**Quality Assurance Plan (QAP) Shell Instructions**

QAPs are written as addenda to the SWQM, WQS, and WQA QAPP (SWQM QAPP). They document procedures and activities specific to the project that are not covered by the umbrella SWQM QAPP. These include a general project description, measurement and data acquisition tasks, roles and responsibilities, and time frame and deliverables.

Provide a draft QAP to project personnel and signatories for review and comment. Allow a minimum 10 business days for review. Once all comments have been received and any necessary changes have been made, collect signatures. The SWQM QA Specialist will sign last.

Project activities may not begin until an approved QAP is distributed to project personnel. Approved QAPs will remain on file in the respective program’s central office QA files as either hard copy or electronic copy. If data from the project will be submitted to SWQMIS, approved QAPs should be provided to DM&A for upload into the SWQMIS database.

* *{Italicized red text}* provides instructions or information to QAP preparers and should be deleted from the QAP before the draft is submitted for review and comment.
* Highlighted text indicates titles or instructions for language that must be replaced.

QUALITY ASSURANCE PLAN (QAP)

Project Title

Effective Date: This QAP is effective from the final approval date through Month Year

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**TCEQ Project Manager Name/Contact Information:**

*{Insert contact information here. Include name, TCEQ Program, Region address, phone, and email*}

John Doe

Surface Water Quality Monitoring Program

Texas Commission on Environmental Quality

Region 99, Central Office

12100 Park 35 Circle, Bldg. B, MC-234

Austin, TX 78753

Phone: (512) 123-4567

Email: jdoe@tceq.texas.gov

## Project Title

Title of Project from cover page

## A. General Description of Special Study:

### Background:

Clearly define the problem and the environmental questions to be answered by the project/study.

Project Task Description:

Summarize the work to be performed and the schedule for implementation. Note here if data will not be entered into SWQMIS and the reason why.

### Project Objective:

State the project specific objectives and the intended use of the data. The information provided should answer the questions: Why is the generation/acquisition of environmental data needed? How will the data be used? And/or what decisions will be made based on the data?

## B. Measurement and Data Acquisition

### B1. Experimental Design

Describe the sampling and analytical design (i.e., sample location, parameters, frequency, types and numbers of samples, design of the sampling network, matrices, and rationale).

Use Table B1.1 (below) to describe sample sites, parameter groups, and number of events. The first 4 columns of Table B1.1 are required; you may delete unnecessary parameter group columns.

Provide map(s) of sample area/sites. Maps and figures may be placed at the end of the QAP.

Table B1. 1 Sampling Sites and Monitoring Frequencies

| Segment | Region | Site Description | Station ID | 24 HR | Aquatic Habitat | Benthics | Nekton | Metals Water | Organics Water | Metals Sediment | Organics Sediment | Conventional | Amb Tox Water | Amb Tox Sed | Indicator Bacteria | Inst Flow | Fish Tissue | Field |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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\*The first four columns are required information. Delete unnecessary parameter groups

### B2. Sampling Methods

The project will be conducted in accordance with quality assurance procedures outlined in the most current TCEQ SWQM, WQS and WQA Programs QAPP. Field sampling will be conducted according to procedures documented in the most current version of the TCEQ Surface Water Quality Monitoring Procedures Volume 1: Physical and Chemical Monitoring Methods, (RG-415) (SWQM Procedures, Vol. 1) and Surface Water Quality Monitoring Procedures Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, (RG-416) (SWQM Procedures, Vol. 2).

*{Describe any deviations from the above referenced documents and manuals in detail for each bullet below (Ex: sediment sampling with a corer device, collecting samples when flow is >3 cfs). If there are no deviations, you may delete the bullets below.}*

* Sampling and field measurement techniques
* Equipment
* Equipment calibration
* Data representativeness

### B3. Sample Handling and Custody

Sample handling and custody will be conducted as described in Section B3 of the TCEQ SWQM, WQS and WQA Programs QAPP and the SWQM Procedures, Vols. 1 and 2.

*{If a laboratory other than the TCEQ Lab or contract lab listed in the SWQM QAPP will analyze samples for the project, include the paragraph immediately below, as well as the lab’s CoC form as an appendix to this QAP. Include custody procedures if they differ from the QAPP or the SWQM Procedures Manual. Otherwise, delete the paragraph below if there are no deviations from the QAPP.}*

Samples analyzed by a sub-contracted laboratory will be documented on a chain of custody (COC) from that laboratory. A copy of the COC and custody procedures from the participating laboratory(ies) is found in Appendix A.

### B4. Analytical Methods and Quality Control

The analytical methods and quality control (QC), associated matrices, and performing laboratories are described in the most current TCEQ SWQM, WQS and WQA Programs QAPP. The project will be conducted in accordance with QC procedures outlined in the most current version of the SWQM Procedures, Vol. 1 and SWQM Procedures, Vol. 2. Laboratories reporting data under this QAP must be NELAP accredited for the appropriate parameters, methods and matrices if available. All acquired analytical data must be NELAP-accredited if accreditation is available.

*{Describe any deviations from the QAPP or SWQM Procedures, Vol. 1 or Vol. 2 with regard to the following bullets. If there are no deviations, you may delete the bullets below.}*

* Analytical methods
* Quality control tests
* Non-Direct Measurements

{*Complete Table B4.1 and adapt it accordingly for the project if*:

* *Any project specific analytical methods, data quality objectives, matrices, laboratories, or QC tests are not included in the SWQM QAPP or Procedures Manual, Vols. 1 and 2. (Examples include: nutrients in sediment, analytes in pore water, extra dilutions requested, performing lab is any lab other than TCEQ Lab or LCRA Lab, a different LOQ check standard recovery is needed for the project.) or,*
* *A subset of routine analytes is to be measured/analyzed (Examples: only nutrients will be analyzed, or only selenium in water will be analyzed)*

*Otherwise, delete the table if there are no deviations from the QAPP or SWQM Manual*.}

Table B4. 1 Measurement Performance Specifications

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Units | Matrix | Method | PAREMETER CODE | AWRL | Limit of Quantitation (LOQ | PRECISION  (RPD of LCS/LCSD) | BIAS  (%Rec. of LCS) | LOQ  CHECK STANDARD  %Rec | Lab |
| Examples:  pH | pH. units | water | EPA 150.1and TCEQ SOP | 00400 | 1.0 | NA | NA | NA | NA | Field |
| DO | mg/L | water | SM 4500-O G and  TCEQ SOP, V1 | 00300 | 1.0 | NA | NA | NA | NA | Field |
| Conductivity | uS/cm | water | EPA 120.1and  TCEQ SOP | 00094 | 1 | NA | NA | NA | NA | Field |
| Flow | cfs | water | TCEQ SOP | 00061 | NA | NA | NA | NA | NA | Field |
| Ammonia-N | mg/L | water | EPA 350.1 Rev. 2.0 (1993) | 00610 | 0.1 | 0.02 | 20 | 80-120 | 70-130 | Lab A, Inc. |
| T-PO4-P | mg/L | water | EPA 365.3 | 00665 | 0.06 | 0.06 | 20 | 80-120 | 70-130 | Lab A, Inc. |
| O-PO4-P | mg/L | water | EPA 365.3 | 00671 | 0.04 | 0.04 | 20 | 80-120 | 70-130 | Lab A, Inc. |
| Total Kjeldahl Nitrogen | mg/Kg  dry weight | sediment | SM 4500-N-org B or C and SM 4500-NH3 B | 00627 | NA | 1.0 | 20 | 80-120 | 70-130 | Lab B, Inc. |
| Total Phosphorus | mg/Kg  dry weight | sediment | modified\*  EPA 365.3 | 00668 | NA | 1.0 | 20 | 80-120 | 70-130 | Lab B, Inc. |

### B5. Data Management

The project will be conducted in accordance with quality assurance procedures outlined in the most current TCEQ SWQM, WQS and WQA Programs QAPP, SWQM Procedures, Vol. 1 and SWQM Procedures, Vol. 2, and the *Data Management Reference Guide* (DMRG).

*{If the flow of data from sample collection to submission to TCEQ deviates from the QAPP or SWQM Procedures, Vol. 1 or Vol. 2, describe the data management process for the following bullets. This includes field or lab contractors. If there are no deviations, you may delete the bullets below.}*

* Data management
* Data review, verification, and validation
* Data completeness
* Documentation and records
* Annual quality assurance review for the sample collector and laboratory(ies) and any necessary corrective action

*If data will be submitted to SWQMIS, indicate who is responsible for ensuring data are validated and entered into the database.*

Submitting Entity, Collecting Entity, and Monitoring Type Codes associated with each sample type are listed in Table B5.1.

*{Complete Table B5.1 with project specific information.}*

Table B5. 1 Submitting Entity, Collecting Entity, and Monitoring Type Codes

| **Data Description** | **Submitting Entity** | **Collecting Entity** | **Monitoring Type** |
| --- | --- | --- | --- |
| Ex: Conventional Water | WC | FO | RT |
| Ex: 24 hr field | WC | FO | BS |
| Ex: Instantaneous field | WC | FO | RT |
| Ex: Benthic data | WC | FO | BS |

{Add definitions for Codes here. Examples below.}

WC is the code for Texas Commission on Environmental Quality

FO is the code for TCEQ Regional Office

RT is the code for routine monitoring

BS is the code for biased season

## C. Roles and Responsibilities

*{Include both internal and external (lab, field, data management) primary participants and their responsibilities. Suggestions are offered below.}*

### **TCEQ**

**Name**

**Project Manager**

Tracks, reviews, and approves deliverables. Participates in the development, approval, implementation, and maintenance of written quality assurance standards. Verifies QAP is being followed by project participants and that the project is producing data of known quality. Coordinates project planning with the project participants. Coordinates field staff and activities. Participates in sample collection. Coordinates with TPWD game wardens prior to field sampling activities in accordance with the TCEQ Scientific Collection Permit requirements. Reviews and approves data and reports. Ensures data reports are complete and comply with project requirements prior to submission to SWQMIS. Notifies QA specialist of circumstances which may adversely affect the quality of data derived from the collection and analysis of samples.

{*Include this information if a contractor will be participating in the project. Otherwise, delete it}* Develops, enforces, and monitors corrective action measures to ensure contractors meet deadlines and scheduled commitments. Responsible for contract management of all entities associated with the project.}

**Name**

**Data Manager**

Responsible for coordination and tracking of data sets from initial submittal through the Project Manager review and approval. Ensures that data are reported as outlined in the most current Surface Water Quality Monitoring Data Management Reference Guide (DMRG). Runs automated data validation checks in SWQMIS and coordinates data verification and error correction with the project manager. Generates SWQMIS summary reports to assist the project manager’s data review. Provides training and guidance on technical data issues as needed. Reviews QAPs for valid stream monitoring stations. Checks validity of parameter codes, submitting entity code(s), collecting entity code(s), and monitoring type code(s).

**Name**

**Lab Manager**

Responsible for supervision of laboratory personnel involved in generating analytical data for this project. Responsible for ensuring that laboratory personnel involved in generating analytical data have adequate training and a thorough knowledge of the project QAP, pertinent sections of the TCEQ SWQM, WQS and WQA Programs QAPP, and all SOPs specific to the analyses or task performed and/or supervised. Responsible for oversight of all laboratory operations, ensuring that all QA/QC requirements are met, and documentation related to the analysis is completely and accurately reported. Responsible for ensuring laboratory corrective actions are implemented, documented, reported and verified. Enforces corrective action, as required.

## D. Time Frame and Deliverables

*{When developing a time frame, remember to consider the whole project from sample collection/analysis, data validation and database submission, to final report (if applicable). Suggested language is provided below.}*

Sampling for the project will be conducted during fiscal year or calendar year {enter year(s)}. However, if conditions are unsafe for sampling or if the stream is dry, sample collection may be extended into fiscal year or calendar year {enter year(s)}. Data will be submitted electronically to TCEQ as outlined in the current SWQM Data Management Reference Guide.

A summary of the sampling phase of the study will be submitted to the TCEQ SWQM Team by August 31 of the fiscal year in which the sampling is conducted. Data will be submitted electronically to TCEQ as outlined in the current SWQM DMRG.

*{If a publication will result from the project, add the following paragraph. Adjust as necessary. Delete if no report will be written.}*

A draft final report will be prepared for the project during the fiscal year following the sampling phase. The draft final report will be submitted to the TCEQ Project Manager August 31 of fiscal year *{enter year}.* The draft report will then undergo peer review. Any necessary revisions will be made, and the final report will be published. The time frame for the final report to be published is dependent upon the nature and extent of comments on the draft report and the agency’s publication schedule.

## E. Signatures and Approvals

*{Signatures should include any outside entities participating in the project. (Ex: lab other than TCEQ Lab or SWQM QAPP contract lab, other state agency, universities, or contractor). Use a separate signature page for each entity. If there is no outside entity participating, delete the next page.*}

### TCEQ

Name Date

Project Manager

Program or Region

Name Date

Team Leader/Supervisor

Program or Region

Name Date

Project QA Specialist

Program

Cathy Anderson Date

Team Leader

Data Management & Analysis

Robin Cypher Date

Quality Assurance Specialist

Surface Water Quality Monitoring Team

### Contractor

Name Date

Project Manager

Name Date

Field Supervisor