

Public Water System Supervision Program
Quality Assurance Project Plan

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Quality Assurance Project Plan

Quality Assurance and Quality Control processes related to environmental data collection activities

Includes 10 addenda addressing program-specific QA and QC

Revised every 3 years with annual updates

Last revision 11/4/2016

1st Annual update in 2017

2nd Annual update in 2018

EPA approval 12/20/2017

Quality Assurance Project Plan for the Texas Commission on Environmental Quality Public Water System Supervision Program Related to the Safe Drinking Water Act

Revision 12

Effective
November 4, 2016
MC-155, P.O. Box 13087

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USEPA GRANTS

991017 DWSRF 10% CFDA: 66.468
990217 - DWSRF 2% CFDA: 66.468
991517 - DWSRF 15% CFDA: 66.468
900643 - PWSS PPG CFDA: 66.605
900681 - FY 17 Multi-Purpose Grant CFDA: 66.204

US EPA Q-TRAK Number _____





Quality Assurance Project Plan

- **Addendum 1** – *Sampling, Analysis, and Reporting of Chemical Compliance Data*
 - Applies to Chemical Compliance laboratories and sample collection contractor only
- **Addendum 2** – *Laboratory Guidance for the Analysis and Reporting of Tap Water Samples under the Lead and Copper Rule*
 - Applies to labs analyzing Pb/Cu tap samples



Quality Assurance Project Plan

- **Addendum 3** – *Laboratory Guidance for the Analysis and Reporting of Water Quality Parameters Under the Lead and Copper Rule*
 - Applies to labs analyzing WQP samples
- **Addendum 4** – *Laboratory Guidance for Analysis and Reporting Under the Revised Total Coliform Rule*
 - Applies to labs analyzing microbial samples under the RTCR



Quality Assurance Project Plan

- **Addendum 5 – *Comprehensive Compliance Investigations***
 - Applies to data collection and management resulting from region conducted CCIs
- **Addendum 6 – *Source Water Susceptibility Assessments***
 - Applies to source water data collection and management



Quality Assurance Project Plan

- **Addendum 7** – *Review and Approval of Public Water System Engineering Plans*
 - Applies to data collection and management related to PWS plans and specifications
- **Addendum 8** – *Texas Optimization Program Evaluations*
 - Applies to data collection and management from TCEQ performance evaluations (CPE/SPE)



Quality Assurance Project Plan

- **Addendum 9** – *Acquisition of Treatment Technique and Disinfectant Residual Data*
 - Applies to data collection and management related to treatment techniques and disinfectant residual monitoring
- **Addendum 10** – *Special Investigation QAPP Template*
 - Template for TCEQ special investigations that involve sample collection and analysis



2017 Annual Updates

Addenda Revised

Laboratory Guidance for the Analysis and Reporting of Lead and Copper Tap Water Samples

Addendum #2
(Revision 0)

to the

Quality Assurance Project Plan for the Texas Commission on Environmental Quality Public Water System Supervision Program Relating to the Safe Drinking Water Act

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Addendum 2—Guidance for the Analysis and Reporting of Lead and Copper under the Lead and Copper Rule

Addendum 3—Guidance for the Analysis and Reporting of Water Quality Parameters under the Lead and Copper Rule



Laboratory Guidance for the Analysis and Reporting

of

Water Quality Parameters Under the Lead and Copper Rule

Addendum #3
(Revision 0)

to the

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Laboratory Guidance for the Analysis and Reporting Under the Revised Total Coliform Rule

Addendum #4
(Revision 0)

to the

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(Revision 12)

Effective Date
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Addendum 4—Guidance for Analysis and Reporting under the Revised Total Coliform Rules



Revisions to Addendum 2

Laboratory Guidance for Analysis and Reporting of Lead and Copper Tap Water Samples

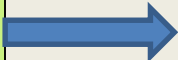
Minor non-substantive revisions made by the TCEQ



Approval page reflects WSD reorganization in Fall 2016



Revised LCR Chain of Custody Form 20683



Laboratory Guidance for the Analysis and Reporting of Lead and Copper Tap Water Samples

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Revisions to Addendum 3

Laboratory Guidance for Analysis and Reporting of Water Quality Parameters under the LCR

Most substantive revisions (of the 3) made to this document

Approval page reflects WSD reorganization in Fall 2016

Requires laboratories to analyze all parameters included in the 30 TAC rule update effective March 30, 2017

Alkalinity, conductivity, calcium, chloride, hardness, iron, manganese, pH, sodium, sulfate, temperature, total dissolved solids, and orthophosphate or silica, depending on the inhibitor

Laboratory Guidance for the Analysis and Reporting

of

**Water Quality Parameters
Under the Lead and Copper Rule**

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Revisions to Addendum 3 (continued)

Requires laboratory approval (or accreditation) for original parameters and laboratory accreditation only for additional parameters

Explains how to report results when single samples are analyzed by multiple laboratories

Requires initial receiving laboratory to report pH and temperatures as field results in the field measurement portion of the EDD

Laboratory Guidance for the Analysis and Reporting

of

**Water Quality Parameters
Under the Lead and Copper Rule**

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Revisions to Addendum 3 (continued)

Updates required information in the analytical test report

Provides an example template for an analytical test report.

Includes Chain of Custody Form 20679

References companion document—*Public Water System Guidance for Monitoring and Collection of Water Quality Parameters*

Laboratory Guidance for the Analysis and Reporting

of

**Water Quality Parameters
Under the Lead and Copper Rule**

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Revisions to Addendum 4

Laboratory Guidance for Analysis and Reporting

Under the Revised Total Coliform Rule

Approval page reflects WSD reorganization in Fall 2016

Most significant changes reflect changes to the Sample Receipt section

Addresses problems encountered when sample results are received

Additional revisions reflect issues that laboratories brought to the attention of TCEQ accreditation staff

Laboratory Guidance for the Analysis and Reporting Under the Revised Total Coliform Rule

Addendum #4

(Revision 0)

to the

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2018 Annual Updates

Addenda under current Revision

- Addendum 1 – *Sampling, Analysis, and Reporting of Chemical Compliance Data*
 - Includes revisions to the Drinking Water Sampling Guide (DWSG)
 - Applies to TCEQ Chemical Compliance Laboratories and Sample Collection Contractor
 - Revisions in *final draft* until Drinking Water Compliance Sampling Services Contract is awarded



QAPP Overview

- Laboratories are subject to requirements under:
 - TNI (Lab Accreditation)
 - EPA's *Manual for the Certification of Laboratories Analyzing Drinking Water* (MCLADW), 5th Ed.
 - State and Federal regulations (TAC, CFR)
- In some cases PWSS requirements may be stricter than TNI
- The TCEQ (WSD) reserves the right to not use for compliance analytical data that does not meet program requirements



QAPP Addendum #2

- *Guidance for the Analysis and Reporting of Tap Water Samples under the Lead and Copper Rule (LCR)*
 - Applies to PWSs and labs submitting data for compliance under the LCR (tap samples)
 - Samples from public water systems
 - Includes regulatory and program requirements
 - Current Revision 1, effective 12/20/2017



QAPP Addendum #2

- Samples must be analyzed by a laboratory that is accredited in the drinking water matrix using a method acceptable to EPA
- Samples must be collected in 1 L lab grade plastic bottles with a fill line
 - Acid preservation should be done in the lab
 - No later than 14 days after collection



QAPP Addendum #2

- PWSs must use the LCR Monitoring Form (LCRMF)
 - Form #20683
 - Customized/modified forms must be approved by TCEQ
- Samples must be collected from the water system's sample site pool
- Samples must be labeled properly
- LCRMF must be completed properly



QAPP Addendum #2

- Analysis
 - Laboratory must meet EPA MRLs
 - Lead – less than or equal to 0.005 mg/L
 - Copper – less than or equal to 0.050 mg/L
 - MRL verification
 - LFB at the laboratory's MRL
 - Run with every preparation batch
 - Do not report results below the MRL
 - The PWSSP does not allow J flagged data



QAPP Addendum #2

- Reporting
 - Electronic data submittal highly encouraged
 - Labs should be submitting data weekly
 - DO NOT hold all data to submit until after the end of the compliance period
 - Paper reports
 - Completed LCRMF
 - Laboratory Chain of Custody (if applicable)
 - Analytical test reports including QC



QAPP Addendum #3

- *Guidance for the Analysis and Reporting of Water Quality Parameters (WQP) under the Lead and Copper Rule*
- Applies to PWSs and labs submitting data for compliance under the LCR (water quality parameters)
 - Samples from public water systems
 - Includes regulatory and program requirements
 - Current Revision 1, effective 12/20/2017
 - Includes TAC rule revision requirements effective 3/30/2017



QAPP Addendum #3

- Samples must be analyzed by a laboratory that is accredited in the drinking water matrix using a method acceptable to EPA **OR** approved by the Water Supply Division (WSD)
 - Approved by WSD: temperature, pH, alkalinity, calcium, conductivity, ortho phosphate, silica
 - Accredited by TCEQ: chloride, hardness, iron, manganese, sodium, sulfate, TDS
 - QAPP only lists EPA allowed methods for which TCEQ offers accreditation



QAPP Addendum #3

- Samples must be collected in lab grade plastic bottles
 - Volume should be sufficient to conduct all required analyses
- Acid preservation should be done in the lab
 - No later than 14 days after collection
- Some analytes require thermal preservation
 - Alkalinity, conductivity, sulfate, TDS, ortho phosphate



QAPP Addendum #3

- Field measurements
 - pH and temperature must be measured and recorded in the field
 - EPA allowed methods must be utilized
 - Entity performing field measurements must complete and submit a laboratory approval form to the WSD



QAPP Addendum #3

- PWSs must use the Water Quality Parameter Monitoring Form (WQPMF)
 - Form #20679
 - Customized/modified forms must be approved by TCEQ
- Samples must be labeled properly
- WQPMF must be completed properly



QAPP Addendum #3

- Reporting
 - Electronic data submittal highly encouraged
 - Labs should be submitting data weekly
 - DO NOT hold all data to submit until after the end of the compliance period
 - Paper reports
 - Completed WQPMF
 - Laboratory Chain of Custody (if applicable)
 - Analytical test reports including QC



QAPP Addendum #3

- Subcontracting/Pass-through
 - Samples analyzed by multiple laboratories
 - Initial (receiving) laboratory reports field measurements
 - Results are reported by the lab that performed the analysis



QAPP Addendum #4

- *Guidance for Analysis and Reporting Under the Revised Total Coliform Rule (RTCR)*
 - Applies to labs submitting data for compliance under RTCR
 - Samples from public water systems
 - Includes regulatory and program requirements
 - Current Revision 1, effective 12/20/2017



QAPP Addendum #4

- Licensing Requirements
 - Samples for community and non-transient non-community water systems **MUST** be collected by an individual with a valid water operators license
 - Not required for transient systems
- Field Measurements
 - **All samples** must have a **field measured** chlorine residual
 - DO NOT analyze, reject. Residual must not be filled in at the lab



QAPP Addendum #4

- Samples must be analyzed by a laboratory that is accredited in the drinking water matrix using a method acceptable to EPA
 - Pg. 15, Table 1 lists EPA allowed drinking water methods
 - Total coliform / *E. coli*
 - Absence / Presence



QAPP Addendum #4

- Sample Containers
 - Containers should be laboratory-supplied
 - Batch tested for sterility if lab sterilized
 - Tested for dechlorinating agent effectiveness
 - Checked for accuracy of 100 mL mark
 - *Lot specific* certificate of analysis required if containers obtained from a vendor



QAPP Addendum #4

- Sample Labels
 - Adhesive or written directly on bottle
 - Must include:
 - PWS ID number
 - Date & Time of sample collection
 - Sampler's initials
 - Address/location of collection



QAPP Addendum #4

- Microbial Reporting Form (MRF)
 - Use of unaltered form is mandatory if **NOT** submitting data electronically (E2)
 - Modified forms may be used after TCEQ approval only if lab submits data electronically
 - Form must capture:
 - Sampler signature
 - Lab chlorine check
 - Legal statement



QAPP Addendum #4

- Sample Temperature
 - Document temperature at time of receipt
 - Recorded and corrected temperature
 - Temperature measuring devices must be calibrated periodically
- Chlorine Residual Lab Check
 - Absence of a chlorine residual must be verified for every sample



QAPP Addendum #4

- Sample Rejection
 - Insufficient/Incorrect documentation
 - Corrections must be made by sampler, not the lab
 - Field chlorine residuals must be measured and recorded *in the field*
 - Sample Issues
 - Broken in transit, exceeds hold time, frozen, leaked, etc.
 - Lab measured chlorine residual
 - Invalid results (turbid, too numerous to count, etc.)



QAPP Addendum #4

- Sample Rejection
 - Notify PWS immediately
 - Record notification on MRF
 - PWS must recollect within 24 hours of notice
 - Report rejected samples to TCEQ
 - Ties back recollection to original
 - Important in avoiding possible monitoring violations



QAPP Addendum #4

- Data submission
 - Labs should be submitting data weekly
 - Electronically through STEERS/E2 preferred
 - DO NOT hold all data to submit until after the end of the compliance period
- Microbial Reporting Form
 - Labs should all now be using the new form or have implemented new requirements on customized forms
 - Current version – 08/2017
 - Instructions for PWSs and laboratories available online



QAPP Addendum #4

- Reporting Positive Samples
 - Positive Result Report Form
 - Email or Fax
 - Current version – 08/2017
 - Report on same day to TCEQ and PWS
 - PWS must collect repeats



QAPP Addendum #4

- Sample Invalidation Requests
 - PWS must complete and submit *Total Coliform Positive Invalidation Request Form* to TCEQ along with supporting documentation
 - Current version – 10/24/2017
 - Requests are assessed by the PWSSP QA Manager and approved by WSD management
 - *E. coli* positive samples are **not eligible** for invalidation



QAPP Overview

- Labs may not make corrections to PWS portion of any reporting form (LCRMF, WQPMF, MRF)
 - Corrections must be made by the sampler before relinquishment to lab
 - Only TCEQ can authorize changes after analysis and reporting
 - Evaluated on a case-by-case basis
 - See QAPP for specific conditions



QAPP Overview

- Sample Receipt and Rejection
 - Errors or omissions on reporting forms
 - Improper bottle labeling
 - Invalid/missing dates or times
 - Missing PWS signature
 - Broken/leaking containers
 - Invalid containers
 - Insufficient volume
 - Exceeding hold time



QAPP Overview

- Corrective Actions
 - Deviations from required protocols
 - May be initiated by the lab or TCEQ
 - Notify TCEQ of issue within 48 hours
 - Corrective action report due within 14 days
 - May require corrected data



QAPP Overview

- Laboratory Record Retention
 - Easily accessible for five (5) years
 - Applies to analyses under the LCR and RTCR
- Reports should be coded following TCEQ Central File Room requirements
 - See applicable QAPP for specifics



QAPP Overview

- Falsification and Fraud
 - Falsification of the MRF or analytical results, or tampering with water samples used for compliance with the SDWA, is a crime punishable under state and/or federal law. [Texas Penal Code, Title 8, Chapter 37.10] By signing the MRF, the sample collector acknowledges that the water samples were collected according to the PWS's established sample collection procedures, and that all information on the form is accurate. Evidence of falsification or fraud is turned over to the TCEQ Environmental Crimes Unit for investigation.



EPA CMDP

- Compliance Monitoring Data Portal (CMDP)
 - Will enable PWSs and labs to report data electronically to TCEQ/EPA
 - Will replace E2
 - TCEQ working with EPA to ensure CROMEER and STEERS compatibility
 - Testing anticipated in FY2019
- More information:
 - <https://www.epa.gov/ground-water-and-drinking-water/compliance-monitoring-data-portal>



Questions?



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