Special Investigation QAPP Template

Addendum #10

(Revision 1)

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

(Revision 13)

US EPA Q-TRAK # 20-054

Effective

November 4, 2019

Amendment #1 to Revision 13
October 4, 2021

Introduction

The TCEQ Water Supply Division (WSD) staff collects special request samples, and conducts special investigations as needed, especially as part of Texas Optimization Program (TOP) activities. These events are "out of the ordinary" and sometimes involve public health and environmental issues of immediate concern. When these events occur, this template is used to document the quality assurance requirements associated with the environmental data collection activities, per the *TCEQ Quality Management Plan* (QMP).

This quality assurance project plan (QAPP) template is designed as a "fill-in-the-blank" document that can be prepared quickly with an expedited signature process so that field activities are not delayed. Directions for completing the template are included within each individual section in italicized text and should be removed as each section is prepared. This page and the cover page should also be removed when the document is completed.

Completed templates are maintained by the Public Water System Supervision (PWSS) Program Lead Quality Assurance Specialist with the QAPP for the *PWSS Program of the Texas Commission on Environmental Quality (TCEQ) Relating to the Safe Drinking Water Act* (SDWA).

Title and Approval Page

Quality Assurance Project Plan

for

Enter Name of the Investigation

Prepared by:

Enter Name of Person Completing QAPP

Prepared for:

Texas Commission on Environmental Quality

Office of Water Quality

Water Supply Division

Enter Month and Year

Approved By:

Project Manager:	_____	_____
	Enter Name	Date
PWSS Program Lead Quality Assurance Specialist:	_____	_____
	Enter Name	Date
Team Leader	_____	_____
	Enter Name	Date
Laboratory Representative	_____	_____
	Enter Name	Date

Table of Contents

Update the table of contents when the document is complete.

- *Place the cursor in the table*
- *Right click and select "Update field."*
- *In the pop-up box, select "Update entire table."*

Key Personnel and Distribution List

This section describes key project personnel and document distribution requirements. The Project Manager is responsible for distributing this document to all individuals listed in the table below. The project manager is also responsible for verifying the current approved version is being used and outdated information is removed from the document. The PWSS Program Lead Quality Assurance Specialist will maintain completed Special Investigation QAPPs with the Programmatic QAPP.

In the following table, list names, titles, roles, responsibilities, and contact information of key project individuals, such as:

Key Personnel	**Role**	**Project Responsibility**	**Contact Information (phone #, email)**
Enter name	PWSS Program Lead Quality Assurance Specialist	Coordinates QA activities for the PWSS Program including the development and management of the QAPP and addenda including the Special Investigation QAPPs. Manages quality assurance corrective actions for the WSD.	Enter Contact Information
Enter name	Team Leader	Describe responsibilities	Enter Contact Information
Enter name	Project Manager	Describe responsibilities	Enter Contact Information
Enter name	Laboratory Manager	Describe responsibilities	Enter Contact Information
Additional lines, as needed.			

Problem Definition/Background

Overview

This *Special Investigation QAPP Template* describes the data quality objectives, field activities, and sampling and analysis methods to be used, and the activities for managing the collected data and supporting information. The individuals involved with the investigation will comply with procedures described in this document.

Problem Statement

Describe the problem to be resolved with this study or investigation

Historical & Background Information

Describe the water quality problem, and the historical and/or regulatory background as applicable.

Special Training Needs/Certification & Qualifications

Laboratory Accreditation

The laboratory providing analytical services for this project is accredited through the Texas Laboratory Accreditation Program (LAP) for the most current standards adopted by the National Environmental Laboratory Accreditation Program (NELAP) and the requirements in 30 Texas Administrative Code (TAC) §25. The laboratory has documented standard operating policies (SOPs) in place and data on record which demonstrate the laboratory capabilities to generate data that meet the project objectives by the methods specified in this *Special Investigation QAPP*.

Training

All individuals performing work under this *Special Investigation QAPP Template* have the experience and technical competence to perform satisfactorily all tasks assigned. In general, TCEQ staff performing PWSS Program work meet job qualifications as described in functional job descriptions, and participate in training programs as defined by the *TCEQ QMP*.

Add and describe project-specific training, certification, and qualifications for personnel, as applicable. Otherwise, state "no project-specific training is required."

Process Design

The TCEQ Project Manager maintains the schedule for the activities specified in this Special Investigation QAPP as listed below. The Project Manager is responsible for communicating the schedule to the project team.

In the table below, list key activities and the schedule, as applicable.

Key Activity	**Start Date**	**End Date**
QAPP development and approval		
Field Measurements (pH, turbidity)		
Sample collection (VOCs)		
Laboratory analysis		
Report		
Management Review		
Additional Activities, as needed.		

Investigation Site Description

The following map (or site description) provides the location of each monitoring location.

Include a site map (or site description) of each monitoring location.

Quality Objectives & Criteria for Measurement Data

Goal Statements & Objective Statements

State the monitoring goal(s) and the objective(s) to provide data of known and documented quality.

Monitoring Goal Statement 1

Objective Statement

Monitoring Goal Statement 2

Objective Statement

Data Quality Indicators (Measurement Data)

Adapt the language in the following sections to be specific for the project.

Precision

Precision is the degree to which a set of observations or measurements of the same property, obtained under similar conditions, conform to themselves. It is a measure of agreement among replicate measurements and is an indication of random error. Precision is controlled by the use of duplicate samples. Requirements for field duplicates are defined in the TCEQ *Drinking Water Sampling Guide*. Analytical requirements for precision in the test methods are followed. Results are compared against criteria defined in the methods and used during the evaluation of analytical performance.

Bias

Bias refers to the systematic distortion of a measurement which makes it different from the true value. A measurement is considered unbiased when the value reported does not differ from the true value. Bias is controlled by the use of proficiency test (PT) samples, calibration standards, quality control samples, blanks (field and laboratory), laboratory fortified sample matrices, etc. Specific project field QC requirements for field blanks are defined in the TCEQ *Drinking Water Sampling Guide*. Otherwise, requirements in the test methods are followed. Results are compared against criteria defined in the methods and used during the evaluation of analytical performance.

Completeness

The completeness of the data is basically a relationship of how much of the data are available for use compared to the total potential data. 100% of the data must be available for this investigation. However, sample or data loss may occur due to accidents, insufficient sample volume, broken or lost samples, laboratory issues, etc. In such cases, samples will be recollected.

Representativeness

Representativeness refers to the degree to which the data accurately represents the frequency distribution of a specific variable in the population. Site selection, the appropriate sampling regime, adherence to the sampling schedule defined in this QAPP, and use of approved analytical methods as defined in the TCEQ

Drinking Water Sampling Guide will ensure data are representative of the population being sampled.

Comparability

Comparability refers to the degree in which methods or data sets are considered to be similar. Confidence in the comparability of data sets for this project is based on sampler training and use of approved sampling and analysis methods and quality assurance protocols in accordance with requirements and described in this QAPP. Comparability is also guaranteed by standard reporting protocols.

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 this project include the method detection limit (MDL) and method reporting limit (MRL) for the analytical data. Requirements in the test methods for MDLs and MRLs are followed. Results are compared against criteria defined in the methods and used during the evaluation of analytical performance.

Data Integrity

Data collected and reported for this project are managed in such a way to ensure the confidentiality, integrity, and availability of data and information. Data management policies and procedures ensure data and information are recoverable and only used for their intended purposes.

Compliance

All activities and procedures associated with this project are consistent with state rules and federal regulations pursuant to the SDWA. Adherence to this QAPP Addendum will ensure data are collected, analyzed, and reported according to statute and are legally defensible.

Non-Direct Measurement Data (Secondary Data)

Identify any data needed for this project that will be obtained from non-measurement sources such as computer databases, literature files, etc., and specify any limitations on the use of the data.

Field Requirements

Monitoring and Sampling Requirements

Parameter	Sampling Method	Sample Container	Sample Volume	Holding Time
Enter all applicable measurements and samples to be collected	*Describe and/or site sampling methods to be used for each parameter, including any sampling equipment and/or containers to be used.*	*Describe the sample containers to be used for each parameter or "N/A" for field measurements.*	*Indicate the volume of sample needed for analysis of each parameter or "N/A" for field measurements.*	*Indicate the maximum holding time allowed for each parameter or "N/A" for field measurements*

Example: Monitoring and Sampling Requirements

Parameter	Sampling Method	Sample Container	Sample Volume	Holding Time
pH	TCEQ *Drinking Water Sampling Guide*	N/A	N/A	N/A
Turbidity	TCEQ *Drinking Water Sampling Guide*	N/A	N/A	N/A
VOCs	TCEQ *Drinking Water Sampling Guide*	2-40 mL glass	Full – no headspace allowed	14 days

Field Documentation

Provide a table listing the sampling records and how they are used as well as the instructions for competing them. An example is provided below.

Document	Use	Instructions for Completion
Sampler Field Notes	Required for all field visits. Documents calibrations and records of all samples collected, including date and time; unusual conditions, etc. Handwritten notes must be legible; scratch-outs must be initialed and dated	TCEQ *Drinking Water Sampling Guide*, Chapter 8
PWS Water Analysis Form TCEQ Form 0351	Required for all field visits. Documents date and time collected, Sampling location, Sampler's initials, Analysis type, field measurement results, etc.	TCEQ *Drinking Water Sampling Guide*, Chapter 10 *Customized forms for special investigations are available
Chain of Custody Form	Must be completed when samples are delivered to a laboratory. Used to ensure integrity as well as legal and technically defensible data.	TCEQ *Drinking Water Sampling Guide*, Chapter 10 *Customized forms for special investigations are available

Analytical Requirements

Analytical Methods, Laboratory, and Accreditation Requirements

The laboratory will analyze the parameters using the methods described in the table below. Only the promulgated laboratory methods may be used for analysis of samples under the SDWA. The requirements for methods are listed in 40 Code of Federal Regulation (CFR) Parts 141 and 143 at <https://ecfr.federalregister.gov/current/title-40/chapter-I/subchapter-D/part-141?toc=1> and <https://ecfr.federalregister.gov/current/title-40/chapter-I/subchapter-D/part-143?toc=1>.

Each of the selected analyses will be performed in accordance with the applicable published method. The laboratory will perform all method-required and method-recommended quality control steps, including the QA/QC procedures specified in the laboratory quality manual. The QC acceptance criteria specified in the methods will be used.

If samples are to be delivered to a laboratory, list each parameter to be analyzed, the units, the name of the laboratory, and the analytical method.

Parameter	Units	Laboratory	Analytical Method
Enter all applicable chemical and/or field parameters to be measured.	*Enter units of measurement for each parameter.*	*If samples are to be analyzed at a laboratory, indicate the name of the lab*	*Enter Analytical Method*

Sample Handling and Custody Requirements

Indicate whether samples will be transported to a laboratory for analysis. If so, state that the TCEQ chain of custody procedures and form in the TCEQ Drinking Water Sampling Guide will be followed.

Testing Calibration

Indicate that field equipment will be calibrated according to the TCEQ Drinking Water Sampling Guide, Chapter 11 and that calibrations are documented in the comment section of the field report.

Assessment and Oversight

Corrective Actions (CA)

In accordance with the *TCEQ QMP*, any person involved with work described in this QAPP Addendum is responsible for reporting deviations from required or standard protocols specified in this document and/or referenced documents.

Most deviations are corrected by project staff using established procedures defined in SOPs that include documentation of problems, solutions, resolution implementation and follow-up. These deviations are documented at the point of origin and maintained with the applicable project records.

Unique problems that cannot be corrected by established procedures will require corrective actions (CA) to be defined and documented in a CA report when the need arises. Upon detection of a unique deviation, staff are responsible for notifying supervisory staff in writing. Managers (or designees) are responsible for assuring that CA reports are prepared within 14 days and forwarded to the PWSS Program Lead Quality Assurance Specialist. Managers (or designees) are responsible for assuring that CAs are selected and implemented that will most likely eliminate the problem and prevent recurrence. Managers (or designees) are also responsible for assuring that CA reports are prepared, reported, implemented, and tracked appropriately.

CA reports must include the following:

- Description of the problem - how it was identified and the date identified
- Programmatic or data impact(s)
- Root cause
- Corrective action 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

The PWSS Program Lead Quality Assurance Specialist determines whether the deviation is significant as defined by any of the following:

- It jeopardizes the integrity of results or conclusions.
- Results in non-conformance with state or federal regulations.
- Was associated with the intentional misrepresentation of data or information.

CA reports documenting significant deviations must be forwarded to the WSD federal Grant Manager, the TCEQ QA Manager, and affected Deputy Directors within 30 days. The PWSS Program Lead Quality Assurance Specialist tracks and monitors the results of significant corrective actions to ensure effectiveness. Appropriate staff may be designated to implement and track CAs that are not deemed significant.

Authorization to Stop Work

TCEQ management will authorize work stoppage if conditions are identified that indicate compliance is in jeopardy or if primacy requirements are not being met. The PWSS Program Lead Quality Assurance Specialist, TCEQ QA Manager, or TCEQ Grant Manager may also request a work stoppage.

Data Review, Verification, Validation and Reconciliation

Data Review and Verification

Describe the measures you will take to review the data.

Reconciliation with User Requirements

Identify the data users. Describe your approach to converting the raw measurements and data into meaningful results. In other words, describe how results will be reconciled with user requirements.

Modeling or Statistical Methods Used

Describe the computations or statistical procedures that will be used to evaluate environmental data that will provide results needed to meet sampling goals and objectives.

Reports to Management, Documentation, Records

Data Reporting and Management

Describe the steps involved in reporting and managing the data, including how the data are transferred from the laboratory, merged with field data, and stored.

Project Reports

Describe interim and final project reports, to whom they will be provided, and their contents.

Documents and Records

Adapt the following table as needed.

Document or Record	Location	Format
Special Investigation QAPP - copy	TCEQ Central Office, QAPP Project Files	Electronic
Field Notes - copy	TCEQ Central Office, Project Files	Hardcopy
Chain of Custody - copy	TCEQ Central Office, Project Files	Hardcopy
Public Water Supply Analysis Form - copy	TCEQ Central Office, Project Files	Hardcopy
Laboratory data	TCEQ Central Office, Project Files	Hardcopy
Final Report	TCEQ Central Office, Project Files	Hardcopy