

Guidance for Collection, Analysis and Reporting
of
Water Quality Parameters
under the Lead and Copper Rule

Addendum #3

(Revision 3)

to the

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

(Revision 13 – QTRAK # 20-054)

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List of Acronyms

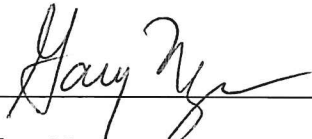
Acronym	Definition
CA	corrective action
CFR	Code of Federal Regulations
COC	chain of custody
DQO	data quality objective
EDD	electronic data deliverable
EPA	Environmental Protection Agency
ID	identification
L	liter
LCR	Lead and Copper Rule
LFB	Lab fortified blank
LFM	Lab fortified matrix
MB	method blank
MCLADW	Manual for the Certification of Laboratories Analyzing Drinking Water, 5 th Ed.(EPA)
MDL	method detection limit
mg/L	milligrams per liter
mL	milliliter
MRL	method reporting limit
NTU	nephelometric turbidity unit
PDF	portable document format
PWS	public water system
PWSS	Public Water System Supervision
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
RPD	Relative percent difference
SDWA	Safe Drinking Water Act
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDS	total dissolved solids
WQP	water quality parameter
OWQP	optimal water quality parameter
WQPMF	water quality parameter monitoring form

Approval Page – PWSS Program QAPP, Addendum #3

The following TCEQ individuals listed on this page are signatories to this document because they are responsible for TCEQ oversight and quality-assurance (QA) of the work described.

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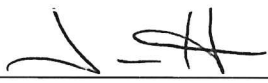
Signature:  Date: 09/13/19

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Purpose

Water Quality Parameter (WQP) monitoring is a component of the Lead and Copper Rule required by federal regulations (40 Code of Federal Regulations (CFR) Part 141 Subpart I) and state rules (30 Texas Administrative Code (TAC) §290.117). WQP results are used to determine the corrosivity of water, and if needed, to help public water systems (PWS) and the Texas Commission on Environmental Quality (TCEQ) determine the type of corrosion control that the system shall implement. For most systems that require treatment, corrosion control is the primary mechanism for reducing lead and copper levels. Furthermore, systems that install corrosion control treatment are required to monitor optimal water quality parameter (OWQP) ranges to establish and maintain optimized corrosion control.

All new systems, all large water systems (>50,000 population), and any size system that exceeds a lead or copper action level are required to perform initial and/or routine WQP monitoring required under 30 TAC §290.117(e). There may be additional reasons whereby a system is required to collect WQP samples. For example, systems must notify the TCEQ if there is a change in treatment or source water. In these cases, the TCEQ may require additional monitoring to ensure changes do not result in the production of corrosive water. Systems may also be required to perform OWQP monitoring after installation of corrosion control treatment based on TCEQ's response to a submitted corrosion control study.

The TCEQ sends letters to PWSs notifying them of upcoming WQP monitoring requirements and PWS WQP monitoring schedules are created in the Safe Drinking Water Information System (SDWIS). Schedules can also be viewed on the Texas Drinking Water Watch website. This document specifies the PWS and laboratory requirements related to WQP and OWQP monitoring including, but not limited to: sample handling, analysis, quality control, data validation, and reporting.

The requirements specified in this document are consistent with state rules pertaining to the regulation of lead and copper. This document is included as part of the TCEQ PWSS Program's QAPP which is reviewed and approved by the EPA. The TCEQ may refuse to accept data and analyses from laboratories that do not comply with the conditions in this document in order to maintain compliance with programmatic requirements and specifications.

WQP monitoring under this project includes the parameters and analyte codes listed below. This entire list, as specified in 30 TAC §290.117(e)(2), went into effect in state rule on March 30, 2017.

- total alkalinity (1927)
- calcium (1919)
- conductivity (1064)
- pH (field measured) (1925)
- temperature (field measured) (1996)
- chloride (1017)
- total hardness (1915)

- iron (1028)
- manganese (1032)
- sodium (1052)
- sulfate (1055)
- total dissolved solids (TDS) dried at 180° C (1930)
- silica - if a corrosion inhibitor containing silica is used (1049)
- orthophosphate - if a corrosion inhibitor containing phosphate is used (1044)

In addition to initial and routine WQPs, this document can be used to guide the analysis and reporting of WQPs after installation of corrosion control treatment; after the designation of optimal water quality parameter (OWQP) ranges; and after the requirement for OWQP monitoring is reduced. The TCEQ will notify the PWSs (who will inform the laboratories) when this monitoring is required and outline the required analytes, sample locations, and monitoring frequency.

The current version of this document is located on the TCEQ web page at <https://www.tceq.texas.gov/drinkingwater/chemicals/lead_copper/lead-copper.html>. For information on WQP monitoring, refer to this web page. For specific questions about this Addendum to the QAPP, contact the TCEQ at (512) 239-4691 and ask for the PWSS Program Lead Quality Assurance Specialist.

Note: *This document does not supersede additional requirements which apply to environmental laboratories. Requirements for training, supplies, equipment maintenance, internal audits, etc. are addressed in laboratory quality manuals (including the Manual for the Certification of Laboratories Analyzing Drinking Water, Fifth Edition) and standard operating procedures, and are reviewed by the TCEQ as part of the laboratory accreditation process.*

Data Quality Objectives and Criteria

The water quality parameter data collected for the TCEQ Lead and Copper Program are used to determine water corrosivity potential and to help PWSs and the TCEQ determine the type of corrosion control that should be implemented, if needed. As a result, the TCEQ can provide better protection of the health of all Texas citizens currently served by a PWS and all those who consume water from such systems.

The data quality objectives (DQOs) described below apply to all laboratories using this guidance document. They ensure that the type and quality of the analytical data generated meet the goals of the Safe Drinking Water Act (SDWA) and support defensible compliance decisions and actions by the TCEQ.

Sensitivity

Sensitivity refers to the ability of an instrument or method to discriminate between different levels of an analyte by producing a different response. Sensitivity requirements specific to the analysis of WQPs include the method detection limit (MDL) and the method reporting limit (MRL). MDLs and MRLs are defined in this document in the Section–*WQP Sample Analysis*.

reported with confidence that the analyte concentration is greater than zero. MDLs are determined according to method requirements.

Minimum Reporting Limit

Minimum Reporting Limits (MRL) are equivalent to the lowest non-zero calibration standard in a multi-point calibration curve, as applicable. Per the TCEQ PWSS Program, laboratories must run a laboratory fortified blank every analysis day and not report WQP results at levels less than the level at which they routinely analyze their lowest calibration standard. This check is known as an MRL verification. An MRL verification consists of a sample of deionized water free from the analytes of interest spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes at or near the MRL. It is used to assess the performance of the measurement system at the lower limits of analysis. The acceptance criteria for MRL verification checks must comply with internal laboratory criteria and be documented. The laboratory must locate and fix problems with MRL verifications before continuing, if results are out of control.

Method Blank

A method blank (MB) is a sample of matrix similar to the batch of associated samples that is free from the analytes of interest and is processed simultaneously with the samples through all steps of the preparation and analytical procedures. MBs are analyzed at a rate of once per preparation batch. The MB is used to document contamination from the analytical process. Results of MB analyses must either be less than the MDL or be less than or equal to 1/10th of the concentration measured in the sample.

Reporting Data to the TCEQ

All laboratories must report WQP compliance results to the TCEQ as explained in the following sections. This includes:

- (1) the forms and the analytical test reports, in portable document format (PDF) for submission to TCEQ Central Records; and
- (2) the electronic data deliverable (EDD).

Reporting Deadlines

All analytical data for use in compliance must be submitted to TCEQ by the following deadlines. PWSs whose data is not received by the regulatory deadline will be subject to monitoring violations.

Monitoring Period	Monitoring Date Range	Reporting Deadline
Annual or less frequent	June 1 - September 30	October 10
6 Month Period 1	January 1 - June 30	July 10
6 Month Period 2	July 1 - December 31	January 10
Action Level Exceeder	June 1 - November 30	December 10

Submission of Completed WQPMFs and Analytical Test Reports to the TCEQ

The TCEQ retains all analytical data and associated information in its central records for a period of time according to federal and state records retention regulations. Therefore, all laboratories are required to submit the following data and information electronically, as PDFs, at least once a week.

- Completed WQPMFs
- Completed Laboratory COCs (if applicable)
- Analytical test reports given to the PWS

To help facilitate the management of TCEQ records, laboratories must package data and information according to one PWS sample submittal (i.e., all the sample results corresponding to a single WQPMF). When the documents are scanned, the WQPMF should be on top of the associated laboratory COC (if applicable) and the analytical test report.

The TCEQ requires the following information to successfully code documents which are submitted to the TCEQ's Central File Room.

- Series Code: PWS
- Primary ID: County Code (3 digits) and Identification (4 digits) (This is the 7-digit PWS ID)
- Document Type: AC
- Document Date: YYYYMMDD (Earliest Collection Date)
- Document Name: WQP Analysis Report

Example 1:

PWS_1010014_AC_20150928_WQP Analysis Report

(printed on the top right corner of the WQPCOC before scanning)

Example 2:

PWS_1010014_AC_20150928_WQP Analysis Report.PDF

(electronic file name of the PDF)

Note that there must be a space between "WQP" and "Analysis" and "Report."

All PDFs shall be emailed to the TCEQ's dedicated mail box at <lcrdata@tceq.texas.gov>.

In the event that the laboratory does not have PDF scanning capabilities, the laboratory shall send hardcopy data reports and associated information to the following postal address. Laboratories should coordinate with the TCEQ Lead and Copper Rule Program before mailing data and information via the postal service.

Texas Commission on Environmental Quality
Attn: Lead and Copper Rule Program
MC 155

PO Box 13087
Austin, TX 78711-3087

When the PDFs are transmitted to the TCEQ, the analytical results shall be transmitted to the PWS within the same timeframe to help ensure that the TCEQ and the PWS have the same information.

Analytical Test Reports

Test reports from the laboratory must document the test results clearly and accurately. Test reports shall include the information necessary for the interpretation and validation of data by the TCEQ and the PWS. At the very minimum, WQP analytical test reports shall include the following even if the laboratory is reporting within its own organization.

- Laboratory name, address, TCEQ Laboratory ID number, and phone number
- PWS name, address, PWS ID number, and phone number
- Sample point address, and sample point ID number
- Report date
- Laboratory Sample ID
- Date and time of sample collection
- Date and time of sample receipt
- Analytical results with units, dilution factors (if applicable), and relevant data flags. (Results of pH and temperature are not required on the laboratory analytical test report. These results are reported to the TCEQ on the WQPCOC and in the field measurement portion of the EDD.)
- Numerical results for the MRL and MDL
- Date and time of sample preparation, and analysis and initials of technicians or analysts who performed the work
- Identification of the analytical methods used
- Indication whether the result was generated by an accredited or approved method
- Quality control sample results, including concentrations, units, recoveries and acceptance criteria for:
 - MRL check samples (include spike concentration, result, % recovery, and % recovery limits)
 - LFBs (include spike concentration, result, % recovery, and % recovery limits)
 - LFM (include original result, spike concentration, result, % recovery, and % recovery limits)
 - Blanks (include result and reporting limit)
 - Laboratory duplicates (include RPD and maximum RPD)
- Data qualifiers with definitions
- Definitions of any abbreviations or codes

- Data comments or case narrative, including information regarding deviations from methods or requirements
- Page numbers
- Name, function, date and signature (or electronic equivalent) of person authorized to approve report
- Statement that the report (or portions of the report) cannot be duplicated, except in whole

An analytical test report form is provided as Exhibit 1 of this document, as an example. The current version of this form is located on the TCEQ web site at: <https://www.tceq.texas.gov/drinkingwater/chemicals/lead_copper/lead-copper.html>. This form incorporates the required analytical test report information as identified above. It is provided as a tool only and is not required for reporting WQP results to the TCEQ.

Electronic Data Deliverable (EDD)

The EDD must be in a format compatible with SDWIS requirements. Data must be submitted electronically in a TCEQ-approved format (typically MS ACCESS) using two separate files – a Sample file and a Result file. The Sample and Result files should be submitted together to the TCEQ at least weekly.

The field structures and requirements for each file are included in this addendum. The TCEQ can provide the laboratory with a “test” database if requested.

Laboratories shall validate analyte codes, units, methods, and sampler names against SDWIS prior to submission. If fields are incorrect or missing, the TCEQ will reject the files.

All fields must be included in the respective tables in the order listed even if a particular field is not used.

Pass-through laboratories shall be noted in [B_SAMPLE_COMMENTS] in the sample file.

Electronic File Naming Convention

Electronic data deliverables (EDD) shall be submitted to the TCEQ with the following file naming convention.

Lab Name_WQP_date of submittal (formatted as ddMMMyyyy)

An example of this naming convention’s use is as follows:
LABNAME_WQP_19MAR2020

Sample Table

The sample table file structure contains information about the sample, including collection date and time, the collector, laboratory, sample point IDs, and the corresponding addresses where the WQP samples were taken. The sample table file structure is outlined in Table 3. Laboratories should report one record per sample. Fields must be in the order listed in the table below and each field may or may not contain data. All fields (except those marked with an “N/A”) must contain either a text or numeric value for every sample taken. Except for the “Comment” field,

these fields must contain only alpha-numeric characters, as designated in field descriptions. Those fields marked as "N/A" shall be left blank. The laboratory must report the field measurement results of pH and temperature in this table. Capital letters must be used for all fields- the only exceptions are be the Sample Collector's name, location address and comment fields.

An EDD must be generated for all rejected samples and results. See later section *Sample and Result Rejection*.

Table 3. Sample Table File Structure

#	Field Name	Description	Data Type	Field Size
1	FILE_NAME	Default to "sample"	Text	6
2	B_RECORD_ID	Auto number, unique	AutoNumber	7
3	B_LAB_SAMPLE_NUM	Laboratory sample ID number	Text	20
4	B_STATE_SAMPLE_NUMBER	N/A		
5	B_PWS_NUMBER	PWS ID number, preceded by "TX"	Text	9
6	B_REPLACEMENT_INDICATOR	"Y" if sample replaces a previously rejected sample, otherwise defaults to "N". If "Y," populate field 24, 25, 37, 38	Text	1
7	B_LABORATORY_CERTIFYING_AGENCY	"State" if accredited/approved by TCEQ, "Federal" if certified by EPA	Text	7
8	B_LABORATORY_CERTIFICATION_ID	Laboratory Certification ID Number	Text	10
9	B_WSF_STATE_ASGN_ID	Examples: DS01= Samples taken in distribution system PBCU001, PBCU002, etc. = samples taken at entry points	Text	12
10	B_SAMPLING_POINT	Examples: "EWQP" = entry point "DSTWQP" = distribution system	Text	12
11	B_SAMPLING_LOCATION	Address of sample point	Text	40
12	B_SAMPLE_CATEGORY	"GE" = General; default for water quality parameters	Text	2
13	B_COMPLIANCE_INDICATOR	"Y" for yes	Text	1
14	B_COLLECTION_DATE	Collection date as text in the following format - MMDDYYYY	Text	8
15	B_COLLECTION_TIME	Collection time (24 hour clock) as text HHMM	Text	4
16	B_SAMPLE_TYPE	"RT" = routine for WQPs	Text	2
17	B_REPEAT_LOCATION	N/A		
18	B_LAB_RECEIPT_DATE	The date the lab received the samples as text MMDDYYYY	Text	8
19	B_COLLECTOR_NAME	Sample collector name	Text	40
20	B_SAMPLE_VOLUME	N/A		
21	B_LEAD_COPPER_SAMPLE_TYPE	N/A		
22	B_SAMPLE_REJECTION_REASON	Rejection Code if applicable=see list of rejection codes.	Text	2
23	B_COLLECTION_METHOD_CODE	N/A		

Table 3. Sample Table File Structure

#	Field Name	Description	Data Type	Field Size
24	B_ORIGINAL_LAB_SAMPLE_NUMBER	Populate with original laboratory sample ID number if sample is a replacement for a previously rejected sample	Text	11
25	B_ORIGINAL_COLLECTION_DATE	Populate with original collection date if sample is a replacement for a previously rejected sample	Text	8
26	B_LAB_COMPOSITE_NUMBER	N/A		
27	B_COMPOSITE_DATE	N/A		
28	B_FREE_CHLORINE_RESIDUAL	N/A		
29	B_TOTAL_CHLORINE_RESIDUAL	N/A		
30	B_SAMPLE_WATER_TEMPERATURE	Populate with <i>field measured</i> temperature in °C, whole numbers	Number	2
31	B_TEMPERATURE_UNIT_MEASURE	"C"	Text	1
32	B_TURBIDITY_MEASURE	N/A		
33	B_PH_MEASURE	Populate with <i>field measured</i> pH	Number	Double
34	B_FLOW_RATE	N/A		
35	B_SAMPLE_PURPOSE	N/A		
36	B_STATE_CLASSIFICATION_CODE	"WQP"	Text	3
37	B_ORIGINAL_LABORATORY_CERTIFYING_AGENCY	"State" if accredited by TCEQ or approved by the TCEQ, "Federal" if certified by EPA (if replacing a previously rejected sample)	Text	7
38	B_ORIGINAL_LABORATORY_CERTIFICATION_ID	TCEQ Laboratory Certification ID Number (if replacing a previously rejected sample)	Text	10
39	B_SAMPLE_COMMENTS	Comments related to the entire sample.	Text	255
40	B_COLLECTION_ADDRESS	Address of sample point. This is a repeat Line 11 - B_SAMPLING_LOCATION	Text	200

Result Table

The Result table contains the individual analyte results. The result table file structure is outlined in Table 4. There may be multiple records depending on how many constituents were analyzed in the particular water sample. A result record shall only be created if a result is available. If an entire sample is rejected and not analyzed, no result records shall be reported with the sample record.

Fields must be in the order listed in the table below and each field may or may not contain data. All fields (except those marked with an "N/A") must contain either a text or numeric value for every sample collected as designated in field descriptions. Text must utilize capital letters. Those fields marked as "N/A" shall

be left blank.

Table 4. Result Table File Structure

#	Field Name	Description	Data Type	Field Size
1	B_FILE_NAME	Default to "result"	Text	6
2	B_RECORD_ID	Auto-number, unique	Auto	7
3	B_LAB_SAMPLE_NUM	Laboratory sample ID number, unique	Text	20
4	B_COLLECTION_DATE	Collection date as text MMDDYYYY	Text	8
5	B_PWS_NUMBER	PWS ID number, precede number with "TX"	Text	9
6	B_LABORATORY_CERTIFYING_AGENCY	"State" if accredited by TCEQ or approved by the TCEQ, "Federal" if accredited by EPA	Text	7
7	B_LABORATORY_CERTIFICATION_ID	TCEQ Laboratory ID Number, check with TCEQ for laboratory unique number	Text	10
8	B_ANALYTE_CODE	alkalinity (1927), calcium (1919), chloride (1017), conductivity (1064), hardness (1915), iron (1028), manganese (1032), sodium (1052), sulfate (1055), TDS (1930), orthophosphate (1044), silica (1049)	Text	4
9	B_ANALYSIS_START_DATE	Date analysis is started as text in the following format: MMDDYYYY	Text	8
10	B_ANALYSIS_START_TIME	Time analysis is started as text in the following format: HHMM	Text	4
11	B_ANALYSIS_COMPLETE_DATE	Date analysis ends as text in the following format: MMDDYYYY	Text	8
12	B_ANALYSIS_COMPLETE_TIME	Time analysis ends as text in the following format: HHMM	Text	4
13	B_STATE_NOTIFY_DATE	Date data is reported to TCEQ as text in the following format: MMDDYYYY. If the data is rejected and returned for correction, use the original submission date when re-submitting.	Text	8
14	B_WATER_SYSTEM_NOTIFY_DATE	Date data is reported to the PWS as text in the following format - MMDDYYYY	Text	8
15	B_DATA_QUALITY	Default to "A"	Text	1
16	B_DATA_QUALITY_REASON	N/A		
17	B_ANALYSIS_METHOD_CODE	Analysis method code-see WQP Allowable Methods	Text	30
18	B_VOLUME_ASSAYED	N/A		
19	B_LAB_REJECTION_REASON	Rejection reason specific to results (if applicable)	Text	2
20	B_MICROBE_PRESENCE_INDICATOR	N/A		
21	B_COUNT	N/A		

Table 4. Result Table File Structure

#	Field Name	Description	Data Type	Field Size
22	B_COUNT_TYPE	N/A		
23	B_COUNT_UNITS	N/A		
24	B_LESS_THAN_INDICATOR	If < MRL, mark field "Y", if not mark	Text	1
25	B_LESS_THAN_CODE	Populate with "MRL" if field 24="Y"	Text	4
26	B_DETECTION_LEVEL	Populate with lab MRL if field 24="Y"	Number	Double
27	B_DETECTION_LEVEL_UNIT_CODE	Populate with units if field 24 ="Y" [C, MG/L, PH, or UMHO/CM. UG must be converted to MG/L]	Text	10
28	B_CONCENTRATION	Populate with concentration if field 24="N"	Number	Double
29	B_CONCENTRATION_UNIT_CODE	Populate with concentration units if field 24 ="N" [C, MG/L, PH, or UMHO/CM] UG must be converted to MG/L	Text	9
30	B_REPORTED_MEASURE	N/A		
31	B_REPORTED_MEASURE_COUNT_ER	N/A		
32	B_COMMENT	Comment specific to result	Text	254
33	B_STATE_SAMPLE_NUMBER	N/A		

Sample and Result Rejection

Laboratories may reject samples in coordination with the TCEQ and the PWS. If a sample is delivered to the laboratory and rejected, the rejected sample occurrence must be reported to the TCEQ electronically, see example below. The table below lists description codes for rejecting samples.

Individual analyte results cannot be rejected as all required analytes must be reported for an initial or routine WQP sample to be considered for compliance. PWSs submitting OWQP samples will only require analysis of a subset of analytes.

Example – The PWS delivers a sample to the laboratory in excess of the holding times described in this document. The lab will reject the sample and request a replacement. The sample rejection occurrence will be reported to the TCEQ in an EDD with just the sample table completed with no results. The rejection code "EH" for "Exceeded Hold Time" will be used. When the sample is resubmitted, Lines 24 and 25 of the sample table will be completed with the original laboratory ID number and the original collection date, which is included in the WQPMF 20679. This will "tie" the original sample to the replacement. The rejection codes and descriptions are listed in Table 5.

Table 5. Sample Rejection Codes and Descriptions

CODE	DESCRIPTION
BR	Sample Broken In Transit
BP	Invalid Sample Point
EH	Exceeded Hold Time
FZ	Sample Frozen
IC	Invalid Container
ID	Invalid Date/Time
IN	Insufficient Sample Information
IP	Invalid Sampling Protocol
LA	Lab Accident
LE	Lab Error / Lab QC Failure
LT	Leaked in Transit
MF	Submission Form and Chain of Custody Do Not Match
MP	Missing pH
ND	No Date/Time
NS	No Sampler Signature
PR	Improperly Preserved
PS	No PWS Representative Signature
SE	Shipping Error
TH	Temperature Too High
VO	Insufficient Volume

How to Report WQP Results to the TCEQ when Single Samples are Analyzed by Multiple Laboratories

WQPs samples are often analyzed by multiple laboratories (i.e. passed-through, subcontracted, etc.). In these cases, analytical results are reported to the TCEQ by the laboratory that performed the analysis, with the exception of pH and temperature. Field measurement results of pH and temperature are reported to the TCEQ by the initial receiving laboratory in the Sample table of EDD (but not in the analytical test report).

The process for transferring samples and reporting results from multiple laboratories is described in this section by way of the following example:

Example - Sampling personnel collect a sample and measure pH and temperature in the field. He/she (or a courier) takes the sample to an initial receiving (sometimes in-house) laboratory where parameters such as alkalinity and conductivity are analyzed. The remaining sample with the WQPMF, original and new, (see next paragraph) is then relinquished to a commercial laboratory to complete the required analyses.

To transfer a sample, the initial receiving laboratory shall generate a new WQPMF. The laboratory shall strike through the PWS portion of the new WQPMF form and write "Refer to original WQPMF." The initial laboratory shall give the second laboratory both a copy of the original WQPMF and the new WQPMF with the sample(s). The second laboratory will record its laboratory-specific information on the new WQPMF, including its TCEQ laboratory ID Number, its sample ID number(s), and check marks on the analyses it will run. The second laboratory will transfer both WQPMFs to the TCEQ with the PDF of the analytical test report package.

All aspects of this document apply to both laboratories, including sample receipt, custody transfer, sample rejection, approved methods, reporting, records maintenance, and corrective action. Each laboratory is responsible for submitting their own results to the the TCEQ including the:

- Completed WQPMFs (original and new)
- Laboratory COCs (if applicable)
- Analytical Test Report
- EDD – See Section – *Electronic Data Deliverable (EDD)*

Analytical Records Maintained by the Laboratory

The laboratory shall maintain accessible records for a minimum of five (5) years from generation of the last entry in the record. Adequate information shall be available to allow an auditor to reconstruct the final results for compliance purposes. Changes in ownership, mergers, or closures of laboratories do not eliminate these requirements. The laboratory must notify the PWS before disposing of records which are less than five years old so they may request copies, if needed. This includes all raw data, calculations, and quality control information. If the laboratory changes its computer hardware or software, it shall make provisions for transferring old data to be retrievable in the timeframe listed above.

Public water systems must maintain records relating to lead and copper testing for no less than twelve (12) years. [30 TAC §290.46(f)(3)(F)]

Corrective Actions (CA)

Any person involved with work described in this document must initiate a CA if there is deviation from required protocols specified in it and/or referenced documents. The procedure for a CA following the identification of a deviation begins with an investigation to determine the root cause(s). The laboratory must select and implement the CAs that will eliminate the problem and prevent recurrence. Any CAs identified must be appropriate in degree to the magnitude and risk of the deviation. Laboratory QA Officers (or designees) are responsible for assuring that CAs are documented, reported, implemented, and tracked appropriately.

Deviations may be identified through:

- Routine quality control procedures (internal or external)
- Internal or external audits
- Management reviews
- Feedback from customers
- Staff observations (internal or external)

Deviations that require CA include, but are not limited to:

- Equipment failure
- Excursions from quality control limits
- Samples lost due to laboratory accidents

- Failure to meet acceptance limits when analyzing EPA Proficiency Test samples
- Holding time exceedances

Most CAs can be accomplished at the point of origin using an established procedure through some combination of the following: repair or replacement of faulty equipment; re-analysis of samples and standards; checking reagents for proper strength; etc. CA procedures/response actions are specified in laboratory SOPs that include required documentation, solutions, and follow-up.

Unique deviations/problems that cannot be corrected by the procedures listed above will require CAs to be defined when the need arises.

If laboratory deviations involve the following list, the laboratory QA Officer must notify the TCEQ by phone or email within 48 hours, draft a CA report, and submit it to the PWSS Program Lead Quality Assurance Specialist within 14 days of the incident detection.

- Calls into question the integrity of sample analysis results which have been previously reported to the TCEQ
- Results in non-conformance with state or federal regulations
- Was associated with the intentional misrepresentation of data or information

CA Reports include the following components:

- Description of the problem - how it was identified and the date it was identified
- Programmatic or Data Impacts – include sample ID number(s) affected
- Root cause
- CA(s) taken
- Actions implemented to prevent recurrence
- Timelines for implementation of corrective actions and actions to prevent recurrence
- Individuals responsible for implementing actions, ensuring corrective actions are implemented, and verifying the effectiveness of actions
- Who prepared the report
- Signatures and dates that includes a manager(s)

The TCEQ will review each CA report and respond within 30 days if (1) actions taken to resolve the deviation are unacceptable, or (2) the TCEQ needs more time to research the issue and make a determination. If CAs taken by a laboratory are unacceptable to the TCEQ, the TCEQ may not use sample results from the laboratory until such time that acceptable CA is achieved.

Corrected data must be submitted in a completely separate file from routinely submitted data. The laboratory must notify the TCEQ in advance in order to prevent duplication in the database of record.

Falsification and Fraud

Falsification of the WQPMF 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 WQPMF, the water system acknowledges that the water samples were collected according to the PWS' 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.

Insert Lab Logo
Here

Laboratory Name
Laboratory Address
Laboratory ID
Laboratory Phone

PWS Name
PWS Number
PWS Address
PWS Phone

Sample Lab ID

State ID

Sample Type

Sample Point ID

Sample Collection— Date **Time**

Collection Address

Sample Received— Date **Time**

QUALITY CONTROL RESULTS

Analysis	MB		LCS				MRL Verification				MS				MSD			
	Result	Q	Result	% Rec	Limit	Q	Result	% Rec	Limit	Q	MS-Result	% Rec	Limit	Q	MSD-Result	%RPD	Limit	Q
alkalinity																		
calcium as Ca																		
conductivity																		
chloride																		
hardness																		
iron																		
manganese																		
o-phosphate-P																		
silica																		
sodium																		
sulfate																		
TDS																		

Comments

Report Definitions

MB Method Blank
LCS Lab Control Standard
MRL Minimum Reporting Limit
MS Matrix Spike
MSD Matrix Spike Duplicate
%Rec Percent Recovery
RPD Relative Percent Difference

Data Qualifiers

S Spike Recovery Outside
RPD Outside Recovery Limits
B Analyte Detected in Method
Q Data Qualifier of flag

REPORT AUTHORIZATION

Name **Function** **Signature or electronic equivalent** **Date**