl-4-chlorophenoxyacetic acid
	MCP	Mecoprop (chlorophenoxy herbicide)
	MEK	Methyl ethyl ketone
	MF	Membrane filtration
	mg	Milligrams
	mg/dscm	Milligrams per dry standard cubic meter
	MIBK	Methyl isobutyl ketone
	MOE	Ministry of the Environment (Ontario)
	MPN	Most probable number
	MRAD	Multi-media radiochemistry
	MTBE	Methyl tert-butyl ether

N	NELAC	National Environmental Laboratory Accreditation Conference
	NELAP	National Environmental Laboratory Accreditation Program
	NIST	National Institute of Standards and Technology (U.S.)
	NPDES	National Pollutant Discharge Elimination System
	NQA	National Quality Assurance
	NTU	Nephelometric turbidity unit

O–Q

O	OES	Optical emission spectrometry
P	PAH	Polycyclic aromatic hydrocarbons
	PC units	Platinum-cobalt
	PCB	Polychlorinated biphenyls
	pci/kg	Picocuries per kilogram
	PE	Performance evaluation
	pg	Picogram
	PT	Proficiency test(ing)
	PUF	Polyurethane foam
Q	QC	Quality control
	QR	Quik Response

R–T

R	RCRA	Resource Conservation and Recovery Act
	RDX	Research department explosive (an explosive nitroamine)
	RM	Reference material
	RTU	Ready-to-use
S	SCC	Standards Council of Canada
	SDWA	Safe Drinking Water Act
	SGT HEM	Silica gel treated hexane extractable materials
	SI unit	International System of Units
	SPE	Solid phase extraction
	SU	Standard Units
T	TCDD	Tetrachlorodibenzo-p-dioxin
	TCLP	Toxicity characteristic leaching procedure
	TCP	Trichloropropane
	TKN	Total Kjeldahl (kel'dahl) Nitrogen
	TNI	The NELAC Institute
	TOC	Total organic carbon
	TOX	Total organic halides
	TPH	Total petroleum hydrocarbons
	TSS	Total suspended solids

U–Z

U	UCMR	Unregulated contaminant monitoring rule
	UKAS	United Kingdom Accreditation Service
	umhos	Micromhos (measure of electrical conductivity of a solution)
	UPLC	Ultra performance liquid chromatography
V	VOA	Volatile organic analysis
	VOC	Volatile organic compounds
W	WP	Water pollution
	WS	Water supply
	WWTP	Wastewater treatment plant
Z	z score	Statistical measurement of a score's relationship to the mean in a group of scores

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