Amendment No. 2
to
Contract No. NA180000005
for
Proficiency Testing Standards Annual Contract
between
Environmental Resource Association
and the
City of Austin

1.0 The City hereby exercises this extension option for the subject contract. This extension option will be effective November 10, 2020 through November 9, 2021. One option will remain.

2.0 The total contract amount is increased by $20,000.00 by this extension period. The total contract authorization is recapped below:

Action	Action Amount	Total Contract Amount
Initial Term: 11/10/2017 – 11/09/2019	$40,000.00	$40,000.00
Amendment No. 1: Option 1 - Extension 11/10/2019 – 11/09/2020	$20,000.00	$60,000.00
Amendment No. 2: Option 2 - Extension 11/10/2020 – 11/09/2021	$20,000.00	$80,000.00

3.0 By signing this Amendment, the Contractor certifies that the vendor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the GSA List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this amendment is hereby incorporated into and made a part of the above-referenced contract.

Sign/Date: 15 October 2020

Printed Name: Jeff Mazzeo
Authorized Representative

Environmental Resource Association
16341 Table Mountain Parkway
Golden, CO 80403-1826
info@eraqc.com
303-431-8454

Sign/Date: Cindy Reyes Digitally signed by Cindy Reyes Date: 2020.10.26 09:28:45 -05'00'

Cindy Reyes
Contract Management Specialist III

City of Austin
Purchasing Office
124 W. 8th Street, Ste. 310
Austin, Texas 78701

Amendment No. 1
to
Contract No. NA180000005
for
Proficiency Testing Standards Annual Contract
between
ENVIRONMENTAL RESOURCE ASSOC and the
City of Austin

1.0 The City hereby exercises this extension option for the subject contract. This extension option will be effective November 10, 2019 through November 9, 2020. Two (2) options will remain.

2.0 The total contract amount is increased by $20,000.00 by this extension period. The total contract authorization is recapped below:

Action	Action Amount	Total Contract Amount
Initial Term: 11/09/2017 – 11/08/2019	$40,000.00	$40,000.00
Amendment No. 1: Option 1-Extension 11/09/2019 – 11/08/2020	$20,000.00	$60,000.00

3.0 By signing this Amendment, the Contractor certifies that the vendor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the GSA List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this amendment is hereby incorporated into and made a part of the above-referenced contract.

Sign/Date: 16 Aug '19

Printed Name: Michael G. Deines
Authorized Representative

ENVIRONMENTAL RESOURCE ASSOC
16341 Table Mountain Parkway
Golden, CO 80403-1826
dsauer@eraqc.com

Sign/Date: 8-21-19

Brenita Selement
Procurement Specialist II
City of Austin
Purchasing Office
124 W. 8th Street, Ste. 310
Austin, Texas 78701

CONTRACT BETWEEN THE CITY OF AUSTIN ("City")
AND
Environmental Resource Associates ("Contractor")
for
Chemical Laboratory Services
NA180000005

The City accepts the Contractor's Offer (as referenced in Section 1.1.3 below) for the above requirement and enters into the following Contract.

This Contract is between Environmental Resource Associates having offices at Golden, Colorado 80403 and the City, a home-rule municipality incorporated by the State of Texas, and is effective as of the date executed by the City ("Effective Date").

Capitalized terms used but not defined herein have the meanings given them in Solicitation Number RFP MDD0106.

1.1 **This Contract is composed of the following documents:**

1.1.1 This Contract

1.1.2 The City's Solicitation, RFP, MDD0106 including all documents incorporated by reference

1.1.3 Environmental Resource Associates Offer, dated August 2, 2017, including subsequent clarifications

1.2 **Order of Precedence.** Any inconsistency or conflict in the Contract documents shall be resolved by giving precedence in the following order:

1.2.1 This Contract

1.2.2 The City's Solicitation as referenced in Section 1.1.2, including all documents incorporated by reference

1.2.3 The Contractor's Offer as referenced in Section 1.1.3, including subsequent clarifications.

1.3 **Term of Contract.** The Contract will be in effect for an initial term of 24 months and may be extended thereafter for up to three (3) 12 month extension option(s), subject to the approval of the Contractor and the City Purchasing Officer or his designee. See the Term of Contract provision in Section 0400 for additional Contract requirements.

1.4 **Compensation.** The Contractor shall be paid a total Not-to-Exceed amount of $40,000 for the initial Contract term and $20,000 for each extension option as indicated in the Bid Sheet, IFB Section 0600. Payment shall be made upon successful completion of services or delivery of goods as outlined in each individual Delivery Order.

1.5 **Quantity of Work.** There is no guaranteed quantity of work for the period of the Contract and there are no minimum order quantities. Work will be on an as needed basis as specified by the City for each Delivery Order

1.6 **Clarifications and Additional Agreements.** The following are incorporated into the Contract.

1.6.1 N/A

This Contract (including any Exhibits) constitutes the entire agreement of the parties regarding the subject matter of this Contract and supersedes all prior and contemporaneous agreements and understandings, whether written or oral, relating to such subject matter. This Contract may be altered, amended, or modified only by a written instrument signed by the duly authorized representatives of both parties.

In witness whereof, the parties have caused a duly authorized representative to execute this Contract on the date set forth below.

ENVIRONMENTAL RESOURCE ASSOCIATES	**CITY OF AUSTIN**
Michael G. Deines	Matthew Duree
Printed Name of Authorized Person	Printed Name of Authorized Person
Signature	Signature
General Manager	Procurement Supervisor
Title:	Title:
7 - Nov - 2017	11-7-2017
Date:	Date:

CITY OF AUSTIN, TEXAS

Purchasing Office

REQUEST FOR PROPOSAL (RFP)

OFFER SHEET

SOLICITATION NO: RFP MDD0106

DATE ISSUED: July 10th, 2017

REQUISITION NO.: RQM 2200 17032800390

COMMODITY CODE: 96222

COMMODITY/SERVICE DESCRIPTION: Chemical Laboratory Services

PRE-PROPOSAL CONFERENCE TIME AND DATE: Wednesday, July 19th, 2017 @ 10:00 AM
Phone Conference #: 512-974-9300
Participant Code #: 203078

PRE-PROPOSAL LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET, 3rd FLOOR CONFERENCE ROOM, AUSTIN, TEXAS 78701

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT THE FOLLOWING AUTHORIZED CONTACT PERSON:

Matthew Duree
Procurement Supervisor

Phone: (512) 974-6346
E-Mail: matt.duree@austintexas.gov

Georgia Billela
Procurement Specialist III

Phone: (512) 974-2939
E-Mail: Georgia.billela@austintexas.gov

PROPOSAL DUE PRIOR TO: 2:00 PM Thursday, August 3rd, 2017

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET
RM 308, AUSTIN, TEXAS 78701

LIVE SOLICITATION OPENING ONLINE: For RFP's, only the names of respondents will be read aloud at 3:00 pm the day proposals are due.

For information on how to attend the Solicitation Closing online, please select this link:

http://www.austintexas.gov/department/bid-opening-webinars

When submitting a sealed Offer and/or Compliance Plan, use the proper address for the type of service desired, as shown below:

Address for US Mail (Only)	Address for FedEx, UPS, Hand Delivery or Courier Service
City of Austin	City of Austin, Municipal Building
Purchasing Office-Response Enclosed for Solicitation # MDD0106	Purchasing Office-Response Enclosed for Solicitation # MDD0106
P.O. Box 1088	124 W 8th Street, Rm 308
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

NOTE: Offers must be received and time stamped in the Purchasing Office prior to the Due Date and Time. It is the responsibility of the Offeror to ensure that their Offer arrives at the receptionist's desk in the Purchasing Office prior to the time and date indicated. Arrival at the City's mailroom, mail terminal, or post office box will not constitute the Offer arriving on time. See Section 0200 for additional solicitation instructions.

All Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL, __ COPIES, AND 1 ELECTRONIC COPY OF YOUR RESPONSE

SIGNATURE FOR SUBMITTAL REQUIRED ON PAGE 3 OF THIS DOCUMENT

This solicitation is comprised of the following required sections. Please ensure to carefully read each section including those incorporated by reference. By signing this document, you are agreeing to all the items contained herein and will be bound to all terms.

SECTION NO.	TITLE	PAGES
0100	STANDARD PURCHASE DEFINITIONS	*
0200	STANDARD SOLICITATION INSTRUCTIONS	*
0300	STANDARD PURCHASE TERMS AND CONDITIONS	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	7
0500	SCOPE OF WORK	ATT
0510	EXCEPTIONS FORM	1
0600	PROPOSAL PREPARATION INSTRUCTIONS & EVALUATION FACTORS	4
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM – Complete and return	2
0700	REFERENCE SHEET – Complete and return if required	2
0800	NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION–Complete and return	2
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	*
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING CERTIFICATION	*
0835	NONRESIDENT BIDDER PROVISIONS – Complete and return	1

*** Documents are hereby incorporated into this Solicitation by reference, with the same force and effect as if they were incorporated in full text. The full text versions of the * Sections are available on the Internet at the following online address:**

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office located in the Municipal Building, 124 West 8th Street, Room #308 Austin, Texas 78701; phone (512) 974-2500. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

INTERESTED PARTIES DISCLOSURE

In addition, Section 2252.908 of the Texas Government Code requires the successful offeror to complete a Form 1295 "Certificate of Interested Parties" that is signed and notarized for a contract award requiring council authorization. The "Certificate of Interested Parties" form must be completed on the Texas Ethics Commission website, printed, signed and submitted to the City by the authorized agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury prior to final contract execution.

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

The undersigned, by his/her signature, represents that he/she is submitting a binding offer and is authorized to bind the respondent to fully comply with the solicitation document contained herein. The Respondent, by submitting and signing below, acknowledges that he/she has received and read the entire document packet sections defined above including all documents incorporated by reference, and agrees to be bound by the terms therein.

Company Name: Environmental Resource Associates DBA: ERA- A Waters Company

Company Address: 10634 W. Table Mountain Parkway

City, State, Zip: Golden, CO 80403

Federal Tax ID No. [redacted]

Printed Name of Officer or Authorized Representative: Michael G. Deines

Title: General Manager

Signature of Officer or Authorized Representative: Michael G. Deines

Date: 7/28/17

Email Address: info@eraqc.com

Phone Number: 303-431-8454

*** Proposal response must be submitted with this Offer sheet to be considered for award**

CITY OF AUSTIN
PURCHASING OFFICE
STANDARD PURCHASE TERMS AND CONDITIONS

By submitting an Offer in response to the Solicitation, the Contractor agrees that the Contract shall be governed by the following terms and conditions. Unless otherwise specified in the Contract, Sections 3, 4, 5, 6, 7, 8, 20, 21, and 36 shall apply only to a Solicitation to purchase Goods, and Sections 9, 10, 11 and 22 shall apply only to a Solicitation to purchase Services to be performed principally at the City's premises or on public rights-of-way.

1. **CONTRACTOR'S OBLIGATIONS**. The Contractor shall fully and timely provide all Deliverables described in the Solicitation and in the Contractor's Offer in strict accordance with the terms, covenants, and conditions of the Contract and all applicable Federal, State, and local laws, rules, and regulations.

2. **EFFECTIVE DATE/TERM**. Unless otherwise specified in the Solicitation, this Contract shall be effective as of the date the contract is signed by the City, and shall continue in effect until all obligations are performed in accordance with the Contract.

3. **CONTRACTOR TO PACKAGE DELIVERABLES**: The Contractor will package Deliverables in accordance with good commercial practice and shall include a packing list showing the description of each item, the quantity and unit price Unless otherwise provided in the Specifications or Supplemental Terms and Conditions, each shipping container shall be clearly and permanently marked as follows: (a) The Contractor's name and address, (b) the City's name, address and purchase order or purchase release number and the price agreement number if applicable, (c) Container number and total number of containers, e.g. box 1 of 4 boxes, and (d) the number of the container bearing the packing list. The Contractor shall bear cost of packaging. Deliverables shall be suitably packed to secure lowest transportation costs and to conform with requirements of common carriers and any applicable specifications. The City's count or weight shall be final and conclusive on shipments not accompanied by packing lists.

4. **SHIPMENT UNDER RESERVATION PROHIBITED**: The Contractor is not authorized to ship the Deliverables under reservation and no tender of a bill of lading will operate as a tender of Deliverables.

5. **TITLE & RISK OF LOSS**: Title to and risk of loss of the Deliverables shall pass to the City only when the City actually receives and accepts the Deliverables.

6. **DELIVERY TERMS AND TRANSPORTATION CHARGES**: Deliverables shall be shipped F.O.B. point of delivery unless otherwise specified in the Supplemental Terms and Conditions. Unless otherwise stated in the Offer, the Contractor's price shall be deemed to include all delivery and transportation charges. The City shall have the right to designate what method of transportation shall be used to ship the Deliverables. The place of delivery shall be that set forth in the block of the purchase order or purchase release entitled "Receiving Agency".

7. **RIGHT OF INSPECTION AND REJECTION**: The City expressly reserves all rights under law, including, but not limited to the Uniform Commercial Code, to inspect the Deliverables at delivery before accepting them, and to reject defective or non-conforming Deliverables. If the City has the right to inspect the Contractor's, or the Contractor's Subcontractor's, facilities, or the Deliverables at the Contractor's, or the Contractor's Subcontractor's, premises, the Contractor shall furnish, or cause to be furnished, without additional charge, all reasonable facilities and assistance to the City to facilitate such inspection.

8. **NO REPLACEMENT OF DEFECTIVE TENDER**: Every tender or delivery of Deliverables must fully comply with all provisions of the Contract as to time of delivery, quality, and quantity. Any non-complying tender shall constitute a breach and the Contractor shall not have the right to substitute a conforming tender; provided, where the time for performance has not yet expired, the Contractor may notify the City of the intention to cure and may then make a conforming tender within the time allotted in the contract.

9. **PLACE AND CONDITION OF WORK**: The City shall provide the Contractor access to the sites where the Contractor is to perform the services as required in order for the Contractor to perform the services in a timely and efficient manner, in accordance with and subject to the applicable security laws, rules, and regulations. The Contractor acknowledges that it has satisfied itself as to the nature of the City's service requirements and specifications, the location and essential characteristics of the work sites, the quality and quantity of materials, equipment, labor and facilities necessary to perform the services, and any other condition or state of fact which could in any way affect performance of the Contractor's obligations under the contract. The Contractor hereby releases and holds the City

harmless from and against any liability or claim for damages of any kind or nature if the actual site or service conditions differ from expected conditions.

10. **WORKFORCE**

A. The Contractor shall employ only orderly and competent workers, skilled in the performance of the services which they will perform under the Contract.

B. The Contractor, its employees, subcontractors, and subcontractor's employees may not while engaged in participating or responding to a solicitation or while in the course and scope of delivering goods or services under a City of Austin contract or on the City's property .

i. use or possess a firearm, including a concealed handgun that is licensed under state law, except as required by the terms of the contract; or
ii. use or possess alcoholic or other intoxicating beverages, illegal drugs or controlled substances, nor may such workers be intoxicated, or under the influence of alcohol or drugs, on the job.

C. If the City or the City's representative notifies the Contractor that any worker is incompetent, disorderly or disobedient, has knowingly or repeatedly violated safety regulations, has possessed any firearms, or has possessed or was under the influence of alcohol or drugs on the job, the Contractor shall immediately remove such worker from Contract services, and may not employ such worker again on Contract services without the City's prior written consent.

11. **COMPLIANCE WITH HEALTH, SAFETY, AND ENVIRONMENTAL REGULATIONS**: The Contractor, its Subcontractors, and their respective employees, shall comply fully with all applicable federal, state, and local health, safety, and environmental laws, ordinances, rules and regulations in the performance of the services, including but not limited to those promulgated by the City and by the Occupational Safety and Health Administration (OSHA). In case of conflict, the most stringent safety requirement shall govern. The Contractor shall indemnify and hold the City harmless from and against all claims, demands, suits, actions, judgments, fines, penalties and liability of every kind arising from the breach of the Contractor's obligations under this paragraph.

12. **INVOICES**:

A. The Contractor shall submit separate invoices in duplicate on each purchase order or purchase release after each delivery. If partial shipments or deliveries are authorized by the City, a separate invoice must be sent for each shipment or delivery made.

B. **Proper Invoices must include a unique invoice number, the purchase order or delivery order number and the master agreement number if applicable, the Department's Name, and the name of the point of contact for the Department**. Invoices shall be itemized and transportation charges, if any, shall be listed separately. A copy of the bill of lading and the freight waybill, when applicable, shall be attached to the invoice. The Contractor's name and, if applicable, the tax identification number on the invoice must exactly match the information in the Vendor's registration with the City. Unless otherwise instructed in writing, the City may rely on the remittance address specified on the Contractor's invoice.

C. Invoices for labor shall include a copy of all time-sheets with trade labor rate and Deliverables order number clearly identified. Invoices shall also include a tabulation of work-hours at the appropriate rates and grouped by work order number. Time billed for labor shall be limited to hours actually worked at the work site.

D. Unless otherwise expressly authorized in the Contract, the Contractor shall pass through all Subcontract and other authorized expenses at actual cost without markup.

E. Federal excise taxes, State taxes, or City sales taxes must not be included in the invoiced amount. The City will furnish a tax exemption certificate upon request.

13. **PAYMENT**:

A. All proper invoices received by the City will be paid within thirty (30) calendar days of the City's receipt of the Deliverables or of the invoice, whichever is later.

B. **If payment is not timely made, (per paragraph A), interest shall accrue on the unpaid balance at the lesser of the rate specified in Texas Government Code Section 2251.025 or the maximum lawful rate; except, if payment is not timely made for a reason for which the City may withhold payment hereunder, interest shall not accrue until ten (10) calendar days after the grounds for withholding payment have been resolved.**

C. If partial shipments or deliveries are authorized by the City, the Contractor will be paid for the partial shipment or delivery, as stated above, provided that the invoice matches the shipment or delivery.

D. The City may withhold or set off the entire payment or part of any payment otherwise due the Contractor to such extent as may be necessary on account of:

i. delivery of defective or non-conforming Deliverables by the Contractor;
ii. third party claims, which are not covered by the insurance which the Contractor is required to provide, are filed or reasonable evidence indicating probable filing of such claims;
iii. failure of the Contractor to pay Subcontractors, or for labor, materials or equipment;
iv. damage to the property of the City or the City's agents, employees or contractors, which is not covered by insurance required to be provided by the Contractor;
v. reasonable evidence that the Contractor's obligations will not be completed within the time specified in the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
vi. failure of the Contractor to submit proper invoices with all required attachments and supporting documentation; or
vii. failure of the Contractor to comply with any material provision of the Contract Documents.

E. Notice is hereby given of Article VIII, Section 1 of the Austin City Charter which prohibits the payment of any money to any person, firm or corporation who is in arrears to the City for taxes, and of §2-8-3 of the Austin City Code concerning the right of the City to offset indebtedness owed the City.

F. Payment will be made by check unless the parties mutually agree to payment by credit card or electronic transfer of funds. The Contractor agrees that there shall be no additional charges, surcharges, or penalties to the City for payments made by credit card or electronic funds transfer.

G. The awarding or continuation of this contract is dependent upon the availability of funding. The City's payment obligations are payable only and solely from funds Appropriated and available for this contract. The absence of Appropriated or other lawfully available funds shall render the Contract null and void to the extent funds are not Appropriated or available and any Deliverables delivered but unpaid shall be returned to the Contractor. The City shall provide the Contractor written notice of the failure of the City to make an adequate Appropriation for any fiscal year to pay the amounts due under the Contract, or the reduction of any Appropriation to an amount insufficient to permit the City to pay its obligations under the Contract. In the event of non or inadequate appropriation of funds, there will be no penalty nor removal fees charged to the City.

14. **TRAVEL EXPENSES**: All travel, lodging and per diem expenses in connection with the Contract for which reimbursement may be claimed by the Contractor under the terms of the Solicitation will be reviewed against the City's Travel Policy as published and maintained by the City's Controller's Office and the Current United States General Services Administration Domestic Per Diem Rates (the "Rates") as published and maintained on the Internet at:

http://www.gsa.gov/portal/category/21287

No amounts in excess of the Travel Policy or Rates shall be paid. All invoices must be accompanied by copies of detailed itemized receipts (e.g. hotel bills, airline tickets). No reimbursement will be made for expenses not actually incurred. Airline fares in excess of coach or economy will not be reimbursed. Mileage charges may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations.

15. **FINAL PAYMENT AND CLOSE-OUT**:

A. If an MBE/WBE Program Compliance Plan is required by the Solicitation, and the Contractor has identified Subcontractors, the Contractor is required to submit a Contract Close-Out MBE/WBE Compliance Report to the Project manager or Contract manager no later than the 15th calendar day after completion of all work under the contract. Final payment, retainage, or both may be withheld if the Contractor is not in compliance with the requirements of the Compliance Plan as accepted by the City.

B. The making and acceptance of final payment will constitute:

i. a waiver of all claims by the City against the Contractor, except claims (1) which have been previously asserted in writing and not yet settled, (2) arising from defective work appearing after final inspection, (3) arising from failure of the Contractor to comply with the Contract or the terms of any warranty specified herein, (4) arising from the Contractor's continuing obligations under the Contract, including but not limited to indemnity and warranty obligations, or (5) arising under the City's right to audit; and

ii. a waiver of all claims by the Contractor against the City other than those previously asserted in writing and not yet settled.

16. **SPECIAL TOOLS & TEST EQUIPMENT**: If the price stated on the Offer includes the cost of any special tooling or special test equipment fabricated or required by the Contractor for the purpose of filling this order, such special tooling equipment and any process sheets related thereto shall become the property of the City and shall be identified by the Contractor as such.

17. **AUDITS and RECORDS**:

A. The Contractor agrees that the representatives of the Office of the City Auditor or other authorized representatives of the City shall have access to, and the right to audit, examine, or reproduce, any and all records of the Contractor related to the performance under this Contract. The Contractor shall retain all such records for a period of three (3) years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer. The Contractor agrees to refund to the City any overpayments disclosed by any such audit.

B. Records Retention:

i. Contractor is subject to City Code chapter 2-11 (Records Management), and as it may subsequently be amended. For purposes of this subsection, a Record means all books, accounts, reports, files, and other data recorded or created by a Contractor in fulfillment of the Contract whether in digital or physical format, except a record specifically relating to the Contractor's internal administration.

ii. All Records are the property of the City. The Contractor may not dispose of or destroy a Record without City authorization and shall deliver the Records, in all requested formats and media, along with all finding aids and metadata, to the City at no cost when requested by the City

iii. The Contractor shall retain all Records for a period of three (3) years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer.

C. The Contractor shall include sections A and B above in all subcontractor agreements entered into in connection with this Contract.

18. **SUBCONTRACTORS**:

A. If the Contractor identified Subcontractors in an MBE/WBE Program Compliance Plan or a No Goals Utilization Plan the Contractor shall comply with the provisions of Chapters 2-9A, 2-9B, 2-9C, and 2-9D, as applicable, of the Austin City Code and the terms of the Compliance Plan or Utilization Plan as approved by the City (the "Plan"). The Contractor shall not initially employ any Subcontractor except as provided in the Contractor's Plan. The Contractor shall not substitute any Subcontractor identified in the Plan, unless the substitute has been accepted by the City in writing in accordance with the provisions of Chapters 2-9A, 2-9B, 2-9C and 2-9D, as applicable. No acceptance by the City of any Subcontractor shall constitute a waiver of any rights or remedies of the City with respect to defective Deliverables provided by a Subcontractor. If a Plan has been approved, the Contractor is additionally required to submit a monthly Subcontract Awards and Expenditures Report to the Contract Manager and the Purchasing Office Contract Compliance Manager no later than the tenth calendar day of each month.

B. Work performed for the Contractor by a Subcontractor shall be pursuant to a written contract between the Contractor and Subcontractor. The terms of the subcontract may not conflict with the terms of the Contract, and shall contain provisions that:

i. require that all Deliverables to be provided by the Subcontractor be provided in strict accordance with the provisions, specifications and terms of the Contract;
ii. prohibit the Subcontractor from further subcontracting any portion of the Contract without the prior written consent of the City and the Contractor. The City may require, as a condition to such further subcontracting, that the Subcontractor post a payment bond in form, substance and amount acceptable to the City;
iii. require Subcontractors to submit all invoices and applications for payments, including any claims for additional payments, damages or otherwise, to the Contractor in sufficient time to enable the Contractor to include same with its invoice or application for payment to the City in accordance with the terms of the Contract;
iv. require that all Subcontractors obtain and maintain, throughout the term of their contract, insurance in the type and amounts specified for the Contractor, with the City being a named insured as its interest shall appear; and
v. require that the Subcontractor indemnify and hold the City harmless to the same extent as the Contractor is required to indemnify the City.

C. The Contractor shall be fully responsible to the City for all acts and omissions of the Subcontractors just as the Contractor is responsible for the Contractor's own acts and omissions. Nothing in the Contract shall create for the benefit of any such Subcontractor any contractual relationship between the City and any such Subcontractor, nor shall it create any obligation on the part of the City to pay or to see to the payment of any moneys due any such Subcontractor except as may otherwise be required by law.

D. The Contractor shall pay each Subcontractor its appropriate share of payments made to the Contractor not later than ten (10) calendar days after receipt of payment from the City.

19. **WARRANTY-PRICE**:

A. The Contractor warrants the prices quoted in the Offer are no higher than the Contractor's current prices on orders by others for like Deliverables under similar terms of purchase.

B. The Contractor certifies that the prices in the Offer have been arrived at independently without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such fees with any other firm or with any competitor.

C. In addition to any other remedy available, the City may deduct from any amounts owed to the Contractor, or otherwise recover, any amounts paid for items in excess of the Contractor's current prices on orders by others for like Deliverables under similar terms of purchase.

20. **WARRANTY – TITLE**: The Contractor warrants that it has good and indefeasible title to all Deliverables furnished under the Contract, and that the Deliverables are free and clear of all liens, claims, security interests and encumbrances. The Contractor shall indemnify and hold the City harmless from and against all adverse title claims to the Deliverables.

21. **WARRANTY – DELIVERABLES**: The Contractor warrants and represents that all Deliverables sold the City under the Contract shall be free from defects in design, workmanship or manufacture, and conform in all material respects to the specifications, drawings, and descriptions in the Solicitation, to any samples furnished by the Contractor, to the terms, covenants and conditions of the Contract, and to all applicable State, Federal or local laws, rules, and regulations, and industry codes and standards. Unless otherwise stated in the Solicitation, the Deliverables shall be new or recycled merchandise, and not used or reconditioned.

    A. Recycled Deliverables shall be clearly identified as such.

    B. The Contractor may not limit, exclude or disclaim the foregoing warranty or any warranty implied by law; and any attempt to do so shall be without force or effect.

    C. Unless otherwise specified in the Contract, the warranty period shall be at least one year from the date of acceptance of the Deliverables or from the date of acceptance of any replacement Deliverables. If during the warranty period, one or more of the above warranties are breached, the Contractor shall promptly upon receipt of demand either repair the non-conforming Deliverables, or replace the non-conforming Deliverables with fully conforming Deliverables, at the City's option and at no additional cost to the City. All costs incidental to such repair or replacement, including but not limited to, any packaging and shipping costs, shall be borne exclusively by the Contractor. The City shall endeavor to give the Contractor written notice of the breach of warranty within thirty (30) calendar days of discovery of the breach of warranty, but failure to give timely notice shall not impair the City's rights under this section.

    D. If the Contractor is unable or unwilling to repair or replace defective or non-conforming Deliverables as required by the City, then in addition to any other available remedy, the City may reduce the quantity of Deliverables it may be required to purchase under the Contract from the Contractor, and purchase conforming Deliverables from other sources. In such event, the Contractor shall pay to the City upon demand the increased cost, if any, incurred by the City to procure such Deliverables from another source.

    E. If the Contractor is not the manufacturer, and the Deliverables are covered by a separate manufacturer's warranty, the Contractor shall transfer and assign such manufacturer's warranty to the City. If for any reason the manufacturer's warranty cannot be fully transferred to the City, the Contractor shall assist and cooperate with the City to the fullest extent to enforce such manufacturer's warranty for the benefit of the City.

22. **WARRANTY – SERVICES**: The Contractor warrants and represents that all services to be provided the City under the Contract will be fully and timely performed in a good and workmanlike manner in accordance with generally accepted industry standards and practices, the terms, conditions, and covenants of the Contract, and all applicable Federal, State and local laws, rules or regulations.

    A. The Contractor may not limit, exclude or disclaim the foregoing warranty or any warranty implied by law, and any attempt to do so shall be without force or effect.

    B. Unless otherwise specified in the Contract, the warranty period shall be at least one year from the Acceptance Date. If during the warranty period, one or more of the above warranties are breached, the Contractor shall promptly upon receipt of demand perform the services again in accordance with above standard at no additional cost to the City. All costs incidental to such additional performance shall be borne by the Contractor. The City shall endeavor to give the Contractor written notice of the breach of warranty within thirty (30) calendar days of discovery of the breach warranty, but failure to give timely notice shall not impair the City's rights under this section.

    C. If the Contractor is unable or unwilling to perform its services in accordance with the above standard as required by the City, then in addition to any other available remedy, the City may reduce the amount of services it may be

required to purchase under the Contract from the Contractor, and purchase conforming services from other sources. In such event, the Contractor shall pay to the City upon demand the increased cost, if any, incurred by the City to procure such services from another source.

23. **ACCEPTANCE OF INCOMPLETE OR NON-CONFORMING DELIVERABLES**: If, instead of requiring immediate correction or removal and replacement of defective or non-conforming Deliverables, the City prefers to accept it, the City may do so. The Contractor shall pay all claims, costs, losses and damages attributable to the City's evaluation of and determination to accept such defective or non-conforming Deliverables. If any such acceptance occurs prior to final payment, the City may deduct such amounts as are necessary to compensate the City for the diminished value of the defective or non-conforming Deliverables. If the acceptance occurs after final payment, such amount will be refunded to the City by the Contractor.

24. **RIGHT TO ASSURANCE**: Whenever one party to the Contract in good faith has reason to question the other party's intent to perform, demand may be made to the other party for written assurance of the intent to perform. In the event that no assurance is given within the time specified after demand is made, the demanding party may treat this failure as an anticipatory repudiation of the Contract.

25. **STOP WORK NOTICE**: The City may issue an immediate Stop Work Notice in the event the Contractor is observed performing in a manner that is in violation of Federal, State, or local guidelines, or in a manner that is determined by the City to be unsafe to either life or property. Upon notification, the Contractor will cease all work until notified by the City that the violation or unsafe condition has been corrected. The Contractor shall be liable for all costs incurred by the City as a result of the issuance of such Stop Work Notice.

26. **DEFAULT**: The Contractor shall be in default under the Contract if the Contractor (a) fails to fully, timely and faithfully perform any of its material obligations under the Contract, (b) fails to provide adequate assurance of performance under Paragraph 24, (c) becomes insolvent or seeks relief under the bankruptcy laws of the United States or (d) makes a material misrepresentation in Contractor's Offer, or in any report or deliverable required to be submitted by the Contractor to the City.

27. **TERMINATION FOR CAUSE:**. In the event of a default by the Contractor, the City shall have the right to terminate the Contract for cause, by written notice effective ten (10) calendar days, unless otherwise specified, after the date of such notice, unless the Contractor, within such ten (10) day period, cures such default, or provides evidence sufficient to prove to the City's reasonable satisfaction that such default does not, in fact, exist. The City may place Contractor on probation for a specified period of time within which the Contractor must correct any non-compliance issues. Probation shall not normally be for a period of more than nine (9) months, however, it may be for a longer period, not to exceed one (1) year depending on the circumstances. If the City determines the Contractor has failed to perform satisfactorily during the probation period, the City may proceed with suspension. In the event of a default by the Contractor, the City may suspend or debar the Contractor in accordance with the "City of Austin Purchasing Office Probation, Suspension and Debarment Rules for Vendors" and remove the Contractor from the City's vendor list for up to five (5) years and any Offer submitted by the Contractor may be disqualified for up to five (5) years. In addition to any other remedy available under law or in equity, the City shall be entitled to recover all actual damages, costs, losses and expenses, incurred by the City as a result of the Contractor's default, including, without limitation, cost of cover, reasonable attorneys' fees, court costs, and prejudgment and post-judgment interest at the maximum lawful rate. All rights and remedies under the Contract are cumulative and are not exclusive of any other right or remedy provided by law.

28. **TERMINATION WITHOUT CAUSE**: The City shall have the right to terminate the Contract, in whole or in part, without cause any time upon thirty (30) calendar days' prior written notice. Upon receipt of a notice of termination, the Contractor shall promptly cease all further work pursuant to the Contract, with such exceptions, if any, specified in the notice of termination. The City shall pay the Contractor, to the extent of funds Appropriated or otherwise legally available for such purposes, for all goods delivered and services performed and obligations incurred prior to the date of termination in accordance with the terms hereof.

29. **FRAUD**: Fraudulent statements by the Contractor on any Offer or in any report or deliverable required to be submitted by the Contractor to the City shall be grounds for the termination of the Contract for cause by the City and may result in legal action.

30. **DELAYS**:

A. The City may delay scheduled delivery or other due dates by written notice to the Contractor if the City deems it is in its best interest. If such delay causes an increase in the cost of the work under the Contract, the City and the Contractor shall negotiate an equitable adjustment for costs incurred by the Contractor in the Contract price and execute an amendment to the Contract. The Contractor must assert its right to an adjustment within thirty (30) calendar days from the date of receipt of the notice of delay. Failure to agree on any adjusted price shall be handled under the Dispute Resolution process specified in paragraph 48. However, nothing in this provision shall excuse the Contractor from delaying the delivery as notified.

B. Neither party shall be liable for any default or delay in the performance of its obligations under this Contract if, while and to the extent such default or delay is caused by acts of God, fire, riots, civil commotion, labor disruptions, sabotage, sovereign conduct, or any other cause beyond the reasonable control of such Party. In the event of default or delay in contract performance due to any of the foregoing causes, then the time for completion of the services will be extended; provided, however, in such an event, a conference will be held within three (3) business days to establish a mutually agreeable period of time reasonably necessary to overcome the effect of such failure to perform.

31. **INDEMNITY**:

A. Definitions:

i. "Indemnified Claims" shall include any and all claims, demands, suits, causes of action, judgments and liability of every character, type or description, including all reasonable costs and expenses of litigation, mediation or other alternate dispute resolution mechanism, including attorney and other professional fees for:
   (1) damage to or loss of the property of any person (including, but not limited to the City, the Contractor, their respective agents, officers, employees and subcontractors; the officers, agents, and employees of such subcontractors; and third parties); and/or
   (2) death, bodily injury, illness, disease, worker's compensation, loss of services, or loss of income or wages to any person (including but not limited to the agents, officers and employees of the City, the Contractor, the Contractor's subcontractors, and third parties),

ii. "Fault" shall include the sale of defective or non-conforming Deliverables, negligence, willful misconduct, or a breach of any legally imposed strict liability standard.

B. **THE CONTRACTOR SHALL DEFEND (AT THE OPTION OF THE CITY), INDEMNIFY, AND HOLD THE CITY, ITS SUCCESSORS, ASSIGNS, OFFICERS, EMPLOYEES AND ELECTED OFFICIALS HARMLESS FROM AND AGAINST ALL INDEMNIFIED CLAIMS DIRECTLY ARISING OUT OF, INCIDENT TO, CONCERNING OR RESULTING FROM THE FAULT OF THE CONTRACTOR, OR THE CONTRACTOR'S AGENTS, EMPLOYEES OR SUBCONTRACTORS, IN THE PERFORMANCE OF THE CONTRACTOR'S OBLIGATIONS UNDER THE CONTRACT. NOTHING HEREIN SHALL BE DEEMED TO LIMIT THE RIGHTS OF THE CITY OR THE CONTRACTOR (INCLUDING, BUT NOT LIMITED TO, THE RIGHT TO SEEK CONTRIBUTION) AGAINST ANY THIRD PARTY WHO MAY BE LIABLE FOR AN INDEMNIFIED CLAIM.**

32. **INSURANCE**: (reference Section 0400 for specific coverage requirements). The following insurance requirement applies. (Revised March 2013).

A. General Requirements.

i. The Contractor shall at a minimum carry insurance in the types and amounts indicated in Section 0400, Supplemental Purchase Provisions, for the duration of the Contract, including extension options and hold over periods, and during any warranty period.

ii. The Contractor shall provide Certificates of Insurance with the coverages and endorsements required in Section 0400, Supplemental Purchase Provisions, to the City as verification of coverage prior to contract execution and within fourteen (14) calendar days after written request from the

City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or hold over period is exercised, as verification of continuing coverage.

iii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.

iv. The City may request that the Contractor submit certificates of insurance to the City for all subcontractors prior to the subcontractors commencing work on the project.

v. The Contractor's and all subcontractors' insurance coverage shall be written by companies licensed to do business in the State of Texas at the time the policies are issued and shall be written by companies with A.M. Best ratings of B+VII or better.

vi. The "other" insurance clause shall not apply to the City where the City is an additional insured shown on any policy. It is intended that policies required in the Contract, covering both the City and the Contractor, shall be considered primary coverage as applicable.

vii. If insurance policies are not written for amounts specified in Section 0400, Supplemental Purchase Provisions, the Contractor shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of the primary coverage.

viii. The City shall be entitled, upon request, at an agreed upon location, and without expense, to review certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.

ix. The City reserves the right to review the insurance requirements set forth during the effective period of the Contract and to make reasonable adjustments to insurance coverage, limits, and exclusions when deemed necessary and prudent by the City based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as the Contractor.

x. The Contractor shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the Contract or as required in the Contract.

xi. The Contractor shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. Self-insured retentions shall be disclosed on the Certificate of Insurance.

xii. The Contractor shall provide the City thirty (30) calendar days' written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the Contract.

xiii. The insurance coverages specified in Section 0400, Supplemental Purchase Provisions, are required minimums and are not intended to limit the responsibility or liability of the Contractor.

B. Specific Coverage Requirements: Specific insurance requirements are contained in Section 0400, Supplemental Purchase Provisions

33. **CLAIMS**: If any claim, demand, suit, or other action is asserted against the Contractor which arises under or concerns the Contract, or which could have a material adverse affect on the Contractor's ability to perform thereunder, the Contractor shall give written notice thereof to the City within ten (10) calendar days after receipt of notice by the

Contractor. Such notice to the City shall state the date of notification of any such claim, demand, suit, or other action; the names and addresses of the claimant(s); the basis thereof; and the name of each person against whom such claim is being asserted. Such notice shall be delivered personally or by mail and shall be sent to the City and to the Austin City Attorney. Personal delivery to the City Attorney shall be to City Hall, 301 West 2nd Street, 4th Floor, Austin, Texas 78701, and mail delivery shall be to P.O. Box 1088, Austin, Texas 78767.

34. **NOTICES**: Unless otherwise specified, all notices, requests, or other communications required or appropriate to be given under the Contract shall be in writing and shall be deemed delivered three (3) business days after postmarked if sent by U.S. Postal Service Certified or Registered Mail, Return Receipt Requested. Notices delivered by other means shall be deemed delivered upon receipt by the addressee. Routine communications may be made by first class mail, telefax, or other commercially accepted means. Notices to the Contractor shall be sent to the address specified in the Contractor's Offer, or at such other address as a party may notify the other in writing. Notices to the City shall be addressed to the City at P.O. Box 1088, Austin, Texas 78767 and marked to the attention of the Contract Administrator.

35. **RIGHTS TO BID, PROPOSAL AND CONTRACTUAL MATERIAL**: All material submitted by the Contractor to the City shall become property of the City upon receipt. Any portions of such material claimed by the Contractor to be proprietary must be clearly marked as such. Determination of the public nature of the material is subject to the Texas Public Information Act, Chapter 552, Texas Government Code.

36. **NO WARRANTY BY CITY AGAINST INFRINGEMENTS**: The Contractor represents and warrants to the City that: (i) the Contractor shall provide the City good and indefeasible title to the Deliverables and (ii) the Deliverables supplied by the Contractor in accordance with the specifications in the Contract will not infringe, directly or contributorily, any patent, trademark, copyright, trade secret, or any other intellectual property right of any kind of any third party; that no claims have been made by any person or entity with respect to the ownership or operation of the Deliverables and the Contractor does not know of any valid basis for any such claims. The Contractor shall, at its sole expense, defend, indemnify, and hold the City harmless from and against all liability, damages, and costs (including court costs and reasonable fees of attorneys and other professionals) arising out of or resulting from: (i) any claim that the City's exercise anywhere in the world of the rights associated with the City's' ownership, and if applicable, license rights, and its use of the Deliverables infringes the intellectual property rights of any third party; or (ii) the Contractor's breach of any of Contractor's representations or warranties stated in this Contract. In the event of any such claim, the City shall have the right to monitor such claim or at its option engage its own separate counsel to act as co-counsel on the City's behalf. Further, Contractor agrees that the City's specifications regarding the Deliverables shall in no way diminish Contractor's warranties or obligations under this paragraph and the City makes no warranty that the production, development, or delivery of such Deliverables will not impact such warranties of Contractor.

37. **CONFIDENTIALITY**: In order to provide the Deliverables to the City, Contractor may require access to certain of the City's and/or its licensors' confidential information (including inventions, employee information, trade secrets, confidential know-how, confidential business information, and other information which the City or its licensors consider confidential) (collectively, "Confidential Information"). Contractor acknowledges and agrees that the Confidential Information is the valuable property of the City and/or its licensors and any unauthorized use, disclosure, dissemination, or other release of the Confidential Information will substantially injure the City and/or its licensors. The Contractor (including its employees, subcontractors, agents, or representatives) agrees that it will maintain the Confidential Information in strict confidence and shall not disclose, disseminate, copy, divulge, recreate, or otherwise use the Confidential Information without the prior written consent of the City or in a manner not expressly permitted under this Agreement, unless the Confidential Information is required to be disclosed by law or an order of any court or other governmental authority with proper jurisdiction, provided the Contractor promptly notifies the City before disclosing such information so as to permit the City reasonable time to seek an appropriate protective order. The Contractor agrees to use protective measures no less stringent than the Contractor uses within its own business to protect its own most valuable information, which protective measures shall under all circumstances be at least reasonable measures to ensure the continued confidentiality of the Confidential Information.

38. **PUBLICATIONS**: All published material and written reports submitted under the Contract must be originally developed material unless otherwise specifically provided in the Contract. When material not originally developed is included in a report in any form, the source shall be identified.

39. **ADVERTISING**: The Contractor shall not advertise or publish, without the City's prior consent, the fact that the City has entered into the Contract, except to the extent required by law.

40. **NO CONTINGENT FEES**: The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon any agreement or understanding for commission, percentage, brokerage, or contingent fee, excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the City shall have the right, in addition to any other remedy available, to cancel the Contract without liability and to deduct from any amounts owed to the Contractor, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

41. **GRATUITIES**: The City may, by written notice to the Contractor, cancel the Contract without liability if it is determined by the City that gratuities were offered or given by the Contractor or any agent or representative of the Contractor to any officer or employee of the City of Austin with a view toward securing the Contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performing of such contract. In the event the Contract is canceled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by the Contractor in providing such gratuities.

42. **PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS**: No officer, employee, independent consultant, or elected official of the City who is involved in the development, evaluation, or decision-making process of the performance of any solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that solicitation. Any willful violation of this section shall constitute impropriety in office, and any officer or employee guilty thereof shall be subject to disciplinary action up to and including dismissal. Any violation of this provision, with the knowledge, expressed or implied, of the Contractor shall render the Contract voidable by the City.

43. **INDEPENDENT CONTRACTOR**: The Contract shall not be construed as creating an employer/employee relationship, a partnership, or a joint venture. The Contractor's services shall be those of an independent contractor. The Contractor agrees and understands that the Contract does not grant any rights or privileges established for employees of the City.

44. **ASSIGNMENT-DELEGATION**: The Contract shall be binding upon and enure to the benefit of the City and the Contractor and their respective successors and assigns, provided however, that no right or interest in the Contract shall be assigned and no obligation shall be delegated by the Contractor without the prior written consent of the City. Any attempted assignment or delegation by the Contractor shall be void unless made in conformity with this paragraph. The Contract is not intended to confer rights or benefits on any person, firm or entity not a party hereto; it being the intention of the parties that there be no third party beneficiaries to the Contract.

45. **WAIVER**: No claim or right arising out of a breach of the Contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party. No waiver by either the Contractor or the City of any one or more events of default by the other party shall operate as, or be construed to be, a permanent waiver of any rights or obligations under the Contract, or an express or implied acceptance of any other existing or future default or defaults, whether of a similar or different character.

46. **MODIFICATIONS**: The Contract can be modified or amended only by a writing signed by both parties. No pre-printed or similar terms on any the Contractor invoice, order or other document shall have any force or effect to change the terms, covenants, and conditions of the Contract.

47. **INTERPRETATION**: The Contract is intended by the parties as a final, complete and exclusive statement of the terms of their agreement. No course of prior dealing between the parties or course of performance or usage of the trade shall be relevant to supplement or explain any term used in the Contract. Although the Contract may have been substantially drafted by one party, it is the intent of the parties that all provisions be construed in a manner to be fair to both parties, reading no provisions more strictly against one party or the other. Whenever a term defined by the Uniform Commercial Code, as enacted by the State of Texas, is used in the Contract, the UCC definition shall control, unless otherwise defined in the Contract.

48. **DISPUTE RESOLUTION**:

A. If a dispute arises out of or relates to the Contract, or the breach thereof, the parties agree to negotiate prior to prosecuting a suit for damages. However, this section does not prohibit the filing of a lawsuit to toll the running of a statute of limitations or to seek injunctive relief. Either party may make a written request for a meeting between representatives of each party within fourteen (14) calendar days after receipt of the request or such later period as agreed by the parties. Each party shall include, at a minimum, one (1) senior level individual with decision-making authority regarding the dispute. The purpose of this and any subsequent meeting is to attempt in good faith to negotiate a resolution of the dispute. If, within thirty (30) calendar days after such meeting, the parties have not succeeded in negotiating a resolution of the dispute, they will proceed directly to mediation as described below. Negotiation may be waived by a written agreement signed by both parties, in which event the parties may proceed directly to mediation as described below.

B. If the efforts to resolve the dispute through negotiation fail, or the parties waive the negotiation process, the parties may select, within thirty (30) calendar days, a mediator trained in mediation skills to assist with resolution of the dispute. Should they choose this option, the City and the Contractor agree to act in good faith in the selection of the mediator and to give consideration to qualified individuals nominated to act as mediator. Nothing in the Contract prevents the parties from relying on the skills of a person who is trained in the subject matter of the dispute or a contract interpretation expert. If the parties fail to agree on a mediator within thirty (30) calendar days of initiation of the mediation process, the mediator shall be selected by the Travis County Dispute Resolution Center (DRC). The parties agree to participate in mediation in good faith for up to thirty (30) calendar days from the date of the first mediation session. The City and the Contractor will share the mediator's fees equally and the parties will bear their own costs of participation such as fees for any consultants or attorneys they may utilize to represent them or otherwise assist them in the mediation.

49. **JURISDICTION AND VENUE**: The Contract is made under and shall be governed by the laws of the State of Texas, including, when applicable, the Uniform Commercial Code as adopted in Texas, V.T.C.A., Bus. & Comm. Code, Chapter 1, excluding any rule or principle that would refer to and apply the substantive law of another state or jurisdiction. All issues arising from this Contract shall be resolved in the courts of Travis County, Texas and the parties agree to submit to the exclusive personal jurisdiction of such courts. The foregoing, however, shall not be construed or interpreted to limit or restrict the right or ability of the City to seek and secure injunctive relief from any competent authority as contemplated herein.

50. **INVALIDITY**: The invalidity, illegality, or unenforceability of any provision of the Contract shall in no way affect the validity or enforceability of any other portion or provision of the Contract. Any void provision shall be deemed severed from the Contract and the balance of the Contract shall be construed and enforced as if the Contract did not contain the particular portion or provision held to be void. The parties further agree to reform the Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this section shall not prevent this entire Contract from being void should a provision which is the essence of the Contract be determined to be void.

51. **HOLIDAYS:** The following holidays are observed by the City:

Holiday	Date Observed
New Year's Day	January 1
Martin Luther King, Jr.'s Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	First Monday in September
Veteran's Day	November 11

Thanksgiving Day	Fourth Thursday in November
Friday after Thanksgiving	Friday after Thanksgiving
Christmas Eve	December 24
Christmas Day	December 25

If a Legal Holiday falls on Saturday, it will be observed on the preceding Friday. If a Legal Holiday falls on Sunday, it will be observed on the following Monday.

52. **SURVIVABILITY OF OBLIGATIONS:** All provisions of the Contract that impose continuing obligations on the parties, including but not limited to the warranty, indemnity, and confidentiality obligations of the parties, shall survive the expiration or termination of the Contract.

53. **NON-SUSPENSION OR DEBARMENT CERTIFICATION:**

The City of Austin is prohibited from contracting with or making prime or sub-awards to parties that are suspended or debarred or whose principals are suspended or debarred from Federal, State, or City of Austin Contracts. By accepting a Contract with the City, the Vendor certifies that its firm and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

54. **EQUAL OPPORTUNITY**

A. **Equal Employment Opportunity:** No Contractor, or Contractor's agent, shall engage in any discriminatory employment practice as defined in Chapter 5-4 of the City Code. No Offer submitted to the City shall be considered, nor any Purchase Order issued, or any Contract awarded by the City unless the Offeror has executed and filed with the City Purchasing Office a current Non-Discrimination Certification. Non-compliance with Chapter 5-4 of the City Code may result in sanctions, including termination of the contract and the Contractor's suspension or debarment from participation on future City contracts until deemed compliant with Chapter 5-4.

B. **Americans with Disabilities Act (ADA) Compliance:** No Contractor, or Contractor's agent, shall engage in any discriminatory practice against individuals with disabilities as defined in the ADA, including but not limited to: employment, accessibility to goods and services, reasonable accommodations, and effective communications.

55. **INTERESTED PARTIES DISCLOSURE**

As a condition to entering the Contract, the Business Entity constituting the Offeror must provide the following disclosure of Interested Parties to the City prior to the award of a contract with the City on Form 1295 "Certificate of Interested Parties" as prescribed by the Texas Ethics Commission for any contract award requiring council authorization. The Certificate of Interested Parties Form must be completed on the Texas Ethics Commission website, printed, and signed by the authorized agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury. The City will submit the "Certificate of Interested Parties" to the Texas Ethics Commission within 30 days of receipt from the successful Offeror. The Offeror is reminded that the provisions of Local Government Code 176, regarding conflicts of interest between the bidders and local officials remains in place. Link to Texas Ethics Commission Form 1295 process and procedures below:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

56. **BUY AMERICAN ACT-SUPPLIES (Applicable to certain Federally funded requirements)**

A. Definitions. As used in this paragraph –

i. "Component" means an article, material, or supply incorporated directly into an end product.

ii. "Cost of components" means -

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

iii. "Domestic end product" means-

(1) An unmanufactured end product mined or produced in the United States; or

(2) An end product manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as those that the agency determines are not mined, produced, or manufactured in sufficient and reasonably available commercial quantities of a satisfactory quality are treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

iv. "End product" means those articles, materials, and supplies to be acquired under the contract for public use.

v. "Foreign end product" means an end product other than a domestic end product.

vi. "United States" means the 50 States, the District of Columbia, and outlying areas.

B. The Buy American Act (41 U.S.C. 10a - 10d) provides a preference for domestic end products for supplies acquired for use in the United States.

C. The City does not maintain a list of foreign articles that will be treated as domestic for this Contract; but will consider for approval foreign articles as domestic for this product if the articles are on a list approved by another Governmental Agency. The Offeror shall submit documentation with their Offer demonstrating that the article is on an approved Governmental list.

D. The Contractor shall deliver only domestic end products except to the extent that it specified delivery of foreign end products in the provision of the Solicitation entitled "Buy American Act Certificate".

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS:** (reference paragraph 5 in Section 0200)

   All requests for explanations or clarifications must be submitted in writing to the Purchasing Office by July 19th, 2017.

2. **ALTERNATE OFFERS:** (reference paragraph 7A in Section 0200)

   Alternate Offers will be considered.

3. **INSURANCE:** Insurance is required for this solicitation.

   A. **General Requirements:** See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.

      i. The Contractor shall provide a Certificate of Insurance as verification of coverages required below to the City at the below address prior to contract execution and within 14 calendar days after written request from the City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award
      ii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.
      iii. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or holdover period is exercised, as verification of continuing coverage.
      iv. The Certificate of Insurance, and updates, shall be mailed to the following address:

         City of Austin Purchasing Office
         P. O. Box 1088
         Austin, Texas 78767

   B. **Specific Coverage Requirements:** The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract, including extension options and hold over periods, and during any warranty period. These insurance coverages are required minimums and are not intended to limit the responsibility or liability of the Contractor.

      i. **Worker's Compensation and Employers' Liability Insurance:** Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are $100,000 bodily injury each accident, $500,000 bodily injury by disease policy limit and $100,000 bodily injury by disease each employee.
         (1) The Contractor's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
            (a) Waiver of Subrogation, Form WC420304, or equivalent coverage
            (b) Thirty (30) days Notice of Cancellation, Form WC420601, or equivalent coverage
      ii. **Commercial General Liability Insurance:** The minimum bodily injury and property damage per occurrence are $500,000 for coverages A (Bodily Injury and Property Damage) and B (Personal and Advertising Injury).
         (1) The policy shall contain the following provisions:
            (a) Contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.
            (b) Contractor/Subcontracted Work.

(c) Products/Completed Operations Liability for the duration of the warranty period.
(d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and/or Underground Coverage.

(2) The policy shall also include these endorsements in favor of the City of Austin:
(a) Waiver of Subrogation, Endorsement CG 2404, or equivalent coverage
(b) Thirty (30) days Notice of Cancellation, Endorsement CG 0205, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CG 2010, or equivalent coverage

iii. **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of $500,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are $250,000 bodily injury per person, $500,000 bodily injury per occurrence and at least $100,000 property damage liability per accident.

(1) The policy shall include these endorsements in favor of the City of Austin:
(a) Waiver of Subrogation, Endorsement CA0444, or equivalent coverage
(b) Thirty (30) days Notice of Cancellation, Endorsement CA0244, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CA2048, or equivalent coverage.

C. **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

4. **TERM OF CONTRACT:**

A. The Contract shall be in effect for an initial term of 24 months and may be extended thereafter for up to two additional 12 month periods, subject to the approval of the Contractor and the City Purchasing Officer or his designee.

B. Upon expiration of the initial term or period of extension, the Contractor agrees to hold over under the terms and conditions of this agreement for such a period of time as is reasonably necessary to re-solicit and/or complete the project (not to exceed 120 days unless mutually agreed on in writing).

C. Upon written notice to the Contractor from the City's Purchasing Officer or his designee and acceptance of the Contractor, the term of this contract shall be extended on the same terms and conditions for an additional period as indicated in paragraph A above.

D. Prices are firm and fixed for the first 12 months. Thereafter, price changes are subject to the Economic Price Adjustment provisions of this Contract.

5. **QUANTITIES:** The quantities listed herein are estimates for the period of the Contract. The City reserves the right to purchase more or less of these quantities as may be required during the Contract term. Quantities will be as needed and specified by the City for each order. Unless specified in the solicitation, there are no minimum order quantities.

6. **DELIVERY REQUIREMENTS:**

Location:	Days:
See specifications in Scope of Work	

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

A. Delivery is to be made within 5 (five) calendar days after the order is placed (either verbally or in writing). All orders must be shipped complete unless arrangements for partial shipments are made in advance.

B. The Contractor shall provide, with each delivery, a Shipping or Delivery Ticket showing the description of each item, quantity, and unit price.

C. The Contractor shall confirm the quantity to be shipped on all orders within two (2) hours of notification by phone from the City.

D. Unless requested by the City, deliveries shall not be made on City-recognized legal holidays (see paragraph 51 in Section 0300).

7. **INVOICES and PAYMENT:** (reference paragraphs 12 and 13 in Section 0300)

A. Invoices shall contain a unique invoice number and the information required in Section 0300, paragraph 12, entitled "Invoices." Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed to the below address:

	City of Austin
Department	Austin Water- Laboratory Services Division
Attn:	Glenly Iffla
Address	14050 Summit Dr. Suite 121
City, State Zip Code	Austin, TX 78728

B. The Contractor agrees to accept payment by either credit card, check or Electronic Funds Transfer (EFT) for all goods and/or services provided under the Contract. The Contractor shall factor the cost of processing credit card payments into the Offer. There shall be no additional charges, surcharges, or penalties to the City for payments made by credit card.

8. **RESTOCKING FEES:**

A. The Contractor may bill the City restocking fees (if included in their Offer) for parts that are ordered by the City under the contract and returned for refund. The Contractor is not obligated to accept for refund any part that is not resalable and/or not in the same condition as when purchased.

B. Restocking fees may be charged to the City when multiple parts or groups of parts are returned for refund at one time due to the City inventory warehouse cleaning, unless these parts are returned at an annual pre-arranged date. The date for the annual return shall be mutually agreed upon between the City and the Contractor.

9. **MATERIALS SPECIFICATIONS/DESCRIPTIVE LITERATURE:**

A. If a solicitation refers to a Qualified Products List (QPL), Standard Products List (SPL) or a manufacturer's name and product, any Offeror offering products not referenced in the solicitation must submit as part of their Offer materials specifications/descriptive literature for the non-referenced product. Materials specifications/descriptive literature must be identified to show the item(s) in the Offer to which it applies.

B. Materials specifications/descriptive literature are defined as product manufacturer's catalog pages, "cut sheets" applicable tests results, or related detailed documents that specify material construction, performance parameters, and any industrial standards that are applicable such as ANSI, ASTM, ASME, SAE, NFPA, NBS, EIA, ESL, and NSA. The submitted materials specifications/descriptive literature must include the manufacturer's name and product number of the product being offered.

C. The failure of the materials specifications/descriptive literature to show that the product offered conforms to the requirements of the Solicitation shall result in rejection of the Offer.

D. Failure to submit the materials specifications/descriptive literature as part of the Offer may subject the Offer to disqualification from consideration for award.

10. **HAZARDOUS MATERIALS:**

A. If this Solicitation involves hazardous materials, the Offeror shall furnish with the Offer Material Safety Data Sheets (MSDS), (OSHA Form 20), on all chemicals and hazardous materials specifying the generic and trade name of product, product specification, and full hazard information including receiving and storage hazards. Instructions, special equipment needed for handling, information on approved containers, and instructions for the disposal of the material are also required.

B. Failure to submit the MSDS as part of the Offer may subject the Offer to disqualification from consideration for award.

C. The MSDS, instructions and information required in paragraph "A" must be included with each shipment under the contract.

11. **RECYCLED PRODUCTS:**

A. The City prefers that Offerors offer products that contain recycled materials. When a recycled product is offered by the Offeror, the Offeror must state in their Offer the percentage of the product that is recycled and must include a list of the recycled materials that are contained in the product.

B. The recycled content of paper products offered to the City shall be in accordance with the Federal Environmental Protection Agency's Recycled Product Procurement Guidelines. These guidelines are available at **http://www.epa.gov/cpg/ .**

C. Contract award for paper products will be made for recycled products unless the cost is more than 10% above the lowest price for non-recycled paper products as required in the City's Comprehensive Recycling Resolution.

12. **PUBLISHED PRICE LISTS:**

A. Offerors may quote using published price lists in the following ways:

i. Offerors may quote one discount from a Published Price List for all offered items to be covered in the Contract. The discount must remain firm during the life of the Contract.

ii. Offerors may quote their dealer cost, plus a percentage markup to be added to the cost. The percentage markup must remain firm during the life of the contract.

B. Two (2) copies of the list upon which the discounts or markups are based shall be submitted with the Offer. All price lists identified in the Offer shall clearly include the Offeror's name and address, the solicitation number, prices, title of the discount and number, and the latest effective date of the price list. If the Offer is based on a discount or markup on a manufacturer's price list, the price list must also include the manufacturer's name, the manufacturer's latest effective date, and the manufacturer's price schedule. All price lists submitted become part of the Offer.

C. The price list may be superseded or replaced during the Contract term only if price revisions are the result of the manufacturer's official price list revision. Written notification from the Contractor of price changes, along with two (2) copies of the revised list must be submitted to the Buyer in the Purchasing Office with the effective date of change to be at least calendar days (30 unless a different period is inserted) after written notification. The City reserves the right to refuse any list revision.

D. The discounts or markups on equipment rental, material, supplies, parts, and contract services shall be fixed throughout the term of the Contract, and are not subject to increase.

E. Failure to submit written notification of price list revisions will result in the rejection of new prices being invoiced. The City will only pay invoices according to the last approved price list.

13. **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING:**

A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.

C. If an Offeror has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Offeror is given written notice and a hearing in advance of the debarment.

D. The City requires Offerors submitting Offers on this Solicitation to certify that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

14. **NON-SOLICITATION:**

A. During the term of the Contract, and for a period of six (6) months following termination of the Contract, the Contractor, its affiliate, or its agent shall not hire, employ, or solicit for employment or consulting services, a City employee employed in a technical job classification in a City department that engages or uses the services of a Contractor employee.

B. In the event that a breach of Paragraph A occurs the Contractor shall pay liquidated damages to the City in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation; or (ii) 100 percent of the employee's annual compensation while employed by the City. The Contractor shall reimburse the City for any fees and expenses incurred in the enforcement of this provision.

C. During the term of the Contract, and for a period of six (6) months following termination of the Contract, a department that engages the services of the Contractor or uses the services of a Contractor employee will not hire a Contractor employee while the employee is performing work under a Contract with the City unless the City first obtains the Contractor's approval.

D. In the event that a breach of Paragraph C occurs, the City shall pay liquidated damages to the Contractor in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation or (ii) 100 percent of the employee's annual compensation while employed by the Contractor.

15. **WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

A. Access to the Austin Water Department building by the Contractor, all subcontractors and their employees will be strictly controlled at all times by the City. Security badges will be issued by the Department for this purpose. The Contractor shall submit a complete list of all persons requiring access to any Austin Water building at least thirty (30) days in advance of their need for access. The City reserves the right to deny a security badge to any Contractor personnel for reasonable cause. The City will notify the Contractor of any such denial no more than twenty (20) days after receipt of the Contractor's submittal.

B. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the contract, the Contractor shall so notify the City's Contract Manager, in writing, within ten (10) days of the receipt of notification of denial.

C. Contractor personnel will be required to check in at the security desk when entering or leaving the Austin Water building and security badges must be on display at all times when in the building. Failure to do so may be cause for removal of Contractor Personnel from the worksite, without regard to Contractor's schedule. Security badges may not be removed from the premises.

D. The Contractor shall provide the City's Contract Manager with a list of personnel scheduled to enter the building, seven days in advance. The list shall identify the persons by name, date of birth, driver's license number, the times that they will be inside the building and the areas where they will be working. Only persons previously approved by the City for the issuance of security badges will be admitted to the building.

E. The Contractor shall comply with all other security requirements imposed by the City and shall ensure that all employees and subcontractors are kept fully informed as to these requirements.

16. **MONTHLY SUBCONTRACT AWARDS AND EXPENDITURES REPORT:** (reference paragraph 18 in Section 0300) (applicable when an MBE/WBE Compliance Plan is required)

A. The Contractor must submit a monthly Subcontract Awards and Expenditures Report to the Contract Manager specified herein and to the Purchasing Office Contract Compliance Manager no later than the tenth calendar day of each month.

B. Mail the Purchasing Office Copy of the report to the following address:

City of Austin
Purchasing Office

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

Attn: Contract Compliance Manager
P. O. Box 1088
Austin, Texas 78767

17. **INTERLOCAL PURCHASING AGREEMENTS:** (applicable to competitively procured goods/services contracts).

    A. The City has entered into Interlocal Purchasing Agreements with other governmental entities, pursuant to the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code. The Contractor agrees to offer the same prices and terms and conditions to other eligible governmental agencies that have an interlocal agreement with the City.

    B. The City does not accept any responsibility or liability for the purchases by other governmental agencies through an interlocal cooperative agreement.

18. **CONTRACT MANAGER:** The following person is designated as Contract Manager, and will act as the contact point between the City and the Contractor during the term of the Contract:

    Virginia Soto -Reynolds

    512-972-0337

    Virginia.Soto-Reynolds@austintexas.gov

*Note: The above listed Contract Manager is not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with the Contract Manager is prohibited during the no contact period.

Scope of Work

SOLICITATION NO. MDD0106

Proficiency Testing

1.0 Purpose

The City of Austin (City), seeks proposals to establish a Contract with a qualified Vendor (Contractor) for services to provide Proficiency Testing (PT) samples. The contractor shall provide both manufacture and evaluation of PT samples.

This contract shall support the Lab Services Division (LSD) of Austin Water. The contract shall be used to fulfill accreditation requirements as per the National Environmental Laboratory Accreditation Program (NELAP) of The NELAC* Institute (TNI) and the Environmental Protection Agency (EPA) Discharge Monitoring Report Quality Assurance (DMRQA) program. The contractor will also be used to monitor laboratory and analyst performance on an ongoing basis.

Any services that have been omitted from this scope of work which are clearly necessary or in conformance with normal Proficiency Testing shall be considered a requirement although not directly specified or called for in the scope of work.

2.0 Background

The LSD is a NELAP accredited laboratory. As such it is required to perform Proficiency Testing on a semi-annual basis as well as ongoing for various laboratory events. Proficiency samples must be purchased and evaluated by an accredited, third-party vendor.

3.0 Tasks/Requirements

3.1 Contractor's Responsibilities

3.1.1 The Contractor shall be an accredited Proficiency Testing Provider (PTP) by an accrediting agency recognized by TNI. The contractor shall maintain its accreditation throughout the term of the contract. If the contractor loses accreditation, the contract is immediately nullified.

3.1.2 The Contractor shall have a schedule of PT and DMRQA studies.

3.1.3 The Contractor shall have the ability to send PT evaluations via email within 21 calendar days of the study close date. The report shall include as a minimum:

- Analyte
- Reported Value
- Units
- Assigned Value
- Acceptance Limits
- Performance Evaluation

3.1.4 The Contractor shall have the ability to generate DMRQA analysis checklists.

3.1.5 The Contractor shall provide the option of immediate response remediation

proficiency testing, also known as rapid response.

3.1.6 The Contractor shall have the ability to provide, at a minimum, PT samples for those analytes listed in Attachment A.

3.1.7 The Contractor shall provide the option of Quality Control (QC) samples which include evaluation criteria with the sample.

3.1.8 The Contractor shall have a database with a customer profile that can hold static information about the lab.

3.1.9 The Contractor shall have a database with the ability to create customizable reports of historical PT results.

3.1.10 The Contractor shall have a means for the LSD to submit PT data via an electronic deliverable (EDD) and manually through a web interface.

3.1.11 The Contractor shall have a means that the LSD can review data which has been submitted, prior to the study close date.

3.1.12 The Contractor shall have a means to track and display historical data in a way in which trends can be identified.

3.1.13 The Contractor shall have a means to report statistical data for PT studies, such as national pass rates, on a per analyte basis to the LSD. Statistical data shall be sent to LSD within 21 days of the study closing date.

3.1.14 The Contractor shall have the ability to receive orders online.

3.1.15 The Contractor shall have the ability to assign orders to different laboratories within the LSD.

3.1.16 The Contractor shall include the cost of shipping and/or in the bid prices.

3.1.17 The Contractor shall ship study samples within one day of the opening day of a study or 2 days of an ad-hoc order.

3.1.18 The Contractor's database shall have a secure log-in with the ability to grant users varying levels of access.

3.1.19 The Contractor shall replace all samples damaged during shipping at no additional cost.

3.1.20 The Contractor shall conduct training of lab staff on the use of the online database at no additional cost.

3.2 **City's Responsibilities**

3.2.1 The City will provide a list of labs which will participate in PT and DMRQA studies.

3.2.2 The City will provide a list of personnel which will require access to the Contractor's database and what rights they are allowed to have. This will include the ability to order samples.

4.0 **Deliverables/Milestones**

Deliverables/Milestones	Description	Timeline (due/completion date, reference date, or frequency)	Performance Measure/ Acceptance Criteria	Contract Reference/ Section
Accreditation certificate	Contractor shall provide a copy of their current certificate of accreditation to be a recognized PTP.	At time of bid and upon renewal	100% compliance	4.1.1

Deliverables/Milestones	Description	Timeline (due/completion date, reference date, or frequency)	Performance Measure/ Acceptance Criteria	Contract Reference/ Section
PT Schedule	Schedule of the various PT studies; open and close dates.	At time of bid and annually	100% compliance	4.1.2
Example report	Example evaluation report for a PT study.	At time of bid	100% compliance	4.1.3
Sample reports and statistical data on time	Contractor shall meet established timeframes.	21 days from study close date	95% compliance	4.1.3 4.1.13
Example DMRQA checklist	Example of a checklist produced by the contractor	At time of bid	100% compliance	4.1.4
Sample/Analyte catalogue	Catalogue of PT, Rapid Response, and QC sample analytes.	At time of bid	100% compliance	4.1.5, 4.1.6, 4.1.7
Example QC sample evaluation	Example of the type of documentation provided with QC samples.	At time of bid	100% compliance	4.1.7
Demonstration of customer profile in database	Demonstrate how the LSD profile will retain and display lab information.	Prior to awarding of bid	100% compliance	4.1.8
Demonstration of custom reports	Demonstration of the Contractor's database to generate custom reports.	Prior to awarding of bid	100% compliance	4.1.9
Demonstration of data submission and review	Demonstration of the database to accept manual and electronic submission.	Prior to awarding of bid	100% compliance	4.1.10, 4.1.11
EDD format	Format required for electronic submission of data.	At time of bid	100% compliance	4.1.10
Demonstration of trending	Demonstration of the Contractor's ability to display historical data for trending.	Prior to awarding of bid	100% compliance	4.1.12
Demonstration of study statistical information	Demonstration of the Contractor's ability to report statistical data to LSD.	Prior to awarding of bid	100% compliance	4.1.13
Demonstration of sample order	Demonstration of how samples are ordered and assigned to the correct lab.	Prior to awarding of bid	100% compliance	4.1.14, 4.1.15
Price List	Price list for all samples required to cover the analytes in Appendix A as well as discounts for other samples	At time of bid	100% compliance	4.1.16

Deliverables/Milestones	Description	Timeline (due/completion date, reference date, or frequency)	Performance Measure/ Acceptance Criteria	Contract Reference/ Section
	not covered by the appendix.			
Shipping of samples on time	Samples to be shipped on time	Within 1 day of study or 2 days of ad-hoc orders	95% compliance	4.1.17
Demonstration of system log-in	Demonstration of the Contractor's database to allow variable level access.	Prior to awarding of bid	100% compliance	4.1.18
Replacement Samples	Contractor shall replace samples damages in shipment	As needed	100% compliance	4.1.19
System Training	Contractor training on use of the online database.	Prior to contract being effective	100% compliance	4.1.20

5.0 **Invoicing Requirements**

5.1 Invoices shall include at minimum:
- 5.1.1 Purchase Order Number
- 5.1.2 Account Number
- 5.1.3 "Bill To" and "Ship To" Addresses
- 5.1.4 Order and Ship Dates
- 5.1.5 Description of Item(s) delivered
- 5.1.6 Quantity
- 5.1.7 List price, Discount, and Extended price

5.2 Contractor shall issue a consolidated monthly invoice. All invoices shall reference the delivery ticket.

5.3 Contractor is responsible for providing accurate monthly invoice(s). In the event that a discrepancy occurs, the contractor will make appropriate changes to the invoice.

5.4 Contractor shall provide a **NEW INVOICE DATE** on all revised invoices.

5.5 **All invoices** for this contract shall be mailed to the following location:

City of Austin, AWU
Laboratory Services Division

14050 Summit Dr. Suite 121
Austin, TX 78728

Attention: Glenly Iffla
Phone: 512.972.1414 Fax: 512.388.1777

5.6 The Laboratory Division will only process invoices for payment after receipt of delivered items/goods.

5.7 Contractor shall not present invoices for payment before delivery of order/s.

5.8 Contractor shall have the ability to provide both, email and paper invoices.

5.9 Contractor shall have the ability to provide invoices by each order.

5.10 No restocking fees or delivery fees should be charged for "return items" which were erroneously sent by Contractor to the City.

6.0 Delivery Locations

The Laboratory Division maintains four separate laboratory sites. Contractor shall make deliveries to these sites as requested upon order placement. The following is a list of delivery locations:

Walnut Creek WWTP – Laboratory Services Division
7113 E. M L King Blvd.
Austin, TX 78724

Hornsby Bend WWTP – Laboratory Services Division
2210 South FM 973
Admin. Bldg. Lab
Austin, TX 78725

Water Quality Lab – Laboratory Services Division
14050 Summit Dr. Suite.121
Austin, Texas 78728

Attachment A
List of Proficiency Testing Samples

Water Pollution Samples

Description	Parameters
Metals	Ag, Al, As, B, Ba, Be, Cd, Cr, Cu, Fe, Pb, Mn, Mo, Ni, Sb, Se, Tl, Zn
Mercury	Hg, HGLL
Hexavalent Chromium	Cr+6
Metals (Mineral)	Na, Ca, Mg, K
Volatiles	As listed in any vendor catalog
Base Neutral Extractables	As listed in any vendor catalog
Acid Extractables	As listed in any vendor catalog
Nutrients	NH3-N, NO3-N, NO2-N, NO3+NO2-N, Ortho-P, TP, TKN
Solids	TSS, TS, TDS
Minerals	Alkalinity, Chloride, Sulfate, Fluoride
Demand	BOD, CBOD, COD
Total Residual Chlorine	Total Residual Chlorine
Turbidity	Turbidity
pH	pH
Cyanide total	CN
Micro	E. Coli, FColi

Water Supply Samples

Description	Parameters
Metals	B, Mn, Mo, Zn, Al, Fe, Ag, As, Ba, Be, Cd, Cr, Cu, Ni
Mercury	Hg
Trihalomethanes (THMs)	As listed in any vendor catalog
Nutrients	NH3-N, Ortho-PO4
Silica	Silica
Hardness	Ca, CaHARD, Mg, THARD
Inorganics	Alkalinity, Conductivity, F, SO4
Solids	TS
UV254	UV254
Total Organic Carbon	TOC
Total Residual Chlorine	Total Residual Chlorine, Free Chlorine Residual
Turbidity	Turbidity
pH	pH
Micro (enumeration and presence/absence)	TColi, E.Coli, FColi, HPC

Soil Samples

Description	Parameters
Metals	Ag, Al, As, B, Ba, Be, Cd, Cr, Cu, Fe, Hg, Pb, Mn, Mo, Ni, Sb, Se, Tl, Zn, Na, Ca, Mg, K
Mercury	Hg
Nutrients	NH3-N, TP, TKN
Anions	NO3-N
pH	pH

DMRQA Samples

Parameters
Residual chlorine low level
Residual chlorine
pH

Section 0510: Purchasing Office Exceptions Form

Solicitation Number: MDD0106 Proficiency Testing

The City will presume that the Offeror is in agreement with all sections of the solicitation unless the Offeror takes specific exception as indicated below. The City, at its sole discretion, may negotiate exceptions to the sections contained in the solicitation documents or the City may deem the Offer non-responsive. The Offeror that is awarded the contract shall sign the contract with the accepted or negotiated sections.

Copies of this form may be utilized if additional pages are needed.

☑ Accepted as written. ☐ Not accepted as written. See below:

Indicate:
- ☐ **0300 Standard Purchase Terms & Conditions**
- ☐ **0400 Supplemental Purchase Provisions**
- ☐ **0500 Scope of Work**

Page Number	**Section Number**	**Section Description**

Alternative Language:

Justification:

CITY OF AUSTIN
PURCHASING OFFICE
REQUEST FOR PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
RFP NUMBER: MDD0106
PROFICIENCY TESTING

1. PROPOSAL FORMAT

The proposal itself shall be organized in the following format and informational sequence:

A. **Tab 1 – Executive Summary:** Provide an Executive Summary of three (3) pages or less which gives in brief terms a summation of the Proposal. Include name, address, and telephone number of person in your organization authorized to negotiate Contract terms and render binding decisions on Contract matters.

B. **Tab 2 – City of Austin Purchasing Documents:**

Complete and submit the following documents:

i. Signed Offer Sheet
ii. Section 0510 – Exceptions Checklist. Any Exceptions not listed on this form may not be considered.
iii. Section 0605 – Local Business Presence Identification
iv. Section 0700 – Reference Sheet
v. Section 0800 – Non Discrimination and Non Retaliation
vi. Section 0835 – Non-Resident Bidder Provisions
vii. Published Addendums

C. **Tab 3 - Business Organization**: State full name and address of your organization and identify parent company if you are a subsidiary. Specify the branch office or other subordinate element which will perform, or assist in performing, work herein.

D. **Tab 4 – Schedule and Catalog**: Define in detail your PT Study Schedule as it relates to the Scope of Work of this request for proposal. Include any aspects related to the flexibility of your PT Study schedule. Define in detail your catalogue of items meets the requirements listed in the Scope of Work.

E. **Tab 5 - Demonstrated Abilities:** Describe the Proposer's understanding of the City's requirements, including result(s) intended and desired and the approach and/or methodology to be employed. Describe applicable experience and accreditations. Also include a discussion and justification of the proposers result submission and reporting abilities as required in the Scope of Work and requested below. Specifically indicate:

i. Demonstrated and list applicable experience and accreditations

ii. Demonstrated result submission abilities

iii. Demonstrated reporting abilities

F. **Tab 6 – Online Capabilities**: Describe your online capabilities as it relates to proficiency testing. Include a description of your online ordering system and the abilities the City of Austin user(s) will have using your system. Specifically indicate:

i. Effective online ordering

ii. Online user role flexibility

G. **Tab 7 – Experience and Qualifications**: Provide the following information:

A. Describe your relevant corporate experience, qualifications, certificatins, and expertise providing accredited Proficiency Tests as described in the Scope of Work.

B. Include names, qualifications, and certifications of all key personnel who will be assigned to this project. Identify key persons by name and title. Provide all resumes. Do not include the experience of personnel who will not actively participate in the work of the resulting Contract

H. **Tab 9 – Customer Support Solutions**: Describe in detail your customer support offerings. Describe what customer support solutions you can provide the customer related to proficiency testing and how your customer support solutions present a solution to any future problems the may arise relating to the Scope of Work.

I. **Tab 9 - Cost Proposal**: Proposer will fill out the Cost proposal Sheet (0600A) ensuring that the unit prices, extended prices, and total proposed price are all completed. Scores for the cost proposal are based on the total proposed price. Costs should include shipping and handling.

i. Unit Price. For each item

ii. Total Proposed Price and sum for all subtotals.

iii. Cost or discount on other samples provided by the Contractor.

J. **Tab 10 - Local Business Presence**: The City seeks opportunities for businesses in the Austin Corporate City Limits to participate on City contracts. A firm (Proposer or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation. Points will be awarded through a combination of the Proposer's Local Business Presence and/or the Local Business Presence of their subcontractors. Evaluation of the Team's Percentage of Local Business Presence will be based on the dollar amount of work as reflected in the Proposer's MBE/WBE Compliance Plan or MBE/WBE Utilization Plan. Specify if and by which definition the Proposer or Subcontractor(s) have a local business presence.

K. **Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying**:

i. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2-7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Proposers or potential Proposers are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

ii. If during the No-Contact Period an Proposer makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Proposer's Offer is disqualified from further consideration except as permitted in the Ordinance.

iii. If a Respondent has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Proposer from doing business with the City for a period not to exceed three (3) years, provided the Respondent is given written notice and a hearing in advance of the debarment.

iv. The City requires Proposers submitting Offers on this Solicitation to provide a signed Section 0810, Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying Affidavit certifying that the Proposer has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

L. **Proposal Acceptance Period**: All proposals are valid for a period of one hundred and eighty (180) calendar days subsequent to the RFP closing date unless a longer acceptance period is offered in the proposal

M. **Proprietary Information**: All material submitted to the City becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The City will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.

2. EXCEPTIONS:

Be advised that exceptions to any portion of the Solicitation may jeopardize acceptance of the Proposal. List any exceptions that your company is making to the solicitation in Section 0510.

3. PROPOSAL PREPARATION COSTS:

All costs directly or indirectly related to preparation of a response to the RFP or any oral presentation required to supplement and/or clarify a proposal which may be required by the City shall be the sole responsibility of the Proposer.

4. EVALUATION FACTORS AND AWARD

A. **Competitive Selection**: This procurement will comply with applicable City Policy. The successful Proposer will be selected by the City. Evaluation factors outlined in Paragraph B below shall be applied to all eligible, responsive Proposers in comparing proposals and selecting the Best Proposer. Award of a Contract may be made without discussion with Proposers after proposals are received. Proposals should, therefore, be submitted on the most favorable terms.

B. **Evaluation Factors**:

100 points.

(1) Schedule and Catalog (Maximum 15 points)
Detailed description of proposers study schedule and catalog as it relates to the Scope or Work **Tab 4.**

(2) Demonstrated Abilities (Maximum 30 points)
Descripiton of demonstrated abilities necessary to complete the responsibilities outlined in the Scope or Work. **Tab 5.**

(3) Online Capabilities (Maximum 15 Points)
Description of the proposers online capabilities. **Tab 6**.

(4) Experience and Qualifications (Maximum 10 Points)
Personnel qualifications related to completing the Scope of Work. **Tab 7.**

(5) Customer Support Solutions (Maximum 10 Points)
Description of the proposers customer support solutions they can provide the City of Austin as it relates to the Scope of Work. **Tab 8.**

(6) Total Evaluated Cost (Maximum 10 Points)
Using the Price Proposal Form, submit proposed cost for all samples listed. The Proposer with the lowest total fee will be awarded the maximum points; other Proposers are awarded points on a pro-rated basis. **Tab 9**.

(7) Local Business Presence (Maximum 10 points) Tab 10.

Team's Local Business Presence	Points Awarded
Local business presence of 90% to 100%	10
Local business presence of 75% to 89%	8
Local business presence of 50% to 74%	6
Local business presence of 25% to 49%	4
Local presence of between 1 and 24%	2
No local presence	0

ii. Presentations, Demonstrations Optional. The City will score proposals on the basis of the criteria listed above. The City may select a "short list" of Proposers based on those scores. "Short-listed" Proposers may be invited for presentations, or demonstrations with the City. The City reserves the right to re-score "short-listed" proposals as a result, and to make award recommendations on that basis.

(6) Contract Payment: The Contract shall be prepared under the direction of the City, and shall incorporate all applicable provisions. A firm fixed-price or not-to-exceed Contract is contemplated, with progress payments as mutually determined to be appropriate.

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this Contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN (REFERENCE SECTION 0900).

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	(No)
or		
Has your branch office been located in the Corporate City Limits for the last 5 years?	Yes	(No)
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	(No)

SUBCONTRACTOR(S):

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	(No)
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	(No)

Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	(No)

SUBCONTRACTOR(S):

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

Section 0700: Reference Sheet

Responding Company Name Environmental Resource Associates DBA: ERA- A Waters Company

The City at its discretion may check references in order to determine the Offeror's experience and ability to provide the products and/or services described in this Solicitation. The Offeror shall furnish at least 3 complete and verifiable references. References shall consist of customers to whom the offeror has provided the same or similar services within the last 5 years. References shall indicate a record of positive past performance.

1. Company's Name ENCO Laboratories, Inc.
   Name and Title of Contact Lori Mangrum- Director of Quality Assurance
   Project Name
   Present Address 10775 Central Port Drive
   City, State, Zip Code Orlando, FL 32824
   Telephone Number (407-826-5314 Fax Number ( )
   Email Address lmangrum@encolabs.com

2. Company's Name Los Angels County Sanitation District
   Name and Title of Contact Karla Thurman
   Project Name San Jose Creek Water Quality Lab
   Present Address 1965 S. Workman Mill Road
   City, State, Zip Code Whittier, CA 90601
   Telephone Number ((562))908-4288 Fax Number ( )
   Email Address kthurman@lacsd.org

3. Company's Name City of Abilene
   Name and Title of Contact Michael Michaud - QA Director
   Project Name
   Present Address 4209 E. Lake Road
   City, State, Zip Code Abilene, TX 79601
   Telephone Number (325) 676-6041 Fax Number (325) 676-6044
   Email Address michael.michaud@abilenetx.com

City of Austin, Texas
Section 0800
NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION

City of Austin, Texas

Equal Employment/Fair Housing Office

To: City of Austin, Texas,

I hereby certify that our firm complies with the Code of the City of Austin, Section 5-4-2 as reiterated below, and agrees:

(1) Not to engage in any discriminatory employment practice defined in this chapter.

(2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter, including affirmative action relative to employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training or any other terms, conditions or privileges of employment.

(3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Equal Employment/Fair Housing Office setting forth the provisions of this chapter.

(4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, sex or age.

(5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.

(6) To cooperate fully with City and the Equal Employment/Fair Housing Office in connection with any investigation or conciliation effort of the Equal Employment/Fair Housing Office to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.

(7) To require of all subcontractors having 15 or more employees who hold any subcontract providing for the expenditure of $2,000 or more in connection with any contract with the City subject to the terms of this chapter that they do not engage in any discriminatory employment practice as defined in this chapter

For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

City of Austin
Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy

As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.

The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.

The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

Further, employees who experience discrimination, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their compliant, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does

not continue.

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE THE CITY A COPY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, **OR** THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL.

Sanctions:

Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.

Term:

The Contractor agrees that this Section 0800 Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the City, will remain in force and effect for one year from the date of filling. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this 28th day of July, 2017

CONTRACTOR ERA-A Waters Company

Authorized Signature

Title General Manager

Section 0835: Non-Resident Bidder Provisions

Company Name ERA- A Waters Company

A. Bidder must answer the following questions in accordance with Vernon's Texas Statues and Codes Annotated Government Code 2252.002, as amended:

Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

Answer: non-Resident Bidder

(1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
(2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

Answer: No Which State: Colorado

C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

Answer: _____

City of Austin
Purchasing Office, Financial Services Department
P.O. Box 1088, Austin, TX 78767

September 20, 2017

Environmental Resource Associates
Michael G. Deines
10634 W. Table Mountain Parkway
Golden CO 80403
info@eraqc.com

Dear ERA:

Thank you for submitting your proposal for RFP MDD0106 Proficiency Testing for the City of Austin's Austin Water Department.

Your organization is invited to meet remotely with City Austin staff to demonstrate your proposal concepts on:

Date:	October 4, 2017
Time:	10:45 AM – Noon (Central)
Phone Conference #:	512-972-1454

I will need to know the product(s) that your company will be using for Video and Audio. If for example, WebEx is used, I need to know these information/details to access the demonstration and have any relevant links prior to close of business on Wednesday, September 27th. The evaluation room City staff will be using has access to phone, internet, and a CPU with a large TV screen and speakers.

Please call the phone number listed above at 10:45 AM (Central) to begin the demonstration.

Please prepare a professional demonstration/presentation that should last no longer than one hour addressing the topics listed below. If a PowerPoint or other presentation is used I will need a copy of the presentation for our records no later than October 4th, 2017.

1. Demonstrate the process of ordering a predefined list of samples as part of the regular PT study.
2. Demonstrate the process of ordering an ad-hoc sample for a specific lab in our division but delivered to our admin office. Our division has 3 lab groups at different locations, one of which houses our admin and QA staff.
3. Demonstrate the ability to generate comparison data of our lab to other labs nationally, specifically comparable pass rates between our lab and the national average. This must be based on the specific analytes which our lab submitted for evaluation.
4. Demonstrate the ability to trend PT performance over time.
5. Demonstrate the ability to upload data electronically. Are there limitations as to what can be uploaded (analytes, methods, etc)?
6. Demonstrate ability of creation of custom reports.

The remainder of the time may be utilized for the questions and answers for a total interview session of no more than one hour and fifteen minutes. The same time frame will be used for all proposers in order to remain impartial to the process.

Additionally please provide the following clarifications related to your proposal. Please respond in document form to me via email no later than Wednesday, September 27th, 2017:

1. 2015-16 Schedule: The schedule provided with the proposal was a 2015-16 schedule. Was anything dropped from the 2015-16 schedule for the 2017 schedule?
2. ERA Attachment O: Is this simply a hyperlink to the information or was there information that needed to be included that wasn't?
3. What are the options for custom double blind samples? What analytes can be chosen?

Please let me know if you have any questions at 512-974-6346.

Sincerely,

Matthew Duree
Procurement Supervisor
City of Austin
Purchasing Office

CITY OF AUSTIN, TEXAS

Purchasing Office

REQUEST FOR PROPOSAL (RFP)

OFFER SHEET

SOLICITATION NO: RFP MDD0106

DATE ISSUED: July 10th, 2017

REQUISITION NO.: RQM 2200 17032800390

COMMODITY CODE: 96222

COMMODITY/SERVICE DESCRIPTION: Chemical Laboratory Services

PRE-PROPOSAL CONFERENCE TIME AND DATE: Wednesday, July 19th, 2017 @ 10:00 AM
Phone Conference #: 512-974-9300
Participant Code #: 203078

PRE-PROPOSAL LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET, 3rd FLOOR CONFERENCE ROOM, AUSTIN, TEXAS 78701

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT THE FOLLOWING AUTHORIZED CONTACT PERSON:

Matthew Duree
Procurement Supervisor

Phone: (512) 974-6346
E-Mail: matt.duree@austintexas.gov

Georgia Billela
Procurement Specialist III

Phone: (512) 974-2939
E-Mail: Georgia.billela@austintexas.gov

PROPOSAL DUE PRIOR TO: **2:00 PM Thursday, August 3rd, 2017**

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET
RM 308, AUSTIN, TEXAS 78701

LIVE SOLICITATION OPENING ONLINE: For RFP's, only the names of respondents will be read aloud at 3:00 pm the day proposals are due.

For information on how to attend the Solicitation Closing online, please select this link:

http://www.austintexas.gov/department/bid-opening-webinars

When submitting a sealed Offer and/or Compliance Plan, use the proper address for the type of service desired, as shown below:

Address for US Mail (Only)	Address for FedEx, UPS, Hand Delivery or Courier Service
City of Austin	City of Austin, Municipal Building
Purchasing Office-Response Enclosed for Solicitation # MDD0106	Purchasing Office-Response Enclosed for Solicitation # MDD0106
P.O. Box 1088	124 W 8th Street, Rm 308
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

NOTE: Offers must be received and time stamped in the Purchasing Office prior to the Due Date and Time. It is the responsibility of the Offeror to ensure that their Offer arrives at the receptionist's desk in the Purchasing Office prior to the time and date indicated. Arrival at the City's mailroom, mail terminal, or post office box will not constitute the Offer arriving on time. See Section 0200 for additional solicitation instructions.

All Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL, __ COPIES, AND 1 ELECTRONIC COPY OF YOUR RESPONSE

*****SIGNATURE FOR SUBMITTAL REQUIRED ON PAGE 3 OF THIS DOCUMENT*****

This solicitation is comprised of the following required sections. Please ensure to carefully read each section including those incorporated by reference. By signing this document, you are agreeing to all the items contained herein and will be bound to all terms.

SECTION NO.	TITLE	PAGES
0100	STANDARD PURCHASE DEFINITIONS	*
0200	STANDARD SOLICITATION INSTRUCTIONS	*
0300	STANDARD PURCHASE TERMS AND CONDITIONS	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	7
0500	SCOPE OF WORK	ATT
0510	EXCEPTIONS FORM	1
0600	PROPOSAL PREPARATION INSTRUCTIONS & EVALUATION FACTORS	4
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM – Complete and return	2
0700	REFERENCE SHEET – Complete and return if required	2
0800	NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION–Complete and return	2
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	*
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING CERTIFICATION	*
0835	NONRESIDENT BIDDER PROVISIONS – Complete and return	1

*** Documents are hereby incorporated into this Solicitation by reference, with the same force and effect as if they were incorporated in full text. The full text versions of the * Sections are available on the Internet at the following online address:**

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office located in the Municipal Building, 124 West 8th Street, Room #308 Austin, Texas 78701; phone (512) 974-2500. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

INTERESTED PARTIES DISCLOSURE

In addition, Section 2252.908 of the Texas Government Code requires the successful offeror to complete a Form 1295 "Certificate of Interested Parties" that is signed and notarized for a contract award requiring council authorization. The "Certificate of Interested Parties" form must be completed on the Texas Ethics Commission website, printed, signed and submitted to the City by the authorized agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury prior to final contract execution.

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

The undersigned, by his/her signature, represents that he/she is submitting a binding offer and is authorized to bind the respondent to fully comply with the solicitation document contained herein. The Respondent, by submitting and signing below, acknowledges that he/she has received and read the entire document packet sections defined above including all documents incorporated by reference, and agrees to be bound by the terms therein.

Company Name: _____

Company Address: _____

City, State, Zip: _____

Federal Tax ID No. _____

Printed Name of Officer or Authorized Representative: _____

Title: _____

Signature of Officer or Authorized Representative: _____

Date: _____

Email Address: _____

Phone Number: _____

*** Proposal response must be submitted with this Offer sheet to be considered for award**

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS:** (reference paragraph 5 in Section 0200)

   All requests for explanations or clarifications must be submitted in writing to the Purchasing Office by July 19th, 2017.

2. **ALTERNATE OFFERS:** (reference paragraph 7A in Section 0200)

   Alternate Offers will be considered.

3. **INSURANCE:** Insurance is required for this solicitation.

   A. **General Requirements:** See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.

      i. The Contractor shall provide a Certificate of Insurance as verification of coverages required below to the City at the below address prior to contract execution and within 14 calendar days after written request from the City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award
      ii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.
      iii. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or holdover period is exercised, as verification of continuing coverage.
      iv. The Certificate of Insurance, and updates, shall be mailed to the following address:

         City of Austin Purchasing Office
         P. O. Box 1088
         Austin, Texas 78767

   B. **Specific Coverage Requirements:** The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract, including extension options and hold over periods, and during any warranty period. These insurance coverages are required minimums and are not intended to limit the responsibility or liability of the Contractor.

      i. **Worker's Compensation and Employers' Liability Insurance:** Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are $100,000 bodily injury each accident, $500,000 bodily injury by disease policy limit and $100,000 bodily injury by disease each employee.
         (1) The Contractor's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
            (a) Waiver of Subrogation, Form WC420304, or equivalent coverage
            (b) Thirty (30) days Notice of Cancellation, Form WC420601, or equivalent coverage
      ii. **Commercial General Liability Insurance:** The minimum bodily injury and property damage per occurrence are $500,000 for coverages A (Bodily Injury and Property Damage) and B (Personal and Advertising Injury).
         (1) The policy shall contain the following provisions:
            (a) Contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.
            (b) Contractor/Subcontracted Work.

(c) Products/Completed Operations Liability for the duration of the warranty period.
(d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and/or Underground Coverage.

(2) The policy shall also include these endorsements in favor of the City of Austin:
(a) Waiver of Subrogation, Endorsement CG 2404, or equivalent coverage
(b) Thirty (30) days Notice of Cancellation, Endorsement CG 0205, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CG 2010, or equivalent coverage

iii. **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of $500,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are $250,000 bodily injury per person, $500,000 bodily injury per occurrence and at least $100,000 property damage liability per accident.

(1) The policy shall include these endorsements in favor of the City of Austin:
(a) Waiver of Subrogation, Endorsement CA0444, or equivalent coverage
(b) Thirty (30) days Notice of Cancellation, Endorsement CA0244, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CA2048, or equivalent coverage.

C. **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

4. **TERM OF CONTRACT:**

A. The Contract shall be in effect for an initial term of 24 months and may be extended thereafter for up to two additional 12 month periods, subject to the approval of the Contractor and the City Purchasing Officer or his designee.

B. Upon expiration of the initial term or period of extension, the Contractor agrees to hold over under the terms and conditions of this agreement for such a period of time as is reasonably necessary to re-solicit and/or complete the project (not to exceed 120 days unless mutually agreed on in writing).

C. Upon written notice to the Contractor from the City's Purchasing Officer or his designee and acceptance of the Contractor, the term of this contract shall be extended on the same terms and conditions for an additional period as indicated in paragraph A above.

D. Prices are firm and fixed for the first 12 months. Thereafter, price changes are subject to the Economic Price Adjustment provisions of this Contract.

5. **QUANTITIES:** The quantities listed herein are estimates for the period of the Contract. The City reserves the right to purchase more or less of these quantities as may be required during the Contract term. Quantities will be as needed and specified by the City for each order. Unless specified in the solicitation, there are no minimum order quantities.

6. **DELIVERY REQUIREMENTS:**

Location:	Days:
See specifications in Scope of Work	

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

A. Delivery is to be made within 5 (five) calendar days after the order is placed (either verbally or in writing). All orders must be shipped complete unless arrangements for partial shipments are made in advance.

B. The Contractor shall provide, with each delivery, a Shipping or Delivery Ticket showing the description of each item, quantity, and unit price.

C. The Contractor shall confirm the quantity to be shipped on all orders within two (2) hours of notification by phone from the City.

D. Unless requested by the City, deliveries shall not be made on City-recognized legal holidays (see paragraph 51 in Section 0300).

7. **INVOICES and PAYMENT:** (reference paragraphs 12 and 13 in Section 0300)

A. Invoices shall contain a unique invoice number and the information required in Section 0300, paragraph 12, entitled "Invoices." Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed to the below address:

	City of Austin
Department	Austin Water- Laboratory Services Division
Attn:	Glenly Iffla
Address	14050 Summit Dr. Suite 121
City, State Zip Code	Austin, TX 78728

B. The Contractor agrees to accept payment by either credit card, check or Electronic Funds Transfer (EFT) for all goods and/or services provided under the Contract. The Contractor shall factor the cost of processing credit card payments into the Offer. There shall be no additional charges, surcharges, or penalties to the City for payments made by credit card.

8. **RESTOCKING FEES:**

A. The Contractor may bill the City restocking fees (if included in their Offer) for parts that are ordered by the City under the contract and returned for refund. The Contractor is not obligated to accept for refund any part that is not resalable and/or not in the same condition as when purchased.

B. Restocking fees may be charged to the City when multiple parts or groups of parts are returned for refund at one time due to the City inventory warehouse cleaning, unless these parts are returned at an annual pre-arranged date. The date for the annual return shall be mutually agreed upon between the City and the Contractor.

9. **MATERIALS SPECIFICATIONS/DESCRIPTIVE LITERATURE:**

A. If a solicitation refers to a Qualified Products List (QPL), Standard Products List (SPL) or a manufacturer's name and product, any Offeror offering products not referenced in the solicitation must submit as part of their Offer materials specifications/descriptive literature for the non-referenced product. Materials specifications/descriptive literature must be identified to show the item(s) in the Offer to which it applies.

B. Materials specifications/descriptive literature are defined as product manufacturer's catalog pages, "cut sheets" applicable tests results, or related detailed documents that specify material construction, performance parameters, and any industrial standards that are applicable such as ANSI, ASTM, ASME, SAE, NFPA, NBS, EIA, ESL, and NSA. The submitted materials specifications/descriptive literature must include the manufacturer's name and product number of the product being offered.

C. The failure of the materials specifications/descriptive literature to show that the product offered conforms to the requirements of the Solicitation shall result in rejection of the Offer.

D. Failure to submit the materials specifications/descriptive literature as part of the Offer may subject the Offer to disqualification from consideration for award.

10. **HAZARDOUS MATERIALS:**

A. If this Solicitation involves hazardous materials, the Offeror shall furnish with the Offer Material Safety Data Sheets (MSDS), (OSHA Form 20), on all chemicals and hazardous materials specifying the generic and trade name of product, product specification, and full hazard information including receiving and storage hazards. Instructions, special equipment needed for handling, information on approved containers, and instructions for the disposal of the material are also required.

B. Failure to submit the MSDS as part of the Offer may subject the Offer to disqualification from consideration for award.

C. The MSDS, instructions and information required in paragraph "A" must be included with each shipment under the contract.

11. **RECYCLED PRODUCTS:**

A. The City prefers that Offerors offer products that contain recycled materials. When a recycled product is offered by the Offeror, the Offeror must state in their Offer the percentage of the product that is recycled and must include a list of the recycled materials that are contained in the product.

B. The recycled content of paper products offered to the City shall be in accordance with the Federal Environmental Protection Agency's Recycled Product Procurement Guidelines. These guidelines are available at **http://www.epa.gov/cpg/ .**

C. Contract award for paper products will be made for recycled products unless the cost is more than 10% above the lowest price for non-recycled paper products as required in the City's Comprehensive Recycling Resolution.

12. **PUBLISHED PRICE LISTS:**

A. Offerors may quote using published price lists in the following ways:

i. Offerors may quote one discount from a Published Price List for all offered items to be covered in the Contract. The discount must remain firm during the life of the Contract.

ii. Offerors may quote their dealer cost, plus a percentage markup to be added to the cost. The percentage markup must remain firm during the life of the contract.

B. Two (2) copies of the list upon which the discounts or markups are based shall be submitted with the Offer. All price lists identified in the Offer shall clearly include the Offeror's name and address, the solicitation number, prices, title of the discount and number, and the latest effective date of the price list. If the Offer is based on a discount or markup on a manufacturer's price list, the price list must also include the manufacturer's name, the manufacturer's latest effective date, and the manufacturer's price schedule. All price lists submitted become part of the Offer.

C. The price list may be superseded or replaced during the Contract term only if price revisions are the result of the manufacturer's official price list revision. Written notification from the Contractor of price changes, along with two (2) copies of the revised list must be submitted to the Buyer in the Purchasing Office with the effective date of change to be at least calendar days (30 unless a different period is inserted) after written notification. The City reserves the right to refuse any list revision.

D. The discounts or markups on equipment rental, material, supplies, parts, and contract services shall be fixed throughout the term of the Contract, and are not subject to increase.

E. Failure to submit written notification of price list revisions will result in the rejection of new prices being invoiced. The City will only pay invoices according to the last approved price list.

13. **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING:**

A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.

C. If an Offeror has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Offeror is given written notice and a hearing in advance of the debarment.

D. The City requires Offerors submitting Offers on this Solicitation to certify that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

14. **NON-SOLICITATION:**

A. During the term of the Contract, and for a period of six (6) months following termination of the Contract, the Contractor, its affiliate, or its agent shall not hire, employ, or solicit for employment or consulting services, a City employee employed in a technical job classification in a City department that engages or uses the services of a Contractor employee.

B. In the event that a breach of Paragraph A occurs the Contractor shall pay liquidated damages to the City in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation; or (ii) 100 percent of the employee's annual compensation while employed by the City. The Contractor shall reimburse the City for any fees and expenses incurred in the enforcement of this provision.

C. During the term of the Contract, and for a period of six (6) months following termination of the Contract, a department that engages the services of the Contractor or uses the services of a Contractor employee will not hire a Contractor employee while the employee is performing work under a Contract with the City unless the City first obtains the Contractor's approval.

D. In the event that a breach of Paragraph C occurs, the City shall pay liquidated damages to the Contractor in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation or (ii) 100 percent of the employee's annual compensation while employed by the Contractor.

15. **WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

A. Access to the Austin Water Department building by the Contractor, all subcontractors and their employees will be strictly controlled at all times by the City. Security badges will be issued by the Department for this purpose. The Contractor shall submit a complete list of all persons requiring access to any Austin Water building at least thirty (30) days in advance of their need for access. The City reserves the right to deny a security badge to any Contractor personnel for reasonable cause. The City will notify the Contractor of any such denial no more than twenty (20) days after receipt of the Contractor's submittal.

B. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the contract, the Contractor shall so notify the City's Contract Manager, in writing, within ten (10) days of the receipt of notification of denial.

C. Contractor personnel will be required to check in at the security desk when entering or leaving the Austin Water building and security badges must be on display at all times when in the building. Failure to do so may be cause for removal of Contractor Personnel from the worksite, without regard to Contractor's schedule. Security badges may not be removed from the premises.

D. The Contractor shall provide the City's Contract Manager with a list of personnel scheduled to enter the building, seven days in advance. The list shall identify the persons by name, date of birth, driver's license number, the times that they will be inside the building and the areas where they will be working. Only persons previously approved by the City for the issuance of security badges will be admitted to the building.

E. The Contractor shall comply with all other security requirements imposed by the City and shall ensure that all employees and subcontractors are kept fully informed as to these requirements.

16. **MONTHLY SUBCONTRACT AWARDS AND EXPENDITURES REPORT:** (reference paragraph 18 in Section 0300) (applicable when an MBE/WBE Compliance Plan is required)

A. The Contractor must submit a monthly Subcontract Awards and Expenditures Report to the Contract Manager specified herein and to the Purchasing Office Contract Compliance Manager no later than the tenth calendar day of each month.

B. Mail the Purchasing Office Copy of the report to the following address:

City of Austin
Purchasing Office

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

Attn: Contract Compliance Manager
P. O. Box 1088
Austin, Texas 78767

17. **INTERLOCAL PURCHASING AGREEMENTS:** (applicable to competitively procured goods/services contracts).

    A. The City has entered into Interlocal Purchasing Agreements with other governmental entities, pursuant to the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code. The Contractor agrees to offer the same prices and terms and conditions to other eligible governmental agencies that have an interlocal agreement with the City.

    B. The City does not accept any responsibility or liability for the purchases by other governmental agencies through an interlocal cooperative agreement.

18. **CONTRACT MANAGER:** The following person is designated as Contract Manager, and will act as the contact point between the City and the Contractor during the term of the Contract:

    Virginia Soto -Reynolds

    512-972-0337

    Virginia.Soto-Reynolds@austintexas.gov

*Note: The above listed Contract Manager is not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with the Contract Manager is prohibited during the no contact period.

Section 0510: Purchasing Office Exceptions Form

Solicitation Number: MDD0106 Proficiency Testing

The City will presume that the Offeror is in agreement with all sections of the solicitation unless the Offeror takes specific exception as indicated below. The City, at its sole discretion, may negotiate exceptions to the sections contained in the solicitation documents or the City may deem the Offer non-responsive. The Offeror that is awarded the contract shall sign the contract with the accepted or negotiated sections.

Copies of this form may be utilized if additional pages are needed.

☐ Accepted as written. ☐ Not accepted as written. See below:

Indicate:
☐ **0300 Standard Purchase Terms & Conditions**
☐ **0400 Supplemental Purchase Provisions**
☐ **0500 Scope of Work**

Page Number **Section Number** **Section Description**

Alternative Language:

Justification:

CITY OF AUSTIN
PURCHASING OFFICE
REQUEST FOR PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
RFP NUMBER: MDD0106
PROFICIENCY TESTING

1. PROPOSAL FORMAT

The proposal itself shall be organized in the following format and informational sequence:

A. **Tab 1 – Executive Summary:** Provide an Executive Summary of three (3) pages or less which gives in brief terms a summation of the Proposal. Include name, address, and telephone number of person in your organization authorized to negotiate Contract terms and render binding decisions on Contract matters.

B. **Tab 2 – City of Austin Purchasing Documents:**

Complete and submit the following documents:

i. Signed Offer Sheet
ii. Section 0510 – Exceptions Checklist. Any Exceptions not listed on this form may not be considered.
iii. Section 0605 – Local Business Presence Identification
iv. Section 0700 – Reference Sheet
v. Section 0800 – Non Discrimination and Non Retaliation
vi. Section 0835 – Non-Resident Bidder Provisions
vii. Published Addendums

C. **Tab 3 - Business Organization**: State full name and address of your organization and identify parent company if you are a subsidiary. Specify the branch office or other subordinate element which will perform, or assist in performing, work herein.

D. **Tab 4 – Schedule and Catalog**: Define in detail your PT Study Schedule as it relates to the Scope of Work of this request for proposal. Include any aspects related to the flexibility of your PT Study schedule. Define in detail your catalogue of items meets the requirements listed in the Scope of Work.

E. **Tab 5 - Demonstrated Abilities:** Describe the Proposer's understanding of the City's requirements, including result(s) intended and desired and the approach and/or methodology to be employed. Describe applicable experience and accreditations. Also include a discussion and justification of the proposers result submission and reporting abilities as required in the Scope of Work and requested below. Specifically indicate:

i. Demonstrated and list applicable experience and accreditations

ii. Demonstrated result submission abilities

iii. Demonstrated reporting abilities

F. **Tab 6 – Online Capabilities**: Describe your online capabilities as it relates to proficiency testing. Include a description of your online ordering system and the abilities the City of Austin user(s) will have using your system. Specifically indicate:

i. Effective online ordering

ii. Online user role flexibility

G. **Tab 7 – Experience and Qualifications**: Provide the following information:

A. Describe your relevant corporate experience, qualifications, certificatins, and expertise providing accredited Proficiency Tests as described in the Scope of Work.

B. Include names, qualifications, and certifications of all key personnel who will be assigned to this project. Identify key persons by name and title. Provide all resumes. Do not include the experience of personnel who will not actively participate in the work of the resulting Contract

H. **Tab 9 – Customer Support Solutions**: Describe in detail your customer support offerings. Describe what customer support solutions you can provide the customer related to proficiency testing and how your customer support solutions present a solution to any future problems the may arise relating to the Scope of Work.

I. **Tab 9 - Cost Proposal**: Proposer will fill out the Cost proposal Sheet (0600A) ensuring that the unit prices, extended prices, and total proposed price are all completed. Scores for the cost proposal are based on the total proposed price. Costs should include shipping and handling.

i. Unit Price. For each item

ii. Total Proposed Price and sum for all subtotals.

iii. Cost or discount on other samples provided by the Contractor.

J. **Tab 10 - Local Business Presence**: The City seeks opportunities for businesses in the Austin Corporate City Limits to participate on City contracts. A firm (Proposer or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation. Points will be awarded through a combination of the Proposer's Local Business Presence and/or the Local Business Presence of their subcontractors. Evaluation of the Team's Percentage of Local Business Presence will be based on the dollar amount of work as reflected in the Proposer's MBE/WBE Compliance Plan or MBE/WBE Utilization Plan. Specify if and by which definition the Proposer or Subcontractor(s) have a local business presence.

K. **Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying**:

i. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2-7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Proposers or potential Proposers are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

ii. If during the No-Contact Period an Proposer makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Proposer's Offer is disqualified from further consideration except as permitted in the Ordinance.

iii. If a Respondent has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Proposer from doing business with the City for a period not to exceed three (3) years, provided the Respondent is given written notice and a hearing in advance of the debarment.

iv. The City requires Proposers submitting Offers on this Solicitation to provide a signed Section 0810, Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying Affidavit certifying that the Proposer has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

L. **Proposal Acceptance Period**: All proposals are valid for a period of one hundred and eighty (180) calendar days subsequent to the RFP closing date unless a longer acceptance period is offered in the proposal

M. **Proprietary Information**: All material submitted to the City becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The City will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.

2. EXCEPTIONS:

Be advised that exceptions to any portion of the Solicitation may jeopardize acceptance of the Proposal. List any exceptions that your company is making to the solicitation in Section 0510.

3. PROPOSAL PREPARATION COSTS:

All costs directly or indirectly related to preparation of a response to the RFP or any oral presentation required to supplement and/or clarify a proposal which may be required by the City shall be the sole responsibility of the Proposer.

4. EVALUATION FACTORS AND AWARD

A. **Competitive Selection**: This procurement will comply with applicable City Policy. The successful Proposer will be selected by the City. Evaluation factors outlined in Paragraph B below shall be applied to all eligible, responsive Proposers in comparing proposals and selecting the Best Proposer. Award of a Contract may be made without discussion with Proposers after proposals are received. Proposals should, therefore, be submitted on the most favorable terms.

B. **Evaluation Factors**:

100 points.

(1) Schedule and Catalog (Maximum 15 points)
Detailed description of proposers study schedule and catalog as it relates to the Scope or Work **Tab 4.**

(2) Demonstrated Abilities (Maximum 30 points)
Descripiton of demonstrated abilities necessary to complete the responsibilities outlined in the Scope or Work. **Tab 5.**

(3) Online Capabilities (Maximum 15 Points)
Description of the proposers online capabilities. **Tab 6**.

(4) Experience and Qualifications (Maximum 10 Points)
Personnel qualifications related to completing the Scope of Work. **Tab 7.**

(5) Customer Support Solutions (Maximum 10 Points)
Description of the proposers customer support solutions they can provide the City of Austin as it relates to the Scope of Work. **Tab 8.**

(6) Total Evaluated Cost (Maximum 10 Points)
Using the Price Proposal Form, submit proposed cost for all samples listed. The Proposer with the lowest total fee will be awarded the maximum points; other Proposers are awarded points on a pro-rated basis. **Tab 9**.

(7) Local Business Presence (Maximum 10 points) Tab 10.

Team's Local Business Presence	Points Awarded
Local business presence of 90% to 100%	10
Local business presence of 75% to 89%	8
Local business presence of 50% to 74%	6
Local business presence of 25% to 49%	4
Local presence of between 1 and 24%	2
No local presence	0

ii. Presentations, Demonstrations Optional. The City will score proposals on the basis of the criteria listed above. The City may select a "short list" of Proposers based on those scores. "Short-listed" Proposers may be invited for presentations, or demonstrations with the City. The City reserves the right to re-score "short-listed" proposals as a result, and to make award recommendations on that basis.

(6) Contract Payment: The Contract shall be prepared under the direction of the City, and shall incorporate all applicable provisions. A firm fixed-price or not-to-exceed Contract is contemplated, with progress payments as mutually determined to be appropriate.

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this Contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN (REFERENCE SECTION 0900).

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years?	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No

Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

Section 0700: Reference Sheet

Responding Company Name _____

The City at its discretion may check references in order to determine the Offeror's experience and ability to provide the products and/or services described in this Solicitation. The Offeror shall furnish at least 3 complete and verifiable references. References shall consist of customers to whom the offeror has provided the same or similar services within the last 5 years. References shall indicate a record of positive past performance.

1. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

2. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

3. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

City of Austin, Texas
Section 0800
NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION

City of Austin, Texas

Equal Employment/Fair Housing Office

To: City of Austin, Texas,

I hereby certify that our firm complies with the Code of the City of Austin, Section 5-4-2 as reiterated below, and agrees:

(1) Not to engage in any discriminatory employment practice defined in this chapter.

(2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter, including affirmative action relative to employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training or any other terms, conditions or privileges of employment.

(3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Equal Employment/Fair Housing Office setting forth the provisions of this chapter.

(4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, sex or age.

(5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.

(6) To cooperate fully with City and the Equal Employment/Fair Housing Office in connection with any investigation or conciliation effort of the Equal Employment/Fair Housing Office to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.

(7) To require of all subcontractors having 15 or more employees who hold any subcontract providing for the expenditure of $2,000 or more in connection with any contract with the City subject to the terms of this chapter that they do not engage in any discriminatory employment practice as defined in this chapter

For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

City of Austin
Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy

As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.

The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.

The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

Further, employees who experience discrimination, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their compliant, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does

not continue.

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE THE CITY A COPY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, **OR** THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL.

Sanctions:

Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.

Term:

The Contractor agrees that this Section 0800 Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the City, will remain in force and effect for one year from the date of filling. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this _____ day of _____, _____

CONTRACTOR _____

Authorized Signature _____

Title _____

Section 0835: Non-Resident Bidder Provisions

Company Name _____

A. Bidder must answer the following questions in accordance with Vernon's Texas Statues and Codes Annotated Government Code 2252.002, as amended:

   Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

   Answer: _____

   (1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
   (2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

   Answer: _____ Which State: _____

C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

   Answer: _____

Section 0510: Purchasing Office Exceptions Form

Solicitation Number: MDD0106 Proficiency Testing

The City will presume that the Offeror is in agreement with all sections of the solicitation unless the Offeror takes specific exception as indicated below. The City, at its sole discretion, may negotiate exceptions to the sections contained in the solicitation documents or the City may deem the Offer non-responsive. The Offeror that is awarded the contract shall sign the contract with the accepted or negotiated sections.

Copies of this form may be utilized if additional pages are needed.

☑ Accepted as written. ☐ Not accepted as written. See below:

Indicate:
- ☐ **0300 Standard Purchase Terms & Conditions**
- ☐ **0400 Supplemental Purchase Provisions**
- ☐ **0500 Scope of Work**

Page Number	**Section Number**	**Section Description**

Alternative Language:

Justification:

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this Contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN (REFERENCE SECTION 0900).

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	(No)
or		
Has your branch office been located in the Corporate City Limits for the last 5 years?	Yes	(No)
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	(No)

SUBCONTRACTOR(S):

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	(No)
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	(No)

Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	(No)

SUBCONTRACTOR(S):

Name of Local Firm	N/A	
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

Section 0700: Reference Sheet

Responding Company Name Environmental Resource Associates DBA: ERA- A Waters Company

The City at its discretion may check references in order to determine the Offeror's experience and ability to provide the products and/or services described in this Solicitation. The Offeror shall furnish at least 3 complete and verifiable references. References shall consist of customers to whom the offeror has provided the same or similar services within the last 5 years. References shall indicate a record of positive past performance.

1. Company's Name ENCO Laboratories, Inc.
   Name and Title of Contact Lori Mangrum- Director of Quality Assurance
   Project Name
   Present Address 10775 Central Port Drive
   City, State, Zip Code Orlando, FL 32824
   Telephone Number (407-826-5314 Fax Number ( )
   Email Address lmangrum@encolabs.com

2. Company's Name Los Angels County Sanitation District
   Name and Title of Contact Karla Thurman
   Project Name San Jose Creek Water Quality Lab
   Present Address 1965 S. Workman Mill Road
   City, State, Zip Code Whittier, CA 90601
   Telephone Number ((562))908-4288 Fax Number ( )
   Email Address kthurman@lacsd.org

3. Company's Name City of Abilene
   Name and Title of Contact Michael Michaud - QA Director
   Project Name
   Present Address 4209 E. Lake Road
   City, State, Zip Code Abilene, TX 79601
   Telephone Number (325) 676-6041 Fax Number (325) 676-6044
   Email Address michael.michaud@abilenetx.com

City of Austin, Texas
Section 0800
NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION

City of Austin, Texas

Equal Employment/Fair Housing Office

To: City of Austin, Texas,

I hereby certify that our firm complies with the Code of the City of Austin, Section 5-4-2 as reiterated below, and agrees:

(1) Not to engage in any discriminatory employment practice defined in this chapter.

(2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter, including affirmative action relative to employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training or any other terms, conditions or privileges of employment.

(3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Equal Employment/Fair Housing Office setting forth the provisions of this chapter.

(4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, sex or age.

(5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.

(6) To cooperate fully with City and the Equal Employment/Fair Housing Office in connection with any investigation or conciliation effort of the Equal Employment/Fair Housing Office to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.

(7) To require of all subcontractors having 15 or more employees who hold any subcontract providing for the expenditure of $2,000 or more in connection with any contract with the City subject to the terms of this chapter that they do not engage in any discriminatory employment practice as defined in this chapter

For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

City of Austin
Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy

As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.

The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.

The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

Further, employees who experience discrimination, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their compliant, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does

not continue.

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE THE CITY A COPY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, **OR** THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL.

Sanctions:

Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.

Term:

The Contractor agrees that this Section 0800 Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the City, will remain in force and effect for one year from the date of filling. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this 28th day of July, 2017

CONTRACTOR ERA-A Waters Company

Authorized Signature

Title General Manager

Section 0835: Non-Resident Bidder Provisions

Company Name ERA- A Waters Company

A. Bidder must answer the following questions in accordance with Vernon's Texas Statues and Codes Annotated Government Code 2252.002, as amended:

Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

Answer: non-Resident Bidder

(1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
(2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

Answer: No Which State: Colorado

C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

Answer: _____

August 2, 2017

City of Austin
Laboratory Services Division
14050 Summit Dr. Suite 121
Austin, TX 78728

Re: **City of Austin Solicitation MDD0106 – Proficiency Testing Samples**

To whom it may concern,

ERA is pleased to offer the following proposal in response to the City of Austin's RFP. We are grateful to have the opportunity to again partner with the City's Laboratory Services Division.

We believe that we are uniquely qualified to provide the City of Austin LSD with the most efficient, effective, and low risk proficiency testing experience available. Many of the features and benefits we have to offer you have improved over the past few years, so we ask that you fully review our proposal and reach out if you require any clarifications or additional information.

Thank you again for this opportunity, and we sincerely look forward to partnering with you in the future to provide all of your critical proficiency testing and quality control needs.

With Best Regards,

Curtis J. Wood
Senior Account Manager

and

Eric Love
Project Specialist

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Tab 1 – Executive Summary

ERA is excited to have the opportunity to present the following proposal. Through 2011, ERA partnered with the City of Austin to provide critical quality control and proficiency testing materials and services. Being able to renew that relationship is important to us and we appreciate being given the opportunity to do so.

As we have improved many of the features and benefits we have to offer since last working with you, we have summarized some below and provide additional detail in the following pages.

Some of the unique and valuable benefits ERA provides are:

- Comprehensively provides all chemistry, microbiology, whole effluent toxicity and radiochemistry analytes required for laboratory certification.
- Only PT provider that provides final reports in 2 business days (industry standard is typically 21 days) from the close of the PT study. Having quick access to PT results allows investigation and correction of any deficiencies to ensure the defensibility of laboratory data to take place as soon as possible.
- Conducts both organic and inorganic WS and WP PT studies each month. You can be confident that ERA will have a sample available when you need it.
- Offers Quik Response™ PT samples that provide an evaluation and final PT report available immediately following reporting of your results. No more waiting to know if your results are acceptable or not.
- Is accredited to ISO Guide 34 as a Reference Material provider for all NELAC chemistry, microbiology, whole effluent toxicity and radiochemistry analytes.
- Is accredited to ISO 17025 as a Testing Laboratory for the analyses related to all NELAC chemistry, microbiology and radiochemistry analytes.
- Allows for data entry and review through our eDATA® 2.0 online portal. This website is on a secure server and is further secured via unique customer identifiers and passwords. Archived items are kept online and accessible for a minimum of 5 years after the close of the study.

Executive Summary, continued

- eDATA 2.0 is the only PT management portal that provides interactive, web-based charts, customizable reports and tools enabling QA Managers to:
    - Monitor performance trends, compare method performance and analyst performance over time using z-score charts
    - Track unacceptable PT results that could affect the laboratory's certification status using PT Review
    - Automatically inspect PT results over time for concerning trends such as bias or directional trending using Risk Reports
    - Generate customized performance history and unsatisfactory performance history summary reports using Performance Report and Exception Report
    - Create analyst performance summary reports for training or demonstration of capability using Analyst Report
    - Compare PT results and success metrics to peer laboratories participating in the same studies using Health of Your Lab (HOYL)
- Allows for an unlimited number of EPA laboratory numbers to be associated with each Discharge Monitoring Report Quality Assurance (DMR-QA) report through our proprietary system, eDATA 2.0.
- On average, provides the largest number of participants in PT studies. The size of each data set is critical to ensuring the appropriateness of individual evaluations.
- Free technical support and customer service support Monday-Thursday 6 am-6 pm (Mountain Time) and 6 am-5 pm (Mountain Time) on Fridays.
- Facilitates multiple webinars on important proficiency testing and laboratory quality subjects throughout the year. In fact, if City of Austin has a suggestion for a webinar ERA has not offered, we would be happy to accommodate.

Tab 2 – City of Austin Purchasing Documents

Attached to the end of this bid proposal are the following documents.

A. Signed Offer Sheet
B. Section 0510 – Exemptions Checklist
C. Section 0605 – Local Business Presence Identification
D. Section 0700 – Reference Sheet
E. Section 0800 – Non Discrimination and Non Retaliation
F. Section 0835 – Non-Resident Bidder Provisions
G. Pricing Sheet (including ERA catalog numbers and product descriptions)
H. Safety Data Sheets (electronic file only)
I. ERA's accreditation certificates (full scopes included in electronic file only)
J. Example PT report
K. Example DMR-QA checklist
L. Current ERA environmental product catalog
M. Example certified reference material Certificate of Analysis and Preparation Instructions
N. EDD upload format (comma delineated- .csv)
O. *eDATA 2.0 Effortless Insight*, *eDATA Risk Report*, and *Upload Data from Your LIMS*
P. Employee Summaries
Q. Actual ERA PT Study Participation Examples

Tab 3 – Business Organization

The full name of our company is Environmental Resource Associates, DBA: ERA - A Waters Company. ERA will be the sole entity performing and executing this contract with the City of Austin LSD. No subcontractors will be used.

The addresses for ERA and our parent company, Waters Corporation, are:

Environmental Resource Associates
16341 Table Mountain Parkway
Golden, CO 80403

Waters Corporation
34 Maple Street
Milford, MA 01757

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Tab 4 – Schedule and Catalog

ERA – A Waters Company conducts 12 Water Supply and 12 Water Pollution Proficiency Testing (PT) studies each calendar year, along with four Soil/Hazardous Waste studies. In addition, ERA gives you the option to participate in one 3-1/2 month DMR-QA specific study or one of 5 DMR-QA compliant WP studies. By offering more analytes more frequently than any other provider, ERA gives the City of Austin the most flexibility regarding the scheduling and analysis of your PT samples. Whether to most efficiently schedule laboratory resources, or to optimize invoicing cycles, with ERA, you will be able to analyze your PTs when it's best for you.

Our WP, WS, Soil, and DMR-QA study schedules for 2017 and 2018 are shown below.

Water Supply		
Study Name	Open Date	Close Date
WS 253	8/7/2017	9/21/2017
WS 254	9/5/2017	10/20/2017
WS 255*	10/6/2017	11/20/2017
WS 256	11/6/2017	12/21/2017
WS 257	12/4/2017	1/18/2018
WS 258*	1/8/2018	2/22/2018
WS 259	2/5/2018	3/22/2018
WS 260	3/5/2018	4/19/2018
WS 261*	4/9/2018	5/24/2018
WS 262	5/7/2018	6/21/2018
WS 263	6/4/2018	7/19/2018
WS 264*	7/9/2018	8/23/2018
WS 265	8/6/2018	9/20/2018
WS 266	9/4/2018	10/19/2018
WS 267*	10/5/2018	11/19/2018
WS 268	11/5/2018	12/20/2018
WS 269	12/3/2018	1/17/2019

Water Pollution		
Study Name	Open Date	Close Date
WP 271	8/14/2017	9/28/2017
WP 272	9/11/2017	10/26/2017
WP 273*	10/13/2017	11/27/2017
WP 274	11/13/2017	12/28/2017
WP 275	12/11/2017	1/25/2018
WP 276*	1/15/2018	3/1/2018
WP 277	2/12/2018	3/29/2018
WP 278	3/12/2018	4/26/2018
WP 279*	4/16/2018	5/31/2018
WP 280	5/14/2018	6/28/2018
WP 281	6/11/2018	7/26/2018
WP 282*	7/16/2018	8/30/2018
WP 283	8/13/2018	9/27/2018
WP 284	9/10/2018	10/25/2018
WP 285*	10/12/2018	11/26/2018
WP 286	11/12/2018	12/27/2018
WP 287	12/10/2018	1/24/2019

Soil		
Study Name	Open Date	Close Date
SOIL 99	7/24/2017	9/7/2017
SOIL 100	10/16/2017	11/30/2017
SOIL 101	1/22/2018	3/8/2018
SOIL 102	4/23/2018	6/7/2018
SOIL 103	7/23/2018	9/6/2018
SOIL 104	10/15/2018	11/29/2018

DMR-QA		
Study Name	Open Date	Close Date
DMRQA 38	3/23/2018^	7/6/2018^

* Denotes a Quarterly PT Study

^ Denotes projected dates

Schedule and Catalog, continued

All of the PT samples specified within this proposal, as well as dozens of others, are also available anytime as Quik Response (QR) PT samples. QR samples will be shipped one day after an order is placed. QR samples must be reported within 45 days from the ship date, but your results will be evaluated and your final report issued within 2 business days of you reporting your results.

Two-day evaluation not only applies to our QuiK Response PTs, but the final reports for all of our regularly scheduled PT studies are sent to you within two business days after study close. This is another exclusive feature of ERA's studies that provides additional flexibility by giving you the quickest feedback and allowing you to implement any changes or corrective actions upto 2-1/2 weeks sooner than other providers.

Both a hardcopy and electronic version of ERA's Proficiency Testing and Reference Materials catalog are included in this proposal (see Attachment L). All of the analytes required by the City of Austin LSD are included in our standard product offerings. In addition, there are hundreds of additional analytes availabe should you need to expand your scope of accreditation or report additional PT data.

As regulations, trends, and laboratory needs change, ERA responds with new products to meet your needs. Since the publication of the included catalog, ERA has introduced the following new products:

- Dissolved Oxygen PT and QC standards
- UCMR 4 – ERA is the exclusive PT provider for the USEPA's UCMR 4 PT program and offers all applicable standards
- Ready-to-Use Formazin online Turbidimeter Calibration reference materials
- Per- & Polyfluoroalkyl Substances (PFAS) in soil and water PT and QC standards

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Tab 5 – Demonstrated Abilities

The City of Austin Lab Services Division (LSD) is seeking a partner to provide the necessary quality control and proficiency testing products and services per the requirements of TNI NELAP as well as the EPA DMR-QA program. The chosen provider must hold and maintain the necessary accreditations and fulfill all of the requirements of EPA, NELAP and state proficiency testing programs. Additionally, the City of Austin LSD requires a flexible PT study schedule, efficient and effective online ordering, proactive and knowledgeable customer support, as well as the supply of the specific deliverables listed the RFP Scope of Work.

ERA has been an accredited PT provider for the NELAP and EPA programs since 1999 and is currently recognized as such by The NELAC Institute (TNI). In addition to PT provider accreditation, ERA maintains ISO 9001 (Quality System), ISO 17025 (Laboratory) and ISO Guide 34 (Reference Material) accreditations as documented by the accreditation certificates included with this proposal (see Attachment I).

We have been and remain intimately involved in the regulatory process for the certification of environmental laboratories. Our involvement and understanding of the PT process are unmatched in the industry. ERA staff members currently hold the following positions within TNI:

- Member – Laboratory PT Committee
- Chair – Stationary Source Audit Sample Expert Committee
- Member – Microbiology subcommittee
- Member – Whole Effluent Toxicity Testing subcommittee
- Chair – Fields of Proficiency Testing Format subcommittee

Successful participation in proficiency testing is a critical element of the accreditation process for the City of Austin LSD and its NELAP accredited laboratories. ERA is committed to ensuring that a laboratory's evaluation is never affected by our sample design, the sample preparation instructions, storage and shipping conditions, or any other variable outside the lab's control. We do this by not only integrating the concept into our quality system, but also by continually monitoring our largest-in-the-industry data sets to ensure we identify any anomalies that may affect lab evaluations and immediately taking corrective actions to avoid negative impacts to labs.

Demonstrated Abilities, continued

While proficiency testing is a mandate for laboratories and may be seen as just a necessary evil by some, ERA believes that value can be found in the data a lab produces and we have implemented tools to give our customers easy access to this information. Our eDATA 2.0 system is the next evolution of PT informatics with many benefits designed to save labs time, money, and reduce risk. Streamlined manual data entry makes typing in your data easier and faster than ever. Our LIMS upload capability is used for over 10,000 data sets per year and is the fastest, easiest, most accurate way to report your PT data. eDATA's Performance Trending and Risk Reports are designed to give you advance notice of potential future problems. Our Demonstration of Capability feature will allow you to use your PT data to easily demonstrate and document analyst training and capability. See the included *eDATA 2.0 Effortless Insight*, *eDATA Risk Report*, and *Upload Data from Your LIMS* documents for additional data (Attachment O).

ERA is the largest PT provider in the U.S., with over 12,000 PT customers, and eDATA is the most used PT data entry and reporting portal in the industry, with 630,000 data points evaluated annually. Some specific numbers of PT participants are shown in Attachment Q.

eDATA 2.0 was launched in 2015 with major revisions based on customer feedback. One of the exclusive features we added is a 2-day turnaround for final reports. This means that you get your complete final reports from ERA up to two and a half weeks earlier than other providers, giving you more flexibility and control in seeing your performance and fixing any possible areas of concern. We continue to add to and refine eDATA and will welcome your input if there are features, reports of other enhancements that will make your job easier or your data more useful.

To ensure you receive all of the benefits of eDATA and experience a smooth transition, ERA will provide onsite training at your facility(s) upon award of this contract. Training will cover our product designs and how they relate to your scopes of accreditation, our on line ordering process, and all features of eDATA. Even after the onsite training, you will have full access to ERA's customer service, technical support, proficiency testing, information technology, and quality groups to answer any questions you may have. A single point of contact will also be assigned to track down any information you need.

Tab 6 – Online Capabilities

At ERA, we have continued to upgrade and improve our online ordering system as technology has improved and customers have provided feedback on how we can make their jobs easier. The result is a system designed to make finding products and placing orders a fast and easy process for all of our customers. Creating an account, assigning roles for different members of your organization, finding products, creating quotes, and placing and tracking orders are all efficient and easy so that your staff can focus on the important tasks related to providing the most accurate and timely analytical data for the City of Austin.

An additional way that we have streamlined the ordering process is by creating an annual renewal quotation for you. This quotation is automatically generated for you toward the end of the calendar year and includes all of the PTs your labs received that year. We match the PT study months from year to year and email you a link to the renewal quotation. Upon your review, you can make any modifications you require (or simply notify us to make the changes) and easily place your order without having to reenter your requirements each year. For the first year of the contract, ERA will prepare these quotations based on your scopes of accreditations and your preferred analysis schedule. Our system also includes reminders to ensure you don't inadvertently miss your bi-annual study schedule.

While our online ordering system makes ordering products fast and easy, we don't want you to miss out on the value our experienced customer service team provides. Therefore, each order, whether submitted via fax, email, phone, or online, is reviewed by our CSRs and you will be notified if any potential problems are identified.

As stated in Tab 5, ERA will provide onsite training for the City of Austin. Accounts for your facilities are already set up in our system, and we will help you make any modifications necessary and set up user roles.

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Tab 7 – Experience and Qualifications

Founded in 1977, ERA is the oldest and largest provider of PT and QC standards for the U.S. environmental laboratory industry. Not only does ERA maintain all of the necessary and applicable accreditations, we have lead the industry by being the first to obtain accreditations as they have become available, and even helping to develop accreditation programs when none previously existed. To this end, ERA was the first provider audited to the NELAP standards when we were audited by NIST to the NVLAP requirements and A2LA to the NELAP requirements over a two week period under the oversight of state accreditors who were ensuring the consistency of the two assessments.

ERA's accreditation certificates are attached and our complete scopes of accreditations are included with our electronic files (see Attachment I).

ERA currently works with over 12,000 laboratories each year and evaluates 630,000 proficiency testing data points annually. This includes eight of the ten USEPA Regional Laboratories that rely on ERA when they need proficiency testing in their own labs. In addition to being trusted by more U.S. environmental laboratories than any other provider, ERA has been selected as the exclusive provider of many unique, quality-critical special projects:

- Manufacture of proficiency testing samples for the USEPA's UCMR 3 and UCMR 4 Laboratory Approval Programs
- PT provider for the United Nations Global Environmental Monitoring System (GEMS) laboratory evaluation program – includes over 150 participant labs from 60 countries
- Sole provider of mission critical standards for water analysis aboard the International Space Station

The following employees will be assigned to the City of Austin. Employee summaries for these individuals are included in Attachment P.

- Craig Huff, Senior Technical Manager
- Lisa Berry, Manufacturing Manager
- Michael Blades, Technical Manager
- Tom Widera, Technical Manager
- Jennifer Watson, Customer Service Representative
- Curtis Wood, Senior Account Manager

Tab 8 – Customer Support Solutions

ERA prides itself on having the most caring and professional customer service staff in the industry. Our philosophy is that great customer service is not just answering the phone and taking orders, but being proactive to help keep our customers in compliance with their accreditation requirements and notify them of industry and regulatory changes. To ensure the City of Austin LSD receives this superior level of proactive customer support, the following dedicated customer support team will be assigned to your facilities:

Customer Service Representative – Jennifer Watson: Jennifer has been with ERA for over 6 years and has a 19 year background in customer service. Jennifer will be focused on processing and reviewing your orders, ensuring timely delivery, and responding to documentation and support requests.

Account Manager – Curtis Wood: A 24 year ERA employee, Curtis has been intimately involved in the NELAC process since its inception. He will ensure that all aspects of this proposal are fulfilled and maintain regular communication to ensure your continued success and satisfaction.

Some of the proactive measures ERA will employ to ensure a smooth transition for the City of Austin LSD laboratories and maintain an ongoing trouble-free partnership with ERA are:

- Provide onsite training on ERA's product line, online ordering system, and eDATA
- Set up all accounts and create initial orders based on the needs of each lab
- Identify your preferred method of communication for receiving important notifications, i.e. phone, email, text, etc.
- Notify you of changes made to Fields of Proficiency Testing or PT requirements that apply to your accreditations
- Create automatic annual renewals to make the yearly reorder process fast and easy
- Offer technical support for any failed analyte
- Provide free Quik Response corrective action PTs for any failed analyte
- Send reminders of important upcoming dates, i.e. study openings, reordering deadlines and study close dates
- Monitor your account and review orders to provide feedback of potential problems
- Establish annual in-person performance review meetings to discuss any issues, upcoming changes, opportunities for improvement, and any other relevant performance topics
- In addition to being proactive in our communications with you, you will also have access the Jennifer, Curtis and any of our staff for any questions you may have

Tab 9 – Cost Proposal

ERA is proposing the costs outlined on the City of Austin's Cost Proposal Sheet (0600A) attached to this proposal. These costs are reflective of our 2017 list price less a 35% discount. Please also see Attachment G – Pricing Sheet, which includes additional information such as ERA catalog numbers and product descriptions. This pricing sheet also includes additional samples not identified on the City of Austin's Cost Proposal Sheet (0600A) but identified on the City of Austin's Attachment A "List of Proficiency Testing Samples", in the Scope of Work submitted as part of Solicitation MDD0106. ERA will hold this pricing firm through December 31, 2019. Shipping for this contract will be at no charge for UPS Ground service, which is typically 5-7 business days for delivery. If the City of Austin requests delivery of any order quicker than the 5-7 business days, then additional shipping fees will apply. If the City of Austin would like to order additional PT/QC/Calibration standards that are not originally identified as part of this proposal, the 35% discount off of current catalog pricing and free ground shipping will apply.

In addition, ERA will include any Corrective Action QuiK Response sample to remediate an "Unacceptable" result from an ERA PT sample at no charge for the life of the contract.

At the end of 2019, pricing will be set at current catalog pricing less 35%, plus free ground shipping and free corrective action QuiK Response samples. ERA will provide an updated Pricing Sheet for each additional year of the contract.

Tab 10 – Local Business Preference

ERA is not considered to have a Local Business Presence in the City of Austin. ERA is not headquartered or does not maintain a branch office within the Austin Corporate City Limits.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ERA
16341 Table Mountain Parkway
Golden, CO 80403
Mr. Patrick Larson Phone: (303) 464 3577
Email: Patrick_Larson@waters.com

CHEMICAL

Valid To: September 30, 2018 Certificate Number: 1539.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests using the testing technologies indicated and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Methylene Blue Active Substances, Microbiology, Misc.- Electronic Probes (pH, ion selective electrodes, O_2), Oxygen Demand, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, Total Organic Carbon, Turbidity, Gamma Detectors, Liquid Scintillation Detectors, Gas Proportion Detector

Parameter/Analyte	Method
Acidity	730002500
Ammonia	730002510
Anions and DBPs	730002523
Chemical Oxygen Demand (COD)	730002495
Conductivity	730002472 & 730002476
Flashpoint Fluoride	730002526
Haloacetic Acid	730002522
Hexavalent Chromium	730002571 & 730002570
Mercury	730002494
Metals (ICP-AES)	730002524
Metals (ICP-MS)	730002520
Methylene Blue Active Substances (MBAS)	730002521
Microbiology Products Verification	730002504
Oil & Grease	730002567
PCBs	730002497 &730002353
Perchlorate	730002569 &730002562
pH	730002523
Phenolics (simple)	730002501
Radiochemical Analysis	730002490

Parameter/Analyte	Method
Semivolatiles	730002562 & 730002570
(Aliphatic Hydrocarbons, Hydrocarbon Fuels by FID)	
(Aromatic Amines, Aromatics, Haloethers, Nitrosoamines, Nitroaromatics &Cyclic Ketones, Polynuclear Aromatic Hydrocarbons and Phthalate esters by MSD)	
(Chlorinated hydrocarbons by MSD, ECD)	
(Organonitrogen Pesticides and Organophosphorus Pesticides by NPD, ECD)	
(Organochlorine Pesticides, Dioxins and Furans, and Polychlorinated Biphenyls by ECD)	
(Phenolics, Acids, Phthalates, Herbicides, Haloacetic Acids, Carbamates, TOX, Nitroaromatics, Nitrosoamines HPLC with UV, plus PAHs by UV, FLD)	
Settleable Solids	730002503
Specific Conductance	730002508
Sulfide	730002516
Total Alkalinity	730002515
Total and Free Cyanide	730002507
Total and Free Residual Chlorine	730002509 & 730002895
Total Dissolved Solids	730002492
Total Kjeldahl Nitrogen (TKN)	730002498
Total Organic Carbon (TOC)	730002496
Total Petroleum Hydrocarbon	730002563 & 730002352
Total Solids in Water	730002491
Total Settleable Solids	730002503
Total Suspended Solids	730002493
Total Volatile Solids (TVS)	730002502
Turbidity in Water Samples	730002499
Volatiles by GC/MSD	730002564 & 730002565
Anions and DBPs	730002527

Accredited Laboratory

A2LA has accredited

ERA

Golden, CO

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 29th day of March 2017.

President and CEO
For the Accreditation Council
Certificate Number 1539.02
Valid to September 30, 2018

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.

SCOPE OF ACCREDITATION TO THE ISO/IEC 17043:2010

ERA
16341 Table Mountain Parkway
Golden, CO 80403
Mr. Patrick Larson Phone: (303) 464 3577
Email: Patrick_Larson@waters.com

PROFICIENCY TESTING PROVIDER

Valid To: September 30, 2018 Certificate Number: 1539.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this proficiency testing provider for the design, preparation, and operation of PT schemes that meet the requirements of ISO/IEC 17043 and TNI Volume 3: General Requirements For Environmental Proficiency Test Providers (EL-V3-2011) and for the design, preparation and operation of stationary source audit samples (SSAS) schemes that meet the requirements of TNI SSAS Program Standard Volume 1, Module 1 (V1M1-2009)-Rev0.2:

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Metals						
Aluminum	√	√	√			√
Antimony	√	√	√		√	√
Arsenic	√	√	√		√	√
Barium	√	√	√		√	√
Beryllium	√	√	√		√	√
Boron	√	√	√			
Cadmium	√	√	√		√	√
Calcium	√	√	√			√
Chromium (total)	√	√	√		√	√
Chromium (VI)	√	√	√		√	√
Cobalt		√	√		√	√
Copper	√	√	√		√	√
Iron	√	√	√			√
Lead	√	√	√		√	√
Magnesium	√	√	√			√
Manganese	√	√	√		√	√
Mercury	√	√	√		√	√
Molybdenum	√	√	√			√
Nickel	√	√	√		√	√
Potassium	√	√	√			√
Selenium	√	√	√		√	√
Silver	√	√	√		√	√

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Sodium	√	√	√			√
Strontium		√	√			√
Thallium	√	√	√		√	√
Tin		√	√			
Titanium		√	√			
Uranium	√					
Vanadium	√	√	√			√
Zinc	√	√	√		√	√
Nutrients						
Ammonia (as N)		√	√		√	√
Nitrate (as N)	√	√	√			√
Nitrate-nitrite (as N)	√	√				
Nitrite (as N)	√	√				√
Orthophosphate (as P)	√	√	√			√
Total Kjeldahl-nitrogen		√	√			√
Total phosphorus		√	√		√	√
Demands						
Biochemical oxygen demand		√				√
Carbonaceous BOD		√				√
Chemical oxygen demand		√				√
Total organic carbon	√	√	√			√
Minerals						
Alkalinity, total ($CaCO_3$)	√	√				√
Calcium	√	√				
Chloride	√	√	√			√
Fluoride	√	√	√		√	√
Calcium hardness (as $CaCO_3$)	√	√	√			√
Hardness, total ($CaCO_3$)	√	√				√
Magnesium	√	√				
Potassium	√	√				
Sodium	√	√				
Specific conductance (25°C)	√	√				√
Sulfate	√	√	√			√
Sulfide		√				
Total dissolved solids at 180°C	√	√				√
Total solids		√	√			√
Microbiology						
Fecal coliform, MF	√	√				√
Total coliform, MF	√	√				√
Fecal coliform, MPN	√	√				√

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Total coliform, MPN	√	√				√
Total Coliform (p/a)	√					
Fecal coliform/E. coli (p/a)	√					
E. coli (MPN)	√	√				√
E. coli (MF)	√	√				√
Enterococci, MF		√				
Enterococci, MPN		√				
Fecal Streptococcus, MF		√				
Fecal Streptococcus, MPN		√				
Heterotrophic Plate Count	√					
Miscellaneous Analytes						
Acidity (as $CaCO_3$)		√				
Alkalinity (as $CaCO_3$)	√	√				√
Bromate	√					
Bromide	√	√	√			
Ca Hardness (as $CaCO_3$)	√	√				
Chlorate	√					
Chlorite	√					
Color	√	√				
Corrosivity	√		√			
Cyanide	√		√			√
Dissolved organic carbon	√					
HEM		√				
Ignitability			√			
Langelier index	√					
Nitrogen oxide					√	
Non-filterable residue	√	√			√	√
Oil and Grease		√	√			√
Perchlorate	√	√				
pH	√	√	√			√
Reactive cyanide	√		√			
Reactive sulfide			√			
Total residual chlorine	√	√				√
Residual free chlorine	√					
Settleable solids		√				√
SGT-HEM		√				
Silica (as SiO_2)	√	√				
Sulfate	√	√				√
Sulfur Dioxide					√	
Sulfuric Acid					√	
Surfactants-MBAS	√	√				
Total cyanide		√	√			√
Total filterable residue	√	√			√	√
Total Halides					√	

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Total Halogens					√	
Total Hardness (as $CaCO_3$)	√	√				√
Total organic halides (TOX)		√				
Total phenolics (4AAP)		√				√
Total sulfide			√			
Turbidity	√	√				√
UV 254	√					
Volatile solids		√				
Volatiles						
Acetaldehyde					√	
Acetone		√	√		√	
Acetonitrile		√	√		√	
Acrolein		√	√		√	
Acrylonitrile		√			√	
Benzene	√	√	√		√	
Benzaldehyde					√	
Bromobenzene	√		√			
Bromochloromethane	√				√	
Bromodichloromethane	√	√	√		√	
Bromoform	√	√	√		√	
Bromomethane	√	√	√		√	
2-Butanone (MEK)		√	√		√	
Tert-butyl Alcohol	√					
n-Butylbenzene	√					
sec-Butylbenzene	√					
tert-Butylbenzene	√					
Butyraldehyde					√	
Carbon disulfide		√	√		√	
Carbon tetrachloride	√	√	√		√	
Chloroacetaldehyde			√			
Chlorobenzene	√	√	√		√	
Chloroethane	√	√	√		√	
Chlorodibromomethane	√	√	√		√	
2-Chloroethylvinylether		√	√		√	
Chloroform	√	√	√		√	
Chloromethane	√	√	√		√	
1,2-Dibromo-3-chloropropane (DBCP)	√	√	√		√	
2-Chlorotoluene	√					
4-Chlorotoluene	√					
Crotonaldehyde					√	
Cyclohexane					√	
Dibromochloromethane		√				
1,2-Dibromoethane (EDB)		√	√		√	
Dibromomethane	√	√	√		√	
1,2-Dichlorobenzene	√	√	√		√	
1,3-Dichlorobenzene	√	√	√		√	

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
1,4-Dichlorobenzene	√	√	√		√	
Dichlorodifluoromethane	√	√	√		√	
1,1-Dichloroethane	√	√	√		√	
1,2-Dichloroethane	√	√	√		√	
1,1-Dichloroethene		√			√	
Trans-1,2-Dichloroethene					√	
1,1-Dichloroethylene	√		√		√	
cis-1,2-Dichloroethene		√			√	
cis-1,2-Dichloroethylene	√		√		√	
1,2-Dichloropropane	√	√	√		√	
1,3-Dichloropropane	√					
2,2-Dichloropropane	√					
1,1-Dichloropropene	√					
cis-1,3-Dichloropropene	√	√			√	
trans-1,3-Dichloropropene	√	√	√		√	
cis-1,3-Dichloropropylene			√		√	
trans-1,3-Dichloropropylene			√		√	
trans-1,2-Dichloroethylene	√	√	√			
1,2-Dichlorotetraflouroethane (Freon 114)					√	
Di-isopropylether	√					
2,5-Dimethylbenzaldehyde					√	
Ethylbenzene	√	√	√		√	
Ethyl-t-butylether (ETBE)	√		√			
Ethylene dibromide (EDB)	√		√			
p-Ethyltoluene					√	
Formaldehyde	√				√	
Hexaldehyde					√	
n-Hexane					√	
2-Hexanone		√	√		√	
Hexachlorobutadiene	√	√	√		√	
Hexachloroethane		√	√			
Di-n-butylphthalate	√					
Isopropylbenzene	√		√			
4-Isopropyltoluene	√					
Isovaleraldehyde					√	
Methylene chloride	√	√	√		√	
4-Methyl-2-pentanone (MIBK)		√	√		√	
Methyl tert-butyl ether (MTBE)	√	√	√			
Naphthalene	√	√	√		√	
Nitrobenzene			√			
1-Phenylpropane	√					
Propionaldehyde (propanol)					√	
n-Propylbenzene	√					
Propylene					√	

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Pyridine			√			
Styrene	√	√	√		√	
1,1,1,2-Tetrachloroethane	√	√	√		√	
1,1,2,2-Tetrachloroethane	√	√	√		√	
Tetrachloroethene		√			√	
Tetrachloroethylene	√		√		√	
o-Tolualdehyde					√	
m-Tolualdehyde					√	
p-Tolualdehyde					√	
Toluene	√	√	√		√	
2-Amino-1-methylbenzene			√			
1,2,3-Trichlorobenzene	√		√		√	
1,2,4-Trichlorobenzene	√	√	√			
1,1,1-Trichloroethane	√	√	√		√	
1,1,2-Trichloroethane	√	√	√		√	
Trichloroethene		√				
Trichloroethylene	√		√		√	
Trichlorofluoromethane	√	√	√		√	
1,2,3-Trichloropropane	√	√	√		√	
Trichlorotrifluoroethane (Freon 113)	√				√	
1,2,4-Trimethylbenzene	√		√		√	
1,3,5-Trimethylbenzene	√		√		√	
TAME	√		√			
Valeraldehyde (pentanal)					√	
Vinyl acetate		√	√		√	
Vinyl bromide					√	
Vinyl chloride	√	√	√		√	
Xylenes, total	√	√	√		√	
Semivolatiles						
Acenaphthene	√	√	√		√	
Acenaphthylene	√	√	√		√	
Anilene		√	√		√	
Anthracene	√	√	√		√	
Benzidine		√	√		√	
Benzoic acid		√	√		√	
Benzo (a) anthracene	√	√	√		√	
Benzo (b) fluoranthene	√	√	√		√	
Benzo (k) fluoranthene	√	√	√		√	
Benzo (g, h, i) perylene	√	√	√		√	
Benzo (a) pyrene	√	√	√		√	
Benzotrichloride			√			
Benzyl alcohol		√	√		√	
Benzyl chloride			√			
bis(2-chloroethoxy) methane		√	√			
bis (2-chloroethyl) ether		√	√			

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
bis (2-chloroisopropyl) ether		√	√			
4-Bromophenyl-phenylether		√	√		√	
Butylbenzylphthalate	√	√	√			
Carbazole		√	√		√	
4-Chloroanilene		√	√		√	
4-Chloro-3-methylphenol		√	√		√	
1-Chloronaphthalene		√	√		√	
2-Chloronaphthalene		√	√		√	
2-Chlorophenol		√	√		√	
4-Chlorophenylphenyl ether		√	√		√	
Chrysene	√	√	√		√	
Dibenzo (a,h) anthracene	√	√	√		√	
Dibenzofuran		√	√		√	
1,2-Dichlorobenzene		√	√		√	
1,3-Dichlorobenzene		√	√		√	
1,4-Dichlorobenzene		√	√		√	
3,3'-Dichlorobenzidine		√	√		√	
2,4-Dichlorophenol		√	√		√	
2,6-Dichlorophenol		√	√		√	
Diethylphthalate	√	√	√		√	
2,4-Dimethylphenol		√	√		√	
Dimethylphthalate	√	√	√		√	
1,3-Dinitrobenzene		√	√			
1,4-Dinitrobenzene			√			
2,4-Dinitrophenol		√	√		√	
2,4-Dinitrotoluene		√	√		√	
2,6-Dinitrotoluene		√	√		√	
Di-n-butylphalate	√	√	√			
Di-n-octylphthalate	√	√	√		√	
bis (2-ethylhexyl) phthalate		√	√			
di (2-Ethylhexyl) adipate	√					
di (2-Ethylhexyl) phthalate	√		√			
Fluoroanthene	√	√	√		√	
Fluorene	√	√	√		√	
Hexachlorobenzene		√	√		√	
Hexachlorobutadiene		√	√		√	
Hexachloroethane		√	√		√	
Hexachlorocyclopentadiene		√	√		√	
Indeno (1,2,3-cd) pyrene	√	√	√		√	
Isophorone		√	√		√	
2-Methyl-4,6-dinitrophenol		√	√		√	
1-Methylnaphthalene	√					
2-Methylnaphthalene		√	√		√	
2-Methylphenol (o-Cresol)		√	√		√	
3-Methylphenol			√			
4-Methylphenol (p-Cresol)		√	√		√	

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Naphthalene	√	√	√		√	
1,4-Naphthoquinone			√			
2-Nitroaniline		√	√		√	
3-Nitroaniline						
4-Nitroaniline		√	√		√	
Nitrobenzene		√	√		√	
2-Nitrophenol		√	√		√	
3-Nitrophenol		√	√		√	
4-Nitrophenol	√	√	√		√	
4-Nitrophenylphenylether			√			
n-Nitrosodiethylamine		√	√		√	
n-Nitrosodimethylamine		√	√		√	
n-Nitrosodiphenylamine		√	√		√	
n-Nitroso-di-n-propylamine		√	√		√	
Pentachlorobenzene		√	√		√	
Pentachlorohexane			√			
Pentachloronitrobenzene			√			
Pentachlorophenol		√	√		√	
Phenanthrene	√	√	√		√	
Phenol		√	√		√	
Pyrene	√	√	√		√	
Pyridine		√	√		√	
1,2,3,4-Tetrachlorobenzene			√			
1,2,3,5-Tetrachlorobenzene			√			
1,2,4,5-Tetrachlorobenzene		√	√		√	
2,3,4,5-Tetrachlorophenol			√			
2,3,4,6-Tetrachlorophenol		√	√		√	
2,3,5,6-Tetrachlorophenol			√			
o-Toluidine		√	√		√	
1,2,4-Trichlorobenzene		√	√		√	
1,3,5-Trichlorobenzene			√			
2,4,5-Trichlorophenol		√	√		√	
2,4,6-Trichlorophenol		√	√		√	
2,3,4-Trichlorophenyl-4-nitrophenylether			√			
2,3,5-Trichlorophenyl-4-nitrophenylether			√			
2,3,6-Trichlorophenyl-4-nitrophenylether			√			
2,4,5-Trichlorophenyl-4-nitrophenylether			√			
2,4,6-Trichlorophenyl-4-nitrophenylether			√			
3,4,5-Trichlorophenyl-4-nitrophenylether			√			
1,3,5-Trinitrobenzene		√	√			
2-Amino-4,6-dinitrotoluene		√	√			
4-Amino-2,6-dinitrotoluene		√	√			

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
1-Chloro-2,4-dinitrobenzene			√			
1-Chloro-4-nitrobenzene			√			
3,5-Dichloronitrobenzene			√			
Dinitramine			√			
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)		√	√			
1,2-Naphthoquinone			√			
2-Nitrotoluene		√	√			
3-Nitrotoluene		√	√			
4-Nitrotoluene		√	√			
HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)		√	√			
1-Phenylpropane			√			
2,3,7,8-Tetrachloro-dibenzodioxin	√					
2,3,4,5-Tetrachloronitrobenzene			√			
Tetry (methyl-2,4,6-trinitrophenylnitramine)		√	√			
2,4,6-Trinitrotoluene		√	√			
2,4-Dinitrotoluene		√	√			
2,6-Dinitrotoluene		√	√			
Nitrobenzene		√	√			
Organic Disinfection By-Products						
Chloral Hydrate	√					
Bromochloroacetic Acid	√					
Dibromoacetic Acid	√					
Dichloroacetic Acid	√					
Monobromoacetic Acid	√					
Monochloroacetic Acid	√					
Trichloroacetic Acid	√					
PCBs						
PCBs as decachlorobiphenyl	√					
PCB arochlor identification	√					
Arochlor 1016	√	√	√		√	
Arochlor 1221	√	√	√		√	
Arochlor 1232	√	√	√		√	
Arochlor 1242	√	√	√		√	
Arochlor 1248	√	√	√		√	
Arochlor 1254	√	√	√		√	
Arochlor 1260	√	√	√		√	
Arochlor 1016/1242	√	√				

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
PCBs in Oil						
Arochlor 1016		√	√			
Arochlor 1221		√	√			
Arochlor 1232		√	√			
Arochlor 1242		√	√			
Arochlor 1248		√	√			
Arochlor 1254		√	√			
Arochlor 1260		√	√			
Carbamates and Vydate						
3-Hydroxycarbofuran	√	√				
Aldicarb	√	√				
Aldicarb sulfone	√	√				
Aldicarb sulfoxide	√	√				
Baygon	√	√				
Carbaryl	√	√				
Carbofuran	√	√				
Dioxacarb			√			
Diuron		√	√			
Methiocarb	√	√	√			
Methomyl	√	√	√			
Oxamyl (Vydate)	√	√	√			
Promecarb			√			
Propham		√	√			
Pesticides						
Alachlor	√	√				
Aldicarb			√			
Aldicarb sulfone			√			
Aldicarb sulfoxide			√			
Aldrin	√	√	√		√	
Alpha-chlordane		√	√		√	
Ametryn		√				
Anilazine		√				
Atraton		√				
Atrazine	√	√				
Azinphos-methyl (Guthion)		√	√			
alpha-BHC		√	√		√	
beta-BHC		√	√		√	
delta-BHC		√	√		√	
gamma-BHC (Lindane)		√	√		√	
Bromacil	√	√				
Brominal (Bromoxynil)						
Butachlor	√	√				
Butylate		√				
Carbaryl			√			
Carbofuran			√			

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Carbophenothion		√				
Chlordane (technical)	√	√	√			
alpha-Chlordane		√	√			
gamma-Chlordane		√	√			
Chlorothalonil	√					
Chlorpyrifos		√	√			
Cyanazine		√				
DDD (4,4)		√	√		√	
DDE (4,4)		√	√		√	
DDT (4,4)		√	√		√	
Deethyl atrazine		√				
Deisopropyl atrazine		√				
Demeton-o		√	√			
Demeton-s		√	√			
Diaminoatrazine		√				
Diazinon	√	√	√			
Dichlorvos (DDVP)		√	√			
Dieldrin	√	√	√		√	
Dioxathion		√				
Dimethoate	√	√				
Disulfoton		√	√			
Diuron	√	√	√			
Endosulfan I		√	√		√	
Endosulfan II		√	√		√	
Endosulfan sulfate		√	√		√	
Endrin	√	√	√		√	
Endrin aldehyde		√	√		√	
Endrin ketone		√	√		√	
EPTC (Eptam, s-ethyl-dipropyl thiocarbamate)		√				
Enthion		√				
Ethoprop		√				
Famphur		√				
Fenuron		√				
Fluometuron		√				
Fonophos		√				
gamma-BHC (Lindane)		√			√	
gamma-Chlordane		√	√		√	
Heptachlor	√	√	√		√	
Heptachlor epoxide (beta)	√	√	√		√	
Hexachlorobenzene	√					
Hexachlorocyclopentadiene	√					
Hexazinone		√				
3-Hydroxycarbofuran			√			
Lindane	√					
Linuron (Lorox)		√				
Malathion		√	√			
Methoxychlor	√	√	√		√	

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Methyl parathion (Parathion, methyl)		√	√			
Metolachlor	√	√				
Metribuzin	√	√				
Molinate (Odram)	√					
Monuron		√				
Napropamide		√				
Neburon		√				
Parathion, ethyl		√	√			
Phorate		√	√			
Phosmet (Imidan)		√				
Promecarb			√			
Prometon	√	√				
Prometryn	√	√				
Pronamide		√				
Propachlor	√	√				
Propazine		√				
Propham		√				
Propoxur			√			
Ronnel		√	√			
Siduron		√				
Simazine	√	√				
Stirophos		√	√			
Tebuthiuron		√				
Terbacil		√				
Terbufos		√	√			
Thiobencarb	√					
Toxaphene	√	√	√			
Trifluralin (Treflan)	√	√	√			
Herbicides						
Acifluorfen	√	√	√			
Bentazon	√	√	√			
Chloramben	√	√	√			
2,4-D	√	√	√			
Dacthal (DCPA)	√	√	√			
Dalapon	√	√	√			
2,4-DB	√	√	√			
Dicamba	√	√	√			
3,5-Dichlorobenzoic acid	√	√	√			
2,4-DP (Dichlorprop)	√	√	√			
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	√	√	√			
Diquat	√					
Disulfoton		√	√			
Endothall	√					
Glyphosate	√					
5-Hydroxydicamba	√					
MCPA		√	√			

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
MCPP		√	√			
4-Nitrophenol	√	√	√			
Paraquat	√					
Pentachlorophenol	√	√	√			
Picloram	√	√	√			
Chloramben	√	√	√			
2,4,5-TP (Silvex)	√	√	√			
2,4,5-T	√	√	√			

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Petroleum Hydrocarbons / UST Analytes						
Diesel range organics (DRO)		√	√			
Gasoline range organics (GRO)		√	√			
Total petroleum hydrocarbons		√	√			
Alaska BTEX (AK-101)		√	√			
Alaska GRO (AK-101)		√	√			
Alaska DRO (AK-102)		√	√			
Alaska RRO (AK-103)			√			
Arizona No. 2 Diesel (C10-C22)		√	√			
Arizona Oil Range Organics (C22-C32)		√	√			
Arizona TPH (C10-C32)		√	√			
Massachusetts EPH		√	√			
Massachusetts VPH		√	√			
C9-C18 Aliphatic Hydrocarbons		√	√			
C19-C36 Aliphatic Hydrocarbons		√	√			
C11-C22 Aliphatic Hydrocarbons		√	√			
C5-C8 Aliphatic Hydrocarbons		√	√			
C9-C12 Aliphatic Hydrocarbons		√	√			
C9-C10 Aliphatic Hydrocarbons		√	√			
Texas 1005 No. 2 Diesel		√	√			
Texas 1005 Unleaded Gasoline		√	√			
Texas 1005 TPH		√	√			
Washington HEM/SGT-HEM (EPA 1664)		√				
Wisconsin DRO		√	√			
Wisconsin GRO		√	√			
Wisconsin PVOC		√	√			
Radiochemistry						
Gross alpha	√					
Gross Beta	√					
Barium-133	√					
Cesium-134	√					
Cesium-137	√					
Cobalt-60	√					
Zinc-65	√					

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Tritium	√					
Iodine-131	√					
Radium-226	√					
Radium-228	√					
Strontium-89	√					
Strontium-90	√					
Uranium (Natural)	√					
DMRQA WET						
Fathead minnow acute MHSF 20° - LC50		√				√
Fathead minnow acute MHSF 25° - LC50		√				√
Fathead minnow acute 20% DMW 25°- LC50		√				√
Fathead minnow chronic MHSF-survival NOEC		√				√
Fathead minnow chronic MHSF-growth IC25 (ON)		√				√
Fathead minnow chronic MHSF-growth IC25 (SN)		√				√
Fathead minnow chronic MHSF-growth NOEC (ON)		√				√
Fathead minnow chronic MHSF-growth NOEC (SN)		√				√
Fathead minnow chronic 20% DMW-survival NOEC		√				√
Fathead minnow chronic 20% DMW-growth IC25 (ON)		√				√
Fathead minnow chronic 20% DMW-growth IC25 (SN)		√				√
Fathead minnow chronic 20% DMW-growth IC25 (ON)		√				√
Fathead minnow chronic 20% DMW-growth NOEC (ON)		√				√
Fathead minnow chronic 20% DMW-growth NOEC (SN)		√				√
Ceriodaphania acute MHSF 20° -LC50		√				√
Ceriodaphnia acute 20% DMW 20° -LC 50		√				√
Ceriodaphnia acute MHSF 25°-LC50		√				√

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Ceriodaphnia acute 20% DMW 25°-LC50		√				√
Ceriodaphnia chronic MHSF-survival NOEC		√				√
Ceriodaphnia chronic MHSF-reproduction IC25		√				√
Ceriodaphnia chronic MHSF-reproduction NOEC		√				√
Ceriodaphnia chronic 20% DMW-survival NOEC		√				√
Ceriodaphnia chronic 20% DMW-reproduction IC25		√				√
Ceriodaphnia chronic 20% DMW-reproduction NOEC		√				√
Daphnia Magma acute MHSF 25°-LC50		√				√
Daphnia Pulex acute MHSF 20°-LC50		√				√
Daphnia Pulex acute MHSF 25°-LC50		√				√
Mysid acute 40 F 25°-LC50		√				√
Mysid chronic 40 F-Survival NOEC		√				√
Mysid chronic 40 F-Growth IC25 (ON)		√				√
Mysid chronic 40F- Growth IC25 (SN)		√				√
Mysid chronic 40F-Growth NOEC (ON)		√				√
Mysid chronic 40F-Growth NOEC (SN)		√				√
Menidia acute 40 F 25° -LC50		√				√
Sheepshead minnow acute 40 F 25°-LC50		√				√
Sheepshead minnow chronic 40 F -survival NOEC		√				√
Sheepshead minnow chronic 40 F-growth IC25 (ON)		√				√
Sheepshead minnow chronic 40 F-growth IC25 (SN)		√				√
Sheepshead minnow chronic 40 F-growth NOEC (ON)		√				√

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Sheepshead minnow chronic 40 F-growth NOEC (SN)		√				√
Menidia berylina chronic 40F-survival NOEC		√				√
Menidia berylina chronic 40F-growth IC25(ON)		√				√
Menidia berylina chronic 40 F-growth NOEC(ON)		√				√
Inorganics in Impinger Solution						
Sulfur Dioxide				√		
Sulfuric Acid Mist				√		
Oxides of Nitrogen				√		
Fluoride				√		
Hydrogen Chloride				√		
Hydrogen Fluoride				√		
Metals on Glass Fiber Filters						
Antimony				√		
Arsenic				√		
Barium				√		
Beryllium				√		
Cadmium				√		
Chromium				√		
Cobalt				√		
Copper				√		
Lead				√		
Manganese				√		
Nickel				√		
Selenium				√		
Silber				√		
Thallium				√		
Zinc				√		
Mercury				√		
Metals in Impinger Solution						
Antimony				√		
Arsenic				√		
Barium				√		
Beryllium				√		
Cadmium				√		
Chromium				√		
Cobalt				√		
Copper				√		
Lead				√		

Parameter/Analyte[1]	Drinking Water	Non-potable Water	Solid and Chemical Materials	SSAS[2]	Air[3]	DMR-QA[3]
Manganese				√		
Nickel				√		
Selenium				√		
Silber				√		
Thallium				√		
Zinc				√		
Mercury				√		

[1] Assigned values and associated uncertainties are determined by consensus of participants' values, known values, certified reference values or reference values within made to target concentration ranges. These concentration ranges are consistent with the TNI FoPT tables where relevant
[2] TNI Stationary Source Audit Sample Program
[3] Denotes non-TNI PT schemes

Accredited Proficiency Testing Provider

A2LA has accredited

ERA

Golden, CO

This accreditation covers the specific proficiency testing schemes listed on the agreed upon Scope of Accreditation. This provider is accredited in accordance with the recognized International Standard ISO/IEC 17043: 2010 *Conformity assessment - General requirements for proficiency testing*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.

Presented this 29th of March 2017.

President and CEO
For the Accreditation Council
Certificate Number 1539.01
Valid to September 30, 2018

For the proficiency testing schemes to which this accreditation applies, please refer to the provider's Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 34:2009

ERA
16341 Table Mountain Parkway
Golden, CO 80403

Mr. Patrick Larson Phone: (303) 464 3577
Email: Patrick_Larson@waters.com

REFERENCE MATERIAL PRODUCER

Valid To: September 30, 2018 Certificate Number: 1539.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this Reference Material Producer for the production of certified reference materials and reference materials of the following categories:

Category A4: Environmental Reference Materials

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Coliforms		**Waste water, Potable Water**	**MPN, Membrane Filtration**
Total Coliform, MF	20 to 2400 CFU/100 mL		
Total Coliform, MPN	20 to 2400 MPN/100 mL		
Fecal Coliform, MF	20 to 2400 CFU/100 mL		
Fecal Coliform, MPN	20 to 2400 MPN/100 mL		
Enterococci		**Waste water**	**MPN, Membrane Filtration**
Enterococci, MF	20 to 1000 CFU/100 mL		
Enterococci, MPN	20 to 1000 MPN/100 mL		
Fecal Streptococcus (MF)	20 to 1000 CFU/100 mL		
Fecal Streptococcus (MPN)	20 to 1000 MPN/100 mL		
Minerals		**Waste water**	
Alkalinity, total ($CaCO_3$)	10 to 120 mg/L		**Titration**
Chloride	35 to 275 mg/L		**IC**
Fluoride	0.3 to 4 mg/L		**IC**
Potassium	4.0 to 40 mg/L		**ICP**
Sodium	6.0 to 100 mg/L		**ICP**
Specific conductance (25°C)	200 to 930 µmhos/cm		**Conductivity meter**
Sulfate	5.0 to 125 mg/L		**IC**
Total dissolved solids	140 to 650 mg/L		**Gravimetric**

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Total solids	140 to 675 mg/L		**Gravimetric**
Hardness		**Waste water**	
Calcium	3.5 to 110 mg/L		**ICP**
Calcium hardness as $CaCO_3$	8.7 to 275 mg/L		**Calc.**
Hardness, total ($CaCO_3$)	17 to 440 mg/L		**Calc.**
Magnesium	2.0 to 40 mg/L		**ICP**
Non-filterable residue	23 to 100 mg/L		**Gravimetric**
pH		**Waste water**	**pH meter**
pH	5.0 to 10 units		
Solids		**Waste water**	
Total Solids	140 to 675 mg/L		**Gravimetric**
Dissolved Solids	140 to 650 mg/L		**Gravimetric**
Suspended Solids	23 to 100 mg/L		**Gravimetric**
Settleable Solids	5 to 100 mL/L		**Imhoff cone**
Volatile Solids	100 to 500 mg/L		**Gravimetric**
Simple Nutrients		**Waste water**	
Ammonia as N	0.65 to 19 mg/L		**Electrode**
Nitrate as N	0.25 to 40 mg/L		**IC**
Nitrate plus nitrite as N	0.25 to 40 mg/L		**IC**
Orthophosphate as P	0.5 to 5.5 mg/L		**IC**
Complex Nutrients		**Waste water**	
Total Kjeldahl-Nitrogen	1.5 to 35 mg/L		**Electrode**
Total phosphorus	0.5 to 10 mg/L		**ICP**
Nitrite		**Waste water**	
Nitrite as N	0.4 to 4.0 mg/L		**IC**
Oil & Grease		**Waste water**	**Gravimetric**
Oil & grease	20 to 100 mg/L		
Demand		**Waste water**	
5-day BOD	15 to 250 mg/L		**Calculated**
Carbonaceous BOD	15 to 250 mg/L		**Calculated**
COD	30 to 250 mg/L		**Spec.**
TOC	6.0 to 100 mg/L		**TOC meter**

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Trace Metals		**Waste water**	**ICP/ICP-MS**
Aluminum	200 to 4000 µg/L		
Antimony	95 to 900 µg/L		
Arsenic	70 to 900 µg/L		
Barium	100 to 2500 µg/L		
Beryllium	8 to 900 µg/L		
Boron	800 to 2000 µg/L		
Cadmium	8 to 750 µg/L		
Chromium, total	17 to 1000 µg/L		
Cobalt	28 to 1000 µg/L		
Copper	40 to 900 µg/L		
Iron	200 to 4000 µg/L		
Lead	70 to 3000 µg/L		
Manganese	70 to 4000 µg/L		
Molybdenum	60 to 600 µg/L		
Nickel	80 to 3000 µg/L		
Selenium	90 to 2000 µg/L		
Silver	26 to 600 µg/L		
Strontium	30 to 300 µg/L		
Thallium	60 to 900 µg/L		
Vanadium	55 to 2000 µg/L		
Zinc	100 to 2000 µg/L		
Flame AA Trace Metals		**Water**	**ICP/ICP-MS**
Aluminum	800 to 16,000 mg/L		
Antimony	380 to 3,600 mg/L		
Arsenic	280 to 3,600 mg/L		
Barium	400 to 10,000 mg/L		
Beryllium	32 to 3,600 mg/L		
Boron	3200 to 8,000 mg/L		
Cadmium	32 to 3,000 mg/L		
Chromium	68 to 4,000 mg/L		
Cobalt	112 to 4,000 mg/L		
Copper	160 to 3,600 mg/L		
Iron	800 to 16,000 mg/L		
Lead	280 to 12,000 mg/L		
Manganese	280 to 16,000 mg/L		
Molybdenum	240 to 2,400 mg/L		
Nickel	320 to 12,000 mg/L		
Selenium	360 to 8,000 mg/L		
Silver	104 to 2,400 mg/L		
Strontium	120 to 1,200 mg/L		
Thallium	240 to 3,600 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Vanadium	220 to 8,000 mg/L		
Zinc	400 to 8,000 mg/L		
Flame AA Cations		**Water**	**ICP**
Calcium	10 to 200 mg/L		
Magnesium	10 to 200 mg/L		
Potassium	5 to 100 mg/L		
Sodium	10 to 250 mg/L		
Ion Chromatography (Anions)		**Water**	**IC**
Bromide	0.2 to 20 mg/L		
Chloride	0.2 to 20 mg/L		
Fluoride	0.1 to 10 mg/L		
Nitrate as N	0.2 to 20 mg/L		
Phosphate as P	0.5 to 30 mg/L		
Sulfate	0.5 to 30 mg/L		
Mercury		**Waste water**	**CVAA**
Mercury	2.0 to 30 µg/L		
Low-Level Mercury		**Waste water**	**CVAA**
Mercury	1 to 100 ng/L		
Hexavalent Chromium		**Waste water**	**Spec.**
Chromium VI	45 to 880 µg/L		
Tin & Titanium		**Waste water**	**ICP/ICP-MS**
Tin	1000 to 5000 µg/L		
Titanium	80 to 300 µg/L		
High Level Aluminum		**Waste water**	**ICP**
Aluminum	0.1 to 1 mg/L		
Uranium		**Waste water**	**ICP/ICP-MS**
Uranium	25 to 200 µg/L		
Acidity		**Waste water**	**Titration**
Acidity	650 to 1800 mg/L		
Boron		**Waste water**	**ICP/ICP-MS**
Boron	0.8 to 2.0 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Bromide		**Waste water**	**IC**
Bromide	1.0 to 10 mg/L		
Total Residual Chlorine		**Waste water**	**Titration**
Total Residual Chlorine	0.5 to 3.0 mg/L		
Low-Level Total Residual Chlorine		**Waste water**	**Titration**
Residual Chlorine	20 to 250 µg/L		
Color		**Waste water**	**ICP**
Color	10 to 75 Color Units		
Total Cyanide		**Waste water**	**Spec.**
Total Cyanide	0.1 to 1 mg/L		
Total Organic Halides (TOX)		**Waste water**	**HPLC**
Total Organic Halides (TOX)	300 to 1500 µg/L		
Total Phenolics		**Waste water**	**4AAP**
Total Phenolics (4AAP)	0.06 to 5 mg/L		
Silica		**Waste water**	**ICP**
Silica as SiO_2	50 to 250 mg/L		
Sulfide		**Waste water**	**Titration**
Sulfide	1.0 to 10 mg/L		
Surfactants-MBAS		**Waste water**	**Spec**
Surfactants (MBAS)	0.2 to 1.0 mg/L		
Turbidity		**Waste water**	**Turbidimeter**
Turbidity	1.0 to 20 NTU		
Volatiles		**Waste water**	**GC/MS**
Acetone	5 to 200 µg/L		
Acetonitrile	5 to 200 µg/L		
Acrolein	5 to 200 µg/L		
Acrylonitrile	5 to 200 µg/L		
Benzene	8.0 to 120 µg/L		
Bromodichloromethane	8.0 to 115 µg/L		
Bromoform	11 to 100 µg/L		
Bromomethane	20 to 100 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
2-Butanone (MEK)	5 to 200 µg/L		
Carbon disulfide	5 to 200 µg/L		
Carbontetrachloride	10 to 140 µg/L		
Chlorobenzene	10 to 120 µg/L		
Chlorodibromomethane	11 to 140 µg/L		
Chloroethane	20 to 100 µg/L		
2-Chloroethylvinylether	5 to 200 µg/L		
Chloroform	12 to 95 µg/L		
Chloromethane	20 to 10 µg/L		
1,2-Dibromo-3-chloropropane (DBCP)	5 to 200 µg/L		
1,2-Dibromoethane (EDB)	5 to 200 µg/L		
Dibromomethane	5 to 200 µg/L		
1,2-Dichlorobenzene	8.0 to 100 µg/L		
1,3-Dichlorobenzene	9.0 to 125 µg/L		
1,4-Dichlorobenzene	8.0 to 115 µg/L		
Dichlorodifluoromethane	5 to 200 µg/L		
1,1-Dichloroethane	15 to 150 µg/L		
1,2-Dichloroethane	10 to 150 µg/L		
1,1-Dichloroethene	11 to 120 µg/L		
cis-1,2-Dichloroethene	15 to 150 µg/L		
trans-1,2-Dichloroethene	10 to 150 µg/L		
1,2-Dichloropropane	10 to 150 µg/L		
cis-1,3-Dichloropropene	15 to 100 µg/L		
trans-1,3-Dichloropropene	8.0 to 90 µg/L		
Ethylbenzene	9.0 to 100 µg/L		
Hexachlorobutadiene	50 to 180 µg/L		
2-Hexanone	20 to 150 µg/L		
Methylene Chloride	10 to 125 µg/L		
4-Methyl-2-pentanone (MIBK)	20 to 200 µg/L		
Methyl-tert-butylether (MTBE)	15 to 100 µg/L		
Naphthalene	30 to 190 µg/L		
Styrene	20 to 100 µg/L		
1,1,1,2-Tetrachloroethane	5 to 200 µg/L		
1,1,2,2-Tetrachloroethane	10 to 150 µg/L		
Tetrachloroethene	10 to 150 µg/L		
Toluene	7.0 to 100 µg/L		
1,2,4-Trichlorobenzene	35 to 180 µg/L		
1,1,1-Trichloroethane	10 to 90 µg/L		
1,1,2-Trichloroethane	25 to 150 µg/L		
Trichloroethene	10 to 95 µg/L		
Trichlorofluoromethane (Freon 11)	20 to 100 µg/L		
1,2,3-Trichloropropane	5 to 200 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Vinyl acetate	5 to 200 µg/L		
Vinyl chloride	20 to 100 µg/L		
Xylenes, total	20 to 300 µg/L		
Base/Neutrals		**Waste water**	**GC**
Acenaphthene	10 to 200 µg/L		
Acenaphthylene	10 to 200 µg/L		
Aniline	10 to 200 µg/L		
Anthracene	10 to 200 µg/L		
Benzidine	200 to 1000 µg/L		
Benzo(a)anthracene	10 to 200 µg/L		
Benzo(b)fluoranthene	20 to 125 µg/L		
Benzo(k)fluoranthene	25 to 200 µg/L		
Benzo(g,h,i)perylene	20 to 200 µg/L		
Benzo(a)pyrene	20 to 160 µg/L		
Benzyl alcohol	10 to 200 µg/L		
4-Bromophenyl-phenylether	20 to 200 µg/L		
Butylbenzylphthalate	50 to 200 µg/L		
Carbazole	10 to 200 µg/L		
4-Chloroaniline	10 to 200 µg/L		
Bis(2-chloroethoxy)methane	10 to 200 µg/L		
Bis(2-chloroethyl)ether	10 to 200 µg/L		
Bis(2-chloroisopropyl)ether	30 to 200 µg/L		
Bis(2-ethylhexyl)phthalate	20 to 200 µg/L		
1-Chloronaphthalene	10 to 200 µg/L		
2-Chloronaphthalene	20 to 200 µg/L		
4-Chlorophenyl-phenylether	25 to 200 µg/L		
Chrysene	10 to 200 µg/L		
Dibenz(a,h)anthracene	20 to 100 µg/L		
Dibenzofuran	30 to 125 µg/L		
Di-n-butylphthalate	40 to 180 µg/L		
1,2-Dichlorobenzene	30 to 150 µg/L		
1,3-Dichlorobenzene	30 to 150 µg/L		
1,4-Dichlorobenzene	30 to 150 µg/L		
3,3'-Dichlorobenzidine	60 to 200 µg/L		
Diethyl phthalate	65 to 170 µg/L		
Dimethyl phthalate	100 to 180 µg/L		
2,4-Dinitrotoluene	20 to 190 µg/L		
2,6-Dinitrotoluene	20 to 190 µg/L		
Di-n-octylphthalate	40 to 190 µg/L		
Fluoranthene	30 to 190 µg/L		
Fluorene	30 to 190 µg/L		
Hexachlorobenzene	20 to 190 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Hexachlorobutadiene	50 to 180 µg/L		
Hexachlorocyclopentadiene	100 to 225 µg/L		
Hexachloroethane	50 to 190 µg/L		
Indeno(1,2,3-cd)pyrene	30 to 125 µg/L		
Isophorone	30 to 140 µg/L		
2-Methylnaphthalene	30 to 190µg/L		
Naphthalene	30 to 190 µg/L		
2-Nitroaniline	10 to 200 µg/L		
3-Nitroaniline	10 to 200 µg/L		
4-Nitroaniline	10 to 200 µg/L		
Nitrobenzene	20 to 190 µg/L		
N-Nitrosodiethylamine	10 to 200 µg/L		
N-Nitrosodimethylamine (NDMA)	75 to 200 µg/L		
N-Nitrosodiphenylamine	30 to 200 µg/L		
N-Nitroso-di-n-propylamine	30 to 140 µg/L		
Pentachlorobenzene	10 to 200 µg/L		
Phenanthrene	30 to 140 µg/L		
Pyrene	30 to 200 µg/L		
Pyridine	10 to 200 µg/L		
o-Toluidine	10 to 200 µg/L		
1,2,4,5-Tetrachlorobenzene	10 to 200 µg/L		
1,2,4-Trichlorobenzene	35 to 180 µg/L		
Acids		**Waste water**	**HPLC**
Benzoic Acid	30 to 200 µg/L		
4-Chloro-3-methylphenol	30 to 200 µg/L		
2-Chlorophenol	30 to 200 µg/L		
2,4-Dichlorophenol	40 to 190 µg/L		
2,6-Dichlorophenol	40 to 190 µg/L		
2,4-Dimethylphenol	65 to 200 µg/L		
2,4-Dinitrophenol	100 to 180 µg/L		
2-Methyl-4,6-dinitrophenol	60 to 200 µg/L		
2-Methylphenol (o-Cresol)	50 to 200 µg/L		
4-Methylphenol (p-Cresol)	50 to 200 µg/L		
2-Nitrophenol	50 to 190 µg/L		
4-Nitrophenol	100 to 180 µg/L		
Pentachlorophenol	55 to 200 µg/L		
Phenol	100 to 200 µg/L		
2,3,4,6-Tetrachlorophenol	30 to 200 µg/L		
2,4,5-Trichlorophenol	50 to 200 µg/L		
2,4,6-Trichlorophenol	50 to 200 µg/L		
Low-Level Nitroaromatics &		**Waste water**	**HPLC**

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Nitramines			
4-Amino-2,6-dinitrotoluene	1.0 to 20 µg/L		
2-Amino-4,6-dinitrotoluene	1.0 to 20 µg/L		
1,3-Dinitrobenzene	1.0 to 20 µg/L		
2,4-Dinitrotoluene	1.0 to 20 µg/L		
2,6-Dinitrotoluene	1.0 to 20 µg/L		
HMX	1.0 to 20 µg/L		
Nitrobenzene	1.0 to 20 µg/L		
2-Nitrotoluene	1.0 to 20 µg/L		
3-Nitrotoluene	1.0 to 20 µg/L		
4-Nitrotoluene	1.0 to 20 µg/L		
RDX	1.0 to 20 µg/L		
Tetryl	1.0 to 20 µg/L		
1,3,5-Trinitrobenzene	1.0 to 20 µg/L		
2,4,6-Trinitrotoluene	1.0 to 20 µg/L		
Low-Level PAHs		**Waste water**	**HPLC**
Acenaphthene	2.0 to 10 µg/L		
Acenaphthylene	2.0 to 10 µg/L		
Anthracene	0.5 to 2.0 µg/L		
Benzo(a)anthracene	0.3 to 2.0 µg/L		
Benzo(b)fluoranthene	0.3 to 2.0 µg/L		
Benzo(k)fluoranthene	0.3 to 2.0 µg/L		
Benzo(g,h,i)perylene	0.3 to 2.0 µg/L		
Benzo(a)pyrene	0.5 to 2.0 µg/L		
Chrysene	0.3 to 2.0 µg/L		
Dibenz(a,h)anthracene	0.5 to 2.0 µg/L		
Fluoranthene	0.3 to 2.0 µg/L		
Fluorene	2.0 to 10 µg/L		
Indeno(1,2,3-cd)pyrene	0.5 to 2.0 µg/L		
Naphthalene	2.0 to 10 µg/L		
Phenanthrene	0.3 to 2.0 µg/L		
Pyrene	0.3 to 2.0 µg/L		
Chlorinated Acid Herbicides		**Waste water**	**HPLC**
Acifluorfen	2 to 10 µg/L		
Bentazon	2 to 10 µg/L		
Chloramben	2 to 10 µg/L		
2,4-D	2 to 10 µg/L		
2,4-DB	2 to 10 µg/L		
DCPA	2 to 10 µg/L		
Dalapon	2 to 10 µg/L		
Dicamba	2 to 10 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
3,5-Dichlorobenzoic acid	2 to 10 µg/L		
Dichlorprop	2 to 10 µg/L		
Dinoseb	2 to 10 µg/L		
MCPA	10 to 100 µg/L		
MCPP	10 to 100 µg/L		
4-Nitrophenol	2 to 10 µg/L		
Pentachlorophenol	2 to 10 µg/L		
Picloram	2 to 10 µg/L		
2,4,5-T	2 to 10 µg/L		
2,4,5-TP (Silvex)	2 to 10 µg/L		
PCBs in Water		**Waste water**	**GC**
Aroclor 1016	0.5 to 20 µg/L		
Aroclor 1221	0.5 to 20 µg/L		
Aroclor 1232	0.5 to 20 µg/L		
Aroclor 1242	0.5 to 20 µg/L		
Aroclor 1248	0.5 to 20 µg/L		
Aroclor 1254	0.5 to 20 µg/L		
Aroclor 1260	0.5 to 20 µg/L		
Organochlorine Pesticides		**Waste water**	**GC**
Aldrin	0.5 to 15.0 µg/L		
alpha-BHC	2.0 to 15 µg/L		
beta-BHC	2.0 to 15 µg/L		
delta-BHC	2.0 to 15 µg/L		
gamma-BHC (Lindane)	2.0 to 15 µg/L		
alpha-Chlordane	1.0 to 9.8 µg/L		
gamma-Chlordane	1.2 to 7.8 µg/L		
DDD (4,4)	2.0 to 10.0 µg/L		
DDE (4,4)	2.0 to 10.0 µg/L		
DDT (4,4)	1.0 to 10 µg/L		
Dieldrin	1.0 to 13 µg/L		
Endosulfan I	4.0 to 17 µg/L		
Endosulfan II	4.0 to 20 µg/L		
Endosulfan sulfate	2.0 to 20 µg/L		
Endrin	2.0 to 20 µg/L		
Endrin aldehyde	4.0 to 20 µg/L		
Endrin ketone	2.0 to 10 µg/L		
Heptachlor	1.0 to 10 µg/L		
Heptachlor Epoxide (beta)	1.0 to 10 µg/L		
Methoxychlor	2.0 to 15 µg/L		
Chlordane		**Waste water**	**GC**

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Chlordane (total)	3.0 to 25 µg/L		
Toxaphene		**Waste water**	**GC**
Toxaphene	20 to 100 µg/L		
Carbamate Pesticides		**Waste water**	**HPLC**
Aldicarb	5 to 200 µg/L		
Aldicarb sulfone	5 to 200 µg/L		
Aldicarb sulfoxide	5 to 200 µg/L		
Baygon	5 to 200 µg/L		
Carbaryl	5 to 200 µg/L		
Carbofuran	5 to 200 µg/L		
Diuron	5 to 200 µg/L		
3-Hydroxycarbofuran	5 to 200 µg/L		
Methiocarb	5 to 200 µg/L		
Methomyl	5 to 200 µg/L		
Oxamyl (vydate)	5 to 200 µg/L		
Propham	5 to 200 µg/L		
Nitrogen Pesticides		**Waste water**	**GC**
Alachlor	2 to 20 µg/L		
Atrazine	2 to 20 µg/L		
Bromacil	2 to 20 µg/L		
Butachlor	2 to 20 µg/L		
Butylate	2 to 20 µg/L		
Cyanazine	2 to 20 µg/L		
Deethyl atrazine	2 to 20 µg/L		
Deisopropyl atrazine	2 to 20 µg/L		
EPTC (Eptam)	2 to 20 µg/L		
Metolachlor	2 to 20 µg/L		
Metribuzin	2 to 20 µg/L		
Napropamide	2 to 20 µg/L		
Prometon	2 to 20 µg/L		
Prometryn	2 to 20 µg/L		
Propachlor	2 to 20 µg/L		
Simazine	2 to 20 µg/L		
Trifluralin	2 to 20 µg/L		
Organophosphorus Pesticides (OPP)		**Waste water**	**GC**
Azinphos methyl	3.6 to 13.8 µg/L		
Carbophenothion	2 to 20 µg/L		
Chlorpyrifos	2 to 20 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Demeton-O	2 to 20 µg/L		
Demeton-S	2 to 20 µg/L		
Diazinon	2.0 to 15 µg/L		
Dichlorvos	2 to 20 µg/L		
Dimethoate	2 to 20 µg/L		
Dioxathion	2 to 20 µg/L		
Disulfoton	2.0 to 15 µg/L		
Ethion	2 to 20 µg/L		
Ethoprop	2 to 20 µg/L		
Ethyl parathion	3.0 to 20 µg/L		
Famphur	2 to 20 µg/L		
Fonofos	2 to 20 µg/L		
Malathion	2.0 to 20 µg/L		
Methyl parathion	2 to 20 µg/L		
Phorate	2 to 20 µg/L		
Phosmet	2 to 20 µg/L		
Ronnel	2 to 20 µg/L		
Stirophos	2 to 20 µg/L		
Terbufos	2 to 20 µg/L		
BTEX & MTBE in Water		**Waste water**	**GC**
Benzene	8 to 120 µg/L		
Ethylbenzene	9 to 100 µg/L		
Toluene	7 to 100 µg/L		
Xylenes, total	20 to 300 µg/L		
Methyl-tert-butylether (MTBE)	15 to 100 µg/L		
Gasoline Range Organics (GRO) in Water		**Waste water**	**GC**
Gasoline Range Organics (GRO)	200 to 4,000 µg/L		
Benzene in GRO	1 to 1,000 µg/L		
Ethylbenzene in GRO	1 to 1,000 µg/L		
Toluene in GRO	1 to 1,000 µg/L		
Xylenes, total, in GRO	1 to 1,000 µg/L		
Diesel Range Organics (DRO) in Water		**Waste water**	**GC**
Diesel Range Organics	500 to 4,000 µg/L		
TPH in Water		**Waste water**	**Gravimetric**
Total Petroleum Hydrocarbons	20 to 170 mg/L		
Massachusetts VPH in Water		**Waste water**	**GC**
Total Hydrocarbons as VPH	200 to 4,000 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
C_5-C_8 Aliphatic Hydrocarbons	2 to 2,000 µg/L		
C_9-C_{12} Aliphatic Hydrocarbons	2 to 2,000 µg/L		
C_9-C_{10} Aromatic Hydrocarbons	2 to 2,000 µg/L		
Benzene in VPH	1 to 1,000 µg/L		
Ethylbenzene in VPH	1 to 1,000 µg/L		
Methyl-tert-butylether (MTBE) in VPH	1 to 1,000 µg/L		
Naphthalene in VPH	1 to 1,000 µg/L		
Toluene in VPH	1 to 1,000 µg/L		
o-Xylene in VPH	1 to 1,000 µg/L		
m&p-Xylene in VPH	1 to 1,000 µg/L		
Xylenes, total in VPH	1 to 1,000 µg/L		
Massachusetts EPH in Water		**Waste water**	**GC**
Total Hydrocarbons as EPH	500 to 4,000 µg/L		
C_9-C_{18} Aliphatic Hydrocarbons	10 to 3,200 µg/L		
C_{19}-C_{36} Aliphatic Hydrocarbons	10 to 3,200 µg/L		
C_{11}-C_{22} Aromatic Hydrocarbons	10 to 3,200 µg/L		
Acenaphthene in EPH	1 to 40 µg/L		
Acenaphthylene in EPH	1 to 40 µg/L		
Anthracene in EPH	1 to 40 µg/L		
Benzo(a)anthracene in EPH	1 to 40 µg/L		
Benzo(b)fluoranthene in EPH	1 to 40 µg/L		
Benzo(k)fluoranthene in EPH	1 to 40 µg/L		
Benzo(g,h,i)perylene in EPH	1 to 40 µg/L		
Benzo(a)pyrene in EPH	1 to 40 µg/L		
Chrysene in EPH	1 to 40 µg/L		
Dibenz(a,h)anthrecene in EPH	1 to 40 µg/L		
Fluoranthene in EPH	1 to 40 µg/L		
Fluorene in EPH	1 to 40 µg/L		
Indeno(1,2,3-cd)pyrene in EPH	1 to 40 µg/L		
2-Methylnaphthalene in EPH	1 to 40 µg/L		
Naphthalene in EPH	1 to 40 µg/L		
Phenanthrene in EPH	1 to 40 µg/L		
Pyrene in EPH	1 to 40 µg/L		
Texas Low-Level Fuels (TPH) in Water		**Waste water**	**GC**
No. 2 Diesel	1 to 10 mg/L		
Unleaded gasoline	1 to 10 mg/L		
Total petroleum hydrocarbons	5 to 10 mg/L		
Texas High-Level Fuels (TPH) in Water		**Waste water**	**GC**
No. 2 Diesel	5 to 100 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Unleaded gasoline	5 to 100 mg/L		
Total petroleum hydrocarbons	20 to 100 mg/L		
Washington TPH in Water		**Waste water**	**Gravimetric**
HEM	5 to 100 mg/L		
SGT-HEM	5 to 100 mg/L		
Wisconsin GRO/PVOC in Water		**Waste water**	**GC**
GRO	200 to 600 µg/L		
Benzene	20 to 75 µg/L		
Ethylbenzene	20 to 75 µg/L		
Methyl tert-butyl ether	20 to 75 µg/L		
Toluene	20 to 75 µg/L		
1,2,4-Trimethylbenzene	20 to 75 µg/L		
1,3,5-Trimethylbenzene	20 to 75 µg/L		
m&p-Xylene	40 to 130 µg/L		
o-Xylene	20 to 75 µg/L		
Xylenes, total	60 to 150 µg/L		
Naphthalene	20 to 75 µg/L		
Wisconsin DRO in Water		**Waste water**	**GC**
DRO	200 to 600 µg/L		
WS Coliform MicrobE™		**Potable water**	**Colilert**
Total Coliform	Presence/Absence +/-		
Fecal Coliform/*E. coli*	Presence/Absence +/-		
Heterotrophic Plate Count		**Potable water**	**Pour Plate and MPN**
Heterotrophic Plate Count	5 to 500 CFU/mL		
SourceWatR™ *E. coli*		**Potable water**	**Membrane Filtration and MPN**
E. coli	10 to 300 CFU/100 mL		
Hardness		**Potable water**	
Total Hardness as $CaCO_3$	83 to 307 mg/L		**Calculated**
Calcium Hardness as $CaCO_3$	75 to 375 mg/L		**Calculated**
Calcium	30 to 90 mg/L		**ICP**
Magnesium	2.0 to 20.0 mg/L		**ICP**
Sodium	12 to 24 mg/L		**ICP**
Inorganics		**Potable water**	
Alkalinity (as $CaCO_3$)	25 to 200 mg/L		**Titration**
Chloride	5 to 100 mg/L		**IC**

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Fluoride	1 to 8 mg/L		**IC**
Nitrate as N	3 to 10 mg/L		**IC**
Nitrate plus Nitrite as N	3.5 to 9.0 mg/L		**IC**
Potassium	10 to 40 mg/L		**ICP**
Specific Conductance	250 to 2500 µmhos		**Conductivity meter**
Sulfate	5 to 500 mg/L		**IC**
Total Filterable Residue	200 to 450 mg/L		**gravimentric**
pH		**Potable water**	**pH meter**
pH	5 to 10 units		
Metals		**Potable water**	**ICP/ICP-MS**
Aluminum	130 to 2500 µg/L		
Antimony	6 to 50 µg/L		
Arsenic	5 to 50 µg/L		
Barium	500 to 3000 µg/L		
Beryllium	1 to 10 µg/L		
Boron	800 to 2000 µg/L		
Cadmium	2 to 50 µg/L		
Chromium	10 to 200 µg/L		
Copper	50 to 2000 µg/L		
Iron	100 to 1800 µg/L		
Lead	5 to 100 µg/L		
Manganese	40 to 900 µg/L		
Molybdenum	15 to 130 µg/L		
Nickel	10 to 500 µg/L		
Selenium	10 to 100 µg/L		
Silver	20 to 300 µg/L		
Thallium	2 to 10 µg/L		
Vanadium	315 to 2500 µg/L		
Zinc	400 to 2500 µg/L		
Mercury		**Potable water**	**CVAA**
Mercury	0.5 to 10 µg/L		
Hexavalent Chromium		**Potable water**	**Spec.**
Chromium (VI)	5 to 50 µg/L		
Uranium		**Potable water**	**ICP/ICP-MS**
Uranium	3 to 104 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Vanadium		**Potable water**	**ICP/ICP-MS**
Vanadium	12.4 to 13.9 µg/L		
Bromide, Bromate & Chlorate		**Potable water**	**IC**
Bromate	7 to 50 µg/L		
Bromide	75 to 500 µg/L		
Chlorate	60 to 180 µg/L		
Chlorite		**Potable water**	**IC**
Chlorite	100 to 1000 µg/L		
Nitrite		**Potable water**	**IC**
Nitrite as N	0.4 to 2 mg/L		
o-Phosphate Nutrients		**Potable water**	**IC**
o-Phosphate as P	0.5 to 5.5 mg/L		
Residual Chlorine		**Potable water**	**Titration**
Free Residual Chlorine	0.5 to 3.0 mg/L		
Total Residual Chlorine	0.5 to 3.0 mg/L		
Cyanide		**Potable water**	**Spec.**
Cyanide	0.1 to 0.5 mg/L		
Organic Carbon		**Potable water**	
Dissolved Organic Carbon (DOC)	1.2 to 4.9 mg/L		
Total Organic Carbon	1.2 to 4.9 mg/L		**TOC meter**
Perchlorate		**Potable water**	**IC**
Perchlorate	4 to 20 µg/L		
Silica		**Potable water**	**ICP**
Silica as SiO_2	5 to 50 mg/L		
Surfactants-MBAS		**Potable water**	**Spec.**
MBAS	0.05 to 1.0 mg/L		
Corrosivity		**Potable water**	**Calculated**
Corrosivity	-4 to +4 s.i. units		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Turbidity		**Potable water**	**Turbidity meter**
Turbidity	0.5 to 8 NTU		
UV 254 Absorbance		**Potable water**	**Spec.**
UV 254 Absorbance	0.02 to 0.7 cm-1		
Gasoline Additives		**Potable water**	**GC**
T-amylmethylether (TAME)	5 to 50 µg/L		
tert-Butyl alcohol	5 to 50 µg/L		
Ethyl-t-butylether (ETBE)	5 to 50 µg/L		
Di-isopropylether (DIPE)	5 to 50 µg/L		
Methyl-tert-butylether (MTBE)	5 to 50 µg/L		
Trichlorotrifluoroethane (Freon 113)	5 to 50 µg/L		
Trichlorofluoromethane (Freon 11)	5 to 50 µg/L		
Halomethanes (THMs)		**Potable water**	**GC**
Bromodichloromethane	10 to 50 µg/L		
Bromoform	10 to 50 µg/L		
Chlorodibromomethane	10 to 50 µg/L		
Chloroform	10 to 50 µg/L		
Regulated Volatiles		**Potable water**	**GC**
Benzene	2.5 to 20 µg/L		
Carbon Tetrachloride	2.5 to 20 µg/L		
Chlorobenzene	2 to 50 µg/L		
1,2-Dichlorobenzene	5 to 50 µg/L		
1,4-Dichlorobenzene	2.5 to 20 µg/L		
1,2-Dichloroethane	2 to 20 µg/L		
1,1-Dichloroethylene	2 to 20 µg/L		
Cis-1,2-Dichloroethylene	2 to 50 µg/L		
Trans-1,2-Dichloroethylene	2 to 50 µg/L		
Dichloromethane (Methylene Chloride)	5 to 50 µg/L		
1,2-Dichloropropane	2.5 to 20 µg/L		
Ethylbenzene	2 to 20 µg/L		
Styrene	2 to 20 µg/L		
Tetrachloroethylene	2 to 20 µg/L		
Toluene	2 to 20 µg/L		
1,2,4-Trichlorobenzene	2 to 20 µg/L		
1,1,1-Trichloroethane	2 to 20 µg/L		
1,1,2-Trichloroethane	2 to 20 µg/L		
Trichloroethylene	2 to 20 µg/L		
Vinyl Chloride	1 to 50 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Total Xylenes	2 to 50 µg/L		
Unregulated Volatiles		**Potable water**	**GC**
Bromobenzene	5 to 50 µg/L		
Bromochloromethane	5 to 50 µg/L		
Bromomethane	5 to 50 µg/L		
n-Butylbenzene	5 to 50 µg/L		
Sec-Butylbenzene	5 to 50 µg/L		
tert-Butylbenzene	5 to 50 µg/L		
Chloroethane	5 to 50 µg/L		
Chloromethane	5 to 50 µg/L		
2-Chlorotoluene	5 to 50 µg/L		
4-Chlorotoluene	5 to 50 µg/L		
Dibromomethane	5 to 50 µg/L		
1,3-Dichlorobenzene	5 to 50 µg/L		
Dichlorodifluoromethane	5 to 50 µg/L		
1,1-Dichloroethane	5 to 50 µg/L		
1,3-Dichloropropane	5 to 50 µg/L		
2,2-Dichloropropane	5 to 50 µg/L		
1,1-Dichloropropene	5 to 50 µg/L		
Cis-1,3-Dichloropropene	5 to 50 µg/L		
Trans-1,3-Dichloropropene	5 to 50 µg/L		
Hexachlorobutadiene	5 to 50 µg/L		
Isopropylbenzene	5 to 50 µg/L		
4-Isopropyltoluene	5 to 50 µg/L		
Methyl-tert-butylether (MTBE)	5 to 50 µg/L		
Naphthalene	2 to 50 µg/L		
n-Propylbenzene	5 to 50 µg/L		
1,1,1,2-Tetrachloroethane	5 to 50 µg/L		
1,1,2,2-Tetrachloroethane	5 to 50 µg/L		
1,2,3-Trichlorobenzene	5 to 50 µg/L		
Trichlorofluoromethane	5 to 50 µg/L		
1,2,3-Trichloropropane	5 to 50 µg/L		
1,2,4-Trimethylbenzene	5 to 50 µg/L		
1,3,5-Trimethylbenzene	5 to 50 µg/L		
Chloral Hydrate		**Potable water**	**GC**
Chloral Hydrate	4 to 30 µg/L		
Haloacetic Acids (HAA)		**Potable water**	**HPLC**
Bromochloroacetic Acid	10 to 50 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Dibromoacetic Acid	10 to 50 µg/L		
Dichloroacetic Acid	10 to 50 µg/L		
Monobromoacetic Acid	10 to 50 µg/L		
Monochloroacetic Acid	10 to 50 µg/L		
Trichloroacetic Acid	10 to 50 µg/L		
Dioxin		**Potable water**	**GC**
2,3,7,8-Tetrachloro-dibenzodioxin	25 to 80 pg/L		
PCBs		**Potable water**	**GC**
PCBs as decachlorobiphenyl	0.5 to 5 µg/L		
Aroclor 1016	0.26 to 2.6 µg/L		
Aroclor 1221	0.19 to 1.9 µg/L		
Aroclor 1232	0.23 to 2.3 µg/L		
Aroclor 1242	0.26 to 2.6 µg/L		
Aroclor 1248	0.3 to 3 µg/L		
Aroclor 1254	0.33 to 3.3 µg/L		
Aroclor 1260	0.36 to 3.6 µg/L		
Regulated Semivolatiles #1		**Potable water**	**HPLC**
Acenaphthene	1 to 10 µg/L		
Acenaphthylene	1 to 10 µg/L		
Anthracene	1 to 10 µg/L		
Benzo(a)anthracene	1 to 10 µg/L		
Benzo(b)fluoranthene	1 to 10 µg/L		
Benzo(k)fluoranthene	1 to 10 µg/L		
Benzo(g,h,i)perylene	1 to 10 µg/L		
Benzo(a)pyrene	0.2 to 2.5 µg/L		
Butylbenzylphthalate	10 to 50 µg/L		
Chyrsene	1 to 10 µg/L		
Dibenz(a,h)anthracene	1 to 10 µg/L		
Di-n-butylphthalate	10 to 50 µg/L		
Diethylphthalate	10 to 50 µg/L		
Dimethylphthalate	10 to 50 µg/L		
Di-n-octylphthalate	10 to 50 µg/L		
bis(2-Ethylhexyl) Adipate	8 to 50 µg/L		(GC)
bis(2-Ethylhexyl) Phthalate	9 to 50 µg/L		
Fluoranthene	1 to 10 µg/L		
Fluorene	1 to 10 µg/L		
Indeno(1,2,3-cd)pyrene	1 to 10 µg/L		
Naphthalene	2 to 50 µg/L		
Phenanthrene	1 to 10 µg/L		
Pyrene	1 to 10 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Chlorinate Acid Herbicides		**Potable water**	**HPLC**
Acifluorfen	15 to 50 µg/L		
Bentazon	10 to 140 µg/L		
Chloramben	20 to 100 µg/L		
2,4-D	5 to 150 µg/L		
2,4-DB	15 to 100 µg/L		
DCPA	20 to 100 µg/L		
Dalapon	10 to 150 µg/L		
Dicamba	5 to 100 µg/L		
3,5-Dichlorobenzoic acid	10 to 100 µg/L		
Dichlorprop	10 to 100 µg/L		
Dinoseb	6 to 50 µg/L		
4-Nitrophenol	5 to 150 µg/L		
Pentachlorophenol	1 to 100 µg/L		
Picloram	10 to 70 µg/L		
2,4,5-T	10 to 100 µg/L		
2,4,5-TP (Silvex)	5 to 150 µg/L		
Regulated Semivolatiles #2 Herbicides		**Potable water**	**HPLC**
Diquat	8 to 40 µg/L		
Endothall	90 to 500 µg/L		
Glyphosate	375 to 800 µg/L		
Paraquat	8 to 100 µg/L		
Pesticides		**Potable water**	**GC**
Alachlor	2 to 20 µg/L		
Aldrin	0.4 to 2 µg/L		
Atrazine	3 to 30 µg/L		
Bromacil	2 to 20 µg/L		
Butachlor	8 to 80 µg/L		
Diazinon	0.1 to 100 µg/L		
Dieldrin	0.5 to 3 µg/L		
Endrin	0.1 to 5 µg/L		
Heptachlor	0.4 to 5 µg/L		
Heptachlor Epoxide (beta)	0.2 to 5 µg/L		
Hexachlorobenzene	0.5 to 4 µg/L		
Hexachlorocyclopentadiene	2 to 30 µg/L		
Lindane	0.2 to 5 µg/L		
Methoxychlor	10 to 100 µg/L		
Metolachlor	8 to 80 µg/L		
Metribuzin	2 to 60 µg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Molinate (ordram)	5 to 50 µg/L		
Prometon	0.1 to 100 µg/L		
Propachlor	1 to 4 µg/L		
Simazine	4 to 40 µg/L		
Trifluralin	1.0 to 5 µg/L		
Carbamate/Carbamoxyloxime Pesticides		**Potable water**	**HPLC**
Aldicarb	15 to 50 µg/L		
Aldicarb Sulfone	19 to 50 µg/L		
Aldicarb Sulfoxide	15 to 50 µg/L		
Baygon	30 to 140 µg/L		
Carbaryl	20 to 100 µg/L		
Carbofuran	15 to 150 µg/L		
3-Hydroxycarbofuran	15 to 75 µg/L		
Methiocarb	30 to 140 µg/L		
Methomyl	15 to 90 µg/L		
Oxamyl (Vydate)	30 to 80 µg/L		
Chlordane		**Potable water**	**GC**
Chlordane (technical)	2 to 20 µg/L		
Toxaphene		**Potable water**	**GC**
Toxaphene (total)	3 to 20 µg/L		
EDB/DBCP/TCP		**Potable water**	**GC**
1,2-Dibromo-3-chloropropane (DBCP)	0.1 to 2 µg/L		
Ethylene Dibromide (EDB)	0.2 to 2 µg/L		
1,2,3-Trichloropropane	0.2 to 2.0 µg/L		
Metals in Soil		**Soil**	**ICP/ICP-MS**
Aluminum	1,000 to 25,000		
Antimony	80 to 300 mg/kg		
Arsenic	40 to 400 mg/kg		
Barium	100 to 1,000 mg/kg		
Beryllium	40 to 400 mg/kg		
Boron	80 to 200 mg/kg		
Cadmium	40 to 400 mg/kg		
Calcium	1,500 to 25,000 mg/kg		
Chromium	40 to 400 mg/kg		
Cobalt	40 to 400 mg/kg		
Copper	40 to 400 mg/kg		
Iron	1,000 to 50,000 mg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Lead	40 to 400 mg/kg		
Magnesium	1,200 to 25,000 mg/kg		
Manganese	100 to 2,000 mg/kg		
Mercury	1 to 35 mg/kg		
Molybdenum	30 to 300 mg/kg		
Nickel	40 to 500 mg/kg		
Potassium	1,400 to 25,000 mg/kg		
Selenium	40 to 400 mg/kg		
Silver	20 to 100 mg/kg		
Sodium	150 to 15,000 mg/kg		
Strontium	40 to 400 mg/kg		
Thallium	40 to 400 mg/kg		
Tin	75 to 250 mg/kg		
Titanium	10 to 2,000 mg/kg		
Vanadium	40 to 400 mg/kg		
Zinc	100 to 1,000 mg/kg		
Hexavalent Chromium in Soil		**Soil**	**Spec.**
Chromium VI	40 to 300 mg/kg		
TCLP Metals in Soil		**Soil**	**ICP**
Antimony	0.2 to 20 mg/L		
Arsenic	0.5 to 40 mg/L		
Barium	0.5 to 50 mg/L		
Beryllium	0.1 to 5 mg/L		
Cadmium	0.5 to 5 mg/L		
Chromium	0.5 to 50 mg/L		
Lead	0.5 to 50 mg/L		
Mercury	0.1 to 10 mg/L		
Nickel	0.5 to 20 mg/L		
Selenium	0.5 to 10 mg/L		
Silver	0.2 to 40 mg/L		
Zinc	0.5 to 30 mg/L		
Metals in SewageSludG™		**Sludge**	**ICP/ICP-MS**
Aluminum	1,000 to 50,000		
Antimony	80 to 300 mg/kg		
Arsenic	50 to 400 mg/kg		
Barium	250 to 2,000 mg/kg		
Beryllium	30 to 200 mg/kg		
Cadmium	40 to 300 mg/kg		
Calcium	5,000 to 70,000 mg/kg		
Chromium	40 to 300 mg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Cobalt	5 to 50 mg/kg		
Copper	40 to 1,000 mg/kg		
Iron	1,000 to 50,000 mg/kg		
Lead	50 to 250 mg/kg		
Magnesium	1,200 to 25,000 mg/kg		
Manganese	100 to 2,000 mg/kg		
Mercury	1 to 50 mg/kg		
Molybdenum	5 to 250 mg/kg		
Nickel	40 to 250 mg/kg		
Potassium	1,400 to 25,000 mg/kg		
Selenium	50 to 250 mg/kg		
Silver	50 to 250 mg/kg		
Sodium	150 to 15,000 mg/kg		
Strontium	200 to 2,000 mg/kg		
Thallium	50 to 250 mg/kg		
Vanadium	5 to 250 mg/kg		
Zinc	70 to 1,500 mg/kg		
Anions in Soil		**Soil**	**IC**
Bromide	10 to 200 mg/Kg		
Chloride	25 to 2,000 mg/Kg		
Fluoride	25 to 500 mg/Kg		
Nitrate as N	25 to 500 mg/Kg		
Phosphate as P	25 to 500 mg/Kg		
Sulfate	25 to 2,000 mg/Kg		
Cyanide in Soil		**Soil**	**Spec.**
Total Cyanide	5 to 500 mg/kg		
Nutrients in Soil		**Soil**	
Ammonia as N	100 to 5,000 mg/Kg		**Electrode**
Total Kjeldahl Nitrogen	100 to 5,000 mg/Kg		**Electrode**
Total Organic Carbon	1,000 to 15,000 mg/Kg		**Titration**
Total Phosphorus	100 to 5,000 mg/Kg		**ICP**
Corrosivity/pH in Soil		**Soil**	
Corrosivity (pH)	2 to 12 S.U.		**Meter**
Ignitability/Flash Point		**Soil**	
Flash point/Ignitability	100 to 200 ºF		**Pensky-Martens cup**
Volatiles in Soil		**Soil**	**GC**
Acetone	160 to 400 µg/kg		
Acetonitrile	200 to 1,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Acrolein	20 to 200 µg/kg		
Benzene	20 to 200 µg/kg		
Bromobenzene	40 to 200 µg/kg		
Bromodichloromethane	20 to 200 µg/kg		
Bromoform	20 to 200 µg/kg		
Bromomethane	80 to 200 µg/kg		
2-Butanone (MEK)	160 to 400 µg/kg		
tert-Butyl methyl ether (MTBE)	20 to 200 µg/kg		
Carbon disulfide	20 to 200 µg/kg		
Carbon tetrachloride	20 to 200 µg/kg		
Chlorobenzene	20 to 200 µg/kg		
Chlorodibromomethane	20 to 200 µg/kg		
Chloroethane	80 to 200 µg/kg		
2-Chloroethylvinylether	20 to 200 µg/kg		
Chloroform	20 to 200 µg/kg		
Chloromethane	80 to 200 µg/kg		
1,2-Dibromo-3-chloropropane (DBCP)	40 to 200 µg/kg		
1,2-Dibromoethane (EDB)	40 to 200 µg/kg		
Dibromomethane	20 to 200 µg/kg		
1,2-Dichlorobenzene	20 to 200 µg/kg		
1,3-Dichlorobenzene	20 to 200 µg/kg		
1,4-Dichlorobenzene	20 to 200 µg/kg		
Dichlorodifluoromethane	80 to 200 µg/kg		
1,1-Dichloroethane	20 to 200 µg/kg		
1,2-Dichloroethane	20 to 200 µg/kg		
1,1-Dichloroethylene	40 to 200 µg/kg		
cis-1,2-Dichloroethylene	40 to 200 µg/kg		
trans-1,2-Dichloroethylene	40 to 200 µg/kg		
1,2-Dichloropropane	20 to 200 µg/kg		
cis-1,3-Dichloropropylene	40 to 200 µg/kg		
trans-1,3-Dichloropropylene	40 to 200 µg/kg		
Ethylbenzene	20 to 200 µg/kg		
2-Hexanone	160 to 400 µg/kg		
Isopropyl benzene	40 to 200 µg/kg		
Methylene chloride	20 to 200 µg/kg		
4-Methyl-2-pentanone (MIBK)	80 to 200 µg/kg		
Naphthalene	40 to 200 µg/kg		
Styrene	40 to 200 µg/kg		
1,1,1,2-Tetrachloroethane	20 to 200 µg/kg		
1,1,2,2-Tetrachloroethane	20 to 200 µg/kg		
Tetrachloroethene	20 to 200 µg/kg		
Toluene	20 to 200 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
1,2,4-Trichlorobenzene	40 to 200 µg/kg		
1,1,1-Trichloroethane	20 to 200 µg/kg		
1,1,2-Trichloroethane	20 to 200 µg/kg		
Trichloroethylene	20 to 200 µg/kg		
Trichlorofluoromethane (Freon 11)	80 to 200 µg/kg		
1,2,3-Trichloropropane	40 to 200 µg/kg		
Vinyl acetate	20 to 200 µg/kg		
Vinyl chloride	80 to 200 µg/kg		
Xylenes, total	40 to 200 µg/kg		
Ready-to-Use VOAs in Soil		**Soil**	**GC**
Acetone	4,000 to 20,000 µg/kg		
Acetonitrile	1,000 to 15,000 µg/kg		
Acrolein	1,000 to 15,000 µg/kg		
Benzene	1,000 to 10,000 µg/kg		
Bromobenzene	2,000 to 10,000 µg/kg		
Bromodichlormethane	1,000 to 10,000 µg/kg		
Bromoform	1,000 to 10,000 µg/kg		
Bromomethane	2,000 to 10,000 µg/kg		
2-Butanone (MEK)	4,000 to 20,000 µg/kg		
tert-Butyl methyl ether (MTBE)	2,000 to 10,000 µg/kg		
Carbon disulfide	1,000 to 15,000 µg/kg		
Carbon tetrachloride	1,000 to 10,000 µg/kg		
Chlorobenzene	1,000 to 10,000 µg/kg		
Chlorodibromomethane	1,000 to 10,000 µg/kg		
Chloroethane	2,000 to 10,000 µg/kg		
2-Chloroethylvinylether	1,000 to 15,000 µg/kg		
Chloroform	1,000 to 10,000 µg/kg		
Chloromethane	2,000 to 10,000 µg/kg		
1,2-Dibromo-3chloropropane (DBCP)	2,000 to 10,000 µg/kg		
1,2-Dibromoethane (EDB)	2,000 to 10,000 µg/kg		
Dibromomethane	2,000 to 10,000 µg/kg		
1,2-Dichlorobenzene	1,000 to 10,000 µg/kg		
1,3-Dichlorobenzene	1,000 to 10,000 µg/kg		
1,4-Dichlorobenzene	1,000 to 10,000 µg/kg		
Dichlorodifluoromethane	2,000 to 10,000 µg/kg		
1,1-Dichloroethane	1,000 to 10,000 µg/kg		
1,2-Dichloroethane	1,500 to 10,000 µg/kg		
1,1-Dichloroethylene	2,000 to 10,000 µg/kg		
cis-1,2-Dichloroethylene	2,000 to 10,000 µg/kg		
trans-1,2-Dichloroethylene	2,000 to 10,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
1,2-Dichloropropane	2,000 to 10,000 µg/kg		
cis-1,3-Dichloropropylene	2,000 to 10,000 µg/kg		
trans-1,2-Dichloropropylene	2,000 to 10,000 µg/kg		
Ethylbenzene	1,000 to 10,000 µg/kg		
2-Hexanone	8,000 to 20,000 µg/kg		
Hexachlorobutadiene	1,500 to 15,000 µg/kg		
Hexachloroethane	1,500 to 15,000 µg/kg		
Isopropylbenzene	2,000 to 10,000 µg/kg		
Methylene chloride	1,000 to 10,000 µg/kg		
4-Methyl-2-pentanone (MIBK)	4,000 to 20,000 µg/kg		
Naphthalene	2,000 to 10,000 µg/kg		
Nitrobenzene	1,500 to 15,000 µg/kg		
Styrene	2,000 to 10,000 µg/kg		
1,1,1,2-Tetrachloroethane	1,000 to 10,000 µg/kg		
1,1,2,2-Tetrachloroethane	1,500 to 10,000 µg/kg		
Tetrachloroethylene	1,000 to 10,000 µg/kg		
Toluene	1,000 to 10,000 µg/kg		
1,2,4-Trichlorobenzene	2,000 to 10,000 µg/kg		
1,1,1-Trichloroethane	1,000 to 10,000 µg/kg		
1,1,2-Trichloroethane	1,000 to 10,000 µg/kg		
Trichloroethene	1,000 to 10,000 µg/kg		
Trichlorofluoromethane (Freon 11)	2,000 to 10,000 µg/kg		
1,2,3-Trichloropropane	1,500 to 10,000 µg/kg		
Vinyl acetate	1,000 to 15,000 µg/kg		
Vinyl chloride	2,000 to 10,000 µg/kg		
Xylenes, total	2,000 to 20,000 µg/kg		
Nitroaromatics & Nitramines in Soil		**Soil**	**HPLC**
4-Amino-2,6-dinitrotoluene	1,500 to 15,000 µg/kg		
2-Amino-4,6-dinitrotoluene	1,500 to 15,000 µg/kg		
1,3-Dinitrobenzene	1,500 to 15,000 µg/kg		
2,4-Dinitrotoluene	1,500 to 15,000 µg/kg		
2,6-Dinitrotoluene	1,500 to 15,000 µg/kg		
HMX	1,500 to 15,000 µg/kg		
Nitrobenzene	1,500 to 15,000 µg/kg		
2-Nitrotoluene	1,500 to 15,000 µg/kg		
3-Nitrotoluene	1,500 to 15,000 µg/kg		
4-Nitrotoluene	1,500 to 15,000 µg/kg		
RDX	1,500 to 15,000 µg/kg		
Tetryl	1,500 to 15,000 µg/kg		
1,3,5-Trinitrobenzene	1,500 to 15,000 µg/kg		
2,4,6-Trinitrotoluene	1,500 to 15,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Low-Level PAHs in Soil		**Soil**	**HPLC**
Acenaphthene	150 to 1,000 µg/kg		
Acenaphthylene	150 to 1,000 µg/kg		
Anthracene	100 to 1,000 µg/kg		
Benzo(a)anthracene	50 to 500 µg/kg		
Benzo(b)fluoranthene	50 to 500 µg/kg		
Benzo(k)fluoranthene	50 to 500 µg/kg		
Benzo(g,h,i)perylene	100 to 1,000 µg/kg		
Benzo(a)pyrene	50 to 500 µg/kg		
Chrysene	50 to 500 µg/kg		
Dibenz(a,h)anthracene	50 to 500 µg/kg		
Fluoranthene	100 to 1,000 µg/kg		
Fluorene	50 to 500 µg/kg		
Indeno(1,2,3-cd)pyrene	50 to 500 µg/kg		
Naphthalene	150 to 1,000 µg/kg		
Phenanthrene	100 to 1,000 µg/kg		
Pyrene	50 to 500 µg/kg		
Base/Neutrals & Acids in Soil		**Soil**	**Base/Neutrals by GC and Acids by HPLC**
Acenaphthene	1,000 to 12,000 µg/kg		
Acenaphthylene	1,000 to 12,000 µg/kg		
Aniline	500 to 15,000 µg/kg		
Anthracene	1,000 to 12,000 µg/kg		
Benzoic acid	500 to 15,000 µg/kg		
Benzo(a)anthracene	1,000 to 12,000 µg/kg		
Benzo(b)fluoranthene	1,000 to 12,000 µg/kg		
Benzo(k)fluoranthene	1,000 to 12,000 µg/kg		
Benzo(g,h,i)perylene	1,000 to 12,000 µg/kg		
Benzo(a)pyrene	1,000 to 12,000 µg/kg		
Benzyl alcohol	500 to 15,000 µg/kg		
Bis(2-chloroethyl)ether	1,500 to 15,000 µg/kg		
Bis(2-chloroisopropyl)ether	1,500 to 15,000 µg/kg		
Bis(2-chloroethoxy)methane	1,500 to 15,000 µg/kg		
Bis(2-ethylhexyl)phthalate	1,500 to 15,000 µg/kg		
4-Bromophenyl-phenylether	1,500 to 15,000 µg/kg		
Butylbenzylphthalate	1,500 to 15,000 µg/kg		
Carbazole	500 to 15,000 µg/kg		
4-Chloroaniline	500 to 15,000 µg/kg		
4-Chloro-3-methylphenol	1,500 to 15,000 µg/kg		
1-Chloronaphthalene	500 to 15,000 µg/kg		
2-Chloronaphthalene	1,000 to 10,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
2-Chlorophenol	1,500 to 15,000 µg/kg		
4-Chlorophenyl-phenylether	1,500 to 15,000 µg/kg		
Chrysene	1,000 to 12,000 µg/kg		
Dibenz(a,h)anthracene	1,000 to 12,000 µg/kg		
Dibenzofuran	1,500 to 15,000 µg/kg		
Di-n-butylphthalate	1,500 to 15,000 µg/kg		
1,2-Dichlorobenzene	1,500 to 15,000 µg/kg		
1,3-Dichlorobenzene	1,500 to 15,000 µg/kg		
1,4-Dichlorobenzene	1,500 to 15,000 µg/kg		
2,4-Dichlorophenol	1,500 to 15,000 µg/kg		
2,6-Dichlorophenol	1,500 to 15,000 µg/kg		
Diethylphthalate	1,500 to 15,000 µg/kg		
2,4-Dimethylphenol	3,000 to 15,000 µg/kg		
Dimethylphthalate	1,500 to 15,000 µg/kg		
2,4-Dinitrophenol	3,000 to 15,000 µg/kg		
2,4-Dinitrotoluene	1,500 to 15,000 µg/kg		
2,6-Dinitrotoluene	1,500 to 15,000 µg/kg		
Di-n-octylphthalate	1,500 to 15,000 µg/kg		
Fluoranthene	1,000 to 12,000 µg/kg		
Fluorene	1,000 to 12,000 µg/kg		
Hexachlorobenzene	1,500 to 15,000 µg/kg		
Hexachlorobutadiene	1,500 to 15,000 µg/kg		
Hexachlorocyclopentadiene	1,500 to 15,000 µg/kg		
Hexachloroethane	1,500 to 15,000 µg/kg		
Indeno(1,2,3-cd)pyrene	1,000 to 12,000 µg/kg		
Isophorone	1,500 to 15,000 µg/kg		
2-Methyl-4,6-Dinitrophenol	3,000 to 15,000 µg/kg		
2-Methylnaphthalene	1,000 to 12,000 µg/kg		
2-Methylphenol	3,000 to 15,000 µg/kg		
4-Methylphenol	3,000 to 15,000 µg/kg		
Naphthalene	1,000 to 12,000 µg/kg		
2-Nitroaniline	500 to 15,000 µg/kg		
3-Nitroaniline	500 to 15,000 µg/kg		
4-Nitroaniline	500 to 15,000 µg/kg		
Nitrobenzene	1,500 to 15,000 µg/kg		
2-Nitrophenol	3,000 to 15,000 µg/kg		
4-Nitrophenol	3,000 to 15,000 µg/kg		
N-Nitroso-dimethylamine	1,500 to 15,000 µg/kg		
N-Nitroso-diphenylamine	1,500 to 15,000 µg/kg		
N-Nitroso-di-n-propylamine	1,500 to 15,000 µg/kg		
Pentachlorophenol	3,000 to 15,000 µg/kg		
Phenanthrene	1,000 to 12,000 µg/kg		
Phenol	1,500 to 15,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Pyrene	1,000 to 12,000 µg/kg		
Pyridine	500 to 15,000 µg/kg		
1,2,4-Trichlorobenzene	1,500 to 15,000 µg/kg		
2,4,5-Trichlorophenol	1,500 to 15,000 µg/kg		
2,4,6-Trichlorophenol	1,500 to 15,000 µg/kg		
Organochlorine Pesticides in Soil		**Soil**	**GC**
Aldrin	50 to 500 µg/kg		
alpha-BHC	50 to 500 µg/kg		
beta-BHC	50 to 500 µg/kg		
delta-BHC	50 to 500 µg/kg		
gamma-BHC (Lindane)	50 to 500 µg/kg		
alpha-Chlordane	50 to 500 µg/kg		
gamma-Chlordane	50 to 500 µg/kg		
4,4-DDD	50 to 500 µg/kg		
4,4-DDE	50 to 500 µg/kg		
4,4'-DDT	50 to 500 µg/kg		
Dieldrin	50 to 500 µg/kg		
Endosulfan I	50 to 500 µg/kg		
Endosulfan II	50 to 500 µg/kg		
Endosulfan sulfate	50 to 500 µg/kg		
Endrin	50 to 500 µg/kg		
Endrin aldehyde	50 to 500 µg/kg		
Endrin ketone	50 to 500 µg/kg		
Heptachlor	50 to 500 µg/kg		
Heptachlor epoxide	50 to 500 µg/kg		
Methoxychlor	50 to 500 µg/kg		
Chlordane in Soil		**Soil**	**GC**
Chlordane (total)	200 to 1,000 µg/kg		
Toxaphene in Soil		**Soil**	**GC**
Toxaphene	200 to 2,000 µg/kg		
Carbamate Pesticides in Soil		**Soil**	**HPLC**
Aldicarb	250 to 2,500 µg/kg		
Aldicarb sulfone	250 to 2,500 µg/kg		
Aldicarb sulfoxide	250 to 2,500 µg/kg		
Carbaryl	250 to 2,500 µg/kg		
Carbofuran	250 to 2,500 µg/kg		
Dioxacarb	250 to 2,500 µg/kg		
Diuron	250 to 2,500 µg/kg		
3-Hydroxycarbofuran	250 to 2,500 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Methiocarb	250 to 2,500 µg/kg		
Methomyl	250 to 2,500 µg/kg		
Oxamyl	250 to 2,500 µg/kg		
Promecarb	250 to 2,500 µg/kg		
Propham	250 to 2,500 µg/kg		
Propoxur (Baygon)	250 to 2,500 µg/kg		
Organophosphorus Pesticides (OPP) in Soil		**Soil**	**HPLC**
Azinphos-methyl (Guthion)	100 to 1,000 µg/kg		
Chlorpyrifos	100 to 1,000 µg/kg		
Demeton-O	100 to 1,000 µg/kg		
Demeton-S	100 to 1,000 µg/kg		
Diazinon	100 to 1,000 µg/kg		
Dichlorvos (DDVP)	100 to 1,000 µg/kg		
Disulfoton	100 to 1,000 µg/kg		
Malathion	100 to 1,000 µg/kg		
Parathion, ethyl	100 to 1,000 µg/kg		
Parathion, methyl	100 to 1,000 µg/kg		
Phorate	100 to 1,000 µg/kg		
Ronnel	100 to 1,000 µg/kg		
Stirophos (Tetrachlorovinphos)	100 to 1,000 µg/kg		
Chlorinated Acid Herbicides in Soil		**Soil**	**HPLC**
Acifluorfen	100 to 1,000 µg/kg		
Bentazon	100 to 1,000 µg/kg		
Chloramben	100 to 1,000 µg/kg		
2,4-D	100 to 1,000 µg/kg		
2,4-DB	100 to 1,000 µg/kg		
DCPA (Dacthal diacid)			
Dalapon	100 to 2,500 µg/kg		
Dicamba	100 to 1,000 µg/kg		
3,5-Dichlorobenzoic acid	100 to 1,000 µg/kg		
Dichlorprop	100 to 1,000 µg/kg		
Dinoseb	100 to 1,000 µg/kg		
MCPA	1,000 to 10,000 µg/kg		
MCPP	250 to 10,000 µg/kg		
4-Nitrophenol	100 to 1,000 µg/kg		
Pentachlorophenol	100 to 1,000 µg/kg		
Picloram	100 to 1,000 µg/kg		
2,4,5-T	100 to 1,000 µg/kg		
2,4,5-TP (Silvex)	100 to 1,000 µg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
PCBs in Soil		**Soil**	**GC**
Aroclor 1016	1 to 50 mg/kg		
Aroclor 1221	1 to 50 mg/kg		
Aroclor 1232	1 to 50 mg/kg		
Aroclor 1242	1 to 50 mg/kg		
Aroclor 1248	1 to 50 mg/kg		
Aroclor 1254	1 to 50 mg/kg		
Aroclor 1260	1 to 50 mg/kg		
PCBs in Oil		**Oil**	**GC**
Aroclor 1016	10 to 50 mg/kg		
Aroclor 1221	10 to 50 mg/kg		
Aroclor 1232	10 to 50 mg/kg		
Aroclor 1242	10 to 50 mg/kg		
Aroclor 1248	10 to 50 mg/kg		
Aroclor 1254	10 to 50 mg/kg		
Aroclor 1260	10 to 50 mg/kg		
BTEX & MTBE in Soil		**Soil**	**GC**
Benzene	20 to 200 µg/kg		
Ethylbenzene	20 to 200 µg/kg		
Toluene	20 to 200 µg/kg		
Xylenes, total	40 to 400 µg/kg		
Methyl-tert-butylether (MTBE)	20 to 200 µg/kg		
Gasoline Range Organics (GRO) in Soil		**Soil**	**GC**
Gasoline Range Organics (GRO)	100 to 2,000 mg/kg		
Benzene in GRO	0.5 to 400 mg/kg		
Ethylbenzene in GRO	1 to 400 mg/kg		
Toluene in GRO	1 to 400 mg/kg		
Xylenes, total, in GRO	1 to 400 mg/kg		
Diesel Range Organics (DRO) in Soil		**Soil**	**GC**
Diesel Range Organics	300 to 3,000 mg/kg		
TPH in Soil		**Soil**	**Gravimetric**
non-Polar Extractable Material (TPH)	300 to 3,000 mg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Oil & Grease (O&G) in Soil		**Soil**	**Gravimetric**
n-Hexane Extractable Materials (O&G)	300 to 3,000 mg/kg		
Arizona TPH in Soil		**Soil**	**GC**
No. 2 Diesel (C10-C22)	50 to 150 mg/kg		
Oil Range Organics (C22-C32)	200 to 300 mg/kg		
TPH in Soil (C10-C32)	300 to 400 mg/kg		
Massachusetts VPH in Soil		**Soil**	**GC**
Total Hydrocarbons as VPH[a]	100 to 2,000 mg/kg		
C_5-C_8 Aliphatic Hydrocarbons	1 to 1,000 mg/kg		
C_9-C_{12} Aliphatic Hydrocarbons	1 to 1,000 mg/kg		
C_9-C_{10} Aromatic Hydrocarbons	1 to 1,000 mg/kg		
Benzene in VPH	0.5 to 500 mg/kg		
Ethylbenzene in VPH	0.5 to 500 mg/kg		
Methyl-tert-butylether (MTBE) in VPH	0.5 to 500 mg/kg		
Naphthalene in VPH	0.5 to 500 mg/kg		
Toluene in VPH	0.5 to 500 mg/kg		
o-Xylene in VPH	0.5 to 500 mg/kg		
m&p-Xylene in VPH	0.5 to 500 mg/kg		
Xylenes, total in VPH	0.5 to 500 mg/kg		
Massachusetts EPH in Soil		**Soil**	**GC**
Total Hydrocarbons as EPH[a]	300 to 3,000 mg/kg		
C_9-C_{18} Aliphatic Hydrocarbons	2 to 3,000 mg/kg		
C_{19}-C_{36} Aliphatic Hydrocarbons	2 to 3,000 mg/kg		
C_{11}-C_{22} Aromatic Hydrocarbons	2 to 3,000 mg/kg		
Acenaphthene in EPH	0.2 to 500 mg/kg		
Acenaphthylene in EPH	0.2 to 500 mg/kg		
Anthracene in EPH	0.2 to 500 mg/kg		
Benzo(a)anthracene in EPH	0.2 to 500 mg/kg		
Benzo(b)fluoranthene in EPH	0.2 to 500 mg/kg		
Benzo(k)fluoranthene in EPH	0.2 to 500 mg/kg		
Benzo(g,h,i)perylene in EPH	0.2 to 500 mg/kg		
Benzo(a)pyrene in EPH	0.2 to 500 mg/kg		
Chrysene in EPH	0.2 to 500 mg/kg		
Dibenz(a,h)anthrecene in EPH	0.2 to 500 mg/kg		
Fluoranthene in EPH	0.2 to 500 mg/kg		
Fluorene in EPH	0.2 to 500 mg/kg		
Indeno(1,2,3-cd)pyrene in EPH	0.2 to 500 mg/kg		
2-Methylnaphthalene in EPH	0.2 to 500 mg/kg		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Naphthalene in EPH	0.2 to 500 mg/kg		
Phenanthrene in EPH	0.2 to 500 mg/kg		
Pyrene in EPH	0.2 to 500 mg/kg		
Texas Low-Level Fuels (TPH) in Soil		**Soil**	**GC**
No. 2 Diesel	20 to 70 mg/kg		
Unleaded gasoline	20 to 70 mg/kg		
Total petroleum hydrocarbons	50 to 100 mg/kg		
Texas High-Level Fuels (TPH) in Soil		**Soil**	**GC**
No. 2 Diesel	300 to 15,000 mg/kg		
Unleaded gasoline	300 to 15,000 mg/kg		
Total petroleum hydrocarbons	1,000 to 20,000 mg/kg		
Strontium-89/90		**Potable water**	**Beta-discriminating liquid scintillation counter**
Strontium-89	10 to 70 pCi/L		
Strontium-90	2 to 45 pCi/L		
Gamma EmitterS™		**Potable water**	
Barium-133	9 to 110 pCi/L		**Gamma Spectrometry**
Cesium-134	10 to 100 pCi/L		
Cesium-137	20 to 240 pCi/L		
Cobalt-60	10 to 120 pCi/L		
Zinc-65	30 to 360 pCi/L		
GroSS™ Alpha/Beta		**Potable water**	**Alpha/Beta-discriminating liquid scintillation counter**
Gross Alpha	3 to 75 pCi/L		
Gross Beta	4 to 75 pCi/L		
Iodine-131		**Potable water**	**Beta-discriminating liquid scintillation counter**
Iodine-131	1 to 30 pCi/L		
NaturalS™		**Potable water**	
Radium-226	1 to 20 pCi/L		**Gamma Spectrometry**
Radium-228	1 to 20 pCi/L		
Natural Uranium	2 to 70 pCi/L		
Uranium (mass)	3 to 104 µg/L		**ICP/MS or ICP**
TritiuM™		**Potable water**	**Beta-discriminating liquid scintillation counter**
Tritium	1000 to 32000 pCi/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Water Gross Alpha/Beta		**Water**	
Gross Alpha (as Thormium-230)	5,000 to 50,000 pCi/L		**Alpha/Beta-discriminating liquid scintillation counter**
Gross Beta (as Cesium-137)	5,000 to 50,000 pCi/L		
Water TritiuM™		**Water**	**Beta-discriminating liquid scintillation counter**
Tritium	300 to 30,000 pCi/L		
Metals on Filter Paper		**Filter Paper**	**ICP/ICP-MS**
Antimony	30 to 1200 µg/filter		
Arsenic	30 to 1200 µg/filter		
Barium	30 to 1200 µg/filter		
Beryllium	30 to 1200 µg/filter		
Cadmium	30 to 1200 µg/filter		
Chromium	30 to 1200 µg/filter		
Cobalt	30 to 1200 µg/filter		
Copper	30 to 1200 µg/filter		
Lead	30 to 1200 µg/filter		
Manganese	30 to 1200 µg/filter		
Nickel	30 to 1200 µg/filter		
Phosphorus	30 to 1200 µg/filter		
Selenium	30 to 1200 µg/filter		
Silver	30 to 1200 µg/filter		
Thallium	30 to 1200 µg/filter		
Zinc	30 to 1200 µg/filter		
Metals in Impinger Solution		**Impinger Sol'n**	**ICP/ICP-MS**
Antimony	0.1 to 10 µg/mL		
Arsenic	0.1 to 10 µg/mL		
Barium	0.1 to 10 µg/mL		
Beryllium	0.1 to 10 µg/mL		
Cadmium	0.1 to 10 µg/mL		
Chromium	0.1 to 10 µg/mL		
Cobalt	0.1 to 10 µg/mL		
Copper	0.1 to 10 µg/mL		
Lead	0.1 to 10 µg/mL		
Manganese	0.1 to 10 µg/mL		
Nickel	0.1 to 10 µg/mL		
Phosphorus	0.1 to 10 µg/mL		
Selenium	0.1 to 10 µg/mL		
Silver	0.1 to 10 µg/mL		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Thallium	0.1 to 10 µg/mL		
Zinc	0.1 to 10 µg/mL		
Mercury on Filter Paper		**Filter Paper**	**CVAA**
Mercury	0.3 to 9 µg/filter		
Mercury in Impinger Solution		**Impinger Sol'n**	**CVAA**
Mercury	1 to 30 ng/mL		
Lead on Filter Paper		**Filter Paper**	**ICP-MS**
Lead	25 to 750 µg/filter		
Lead in Impinger Solution		**Impinger Sol'n**	**ICP/ICP-MS**
Lead	0.1 to 3 µg/mL		
Chromium on Filter Paper		**Filter Paper**	**ICP**
Total Chromium	1 to 20 µg/filter		
Hexavalent Chromium	1 to 20 µg/filter		
Hexavalent Chromium in Impinger Solution		**Impinger Sol'n**	**Spec.**
Hexavalent Chromium	50 to 800 µg/L		
Hydrogen Halides & Halogens in Impinger Solution		**Impinger Sol'n**	**IC**
Bromine	5 to 100 mg/L		
Chlorine	5 to 100 mg/L		
Hydrogen Fluoride	5 to 100 mg/L		
Hydrogen Chloride	5 to 100 mg/L		
Hydrogen Bromide	5 to 100 mg/L		
Total Halogens	10 to 200 mg/L		
Total Halide	15 to 300 mg/L		
Fluoride in Impinger Solution		**Impinger Sol'n**	**IC**
Fluoride	1 to 50 µg/mL		
Nitrogen Oxide in Impinger Solution		**Impinger Sol'n**	**IC**
Nitrogen Oxide	2 to 400 mg/dscm		
Sulfur Dioxide in Impinger Solution		**Impinger Sol'n**	**IC**
Sulfur Dioxide	200 to 2400 mg/dscm		
Sulfuric Acid & Sulfur Dioxide		**Impinger Sol'n**	**IC**

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
in Impinger Solution			
Sulfuric Acid	1 to 120 mg/dscm		
Sulfur Dioxide	1 to 120 mg/dscm		
Ammonia in Impinger Solution		**Impinger Sol'n**	**Electrode-ISE**
Ammonia	1 to 50 mg/L		
Particulate Matter on Filter Paper		**Filter Paper**	**Gravimetric**
Particulate Matter	50 to 600 mg/filter		
Particulate Matter in Impinger Solution		**Impinger Sol'n**	**Gravimetric**
Particulate Matter	140 to 675 mg/L		
Volatiles on Sorbent		**Sorbent**	**GC**
Acetone	50 to 2000 ng/sample		
Acetonitrile	50 to 2000 ng/sample		
Acrolein	50 to 2000 ng/sample		
Acrylonitrile	50 to 2000 ng/sample		
Benzene	50 to 2000 ng/sample		
Bromodichloromethane	50 to 2000 ng/sample		
Bromoform	50 to 2000 ng/sample		
Bromomethane	50 to 2000 ng/sample		
2-Butanone (MEK)	50 to 2000 ng/sample		
Carbon disulfide	50 to 2000 ng/sample		
Carbontetrachloride	50 to 2000 ng/sample		
Chlorobenzene	50 to 2000 ng/sample		
Chlorodibromomethane	50 to 2000 ng/sample		
Chloroethane	50 to 2000 ng/sample		
2-Chloroethylvinylether	50 to 2000 ng/sample		
Chloroform	50 to 2000 ng/sample		
Chloromethane	50 to 2000 ng/sample		
1,2-Dibromo-3-chloropropane (DBCP)	50 to 2000 ng/sample		
1,2-Dibromoethane (EDB)	50 to 2000 ng/sample		
Dibromomethane	50 to 2000 ng/sample		
1,2-Dichlorobenzene	50 to 2000 ng/sample		
1,3-Dichlorobenzene	50 to 2000 ng/sample		
1,4-Dichlorobenzene	50 to 2000 ng/sample		
Dichlorodifluoromethane	50 to 2000 ng/sample		
1,1-Dichloroethane	50 to 2000 ng/sample		
1,2-Dichloroethane	50 to 2000 ng/sample		
1,1-Dichloroethene	50 to 2000 ng/sample		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
cis-1,2-Dichloroethene	50 to 2000 ng/sample		
trans-1,2-Dichloroethene	50 to 2000 ng/sample		
1,2-Dichloropropane	50 to 2000 ng/sample		
cis-1,3-Dichloropropene	50 to 2000 ng/sample		
trans-1,3-Dichloropropene	50 to 2000 ng/sample		
Ethylbenzene	50 to 2000 ng/sample		
Hexachlorobutadiene	50 to 2000 ng/sample		
2-Hexanone	50 to 2000 ng/sample		
Methylene Chloride	50 to 2000 ng/sample		
4-Methyl-2-pentanone (MIBK)	50 to 2000 ng/sample		
Methyl-tert-butylether (MTBE)	50 to 2000 ng/sample		
Naphthalene	50 to 2000 ng/sample		
Styrene	50 to 2000 ng/sample		
1,1,1,2-Tetrachloroethane	50 to 2000 ng/sample		
1,1,2,2-Tetrachloroethane	50 to 2000 ng/sample		
Tetrachloroethene	50 to 2000 ng/sample		
Toluene	50 to 2000 ng/sample		
1,2,4-Trichlorobenzene	50 to 2000 ng/sample		
1,1,1-Trichloroethane	50 to 2000 ng/sample		
1,1,2-Trichloroethane	50 to 2000 ng/sample		
Trichloroethene	50 to 2000 ng/sample		
Trichlorofluoromethane (Freon 11)	50 to 2000 ng/sample		
1,2,3-Trichloropropane	50 to 2000 ng/sample		
Vinyl acetate	50 to 2000 ng/sample		
Vinyl chloride	50 to 2000 ng/sample		
Xylenes, total	200 to 3000 ng/sample		
Semivolitiles on PUF		**PUF**	**GC**
Acenaphthene	10 to 225 µg/sample		
Acenaphthylene	10 to 225 µg/sample		
Aniline	10 to 225 µg/sample		
Anthracene	10 to 225 µg/sample		
Benzidine	200 to 1000 µg/sample		
Benzo(a)anthracene	10 to 225 µg/sample		
Benzo(b)fluoranthene	10 to 225 µg/sample		
Benzo(k)fluoranthene	10 to 225 µg/sample		
Benzo(g,h,i)perylene	10 to 225 µg/sample		
Benzo(a)pyrene	10 to 225 µg/sample		
Benzyl alcohol	10 to 225 µg/sample		
4-Bromophenyl-phenylether	10 to 225 µg/sample		
Butylbenzylphthalate	10 to 225 µg/sample		
Carbazole	10 to 225 µg/sample		
4-Chloroaniline	10 to 225 µg/sample		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Bis(2-chloroethoxy)methane	10 to 225 µg/sample		
Bis(2-chloroethyl)ether	10 to 225 µg/sample		
Bis(2-chloroisopropyl)ether	10 to 225 µg/sample		
Bis(2-ethylhexyl)phthalate	10 to 225 µg/sample		
1-Chloronaphthalene	10 to 225 µg/sample		
2-Chloronaphthalene	10 to 225 µg/sample		
4-Chlorophenyl-phenylether	10 to 225 µg/sample		
Chrysene	10 to 225 µg/sample		
Dibenz(a,h)anthracene	10 to 225 µg/sample		
Dibenzofuran	10 to 225 µg/sample		
Di-n-butylphthalate	10 to 225 µg/sample		
1,2-Dichlorobenzene	10 to 225 µg/sample		
1,3-Dichlorobenzene	10 to 225 µg/sample		
1,4-Dichlorobenzene	10 to 225 µg/sample		
3,3'-Dichlorobenzidine	10 to 225 µg/sample		
Diethyl phthalate	10 to 225 µg/sample		
Dimethyl phthalate	10 to 225 µg/sample		
2,4-Dinitrotoluene	10 to 225 µg/sample		
2,6-Dinitrotoluene	10 to 225 µg/sample		
Di-n-octylphthalate	10 to 225 µg/sample		
Fluoranthene	10 to 225 µg/sample		
Fluorene	10 to 225 µg/sample		
Hexachlorobenzene	10 to 225 µg/sample		
Hexachlorobutadiene	10 to 225 µg/sample		
Hexachlorocyclopentadiene	10 to 225 µg/sample		
Hexachloroethane	10 to 225 µg/sample		
Indeno(1,2,3-cd)pyrene	10 to 225 µg/sample		
Isophorone	10 to 225 µg/sample		
2-Methylnaphthalene	10 to 225 µg/sample		
Naphthalene	10 to 225 µg/sample		
2-Nitroaniline	10 to 225 µg/sample		
3-Nitroaniline	10 to 225 µg/sample		
4-Nitroaniline	10 to 225 µg/sample		
Nitrobenzene	10 to 225 µg/sample		
N-Nitrosodiethylamine	10 to 225 µg/sample		
N-Nitrosodimethylamine (NDMA)	10 to 225 µg/sample		
N-Nitrosodiphenylamine	10 to 225 µg/sample		
N-Nitroso-di-n-propylamine	10 to 225 µg/sample		
Pentachlorobenzene	10 to 225 µg/sample		
Phenanthrene	10 to 225 µg/sample		
Pyrene	10 to 225 µg/sample		
Pyridine	10 to 225 µg/sample		
o-Toluidine	10 to 225 µg/sample		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
1,2,4,5-Tetrachlorobenzene	10 to 225 µg/sample		
1,2,4-Trichlorobenzene	10 to 225 µg/sample		
Benzoic Acid	10 to 225 µg/sample		
4-Chloro-3-methylphenol	10 to 225 µg/sample		
2-Chlorophenol	10 to 225 µg/sample		
2,4-Dichlorophenol	10 to 225 µg/sample		
2,6-Dichlorophenol	10 to 225 µg/sample		
2,4-Dimethylphenol	10 to 225 µg/sample		
2,4-Dinitrophenol	10 to 225 µg/sample		
2-Methyl-4,6-dinitrophenol	10 to 225 µg/sample		
2-Methylphenol (o-Cresol)	10 to 225 µg/sample		
4-Methylphenol (p-Cresol)	10 to 225 µg/sample		
2-Nitrophenol	10 to 225 µg/sample		
4-Nitrophenol	10 to 225 µg/sample		
Pentachlorophenol	10 to 225 µg/sample		
Phenol	10 to 225 µg/sample		
2,3,4,6-Tetrachlorophenol	10 to 225 µg/sample		
2,4,5-Trichlorophenol	10 to 225 µg/sample		
2,4,6-Trichlorophenol	10 to 225 µg/sample		
Organochlorine Pesticides on PUF		**PUF**	**GC**
Aldrin	0.5 to 20.0 µg/sample		
alpha-BHC	0.5 to 20.0 µg/sample		
beta-BHC	0.5 to 20.0 µg/sample		
delta-BHC	0.5 to 20.0 µg/sample		
gamma-BHC (Lindane)	0.5 to 20.0 µg/sample		
alpha-Chlordane	0.5 to 20.0 µg/sample		
gamma-Chlordane	0.5 to 20.0 µg/sample		
DDD (4,4)	0.5 to 20.0 µg/sample		
DDE (4,4)	0.5 to 20.0 µg/sample		
DDT (4,4)	0.5 to 20.0 µg/sample		
Dieldrin	0.5 to 20.0 µg/sample		
Endosulfan I	0.5 to 20.0 µg/sample		
Endosulfan II	0.5 to 20.0 µg/sample		
Endosulfan sulfate	0.5 to 20.0 µg/sample		
Endrin	0.5 to 20.0 µg/sample		
Endrin aldehyde	0.5 to 20.0 µg/sample		
Endrin ketone	0.5 to 20.0 µg/sample		
Heptachlor	0.5 to 20.0 µg/sample		
Heptachlor Epoxide (beta)	0.5 to 20.0 µg/sample		
Methoxychlor	0.5 to 20.0 µg/sample		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
PCBs on PUF		**PUF**	**GC**
Aroclor 1016	1 to 15 µg/sample		
Aroclor 1221	1 to 15 µg/sample		
Aroclor 1232	1 to 15 µg/sample		
Aroclor 1242	1 to 15 µg/sample		
Aroclor 1248	1 to 15 µg/sample		
Aroclor 1254	1 to 15 µg/sample		
Aroclor 1260	1 to 15 µg/sample		
PAHs on PUF		**PUF**	**HPLC**
Acenaphthene	10.0 to 200 µg/sample		
Acenaphthylene	10.0 to 200 µg/sample		
Anthracene	10.0 to 200 µg/sample		
Benzo(a)anthracene	10.0 to 200 µg/sample		
Benzo(b)fluoranthene	10.0 to 200 µg/sample		
Benzo(k)fluoranthene	10.0 to 200 µg/sample		
Benzo(g,h,i)perylene	10.0 to 200 µg/sample		
Benzo(a)pyrene	10.0 to 200 µg/sample		
Chrysene	10.0 to 200 µg/sample		
Dibenz(a,h)anthracene	10.0 to 200 µg/sample		
Fluoranthene	10.0 to 200 µg/sample		
Fluorene	10.0 to 200 µg/sample		
Indeno(1,2,3-cd)pyrene	10.0 to 200 µg/sample		
Naphthalene	10.0 to 200 µg/sample		
Phenanthrene	10.0 to 200 µg/sample		
Pyrene	10.0 to 200 µg/sample		
Aldehydes & Ketones on Sorbent		**sorbent**	**HPLC**
Acetaldehyde	0.5 to 10 µg/sample		
Acetone	0.5 to 10 µg/sample		
Benzaldehyde	0.5 to 10 µg/sample		
2-Butanone (MEK)	0.5 to 10 µg/sample		
Butyraldehyde (butanal)	0.5 to 10 µg/sample		
Crotonaldehyde	0.5 to 10 µg/sample		
2,5 Dimethylbenzaldehyde	0.5 to 10 µg/sample		
Formaldehyde	0.5 to 10 µg/sample		
Hexaldehyde (hexanal)	0.5 to 10 µg/sample		
Isovaleraldehyde	0.5 to 10 µg/sample		
Propionaldehyde (propanol)	0.5 to 10 µg/sample		
o-Tolualdehyde	0.5 to 10 µg/sample		
m-Tolualdehyde	0.5 to 10 µg/sample		
p-Tolualdehyde	0.5 to 10 µg/sample		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Valeraldehyde (pentanal)	0.5 to 10 µg/sample		
Certified Reference Materials		**Water**	
Chemical Oxygen Demand (COD)	1-10000 mg/L		**Spec.**
Total Kjeldahl Nitrogen (TKN)	1-10000 mg/L		**Electrode**
MBAS/LAS Surfactants	1-10000 mg/L		**Spec.**
Total Dissolved Solids (TDS)	1-10000 mg/L		**Spec.**
Total Suspended Solids (TSS)	1-10000 mg/L		**Gravimetric**
Total Organic Carbon (TOC)	.05-10000 mg/L		**TOC meter**
Total Inorganic Carbon	.05-10000 mg/L		**TOC meter**
Total Organic Halides (TOX)	1-10000 mg/L		**HPLC**
Phenol	1 to 10000 mg/L		**4AAP**
Sulfide	1 to 10000 mg/L		**Titration**
Conductivity	5-500,000 µmhos/cm		**Conductivity meter**
Acetate	1 to 10000 mg/L		**IC**
Ammonia as NH_3	1 to 10000 mg/L		**Electrode**
Ammonia as N	1 to 10000 mg/L		**Electrode**
Bromate	1 to 10000 mg/L		**IC**
Bromide	1 to 10000 mg/L		**IC**
Chlorate	1 to 10000 mg/L		**IC**
Chloride	1 to 10000 mg/L		**IC**
Complex Cyanide	1 to 10000 mg/L	**(NaOH)**	**Spec.**
Free Cyanide	1 to 10000 mg/L	**(NaOH)**	**IC**
Iodide	1 to 10000 mg/L		**IC**
Fluoride	1 to 10000 mg/L		**IC**
Nitrate as NO_3	1 to 10000 mg/L		**IC**
Nitrate as N	1 to 10000 mg/L		**IC**
Nitrite as N	1 to 10000 mg/L		**IC**
Nitrite as NO_2	1 to 10000 mg/L		**IC**
Perchlorate	1 to 10000 mg/L		**IC**
Phosphate as PO_4	1 to 10000 mg/L		**IC**
Sulfate	1 to 10000 mg/L		**IC**
Individual Metals Calibration		**Water**	**ICP/ICP-MS**
Aluminum	1 to 10000 mg/L		
Antimony	1 to 10000 mg/L		
Arsenic	1 to 10000 mg/L		
Barium	1 to 10000 mg/L		
Beryllium	1 to 10000 mg/L		
Bismuth	1 to 10000 mg/L		
Boron	1 to 10000 mg/L		
Cadmium	1 to 10000 mg/L		
Calcium	1 to 10000 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Chromium VI	1 to 10000 mg/L		
Chromium, total	1 to 10000 mg/L		
Cobalt	1 to 10000 mg/L		
Copper	1 to 10000 mg/L		
Iron	1 to 10000 mg/L		
Lead	1 to 10000 mg/L		
Lithium	1 to 10000 mg/L		
Magnesium	1 to 10000 mg/L		
Manganese	1 to 10000 mg/L		
Mercury	1 to 10000 mg/L		
Molybdenum	1 to 10000 mg/L		
Nickel	1 to 10000 mg/L		
Phosphorus	1 to 10000 mg/L		
Platinum	1 to 10000 mg/L		
Potassium	1 to 10000 mg/L		
Selenium	1 to 10000 mg/L		
Silica	1 to 10000 mg/L		
Silicon	1 to 10000 mg/L		
Silver	1 to 10000 mg/L		
Sodium	1 to 10000 mg/L		
Strontium	1 to 10000 mg/L		
Thallium	1 to 10000 mg/L		
Tin	1 to 10000 mg/L		
Titanium	1 to 10000 mg/L		
Vanadium	1 to 10000 mg/L		
Yttrium	1 to 10000 mg/L		
Zinc	1 to 10000 mg/L		
ICP-MS Trace Metals Calibration		**Water**	**ICP/ICP-MS**
Aluminum	1 to 10000 mg/L		
Antimony	1 to 10000 mg/L		
Arsenic	1 to 10000 mg/L		
Barium	1 to 10000 mg/L		
Beryllium	1 to 10000 mg/L		
Cadmium	1 to 10000 mg/L		
Chromium	1 to 10000 mg/L		
Cobalt	1 to 10000 mg/L		
Copper	1 to 10000 mg/L		
Iron	1 to 10000 mg/L		
Lead	1 to 10000 mg/L		
Manganese	1 to 10000 mg/L		
Molybdenum	1 to 10000 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix [1]	Measurement Technique(s)
Nickel	1 to 10000 mg/L		
Selenium	1 to 10000 mg/L		
Silver	1 to 10000 mg/L		
Thallium	1 to 10000 mg/L		
Thorium	1 to 10000 mg/L		
Uranium	1 to 10000 mg/L		
Vanadium	1 to 10000 mg/L		
Zinc	1 to 10000 mg/L		
ICP-MS Major Cations Calibration		**Water**	**ICP/ICP-MS**
Calcium	1 to 10000 mg/L		
Magnesium	1 to 10000 mg/L		
Potassium	1 to 10000 mg/L		
Sodium	1 to 10000 mg/L		
ICP-MS Tuning Standard		**Water**	**ICP/ICP-MS**
Barium	1 to 10000 mg/L		
Beryllium	1 to 10000 mg/L		
Cerium	1 to 10000 mg/L		
Cobalt	1 to 10000 mg/L		
indium	1 to 10000 mg/L		
Lead	1 to 10000 mg/L		
Lithium	1 to 10000 mg/L		
Magnesium	1 to 10000 mg/L		
Rhodium	1 to 10000 mg/L		
Thallium	1 to 10000 mg/L		
Uranium	1 to 10000 mg/L		
Yttrium	1 to 10000 mg/L		
ICP Trace Metals for Calibration		**Water**	**ICP/ICP-MS**
Aluminum	1 to 10000 mg/L		
Antimony	1 to 10000 mg/L		
Arsenic	1 to 10000 mg/L		
Barium	1 to 10000 mg/L		
Beryllium	1 to 10000 mg/L		
Bismuth	1 to 10000 mg/L		
Boron	1 to 10000 mg/L		
Cadmium	1 to 10000 mg/L		
Calcium	1 to 10000 mg/L		
Chromium	1 to 10000 mg/L		
Cobalt	1 to 10000 mg/L		
Copper	1 to 10000 mg/L		

Category and sub-category of Reference Materials	Concentration Range	Test matrix (1)	Measurement Technique(s)
Iron	1 to 10000 mg/L		
Lanthanum	1 to 10000 mg/L		
Lead	1 to 10000 mg/L		
Magnesium	1 to 10000 mg/L		
Manganese	1 to 10000 mg/L		
Molybdenum	1 to 10000 mg/L		
Nickel	1 to 10000 mg/L		
Phosphorus	1 to 10000 mg/L		
Potassium	1 to 10000 mg/L		
Selenium	1 to 10000 mg/L		
Sodium	1 to 10000 mg/L		
Strontium	1 to 10000 mg/L		
Tin	1 to 10000 mg/L		
Vanadium	1 to 10000 mg/L		
Zinc	1 to 10000 mg/L		
pH Calibration		**Water**	**pH Meter**
pH Buffers	2-12 pH		

(1) Applicable to EPA-approved methods

Accredited Reference Material Producer

A2LA has accredited

ERA

Golden, CO

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation. This producer meets the requirements of ISO Guide 34:2009 *General Requirements for the Competence of Reference Material Producers.* This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.

Presented this 29th day of March 2017.

President and CEO
For the Accreditation Council
Certificate Number 1539.03
Valid to September 30, 2018

For reference materials to which this accreditation applies, please refer to the reference material producer's Scope of Accreditation.

CONTENTS

ISO/IEC GUIDE 34:2009 ACCREDITED
REFERENCE MATERIAL PRODUCER CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005 ACCREDITED
CHEMICAL TESTING LABORATORY CERTIFICATE NO. 1539.02

ISO/IEC 17043:2010 ACCREDITED
PROFICIENCY TESTING PROVIDER CERTIFICATE NO. 1539.01

nqa. ISO 9001 Registered
ISO 9001:2008 CERTIFICATE NO. 10551

ERA

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:

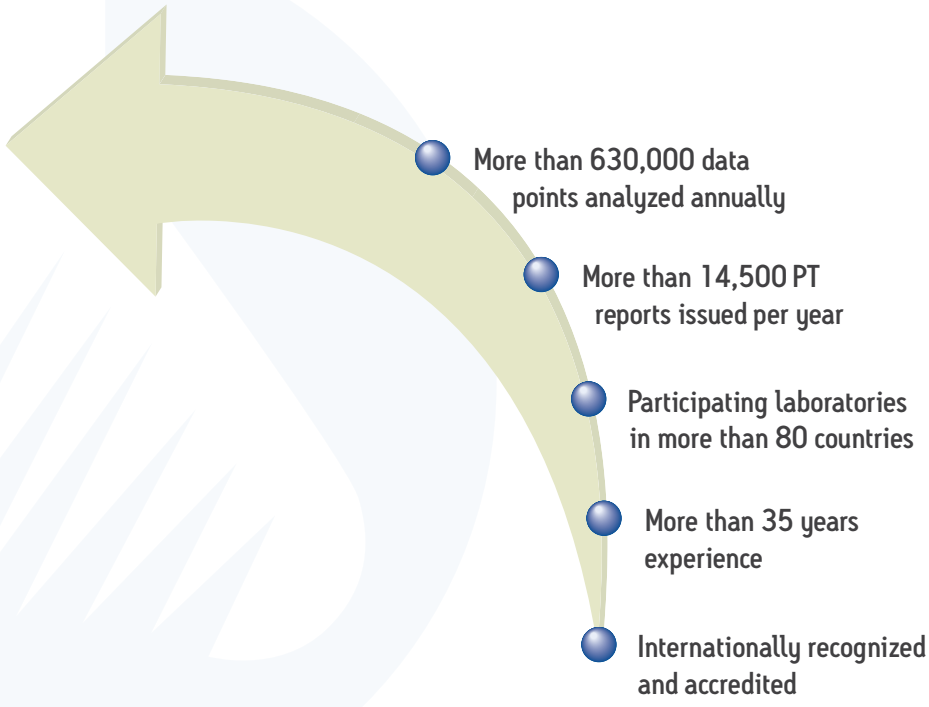
- Continuously improve the reliability of data you deliver to your customers
- Cost-effectively meet your accreditation goals

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.

QuiK Response PT

ISO/IEC GUIDE 34:2009

ACCREDITED

REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17043:2010

ACCREDITED

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CERTIFICATE NO. 1539.01

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CHEMICAL TESTING LABORATORY
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nqa.
ISO 9001
Registered

ISO 9001:2008
CERTIFICATE NO. 10551

Remove and Post for Easy Reference

2015 PROFICIENCY TESTING SCHEME SCHEDULE

ERA
www.eraqc.com

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

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

Remove and Post for Easy Reference

2016 PROFICIENCY TESTING SCHEME SCHEDULE

ERA
www.eraqc.com

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

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

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

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.

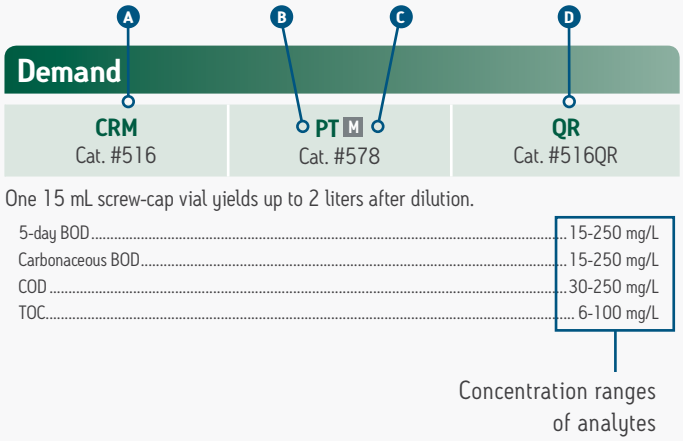
QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

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 Directory, 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
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

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.

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

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

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

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

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	PT M	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, or other applicable method. Gravimetric analysis only.

Oil & Grease ..... 20-200 mg/L

1 Liter Oil & Grease

CRM	PT M	QR
Cat. #518	Cat. #582	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	PT M	QR
Cat. #818	Cat. #582	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	PT Q	QR
Cat. #519	Cat. #489	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	PT Q	QR
Cat. #600	Cat. #642	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	PT Q	QR
Cat. #601	Cat. #642	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	PT M	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

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 EPA1631, or other sensitive mercury analysis methods.

Mercury, total	20-100 ng/L

ERA Low-Level Mercury is also available during February and March WP PT 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 Q	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 M	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 M	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 Q	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 M	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 Q	QR
Cat. #775	Cat. #890	Cat. #775QR

One 60 mL poly bottle yields up to 1 liter after dilution. Analyze for silica as SiO_2 with colorimetric or ICP methods.

Silica as SiO_2 ..... 50-250 mg/L

Sulfide

CRM	PT M	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 Q	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	PT Q	QR
Cat. #915	Cat. #885	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 $CaCO_3$ ..... 650-1,800 mg/L

Boron

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

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

Boron ..... 800-2000 µg/L

Bromide

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

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

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

Total Residual Chlorine (TRC)

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

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

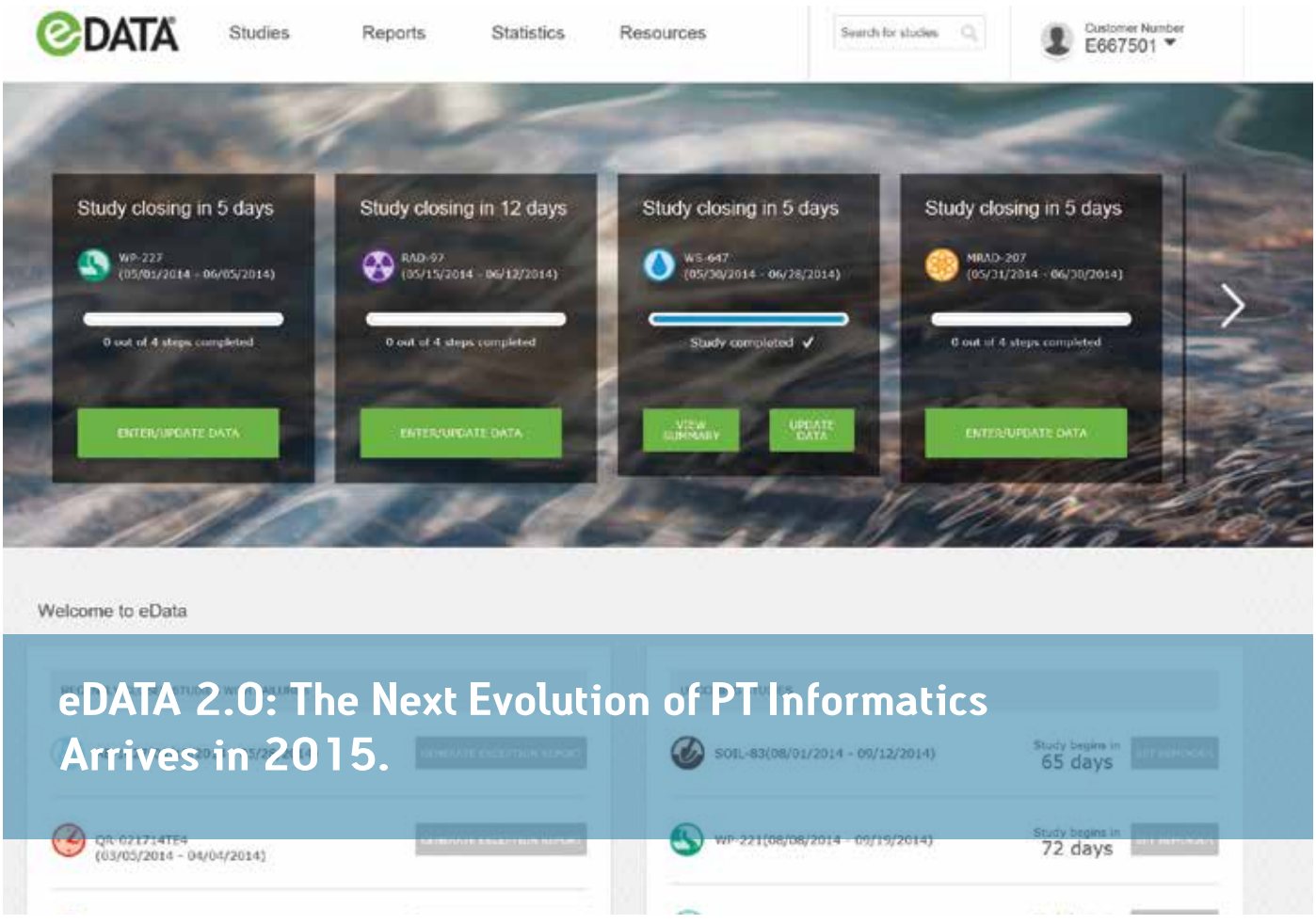
Total Residual Chlorine ..... 0.5-3 mg/L

Low-Level Total Residual Chlorine (TRC)

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

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

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



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

VOLATILES

Volatiles

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

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

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

Volatile Aromatics

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

One 2 mL flame sealed ampule yields in excess of 200 mL after dilution. Use with EPA methods 602, 8021, or other applicable method. Each standard contains all listed analytes at 5-300 µg/L after dilution.

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

BTEX & MTBE in Water

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

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

Gasoline Range Organics (GRO) in Water

CRM	PT Q	QR
Cat. #762	Cat. #640	Cat. #762QR

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	PT M	QR
Cat. #718	Cat. #829	Cat. #718QR

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

PCBs

PCBs in Water

CRM	PT M	QR
Cat. #734S	Cat. #832S	Cat. #734SQR

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 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

PCBs in Oil

CRM	PT M	QR
Cat. #729S	Cat. #835S	Cat. #729SQR

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 1242
- Aroclor 1254
- Aroclor 1260

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

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

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
- Ethylene glycol
- Propylene glycol
- Tetraethylene glycol
- Triethylene 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
- 2-Amino-4,6-dinitrotoluene
- 1,3-Dinitrobenzene
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- HMX
- Nitrobenzene
- 2-Nitrotoluene
- 3-Nitrotoluene
- 4-Nitrotoluene
- RDX
- Tetryl
- 1,3,5-Trinitrobenzene
- 2,4,6-Trinitrotoluene

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

PAHs – GC/GCMS

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

One 2mL flame sealed ampule yields up to 2 liters after dilution. Use with EPA methods 625, 8100, 8270, or other applicable method. Each standard contains a subset of the analytes listed below at 10-200 µg/L.

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

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 contains a subset of the analytes listed below at 1-20 µg/L.

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

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

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
- Aldicarb sulfone
- Aldicarb sulfoxide
- Baygon
- Carbaryl
- Carbofuran
- Diuron
- 3-Hydroxycarbofuran
- Methiocarb
- Methomyl
- Oxamyl
- 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)
- Carbophenothion
- Chlorpyrifos
- Demeton O & S
- Diazinon
- Dichlorvos (DDVP)
- Dimethoate
- Dioxathion
- Disulfoton
- Ethion
- Ethoprop
- Ethyl Parathion (Parathion)
- Famphur
- Fonofos
- Malathion
- Methyl parathion
- Phorate
- Phosmet
- Ronnel
- Stirophos (tetrachlorovinphos)
- 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

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

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

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

QC Plus – pH

RM
Cat. #4063

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

pH	2.00-12.0 Units

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.

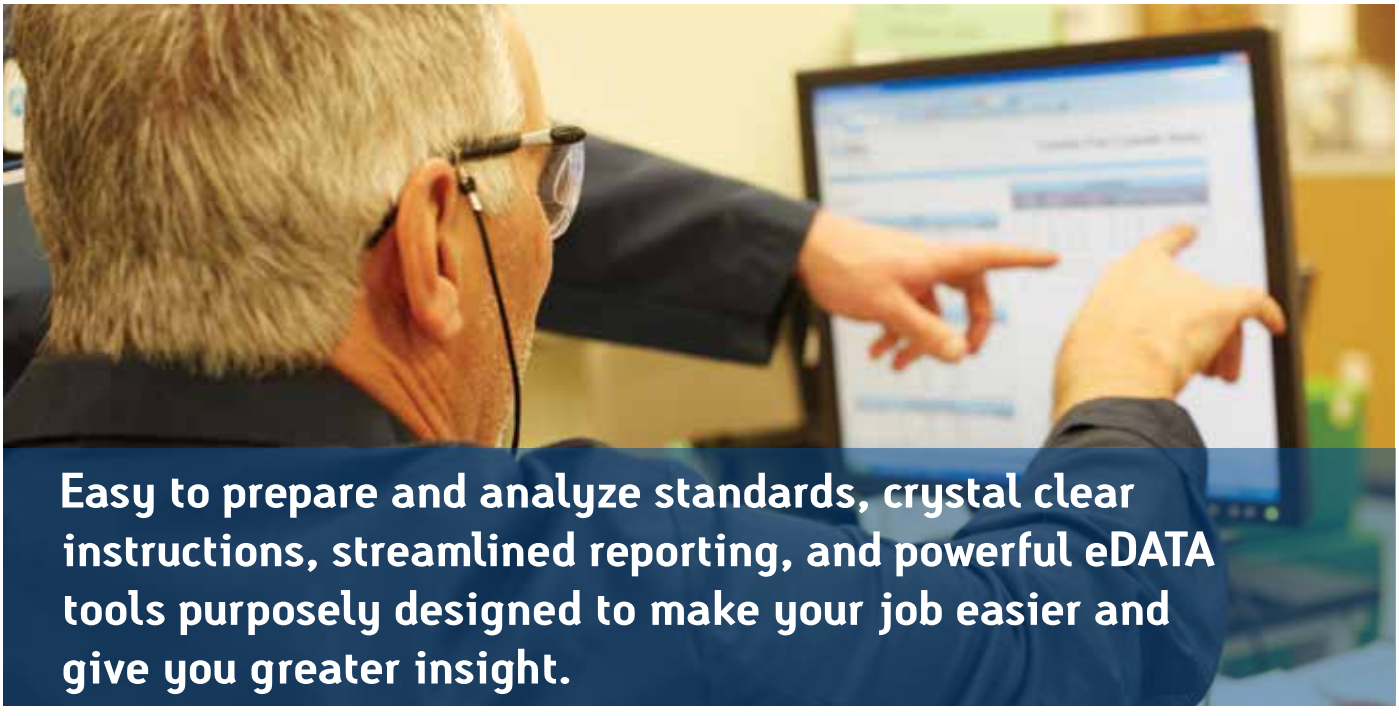
Total Residual Chlorine	0.100-1.00 mg/L

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



Easy to prepare and analyze standards, crystal clear instructions, streamlined reporting, and powerful eDATA tools purposely designed to make your job easier and give you greater insight.



The Industry Standard.

Your Partner In Defensible Data

We understand that the art of our superior service is just as important as the science of our superior standards, our goal is to help you successfully complete your accreditation requirements and ensure the reliability of the data you report to your customers.

- Customer Service and Technical experts with over 200 combined years of experience in the environmental testing field
- Available 6:00 am to 6:00 pm MT Monday – Thursday, and 6:00 am to 5:00 pm MT Friday.
- No hassle product replacement

With your accreditation on the line, the last thing you need is for a PT sample to be dropped or broken in the lab, a dilution error, or routine QC problem to stand in the way of successfully reporting your results. With ERA you get worry-free compliance.

- Corrective action support

When failures occur, your accreditation and the defensibility of the results you report to your clients depends on effectively determining root cause and implementing appropriate corrective actions. Our technical experts have many years of environmental analytical experience and are here to help you solve your analytical challenges.

HOW CAN ERA MAKE YOUR JOB EASIER?

"I cannot think of anything more that would make lab life easier when it comes to ERA testing items. Online ordering is simple, online results posting is easy and customer support outstanding."

- 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

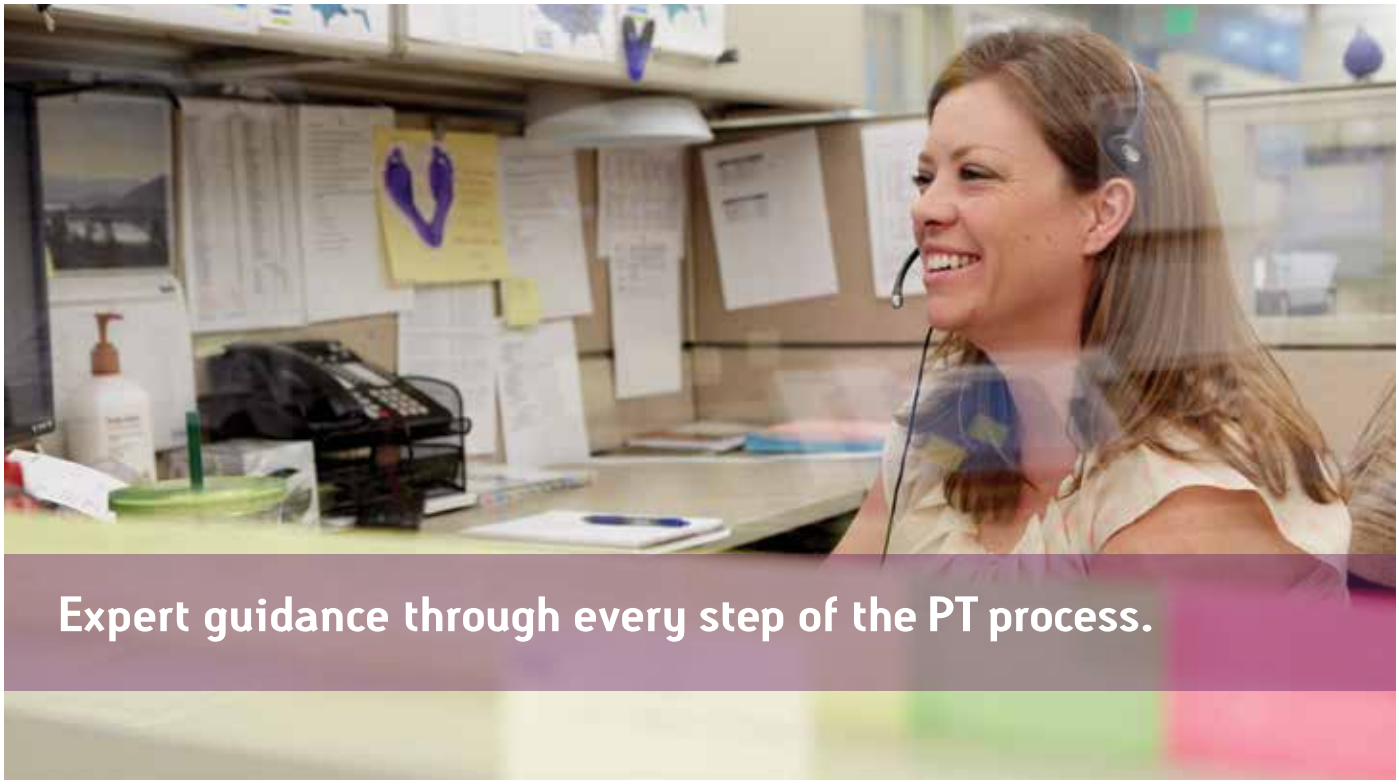
Description	CRM	PT	QR	Page
DMR-QA Sets	see page 28 for options			
Complex Nutrients	525	579	525QR	27
Demand	516	578	516QR	26
Hardness/TSS	507	580	507QR	26
Hexavalent Chromium	984	898	984QR	26
Low-Level Mercury	931	896	931QR	26
Low-Level Total Residual Chlorine (TRC)	917	881	917QR	27
Mercury	514	574	514QR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

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			

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

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.



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

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

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

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

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

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

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

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

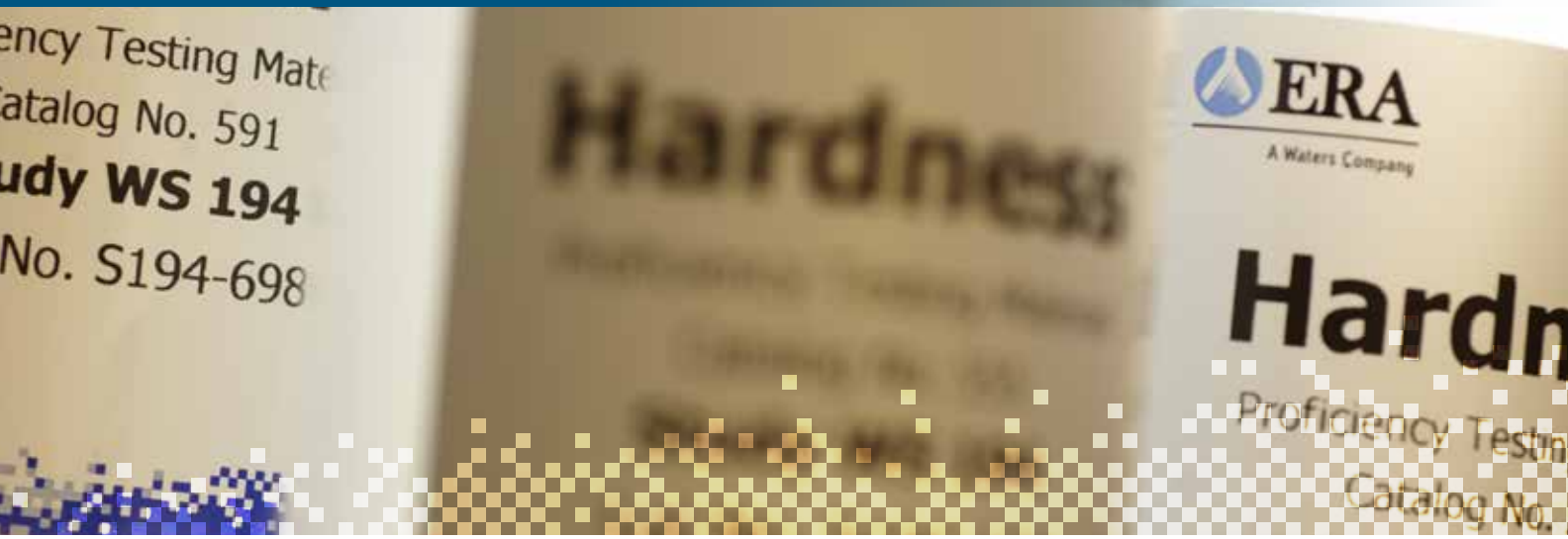
Set includes Hardness/TSS, pH, Oil & Grease, Trace Metals, Mercury, Demand, Simple Nutrients, Complex Nutrients, Total Cyanide, Total Phenolics, Total Residual Chlorine, Minerals, Settleable Solids, Nitrite, Turbidity, and Hexavalent Chromium.

WHOLE EFFLUENT TOXICITY

Description	USEPA Test Code	USEPA Method Code	CRM	PT	QR
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
Daphnia Pulex					
48-hour acute, non-renewal, 25 °C, MHSF.	38	2021	AQC015	WET015	AQC015QR
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/ Carbamoxyloxime 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
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

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.

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

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

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

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

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

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.

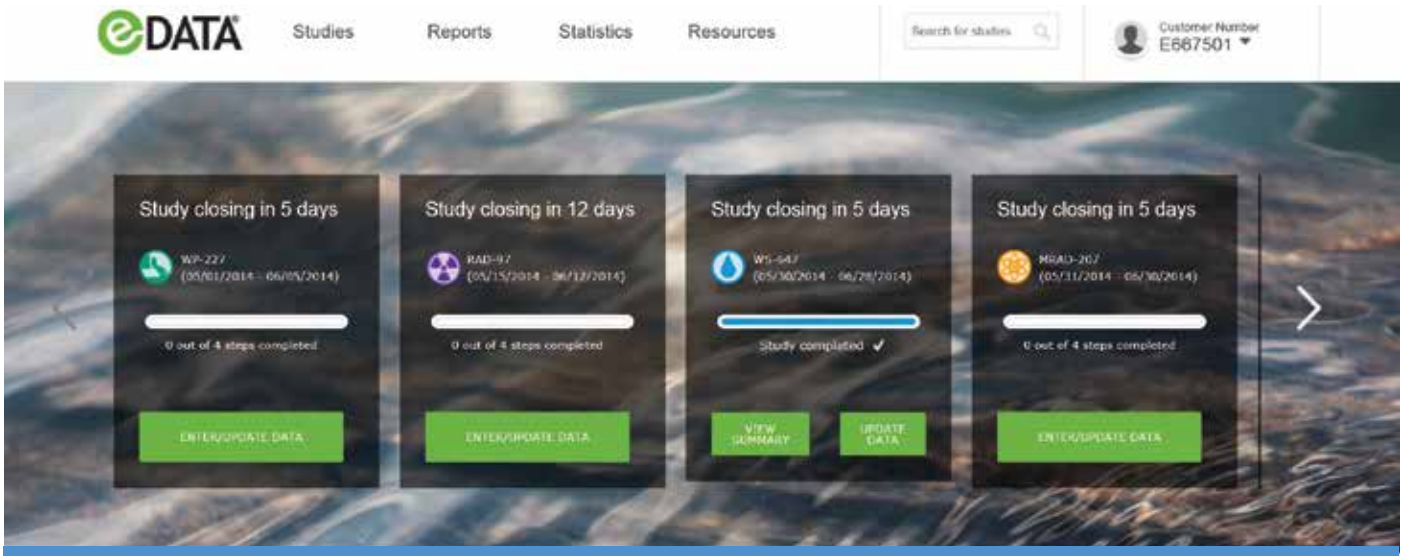
Nitrite as N ..... 0.4-2 mg/L

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	PT M	QR
Cat. #696	Cat. #593	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	PT M	QR
Cat. #983	Cat. #556	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	PT M	QR
Cat. #669	Cat. #557	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	PT Q	QR
Cat. #910	Cat. #903	Cat. #910QR

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

Perchlorate ..... 4-20 µg/L

Silica

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

One 60 mL poly bottle yields 1 liter after dilution.

Silica as SiO_2 ..... 5-75 mg/L

Surfactants-MBAS

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

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

Color ..... 10-75 PC units

Corrosivity

CRM	PT Q	QR
Cat. #980	Cat. #900	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	PT M	QR
Cat. #699	Cat. #592	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	PT Q	QR
Cat. #662	Cat. #904	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 M	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
- Dibromoacetic Acid
- Dichloroacetic Acid
- Monobromoacetic Acid
- Monochloroacetic Acid
- Trichloroacetic Acid

VOLATILE ORGANICS

Gasoline Additives

CRM	PT Q	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)
- tert-Butyl Alcohol
- Di-isopropylether (DIPE)
- Ethyl tert-butyl ether (ETBE)
- Methyl tert-butyl ether (MTBE)
- Trichlorofluoromethane (Freon® 11)
- Trichlorotrifluoroethane (Freon 113)

Halomethanes (THMs)

CRM	PT M	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
- Bromoform
- Chlorodibromomethane
- Chloroform

Regulated Volatiles

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

Unregulated Volatiles

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

All ERA WS PTs open monthly (M) or quarterly (Q) 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
- Aldrin
- Atrazine
- Bromacil
- Butachlor
- Diazinon
- Dieldrin
- Endrin
- Heptachlor
- Heptachlor epoxide (beta)
- Hexachlorobenzene
- Hexachlorocyclopentadiene
- Lindane (gamma-BHC)
- Methoxychlor
- Metolachlor
- Metribuzin
- Molinate (Ordram)
- Prometon
- Propachlor
- Simazine
- Thiobencarb
- Trifluralin

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 toxapheneat 2-20 µg/L.

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

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

Dioxin

CRM	PT Q	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 pg/L.

PCBs as Decachlorobiphenyl

CRM	PT Q	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 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

Semivolatiles #1

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

Naphthalene is not within the EPA/NELAC range. Use the Unregulated Volatiles standard (page 35) for this compound in the EPA/NELAC range.

HERBICIDES

Chlorinated Acid Herbicides

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

Semivolatiles #2 Herbicides

CRM	PT M	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
- Endothall
- Glyphosate
- Paraquat

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

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.

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.

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

WP MICROBIOLOGY

Wastewater Coliform Microbe

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

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	PT Q	QR
Cat. #081	Cat. #880	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.

STATE-SPECIFIC MICROBIOLOGY

Massachusetts Ground Water Enterococci

CRM	PT *
Cat. #081	Cat. #077

Each PT sample set is composed of 10 lyophilized samples to be analyzed for presence or absence of Enterococci. This sample is specifically designed for the State of Massachusetts certification for compliance with the federal Ground Water Rule. Each CRM sample set is composed of 2 lyophilized samples- one quantitative positive and one blank.

* Massachusetts Ground Water Enterococci PT is available any time.

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.

The Industry Standard

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

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.

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	PT M	QR
Cat. #084	Cat. #079	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	PT M	QR
Cat. #694	Cat. #080	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	PT Q	QR
Cat. #078	Cat. #595	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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All ERA Microbiology PTs open monthly (M) or quarterly (Q) unless otherwise noted.

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
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

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

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METALS

Metals in Soil

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

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	PT Q	QR
Cat. #921	Cat. #876	Cat. #921QR

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

Hexavalent chromium	40-300 mg/kg

TCLP Metals in Soil

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

One 105 g soil standard in a screw-cap bottle designed specifically to meet all state requirements for TCLP extraction and analysis for the metals listed below.

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

Metals in Sewage Sludge

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

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

Aluminum	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 Q	QR
Cat. #914	Cat. #875	Cat. #914QR

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

Corrosivity/pH ..... 2-12 S.U.

Ignitability/Flash Point

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

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

Ignitability/Flashpoint ..... 100-200°F

OIL & GREASE

Oil & Grease in Soil

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

One screw-cap bottle containing 50 g of soil ready to analyze. Use with gravimetric method 9071B or infrared spectrometric analysis.

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

INORGANICS

Anions in Soil

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

One 40 g soil standard in a screw-cap bottle designed for a DI water extraction procedure for all the anions listed below.

Bromide ..... 10-100 mg/kg
Chloride ..... 200-1,000 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 Q	QR
Cat. #541	Cat. #621	Cat. #541QR

One 40 g soil standard in a screw-cap bottle for all distillation/colorimetric methods.

Total Cyanide ..... 20-200 mg/kg
Amenable Cyanide ..... 0-100 mg/kg

Nutrients in Soil

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

One 40 g soil standard in a screw-cap bottle. Use to analyze for all the nutrients listed below.

Ammonia as N ..... 300-3,000 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)

The Industry Standard

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VOLATILES

Volatiles in Soil

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

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

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

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

Gasoline Range Organics (GRO) in Soil

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

One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100-2,000 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	PT Q	QR
Cat. #761	Cat. #633	Cat. #761QR

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

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

Ready-to-Use VOAs in Soil

CRM	PT Q	QR
Cat. #924	Cat. #870	Cat. #924QR

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

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

TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons (TPH) in Soil

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

One screw-top bottle with 50 g of soil to be analyzed for TPH. Use with EPA IR or gravimetric methods 8440, 9071B, 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 Q	QR
Cat. #571	Cat. #632	Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for TPH in the presence of *interfering fatty acids*. Use with EPA IR or gravimetric methods 8440, 9071B, 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

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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 (Q) unless otherwise noted.

SEMIVOLATILES

Nitroaromatics & Nitramines in Soil

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

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

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

Low-Level PAHs in Soil

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

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

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

Diesel Range Organics (DRO) in Soil

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

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

Glycols in Soil

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

Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA methods 8015B, 8430, 1671, or other applicable method.

- Diethylene glycol
- Ethylene glycol
- Propylene glycol
- Tetraethylene glycol
- Triethylene glycol

Base/Neutrals & Acids in Soil

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

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

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

HERBICIDES

Chlorinated Acid Herbicides in Soil

CRM	PT Q	QR
Cat. #723	Cat. #626	Cat. #723QR

Two flame-sealed ampules, each containing 30 g of soil are ready-to-use. Use with EPA method 8151, or other applicable methods. Includes a subset of the analytes listed below at 100-1,000 µg/kg (MCPA & MCPP 1,000-10,000 µg/kg).

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

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

PCBS

PCBs in Soil

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

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

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

PESTICIDES

Organochlorine Pesticides in Soil

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

Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA method 8081, or other applicable methods. Includes a subset of the analytes listed below at 50-500 µg/kg.

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

Chlordane in Soil

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

One screw-top bottle containing 50 g of soil is ready to analyze. Use with EPA method 8081, or other applicable methods. The standard contains technical chlordane at 200-1,000 µg/kg.

Toxaphene in Soil

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

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

Carbamate Pesticides in Soil

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

Organophosphorus Pesticides (OPP) in Soil

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

Two flame-sealed ampules, each containing 30 g of soil are ready to analyze. Use with EPA method 8141, or other applicable methods. Each standard contains a subset of the analytes listed below at 100-1,000 µg/kg.

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

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

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.

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

One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes 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	PT Q	QR
Cat. #763	Cat. #630	Cat. #763QR

One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100-2,000 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	PT Q	QR
Cat. #765	Cat. #631	Cat. #765QR

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

Total Petroleum Hydrocarbons (TPH) in Soil

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

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

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

Total Petroleum Hydrocarbons (TPH) in Soil

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

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

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

UST IN WATER

BTEX & MTBE in Water

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

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

Gasoline Range Organics (GRO) in Water

CRM	PT Q	QR
Cat. #762	Cat. #640	Cat. #762QR

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	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, or other applicable GC/FID methods. Includes #2 Diesel at 800-6,000 µg/L.

Total Petroleum Hydrocarbons (TPH) in Water

CRM	PT Q	QR
Cat. #600	Cat. #642	Cat. #602QR

One liter whole-volume bottle is ready to analyze for total petroleum hydrocarbons (TPH) without interferring 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	PT Q	QR
Cat. #601	Cat. #642	Cat. #602QR

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

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

ALASKA UST IN WATER

Alaska GRO in Water

RM	PT ✱
Cat. #645	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	PT ✱
Cat. #647	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	PT ✱
Cat. #646	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	PT ✱
Cat. #635	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	PT ✱
Cat. #637	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	PT ✱
Cat. #638	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	PT ✱
Cat. #636	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	PT Q	QR
Cat. #798	Cat. #488	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	PT Q	QR
Cat. #794	Cat. #476	Cat. #794QR

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	PT Q	QR
Cat. #795	Cat. #477	Cat. #795QR

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	PT Q	QR
Cat. #796	Cat. #478	Cat. #796QR

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	PT Q	QR
Cat. #797	Cat. #479	Cat. #797QR

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	PT Q	QR
Cat. #773	Cat. #649	Cat. #773QR

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

Wisconsin Diesel Range Organics (DRO) in Water

CRM	PT Q	QR
Cat. #772	Cat. #648	Cat. #772QR

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

WASHINGTON HEM/SGT-HEM METHOD UST

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

Washington HEM/SGT-HEM

CRM	PT Q	QR
Cat. #519	Cat. #489	Cat. #519QR

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

Description	CRM	PT	QR	Page
Aldehydes and Ketones on Sorbent	1114	1014 Q	1114QR	61
Ammonia in Impinger Solution	1145	1045 Q	1145QR	63
Chromium on Filter Paper	1131	1031 Q	1131QR	62
Fluoride in Impinger Solution	1141	1041 Q	1141QR	63
Hexavalent Chromium in Impinger Solution	1132	1032 Q	1132QR	62
Hydrogen Halides and Halogens in Impinger Solution	1140	1040 Q	1140QR	63
Lead in Impinger Solution	1130	1030 Q	1130QR	62
Lead on Filter Paper	1129	1029 Q	1129QR	62
Mercury in Impinger Solution	1128	1028 Q	1128QR	62
Mercury on Filter Paper	1127	1027 Q	1127QR	62
Metals in Impinger Solution	1126	1026 Q	1126QR	62
Metals on Filter Paper	1125	1025 Q	1125QR	62

Description	CRM	PT	QR	Page
Nitrogen Oxide in Impinger Solution	1142	1042 Q	1142QR	63
Organochlorine Pesticides on Polyurethane Foam	1111	1011 Q	1111QR	61
PAHs on Polyurethane Foam	1113	1013 Q	1113QR	61
Particulate Matter in Impinger Solution	1151	1051 Q	1151QR	63
Particulate Matter on Filter Paper	1150	1050 Q	1150QR	63
PCBs on Polyurethane Foam	1112	1012 Q	1112QR	61
Semivolatiles on Polyurethane Foam	1110	1010 Q	1110QR	61
Sulfur Dioxide in Impinger Solution	1143	1043 Q	1143QR	63
Sulfuric Acid and Sulfur Dioxide in Impinger Solution	1144	1044 Q	1144QR	63
Volatiles in Gas Cylinder	1100	1000 Q	1100QR	60
Volatiles on Sorbent	1101*	1001 Q	1101QR	60

*Reference Material [RM]

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

Q All ERA Air & Emissions PTs open quarterly.

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.

VOLATILES

Volatiles in Gas Cylinder*

CRM	PT Q	QR
Cat. #1100	Cat. #1000	Cat. #1100QR

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

*Volatiles in Gas Cylinder ships as dangerous goods.

Volatiles on Sorbent

RM	PT Q	QR
Cat. #1101	Cat. #1001	Cat. #1101QR

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

Semivolatiles on Polyurethane Foam

CRM	PT Q	QR
Cat. #1110	Cat. #1010	Cat. #1110QR

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

Organochlorine Pesticides on Polyurethane Foam

CRM	PT Q	QR
Cat. #1111	Cat. #1011	Cat. #1111QR

One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA methods TO-04A, TO-10A, or other applicable methods. Contains at least16 analytes, randomly selected from the list below, at 0.5–20 µg/sample after preparation.

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

PCBs on Polyurethane Foam

CRM	PT Q	QR
Cat. #1112	Cat. #1012	Cat. #1112QR

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 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

PAHs on Polyurethane Foam

CRM	PT Q	QR
Cat. #1113	Cat. #1013	Cat. #1113QR

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

Aldehydes & Ketones on Sorbent

CRM	PT Q	QR
Cat. #1114	Cat. #1014	Cat. #1114QR

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

All ERA Air & Emissions PTs open quarterly (Q).

METALS

Metals on Filter Paper

CRM	PT Q	QR
Cat. #1125	Cat. #1025	Cat. #1125QR

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

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

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

Mercury on Filter Paper

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

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

Mercury	1-75 µg/filter

Mercury in Impinger Solution

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

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

Mercury	0.9-200 ng/mL

Lead on Filter Paper

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

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

Lead	20-350 µg/filter

Lead in Impinger Solution

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

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

Lead	0.2-120 µg/mL

Chromium on Filter Paper

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

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

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

Hexavalent Chromium in Impinger Solution

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

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

Hexavalent chromium	45-880 µg/L

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

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 (NOx)	100-2000 mg/dscm

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

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

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

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

Particulate Matter in Impinger Solution

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

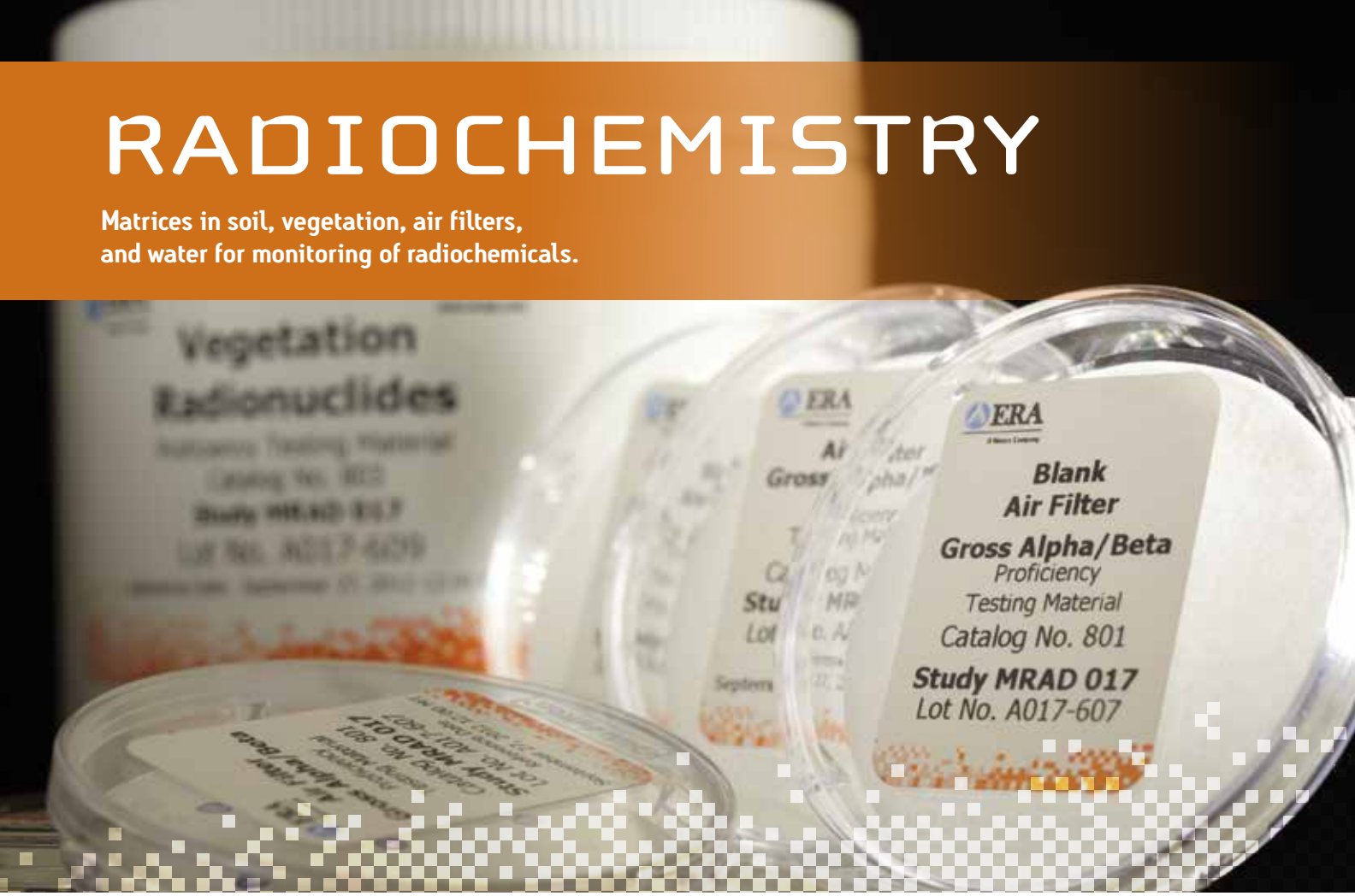
One impinger solution sample packaged in a 250 mL polyethylene bottle containing approximately 250 mL of standard ready for use with EPA methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter	140-675 mg/L

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

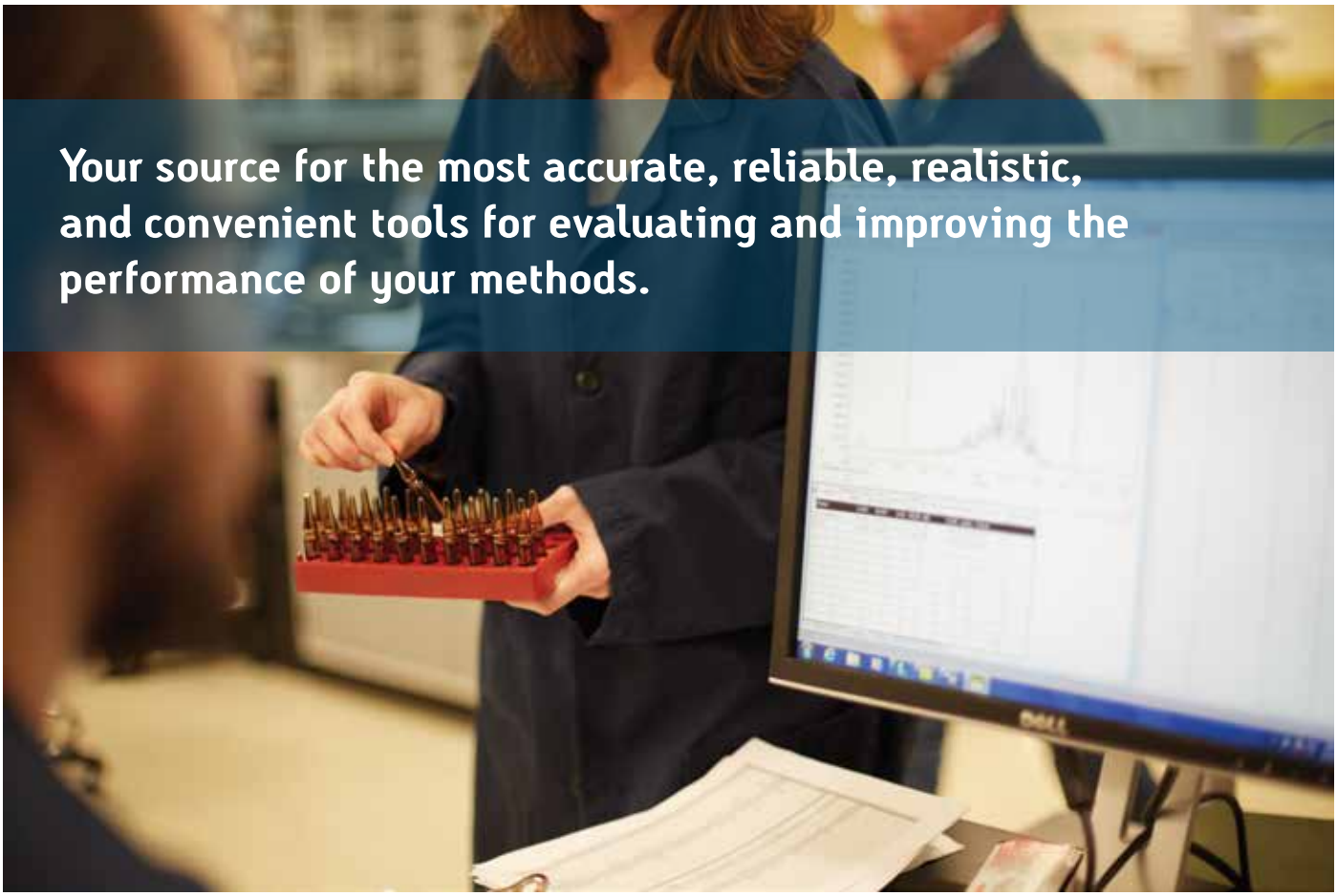
Q All ERA WS Radchem PTs open quarterly.

✱ All ERA MRAD PTs open in March and September.

Description	CRM	PT	QR	Page
Air Filter Gross Alpha/Beta	607	801 ✱	607QR	68
Air Filter Radionuclides	606	800 ✱	606QR	68
Soil Radionuclides	608	802 ✱	608QR	68
Vegetation Radionuclides	609	803 ✱	609QR	68
Water Gross Alpha/Beta	615	805 ✱	615QR	69
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.



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	PT *	QR
Cat. #608	Cat. #802	Cat. #608QR

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	PT *	QR
Cat. #609	Cat. #803	Cat. #609QR

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	PT *	QR
Cat. #606	Cat. #800	Cat. #606QR

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

Americium-241	2-80 pCi/filter
Cesium-134	50-1,500 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	PT *	QR
Cat. #607	Cat. #801	Cat. #607QR

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

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

* All ERA MRAD PTs open in March and September.

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

✱ 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

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

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	1-25µg/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
- Bromoxynil
- Dicamba
- Dichlorprop
- Ioxynil
- Monuron
- Propyzamide
- Trichlopyr

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
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- Alpha BHC
- Beta BHC
- Delta BHC
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endrin
- Gamma BHC (Lindane)
- Heptachlor
- Heptachlor epoxide
- Hexachlorobenzene
- Pentachlorobenzene
- 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
- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- alpha-Chlordane
- gamma-Chlordane
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- Heptachlor
- Heptachlor epoxide (beta)
- Methoxychlor
- 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
- Azinphos-methyl
- Chlorfenvinphos
- Chlorpyrifos
- Cypermethrin
- Diazinon
- Dichlorvos
- Fenitrothion
- Fenthion
- Malathion
- Mevinphos
- Parathion-ethyl
- Parathion-methyl

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

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 52
- PCB 101
- PCB 118
- PCB 138
- PCB 153
- PCB 180

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 52
- PCB 101
- PCB 118
- PCB 138
- PCB 153
- PCB 180

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

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
- AMPA
- Atrazine
- Bentazone
- Chlortoluron
- Diuron
- Glyphosate
- Isoproturon
- Linuron
- MCPA
- MCPB
- Mecoprop
- Propazine
- Simazine

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.

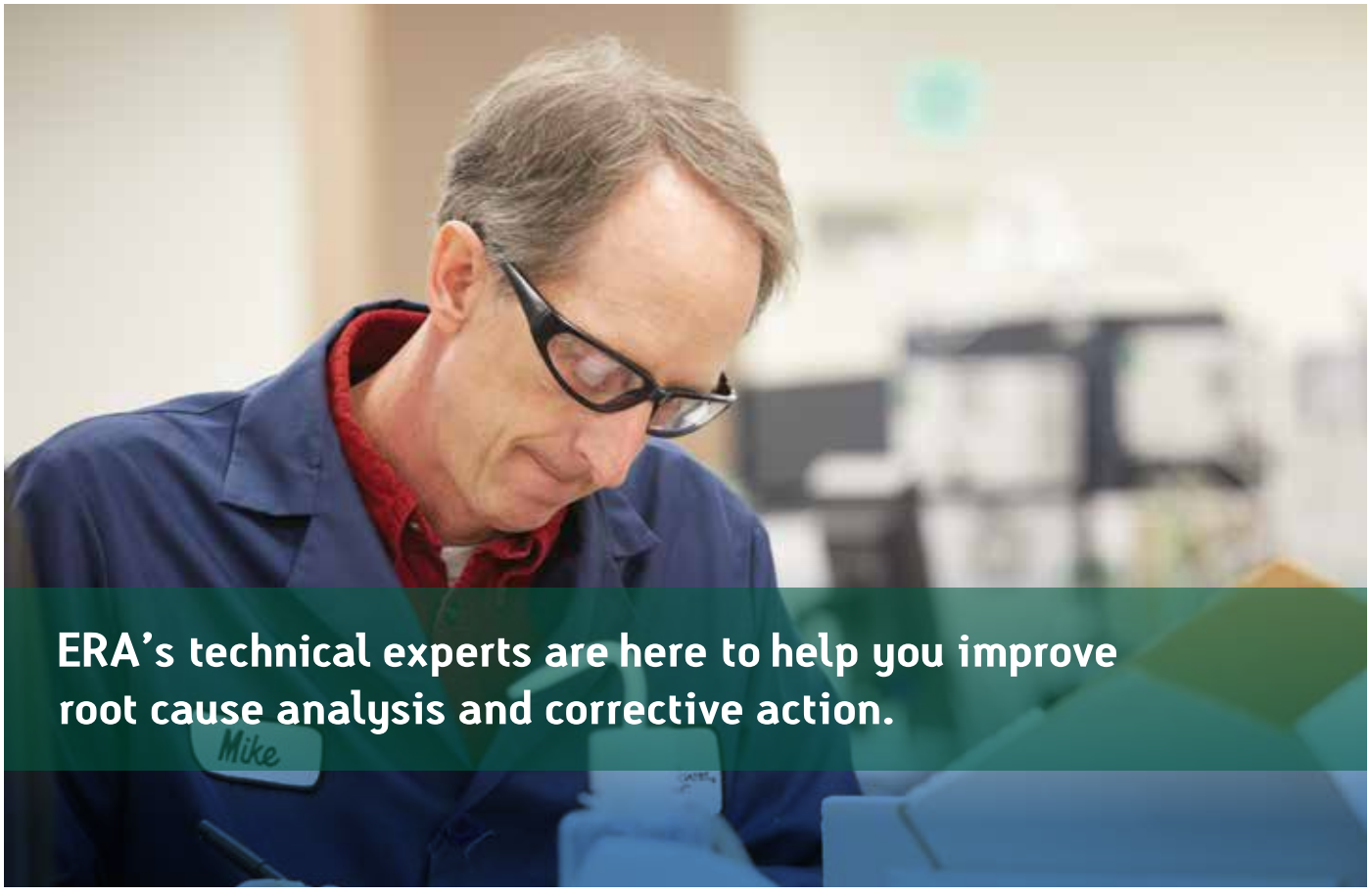
- 2,4-D
- AMPA
- Atrazine
- Bentazone
- Chlortoluron
- Diuron
- Glyphosate
- Isoproturon
- Linuron
- MCPA
- MCPB
- Mecoprop
- Propazine
- Simazine

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
- Bromoform
- Chlorodibromomethane
- Chloroform



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

Volatiles

CRM
Cat. #1251

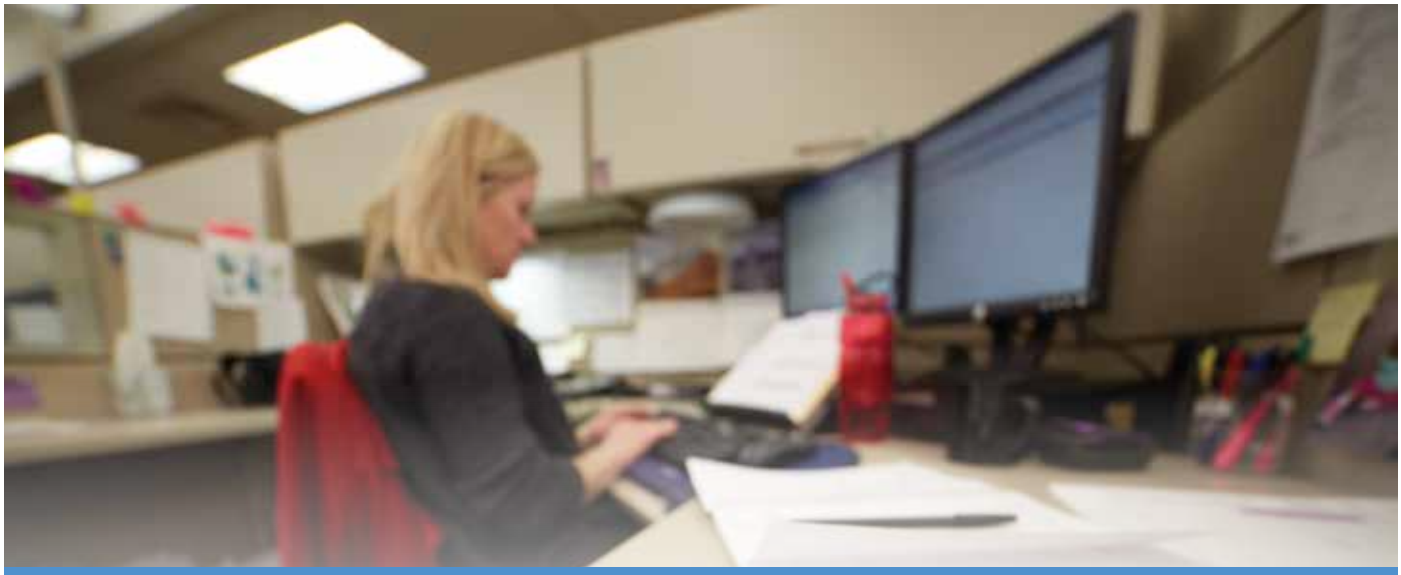
One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate makes up to 2 liters of sample to be analyzed for the compounds listed below at 1-300 µg/L.

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

HOW CAN ERA'S FASTER PT RESULTS MAKE YOUR JOB EASIER?

"It makes it a lot easier to correct problems faster, in order to get back on track of providing good data."

– Lab Manager, Nevada



Maximize Efficiency, Minimize Errors

Upload PT data directly from your LIMS

Simple to set up and easy-to-use, automatic data upload from your LIMS to ERA's eDATA System:

- Eliminates the possibility of transcription errors
- Saves you time by eliminating manual entry and review for transcription errors
- Allows you to spend more time reviewing the quality of the analytical data

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

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Organochlorine Pesticides	1374	1334	82
PCB Congeners	1373	1333	82
Semivolatiles	1372	1332	82
Simple Nutrients in Hard Water	1348	1308	81
Simple Nutrients in Soft Water	1349	1309	81
Triazines, Urons, and Acid Herbicides	1375	1335	82
Trihalomethanes	1371	1331	82
Volatiles	1370	1330	82

CRM – Certified Reference Material
PT – Proficiency Testing

INORGANICS

Inorganic Disinfection By-products

CRM	PT
Cat. #1343	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	PT
Cat. #1345	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	PT
Cat. #1346	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	PT
Cat. #1347	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	PT
Cat. #1353	Cat. #1313

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

Color	5-25 pc units

Demand

CRM	PT
Cat. #1354	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	PT
Cat. #1355	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	PT
Cat. #1358	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	1-25µg/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

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

QuiK Response PT

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

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

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 52
- PCB 101
- PCB 118
- PCB 138
- PCB 153
- PCB 180

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
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- Alpha BHC
- Beta BHC
- Delta BHC
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endrin
- Gamma BHC (Lindane)
- Heptachlor
- Heptachlor epoxide
- Hexachlorobenzene
- Pentachlorobenzene
- 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
- AMPA
- Atrazine
- Bentazone
- Chlortoluron
- Diuron
- Glyphosate
- Isoproturon
- Linuron
- MCPA
- MCPB
- Mecoprop
- Propazine
- 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
- Bromoxynil
- Dicamba
- Dichlorprop
- Ioxynil
- Monuron
- Propyzamide
- Trichlopyr

The Industry Standard

ERA

ERA currently serves customers in more than 80 countries through an extensive network of knowledgeable sales partners who are ready to assist you with your ordering and scheduling needs.

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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

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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

METALS

Metals

CRM	PT
Cat. #1244	Cat. #1204

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	PT
Cat. #1248	Cat. #1208

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

ERA is committed to setting the Industry Standard for helping laboratories succeed in delivering more defensible data through the:

- Quality of our performance evaluation tools
- Convenience of our process
- Knowledge of our technical experts shared with our customers
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- Faster turnaround of final PT results
- Extensive ISO/IEC 17043 and ISO/IEC Guide 34 scope of accredited products

Volatiles

CRM	PT
Cat. #1251	Cat. #1211

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

PAHs

CRM	PT
Cat. #1254	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
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(a)pyrene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

PCB Congeners

CRM	PT
Cat. #1255	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 52
- PCB 101
- PCB 118
- PCB 138
- PCB 153
- PCB 180

Organophosphorus Pesticides

CRM	PT
Cat. #1256	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
- Azinphos-methyl
- Chlorfenvinphos
- Chlorpyrifos
- Cypermethrin
- Diazinon
- Dichlorvos
- Fenitrothion
- Fenthion
- Malathion
- Mevinphos
- Parathion-ethyl
- Parathion-methyl

Organochlorine Pesticides

CRM	PT
Cat. #1253	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
- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- alpha-Chlordane
- gamma-Chlordane
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- Heptachlor
- Heptachlor epoxide (beta)
- Methoxychlor
- Pentachlorobenzene

Triazines, Urons and Acid Herbicides

CRM	PT
Cat. #1257	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
- AMPA
- Atrazine
- Bentazone
- Chlortoluron
- Diuron
- Glyphosate
- Isoproturon
- Linuron
- MCPA
- MCPB
- Mecoprop
- Propazine
- Simazine

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

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- 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)

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

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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

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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:

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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.

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C0005 August 2012

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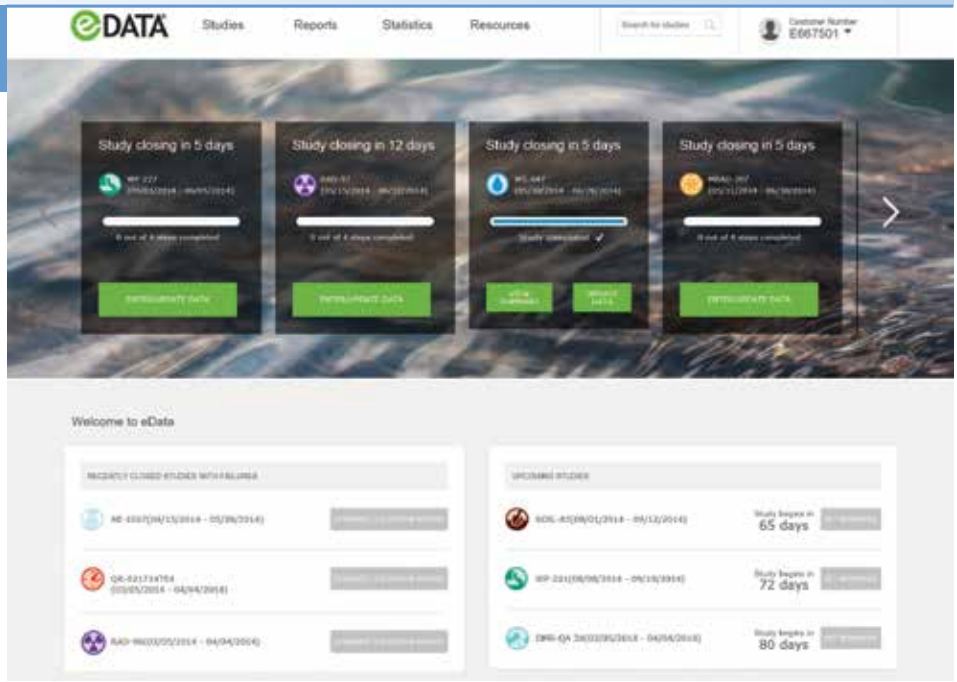

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CALIBRATION STANDARDS

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.

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	125 mL Bottle
Cat. #974	Cat. #042

One 1,000 mg/L standard preserved with H_2SO_4 in an amber glass bottle.

Total Kjeldahl Nitrogen (TKN)

500 mL Bottle	125 mL Bottle
Cat. #996	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 H_2SO_4.

Total Organic Carbon (TOC)

Cat. #978

One 500 mL amber glass bottles with TOC at 1,000 mg/L preserved with H_2SO_4.

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 H_2SO_4.

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_2O	—	Cat. #78202
Ammonia as NH_3	H_2O	Cat. #986	Cat. #044
Ammonia as N	H_2O	Cat. #985	Cat. #045
Bromate	H_2O	—	Cat. #065
Bromide	H_2O	Cat. #987	Cat. #046
Chlorate	H_2O	—	Cat. #066
Chloride	H_2O	Cat. #988	Cat. #047
Chlorite	H_2O	—	Cat. #067
Complex Cyanide	NaOH	Cat. #998	Cat. #049
Cyanide (free)	NaOH	Cat. #997	Cat. #048
Fluoride	H_2O	Cat. #989	Cat. #050
Iodide	H_2O	—	Cat. #78212
Nitrate as NO_3	H_2O	Cat. #992	Cat. #051
Nitrate as N	H_2O	Cat. #991	Cat. #052
Nitrite as N	H_2O	Cat. #990	Cat. #053
Perchlorate	H_2O	—	Cat. #068
Phosphate as PO_4	H_2O	Cat. #994	Cat. #060
Phosphate as P	H_2O	Cat. #993	Cat. #061
Sulfate	H_2O	Cat. #995	Cat. #062

CATIONS BY ION CHROMATOGRAPHY — 100 MG/L

Parameter	Matrix	125 mL Bottle
Ammonium as NH_4	H_2O	Cat. #78102
Ammonium as N	H_2O	Cat. #78104

CATIONS BY ION CHROMATOGRAPHY — 1000 MG/L

Parameter	Matrix	125 mL Bottle
Calcium	H_2O	Cat. #K10
Magnesium	H_2O	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_2O	–	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_2O	–	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 HNO_3 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 HNO_3.*

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

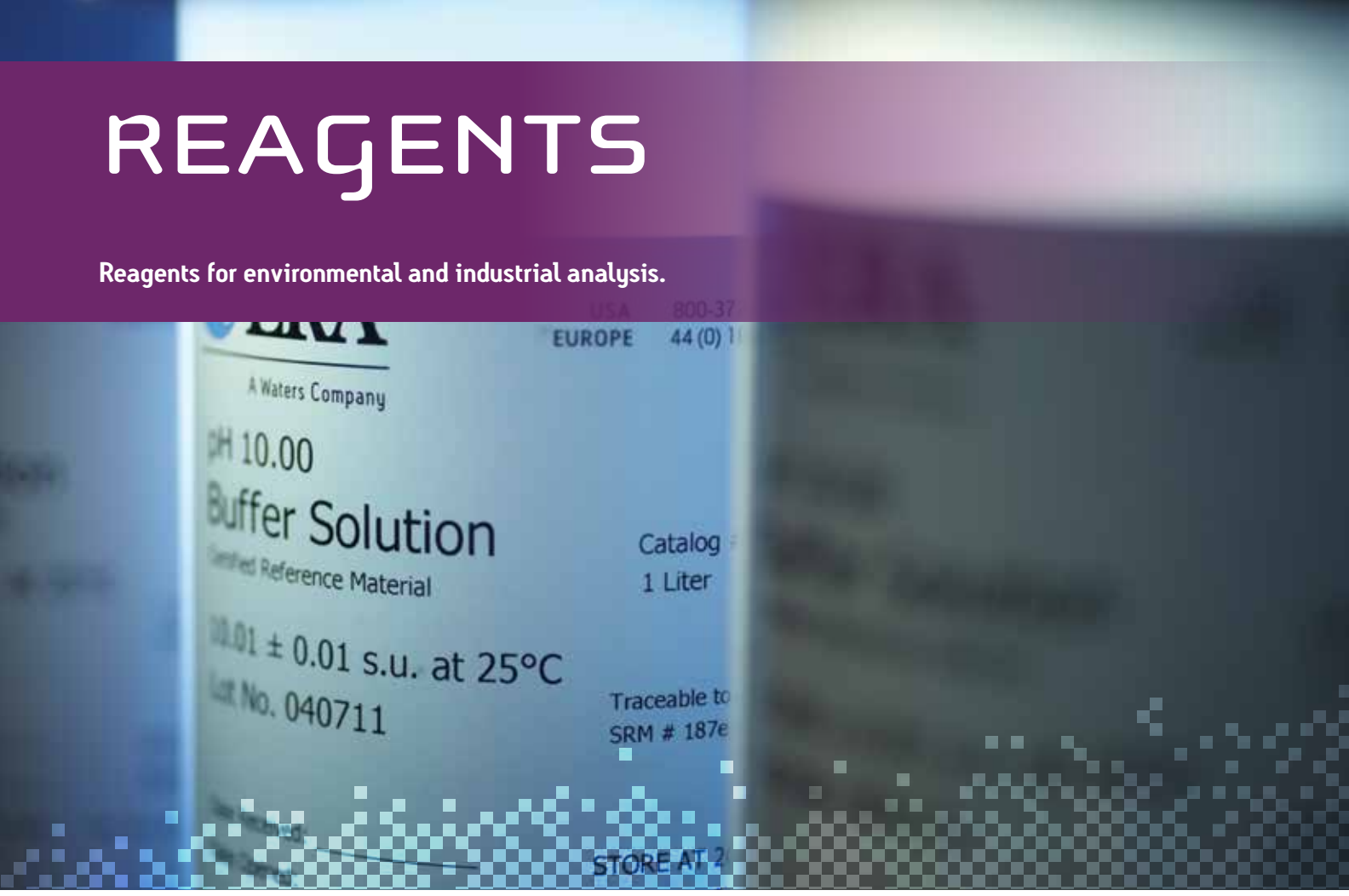
ERA Cal pH Buffers are directly traceable to NIST SRMs, mercury free, guaranteed stable for at least one year after your receipt, and are supplied with a full certificate of analysis. Choose single bottles or convenient 6-bottle cases.

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.



REAGENTS

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

EDTA

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

Iodine

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

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 beryllina)				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												19	
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 Organic fuels (RRO)											55		

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	
Diaminoatrazine												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		82			76				46-47			35
cis-1,2-Dichloroethylene	60		82			76				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												
Dichlorprop			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	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		

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							
MCPP										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 variegarus)				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	
Trichloroethlyene	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	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–C

A	4-AAP	4 - Aminoantipyrene
	A2LA	American Association for Laboratory Accreditation
	AE	Air & emissions
B	BCH	Benzene hexachloride
	BOD	Biochemical oxygen demand
	BTEX	Benzene, toluene, ethylbenzene, and xylenes
C	CALA	Canadian Association for Laboratory Accreditation
	CFU	Colony-forming unit
	CLP	Contract laboratory program
	COD	Chemical oxygen demand
	CofA	Certificate of analysis
	CRDL	Contract required detection limit
	CRM	Certified reference material
	CVAFS	Cold 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
	MCPP	Mecoprop (chlorophenoxy herbicide)
	MEK	Methyl ethyl ketone
	MF	Membrane filtration
	mg	Milligrams
	mg/dscm	Milligrams per dry standard cubic meter
	MIBK	Methyl isobutyl ketone
	MOE	Ministry of the Environment (Ontario)
	MPN	Most probable number
	MRAD	Multi-media radiochemistry
	MTBE	Methyl tert-butyl ether
N	NELAC	National Environmental Laboratory Accreditation Conference
	NELAP	National Environmental Laboratory Accreditation Program
	NIST	National Institute of Standards and Technology (U.S.)
	NPDES	National Pollutant Discharge Elimination System
	NQA	National Quality Assurance
	NTU	Nephelometric turbidity unit

O–Q

O	OES	Optical emission spectrometry
P	PAH	Polycyclic aromatic hydrocarbons
	PC units	Platinum-cobalt
	PCB	Polychlorinated biphenyls
	pci/kg	Picocuries per kilogram
	PE	Performance evaluation
	pg	Picogram
	PT	Proficiency test(ing)
	PUF	Polyurethane foam
Q	QC	Quality control
	QR	QuiK Response

R–T

R	RCRA	Resource Conservation and Recovery Act
	RDX	Research department explosive (an explosive nitroamine)
	RM	Reference material
	RTU	Ready-to-use
S	SCC	Standards Council of Canada
	SDWA	Safe Drinking Water Act
	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

USEPA
DMR-QA 36

NPDES PERMITTEE DATA REPORT FORM

ERA
A Waters Company

Due August 26, 2016

USEPA NPDES Permit #: [redacted] Permit Ext:

Permittee Name: [redacted]

Facility Address:

City: State: Postal Code:

Phone Number: [redacted] Fax Number: [redacted]

E-mail address: [redacted]

Optional: If WP study was used, list PT provider name:

Optional: WP study number(s):

For DMRQA-36, conducted in 2016, the Permittee ensured that their laboratory(s) performing the required analyses:

Received PT Samples	Submitted Complete and Accurate Data by July 1, 2016	Received a Graded Report by July 29, 2016
Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

Certification by Permit Holder or Authorized Representative

(as per 40 C.F.R. Section 122.22)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. Each reported value was produced from a single analytical run using the analytical system that rountinely performs these analyses to produce compliance monitoring data required under our National Pollutant Discharge Elimination System (NPDES) Permit. Neither I nor any of my subordinates compared our results from independent analyses conducted by us or any other laboratory before we reported our results to the USEPA. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Certifying Official: [redacted] Title: [redacted]

Signature: Date Signed: / /

Mailing Address: [redacted]

(enter only if different from address above)

City: [redacted] State: [redacted] Postal Code: [redacted]

Phone Number: [redacted] E-mail address: [redacted]

Please make corrections in boxes above

United States

ENVIRONMENTAL PROTECTION AGENCY

Laboratory Performance Evaluation

Laboratory DMR-QA Evaluation Study 36

USEPA NPDES Permit # [redacted] **Permit Ext:**

Identification of all CHEM, MICRO and TOX laboratories who did analyses for this permit

Name of Laboratory	Address of Laboratory	U.S. EPA Lab Code	Lab Analysis (Check box(es) that apply)			Lab Type*	State-certified Lab**
			CHEM	MICRO	TOX		
[redacted]	[redacted]	[redacted]	☐	☐	☐		☐

* Lab Types: C = Commercial F = Federal G = Local Government I = Industrial O = Other S = State

** See Footnote 2 on DMRQA-36, Frequently Asked Questions page

Permittee Name: [redacted] Permit Number: [redacted] EPA Lab Code: [redacted]

Chemistry/Microbiology Analyte Checklist

DMRQA Study 36

Analyte Test / Method	Test Required	Laboratory's Graded Result		Analyte determined by state-certified lab
		Acceptable	Not Acceptable (Corrective Action Required)	
Minerals				
Alkalinity as CaCO3 Chloride Conductivity at 25°C Fluoride Potassium Sodium Sulfate Total Dissolved Solids at 180°C Total Solids at 105°C				
Hardness				
Total Suspended Solids Calcium Magnesium Calcium Hardness as CaCO3 Total Hardness as CaCO3				
pH				
pH SM 4500-H+ B-2011	☐	☒	☐	☐
Settleable Solids				
Settleable Solids SM 2540 F-2011	☐	☒	☐	☐
Solids Concentrate				
Total Suspended Solids SM 2540 D-2011 Total Dissolved Solids at 180°C Total Solids at 105°C	☐	☒	☐	☐
Solids				
Total Suspended Solids Total Dissolved Solids at 180°C Total Solids at 105°C				
Simple Nutrients				
Ammonia as N Nitrate + Nitrite as N Nitrate as N ortho-Phosphate as P				
Complex Nutrients				
Total Kjeldahl Nitrogen Total phosphorus as P				
Nitrite				
Nitrite as N				
Demand				
BOD				

Permittee Name: [redacted] Permit Number: [redacted] EPA Lab Code: [redacted]

Chemistry/Microbiology Analyte Checklist

DMRQA Study 36

Analyte Test / Method	Test Required	Laboratory's Graded Result		Analyte determined by state-certified lab
		Acceptable	Not Acceptable (Corrective Action Required)	
CBOD COD TOC				
Oil & Grease Concentrate n-Hexane Extractable Material(O&G) (Grav)				
Oil & Grease n-Hexane Extractable Material(O&G) (Grav) n-Hexane Extractable Material(O&G) (IR)				
Trace Metals Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Chromium Cobalt Copper Iron Lead Manganese Molybdenum Nickel Selenium Silver Strontium Thallium Vanadium Zinc				
Low-Level Mercury Low Level Mercury				
Mercury Mercury				
Hexavalent Chromium Hexavalent Chromium				
Turbidity Turbidity				
Total Cyanide Cyanide, total Amenable Cyanide				

Permittee Name: [redacted] Permit Number: [redacted] EPA Lab Code: [redacted]

Chemistry/Microbiology Analyte Checklist

DMRQA Study 36

Analyte Test / Method	Test Required	Laboratory's Graded Result		Analyte determined by state-certified lab
		Acceptable	Not Acceptable (Corrective Action Required)	
Total Phenolics (4-AAP)				
Phenolics, total				
Total Residual Chlorine				
Total Residual Chlorine SM 4500-Cl C-2011	☐	☒	☐	☐
Low-Level Total Residual Chlorine				
Low Level Total Residual Chlorine				
WasteWatR™ Coliform MicrobE™				
Total Coliforms (MF) Fecal Coliforms (MF) E.coli (MF) Total Coliforms (MPN) Fecal Coliforms (MPN) E.coli (MPN) SM 9223 B (Colilert Quanti-Tray)-2004	☐	☒	☐	☐

Print Name

Date

Signature/Title

Use a separate checklist for EACH lab used

Instructions for Catalog # 710QR

WatR™Pollution Volatiles

Revision 111811

Description:

- This standard is packaged in a 2 mL flame-sealed ampule containing approximately 2 mL of standard concentrate.
- This concentrate is not preserved.
- The solvent for this concentrate is Methanol.
- The concentrate should be stored at 4±2°C.
- The diluted standard will contain all or a subset of the analytes listed in the ranges specified on the data reporting form.

Before you begin:

- This standard has been prepared as a concentrate and must be diluted prior to analysis.
- When performing purge and trap analysis, there is a possibility of false positive results for some compounds (bromomethane, chloromethane and others) resulting from thermal decomposition of analytes or trap material, and/or degradation from contaminated transfer lines or traps.
- As the diluted standard is not stable, it must be analyzed **immediately** after the concentrate is diluted.

Instructions:

1. Add 100 mL of organic free, deionized water to a clean 100 mL class A volumetric flask.
2. Carefully snap the top off of the Volatiles ampule.
3. Using a ten-microliter syringe, transfer 5.0 µL of the concentrate below the surface of the water in the flask.
4. Cap the flask and mix by inverting two or three times.
5. Immediately analyze the diluted sample by your normal procedures.
6. Report your results as µg/L for the diluted sample.

Safety:

ERA products may be hazardous and are intended for use by professional laboratory personnel trained in the competent handling of such materials. Responsibility for the safe use of these products rests entirely with the buyer and/or user. Material Safety Data Sheets (MSDS) for all ERA products are available by calling 1-800-372-0122.

▪ Certificate of Analysis ▪

Product: WatR™ Pollution Volatiles
Catalog Number: 710
Lot No. P267-710
Certificate Issue Date: July 28, 2017
Expiration Date: February 16, 2020
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #710 revision 100411.

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	µg/L	%	µg/L	µg/L
Acetone	33.0	0.814	14.9 - 45.2	7.49 - 58.1
Acetonitrile	<5.00	-	-	-
Acrolein	<5.00	-	-	-
Acrylonitrile	<5.00	-	-	-
Benzene	22.1	0.786	17.3 - 26.3	15.5 - 28.7
Bromobenzene	<5.00	-	-	-
Bromochloromethane	<5.00	-	-	-
Bromodichloromethane	23.4	0.790	19.0 - 29.2	14.0 - 32.8
Bromoform	<6.00	-	-	-
Bromomethane	<8.00	-	-	-
2-Butanone (MEK)	<5.00	-	-	-
n-Butylbenzene	<5.00	-	-	-
sec-Butylbenzene	<5.00	-	-	-
tert-Butylbenzene	<5.00	-	-	-
tert-Butyl methyl ether (MTBE)	<9.00	-	-	-
Carbon disulfide	<5.00	-	-	-
Carbon tetrachloride	27.5	0.622	18.0 - 34.4	14.9 - 37.9
Chlorobenzene	12.0	4.06	9.55 - 14.3	8.40 - 15.6
Chlorodibromomethane	13.9	4.32	10.9 - 17.1	8.34 - 19.5
Chloroethane	<8.00	-	-	-
2-Chloroethylvinylether	<5.00	-	-	-
Chloroform	<7.00	-	-	-
Chloromethane	26.0	0.586	14.9 - 39.0	10.4 - 41.6
2-Chlorotoluene	<5.00	-	-	-

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▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	µg/L	%	µg/L	µg/L
4-Chlorotoluene	<5.00	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	20.1	0.790	13.7 - 26.1	12.1 - 28.1
1,2-Dibromoethane (EDB)	<6.50	-	-	-
Dibromomethane	<6.50	-	-	-
1,2-Dichlorobenzene	18.6	0.786	14.2 - 22.5	13.0 - 24.2
1,3-Dichlorobenzene	18.6	0.918	13.6 - 22.3	13.0 - 24.2
1,4-Dichlorobenzene	29.6	0.814	22.2 - 35.8	20.7 - 38.5
Dichlorodifluoromethane (Freon 12)	<5.00	-	-	-
1,1-Dichloroethane	18.2	0.788	14.3 - 22.4	11.6 - 25.1
1,2-Dichloroethane	20.6	2.54	16.4 - 25.5	14.6 - 28.7
1,1-Dichloroethylene	21.8	0.624	15.2 - 29.2	12.9 - 32.2
cis-1,2-Dichloroethylene	<7.00	-	-	-
trans-1,2-Dichloroethylene	28.6	0.624	21.8 - 36.0	17.2 - 40.0
1,2-Dichloropropane	28.6	0.626	22.8 - 34.6	20.0 - 37.2
1,3-Dichloropropane	<5.00	-	-	-
2,2-Dichloropropane	<5.00	-	-	-
1,1-Dichloropropene	<5.00	-	-	-
cis-1,3-Dichloropropylene	13.3	0.786	9.75 - 15.6	8.64 - 18.0
trans-1,3-Dichloropropylene	26.8	0.788	19.7 - 31.9	17.4 - 36.2
Ethylbenzene	21.1	0.800	15.6 - 25.7	14.8 - 27.4
Hexachlorobutadiene	52.4	3.48	18.9 - 70.2	5.24 - 66.7
Hexachloroethane	<3.30	-	-	-
2-Hexanone	<4.40	-	-	-
Isopropylbenzene	<5.00	-	-	-
4-Isopropyltoluene	<5.00	-	-	-
Methylene chloride	23.6	0.784	17.3 - 29.7	14.2 - 33.0
4-Methyl-2-pentanone (MIBK)	37.8	0.816	25.8 - 49.5	13.7 - 60.0
Naphthalene	24.4	0.616	15.3 - 30.7	10.8 - 34.9
Nitrobenzene	27.8	18.3	14.8 - 41.7	8.78 - 34.7
n-Propylbenzene	<5.00	-	-	-

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Parameter	Certified Value[1]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	µg/L	%	µg/L	µg/L
Styrene	25.8	0.786	20.1 - 31.5	16.8 - 34.8
1,1,1,2-Tetrachloroethane	<9.80	-	-	-
1,1,2,2-Tetrachloroethane	<9.80	-	-	-
Tetrachloroethylene	<4.30	-	-	-
Toluene	15.7	3.14	12.2 - 18.7	11.0 - 20.4
1,2,3-Trichlorobenzene	<5.00	-	-	-
1,2,4-Trichlorobenzene	<4.30	-	-	-
1,1,1-Trichloroethane	10.8	0.790	7.78 - 13.2	6.48 - 15.1
1,1,2-Trichloroethane	32.2	6.17	26.3 - 39.0	22.5 - 41.9
Trichloroethylene	<6.20	-	-	-
Trichlorofluoromethane	<8.00	-	-	-
1,2,3-Trichloropropane (TCP)	<4.10	-	-	-
1,2,4-Trimethylbenzene	19.4	7.06	12.6 - 23.9	12.6 - 26.2
1,3,5-Trimethylbenzene	<6.50	-	-	-
Vinyl acetate	<5.00	-	-	-
Vinyl chloride	21.7	1.30	13.2 - 32.3	8.68 - 34.7
m-Xylene	27.4	0.624	-	-
m&p-Xylene	51.6	4.40	36.6 - 63.5	31.0 - 72.2
o-Xylene	19.0	0.786	14.0 - 23.2	11.4 - 26.6
p-Xylene	24.2	0.786	-	-
Xylenes, total	70.6	2.30	51.5 - 86.8	42.4 - 98.8

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	µg/L	µg/L	%			%
Acetone	33.0	30.9	93.7	70	-	-
Acetonitrile	<5.00	-	-	-	-	-
Acrolein	<5.00	-	-	-	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	µg/L	µg/L	%			%
Acrylonitrile	<5.00	-	-	-	-	-
Benzene	22.1	21.8	98.5	98	1586-1	102
Bromobenzene	<5.00	-	-	-	-	-
Bromochloromethane	<5.00	-	-	-	-	-
Bromodichloromethane	23.4	23.3	99.7	90	1639	100
Bromoform	<6.00	-	-	-	-	-
Bromomethane	<8.00	-	-	-	-	-
2-Butanone (MEK)	<5.00	-	-	-	-	-
n-Butylbenzene	<5.00	-	-	-	-	-
sec-Butylbenzene	<5.00	-	-	-	-	-
tert-Butylbenzene	<5.00	-	-	-	-	-
tert-Butyl methyl ether (MTBE)	<9.00	-	-	-	-	-
Carbon disulfide	<5.00	-	-	-	-	-
Carbon tetrachloride	27.5	25.8	93.8	95	1639	94.7
Chlorobenzene	12.0	11.9	99.1	91	-	-
Chlorodibromomethane	13.9	13.5	97.0	88	1639	92.7
Chloroethane	<8.00	-	-	-	-	-
2-Chloroethylvinylether	<5.00	-	-	-	-	-
Chloroform	<7.00	-	-	-	-	-
Chloromethane	26.0	25.5	98.1	86	-	-
2-Chlorotoluene	<5.00	-	-	-	-	-
4-Chlorotoluene	<5.00	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	20.1	19.0	94.5	73	-	-
1,2-Dibromoethane (EDB)	<6.50	-	-	-	-	-
Dibromomethane	<6.50	-	-	-	-	-
1,2-Dichlorobenzene	18.6	18.2	98.0	90	-	-
1,3-Dichlorobenzene	18.6	17.8	95.7	90	-	-
1,4-Dichlorobenzene	29.6	28.4	95.8	94	-	-
Dichlorodifluoromethane (Freon 12)	<5.00	-	-	-	-	-
1,1-Dichloroethane	18.2	18.4	101	92	-	-

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▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	µg/L	µg/L	%			%
1,2-Dichloroethane	20.6	20.8	101	94	-	-
1,1-Dichloroethylene	21.8	22.3	102	94	-	-
cis-1,2-Dichloroethylene	<7.00	-	-	-	-	-
trans-1,2-Dichloroethylene	28.6	29.9	104	91	-	-
1,2-Dichloropropane	28.6	28.6	100	90	-	-
1,3-Dichloropropane	<5.00	-	-	-	-	-
2,2-Dichloropropane	<5.00	-	-	-	-	-
1,1-Dichloropropene	<5.00	-	-	-	-	-
cis-1,3-Dichloropropylene	13.3	11.3	85.0	89	-	-
trans-1,3-Dichloropropylene	26.8	25.1	93.8	89	-	-
Ethylbenzene	21.1	20.5	96.9	95	3002	101
Hexachlorobutadiene	52.4	49.3	94.1	72	-	-
Hexachloroethane	<3.30	-	-	-	-	-
2-Hexanone	<4.40	-	-	-	-	-
Isopropylbenzene	<5.00	-	-	-	-	-
4-Isopropyltoluene	<5.00	-	-	-	-	-
Methylene chloride	23.6	24.2	103	88	3008	109
4-Methyl-2-pentanone (MIBK)	37.8	38.6	102	70	-	-
Naphthalene	24.4	23.1	94.8	76	1647d	103
Nitrobenzene	27.8	25.1	90.2	9	-	-
n-Propylbenzene	<5.00	-	-	-	-	-
Styrene	25.8	25.7	99.5	82	-	-
1,1,1,2-Tetrachloroethane	<9.80	-	-	-	-	-
1,1,2,2-Tetrachloroethane	<9.80	-	-	-	-	-
Tetrachloroethylene	<4.30	-	-	-	-	-
Toluene	15.7	15.4	98.1	95	3001	100
1,2,3-Trichlorobenzene	<5.00	-	-	-	-	-
1,2,4-Trichlorobenzene	<4.30	-	-	-	-	-
1,1,1-Trichloroethane	10.8	10.1	93.8	89	3011	95.6
1,1,2-Trichloroethane	32.2	32.2	100	91	-	-
Trichloroethylene	<6.20	-	-	-	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	µg/L	µg/L	%			%
Trichlorofluoromethane	<8.00	-	-	-	-	-
1,2,3-Trichloropropane (TCP)	<4.10	-	-	-	-	-
1,2,4-Trimethylbenzene	19.4	18.1	93.1	73	-	-
1,3,5-Trimethylbenzene	<6.50	-	-	-	-	-
Vinyl acetate	<5.00	-	-	-	-	-
Vinyl chloride	21.7	22.9	105	87	-	-
m-Xylene	27.4	-	-	-	3004	101
m&p-Xylene	51.6	51.3	99.5	89	-	-
o-Xylene	19.0	19.1	101	89	3003	99.2
p-Xylene	24.2	-	-	-	3005	102
Xylenes, total	70.6	70.6	100	83	-	-

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1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)**are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.
Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Quality Officer

Patrick Larson

Pat Larson

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