

Review and Approval of Public Water System Engineering Plans

Addendum #7

(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



List of Acronyms

Acronym	Definition
API	area of primary influence
CA	corrective action
CCN	Certificate of Convenience and Necessity
CN	customer number
DWQT	Drinking Water Quality Team
EPA	Environmental Protection Agency
OW	Office of Water
PE	professional engineer
PRT	Plan Review Team
PTRS	Plan and Technical Review Section
PUC	Public Utility Commission
PWS	Public Water System
PWSS	Public Water System Supervision
QA	quality assurance
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
RN	regulated entity number
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SOP	standard operating procedure
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
THSC	Texas Health and Safety Code
WSD	Water Supply Division
WUD	Water Utilities Database

A1 Title and Approval Page – PWSSP QAPP, Addendum #7

The following individuals are signatories on this Programmatic Quality Assurance Project Plan (QAPP) Addendum because they are responsible for the direct oversight, implementation, and quality assurance of work related to the review and approval of public water supply engineering plans for the Public Water System Supervision (PWSS) Program. Other individuals involved with the oversight of this work are also signatories on the Programmatic QAPP of which this addendum is a part.

Vera Poe, Team Leader

Texas Commission on Environmental Quality (TCEQ)/Office of Water (OW)/Water Supply Division (WSD) /Plan and Technical Review Section (PTRS)/ Plan Review Team (PRT)

Signature: Vera Poe Date: 9/19/19

Gary Regner, PWSS Program Quality Assurance (QA) Manager

TCEQ/OW/WSD

Signature: Gary Regner Date: 9/13/19

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A3 Distribution List

The following individuals will receive a final copy of this Programmatic QAPP Addendum and its subsequent revisions. Other individuals involved with the PWSSs are included on the distribution list and will receive a copy of this addendum as part of the Programmatic QAPP distribution, or if revisions are made as part of interim annual reviews.

QAPP Recipients	Title	Contact Information
Jessica Hoch	PWSS Program Lead Quality Assurance Specialist	Jessica.Hoch@tceq.texas.gov (512) 239-2353
Joel Klump	Plan and Technical Review Section Manager	Joel.Klumpp@tceq.texas.gov (512) 239-4453
Vera Poe	Plan Review Team Leader	Vera.Poe@tceq.texas.gov (512) 239-6988

A4 Project/Task Organization

The roles and responsibilities of TCEQ staff who participate directly in the review of Public Water Systems (PWS) engineering plans are described below. Roles for other individuals (e.g. Division Director, Section Manager, TCEQ QA Manager) are described in the Programmatic QAPP.

Jessica Hoch, PWSS Program Lead Quality Assurance Specialist TCEQ/OW/WSD

Coordinates development and implementation of the QA program for the PWSS Program. Responsible for development and management of the QAPP, coordinating, monitoring, and reporting on corrective actions, and providing assistance and communication to program staff in areas of quality assurance.

Joel Klumpp, Manager, TCEQ/OW/WSD/PTRS

Manages all teams within the PTRS. The PTRS has responsibility for approval of engineered systems related to drinking water, Long Term 2 Enhanced Surface Water Treatment Rule (LT2), and supports capacity development through optimization, financial, managerial, and technical assistance.

Vera Poe, Team Leader, TCEQ/OW/WSD/PTRS/PRT

Supervises the PRT to ensure that the TCEQ responsibilities (e.g., oversight, assessment, corrective actions, standard operating procedure (SOP) maintenance, performance management) relating to the review and approval of engineering plans are implemented. Establishes annual goals, monitors monthly performance, develops and adjusts strategies and assignments to ensure reviews are processed in a timely manner, and reviews all correspondence to ensure consistent reviews.

Engineering Staff Reviewers, TCEQ/OW/WSD/PTRS/PRT

Approximately 10 engineers and five contractors on the PRT are assigned to review complex engineering plans and specifications for compliance with state and federal regulations. The engineering staff provides technical assistance to and/or consults with consulting engineers, water system operators, and the general public on rule interpretations; performs engineering evaluations to determine plan feasibility and conducts detailed engineering work for major public drinking water projects; prepares technical reports with recommendations for use by the TCEQ and the general public; and analyzes the engineering design of water facilities. The reviewers prepare draft response letters to all engineering submittals. The response letters involve approvals, disapprovals, and/or requests for additional information.

Business Plan Reviewers, TCEQ/OW/WSD/Districts Section

Business plan reviewers are responsible for reviewing engineering plan documents for financial and managerial capability and preparing a memo for the engineering reviewers regarding these capabilities.

Administrative Staff Reviewers, TCEQ/OW/WSD/PTRS/PRT

Administrative staff are responsible for entering and tracking the engineering plan submittals in the Water Utilities Database (WUD) which provides a tracking mechanism for completeness and timeliness objectives. Administrative staff also finalize the approval and "unable to approve" letters that are sent out to the PWSs as part of the review the review process.

A5 Background/Definition

The Texas Health and Safety Code (THSC), Chapter 341, Subchapter C describes the duties of the TCEQ relating to the implementation of the Safe Drinking Water Act (SDWA) and the regulation and control of PWSs. Pursuant to the THSC Chapter 341 Subchapter C, the TCEQ reviews plans and specifications for all planned construction related to PWSs not exempted by THSC Chapter 341.035(d). The statute also requires the TCEQ to be notified of any subsequent material changes, improvements, additions, or alterations in existing systems, and consider compliance history in approving new or modified PWS.

The TCEQ review of plans and specifications conform to requirements in the 30 Texas Administrative Code (TAC) §290. According to 30 TAC §290.39, construction on a new PWS may not begin before receiving written approval of plans and specifications from the TCEQ. In addition, if a significant change to an existing system is planned, construction may not begin without written notification and the approval of plans and specifications. Significant changes to a PWS that warrant plans and specifications to be reviewed by the TCEQ include:

- Increase or decrease in capacity related to
 - Distribution
 - Treatment
 - Production
 - Pressure

- Storage
- Any other material changes

The TCEQ reviews plans and specifications using checklists described in Section A9. The checklists are based on technical criteria and standards to ensure the engineering plan reviews are consistent and comply with state and federal rules and regulations. The “users” of these reviews include both the TCEQ and the PWSs.

Activities conducted during the review and approval of PWS engineering plans can be considered environmental data operations as defined in the TCEQ Quality Management Plan (QMP) and Environmental Protection Agency (*EPA Requirements for QAPPs, EPA QA/R-5*). As such, the QA processes regarding organization, planning, implementation, and assessment must be addressed in a QAPP which is reviewed and approved by the EPA. This document is written as an addendum to the PWSS Programmatic QAPP to facilitate its management, review, and future revision.

A6 Project/Task Description

The TCEQ has separate processes as described below for the two types of engineering plan review and approvals—new PWS construction and significant changes to existing PWSs.

Review of Engineering Plans for New Construction

A work flow diagram detailing the steps involved in the TCEQ review of PWS engineering plans for new construction is included in Exhibit 1. PWSs submit engineering plans for new construction to the TCEQ PRT. The first level of review determines the plans’ completeness as described in the Standard Operating Procedure Administrative Review of New PWS Submittals. If the administrative reviewer determines that the plans include all major components in the submittal, then the project is acceptable for further review. Per the work instructions, all new PWS engineering plans must be prepared properly and be signed, sealed, and dated by a professional engineer. Two copies of each of the following components must be included with the submittal:

- Complete Core Data Form and Plan Review Submittal Form
- Business Plan information, if required.
- Proof of submission of Certificate of Convenience and Necessity (CCN) application to the Public Utility Commission (PUC) if applicable; and request for service documentation, if applicable
- Copies of applications sent to neighboring retail PWSs and the responses
- Engineering report
- Plans and specifications

If the engineering firm has not submitted all of the required documents, such as the submittal form, drawings, or specifications, the PRT prepares an administrative review letter within seven days requesting this information. The PWS is given 30 days from the date of the letter to respond.

If deemed administratively complete, the PRT Leader assigns one copy of the plans to the Technical PRT who reviews plans against rules and regulations. The other copy is given to the Business Plan (BP) reviewer for its review of the Business Plans. This process typically takes 30 days. At this point, if both the Technical PRT and the BP approve the plans, the PRT requests a PWS identification number from the DWSF by transferring the submittal file and establishes the monitoring schedule. Once DWSF has completed entering the system information, DWSRF sends the core data form to Central Registry. Central Registry then assigns the Customer Number (CN) and the Regulated Entity Number (RN) within seven days. The draft approval letter is prepared by the PRT staff and reviewed by the PRT Team Leader. The administrative staff then finalizes an approval letter to be sent to the PWS. The DWSF enters the proposed system information into SDWIS. The whole process takes no more than 60 days.

Review of Engineering Plans for Changes or Modifications to Existing PWSs

A work flow diagram detailing the steps involved in the TCEQ review and approval of PWS engineering plans for changes or modifications to PWSs is included in Exhibit 2. PWSs submit one copy of their engineering plans to the TCEQ PRT for review for completeness and technical adequacy as described in the *PRT Standard Operating Procedure for Processing Mail, Logging Plan Submittals into the WUD and Plan Assignment*. If the administrative reviewer determines that the plan includes all major components in the submittal, then the project is acceptable for further review.

If the engineering firm has not submitted all of the required documents, such as the submittal form, drawings and specifications, and/or other pertinent information, then the administrative reviewer contacts the submitting engineer by email or telephone requesting the additional information.

Once a plan is deemed complete by the administrative reviewer, he/she will log the project into the WUD and assign a log number. Plans for changes or modifications are reviewed similarly to new system requests with the exception of a business plan review, assignment of the PWS identification number by DWSF staff, and the assignment of CNs and RNs by Central Registry. The PRT Leader assigns the plans to a technical reviewer to evaluate them against applicable rules and regulations. If approved, the administrative staff finalizes the "approval letter." This whole process also takes no more than 60 days.

A7 Quality Objectives & Criteria

The overall objective of the PWSS Program as described in the Programmatic QAPP is to fulfill the requirements of the SDWA to ensure that water produced and distributed by PWSs is safe to drink. Consequently, as the state's environmental agency, the TCEQ can provide better protection of the health of all Texas citizens currently served by PWSs and all those who consume water from the systems. The specific objectives related to the review and approval of PWS Engineering Plans as described below reflect the objectives specified in the Programmatic QAPP.

Quality Objectives of PWS Engineering Plan Review and Approvals

The PWSS Program's goal for this project is to accurately and consistently assess engineering plans submitted by PWSs, and document, within established timeframes, whether the system will be financially stable, technically sound, and can supply adequate quantities of safe drinking water. The following data quality objectives apply to the review and approval of PWS engineering plans. A combination of management oversight; peer review, staff training, experience, staff coordination; standardized review processes pursuant to 30 TAC §290 and the SDWA; plan review checklists; and strict adherence to allotted timeframes ensure the data quality objectives described below are met.

Accuracy

Accuracy is a reflection of correctness. The accuracy of the plans and specifications, Core Data Forms, Plan Review Submittal Forms and the Business Plan is assessed by the engineers on the PRT and BP staff and the DWSF. To ensure accuracy, plans are compared to appropriate checklist(s) which contain applicable rule citations from Title 30 §290.

Completeness and Timeliness

Completeness reflects a relationship of how much of the data or information are available for use compared to the total potential data. All engineering plans must be complete and contain all required components pursuant to state rule. Timeliness refers to the time allotted for the review and approval process to ensure compliance with TCEQ policy regarding permit reviews. Engineering plans are reviewed within a 60 day timeframe to which the PRT strictly adheres.

Compliance

All TCEQ requirements associated with PWS engineering plans have been developed to be consistent with state rules and federal regulations pursuant to the SDWA. Plans are reviewed by technical reviewers who have the required experience and training to ensure engineering plans comply with TCEQ requirements, rules, and regulations. Staff training and coordination, as well as standardized checklists which include rule citations, also contribute to compliance.

Data Integrity

Data and information collected by the TCEQ from the PWSs 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.

A8 Special Training/Certifications

The personnel specified below have had specialized training in the subject matter related to this project in order to successfully manage and assess engineering plan reviews described in this document.

Vera Poe, Team Leader

General TCEQ training and experience for the Team Leader is described in the Programmatic QAPP. In addition, the Team Leader has an engineering degree and is registered as a professional engineer in the State of Texas. This designation gives the Team Leader the expertise to ensure that the TCEQ technical activities are performed accurately and conform to applicable rules and regulations. As a professional engineer, the Team Leader attends annual training for professional development. The TCEQ also arranges for onsite professional development provided by vendors, trade associations, and senior staff which the Team Leader may also attend.

Engineering Staff

All engineering staff have engineering degrees and six are registered Professional Engineers (P.E.) in the State of Texas. Engineering curricula and on the job training to become a P.E. provides background and expertise on PWS design. Each new staff person is assigned a senior level P.E. to provide mentoring and one-on-one training. The TCEQ engineering staff is encouraged and funded to attend additional specific training on applicable drinking water topics annually. The engineering staff also attends onsite professional development provided by vendors, trade associations, and senior staff. The engineering staff also reads and researches trade journals and EPA documents for specific information needed for reviewers.

A9 Documents and Records

The documents and records that describe, specify, manage, and report engineering plans are listed in the following table.

Table of Documents and Records

Document or Record	Purpose	Format/Location
<i>QAPP for the PWSS Program Relating to the SDWA</i>	Programmatic QAPP describes requirements and activities of the PWSS Program to assure quality and quantity of drinking water in Texas as well as compliance with the SDWA	Electronic https://www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/qapp/PWSSP_QAPP_Programmatic_Rev13.pdf
<i>Review and Approval of Public Water System Engineering Plans - QAPP Addendum # 7</i>	Project specific addendum to the overall Programmatic QAPP that addresses QA processes for engineering plan review and approvals to plan, implement, and assess associated activities. This addendum format facilitates review and future revisions to the Programmatic QAPP.	Electronic https://www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/qapp/PWSSP_QAPP_Addendum7_Rev1_Plan_Review.pdf
<i>TCEQ QMP, Rev. 24, 2019</i>	TCEQ document that describes the organizational arrangements, processes, procedures, and requirements of the TCEQ QA Program	Electronic https://www.tceq.texas.gov/assets/public/compliance/compliance_support/qa/qmp.pdf
<i>PRT Instructions for Processing Mail, Logging Plan Submittals into the WUD and Plan Assignment</i>	Describes the administrative procedure in the PRT for logging submittals received for new PWSs into the WUD	WSD Network Drives
<i>PRT Standard Operating Procedures for Plans Technical Review Process and Generating a Response Letter from WUD</i>	Describes the TCEQ procedure for reviewing and approving engineering plans for construction of PWS facilities	WSD Network Drives
<i>PRT Instructions for Processing Mail, Logging Plan Submittals into the WUD and Plan Assignment</i>	Describes the administrative procedure in the PRT for logging submittals received into the WUD	WSD Network Drives
<i>Forms and Checklists for PWS Operators Submitting Plans or Specifications</i>	Checklists for water systems submitting plans or specifications for review to ensure completeness of plan packages	WSD Network Drives https://www.tceq.texas.gov/drinkingwater/udpubs.html
Engineering plan submittal information and TCEQ approval/disapproval letters	Records that may include PWS engineering package and TCEQ correspondence	Hardcopy of TCEQ letters and submittal form Stored in Central Records per the TCEQ archival plan, permanent
Submittal data	Data records including name of PWS, contact information, ID numbers, etc,	Electronic Water Utility Database/Water Districts Database

B1 Sampling Process

Not Applicable.

B2 Sampling Methods

Not Applicable.

B3 Sample Handling & Custody

Not Applicable.

B4 Analytical Methods

Not Applicable.

B5 Quality Control

The PRT reviews and approves engineering plans to ensure adherence to the quality control objectives described in Section A7. As stated in Section A7, a combination of management oversight; peer review, staff training, experience, and coordination; standardized review processes pursuant to 30 TAC §290 and the SDWA; plan review checklists; and strict adherence to allotted timeframes ensure the data quality objectives are met. Quality control checks such as positive and negative controls, etc. which apply to the analysis of environmental samples are not applicable to this project.

B6 Instrument/ Equipment Testing, Inspection, and Maintenance

Not Applicable.

B7 Instrument/Equipment Calibration and Frequency

Not Applicable.

B8 Inspection/Acceptance of Supplies & Consumables

Not Applicable.

B9 Data Acquisition Requirements for Non-Direct Measurements

Water quality data are required to be submitted to the TCEQ as part of the engineering plan package per 30 TAC §290.41(a). Water quality data are acquired and evaluated by the TCEQ based on its source-ground or surface water.

For surface water sources, a PWS or proposed PWS submits water quality data according to 30 TAC §290.41(e)(1)(F). Before TCEQ approval of a new surface water source, the system provides results of source water quality analyses including total coliform, *E. coli*, turbidity, alkalinity, hardness, bromide, total organic carbon, temperature, color, taste and odor, regulated volatile organic

compounds, regulated synthetic organic compounds, regulated organic compounds, and possible sources of contamination.

For ground water, PWSs are required to submit the water quality data following the *Public Well Completion Data Checklist for Approval to Use* guidance. See Exhibit 3. Plans are reviewed for compliance with Rules and Regulations for PWSs Title 30 TAC §290.38-49.

Water quality samples for both surface and ground water sources are required to be analyzed at an accredited laboratory per 30 TAC §25.

B10 Data Management

The data management process for engineering plan reviews, from generation to final use or storage, is similar for both new systems and modifications to current systems. Specific data management practices described below ensure proper tracking and control to ensure integrity and maintenance of data and information as well as compliance with allotted timeframes for review.

New PWSs Engineering Plans

The administrative reviewer of the PRT determines if the plan includes all major components as described Section A6. If so, reviewer creates a memo, that's saved on the server and updates the Excel tracking log with the status of the plan (accepted/unaccepted) within seven days. If it is determined that the plan is incomplete due to lack of the major items in the submittal package, the administrative reviewer drafts an administrative review letter requesting additional information within 30 days. If the responses are not received within 30 days, then the entire submittal package is rejected and needs to be resubmitted.

If the plan is accepted by the administrative reviewer, one copy of the submittal is forwarded to the business plan reviewer and the other copy gets reviewed by engineering staff on the Plan Review Team. The business plan reviewer and the engineering staff are allotted 30 days to review the plan. Once the plan is approved, the DWSF assigns the system a number and adds it to the PWS inventory with a proposed monitoring schedule. Also, Central Registry assigns the system a CN and a RN. An approval letter is drafted, signed, and sent to the PWS. The letter is logged into the WUD database by entry of the Final Action Date and project status. The administrative staff will email a signed copy of the letter to the reviewer who will then save that copy of the letter in a common directory on the network J Drive. After the review is final, the submittal cover letter and the associated submittal form, reports, and contracts (if applicable) are routed to Central Records for record keeping purposes.

Changes or Modifications to Existing PWSs

The data management process for changes or modifications to existing PWS engineering plans is similar to new PWS engineering plan requests except the business plan reviewers do not get a copy of the submittal forms and Central Registry does not assign and log new CNs and RNs to the pre-existing systems. The DWSF also does not assign and log a system ID number.

C1 Assessments and Response Actions

Corrective Actions (CA)

In accordance with the *TCEQ QMP*, any person involved with work described in this Programmatic QAPP Addendum is responsible for reporting and correcting 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 also 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 corrective actions 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.

C2 Reports to Management

The PRT provides status reports to TCEQ management monthly. The reports contain the number of plan reviews received, number processed, total pending under review, average processing time, maximum processing time, minimum processing time, number exceeding target, and list of PWS reviews completed. These reports help to ensure timeliness of reviews.

D1 Data Review, Verification, and Validation

For the purpose of this activity, verification refers to the evaluation of completeness, correctness, and conformance/compliance of the engineering plans, data, information, and letters with regulatory and procedural requirements to determine exceptions. In general, validation extends the evaluation of data beyond regulatory and procedural requirements (i.e. data verification) to determine its quality so it can be qualified appropriately. Engineering plan reviews result in approvals or disapprovals of plans based on the implementation of TCEQ processes. Situations do not exist in which data or information is validated for subsequent use.

D2 Verification and Validation Methods

The TCEQ review of engineering plans is overseen by professional engineers who mentor junior level engineers who have not yet received their licenses and review their work. Weekly staff meetings are used to communicate, discuss issues, review decisions, coordinate reviews and provide training. The team leader reviews all approval and disapproval letters before being sent out.

D3 Reconciliation with User Requirements

The “users” of the engineering plan reviews include both the TCEQ and the PWSs who have requested the review. The TCEQ either approves plans or disapproves plans during multiple steps in the review process as described in Section A6. Plans which are disapproved do not comply with the quality objectives described in Section A7; plans which are approved comply with those quality objectives. The TCEQ documents the reasons for disapproval or approval and all correspondence with the PWS. For each PWS engineering plan disapproval, the PWS has the opportunity to address the deficiency described in the letter and resubmit the plans.

Exhibit 1: Engineering Plan Review and Approval of New PWSs

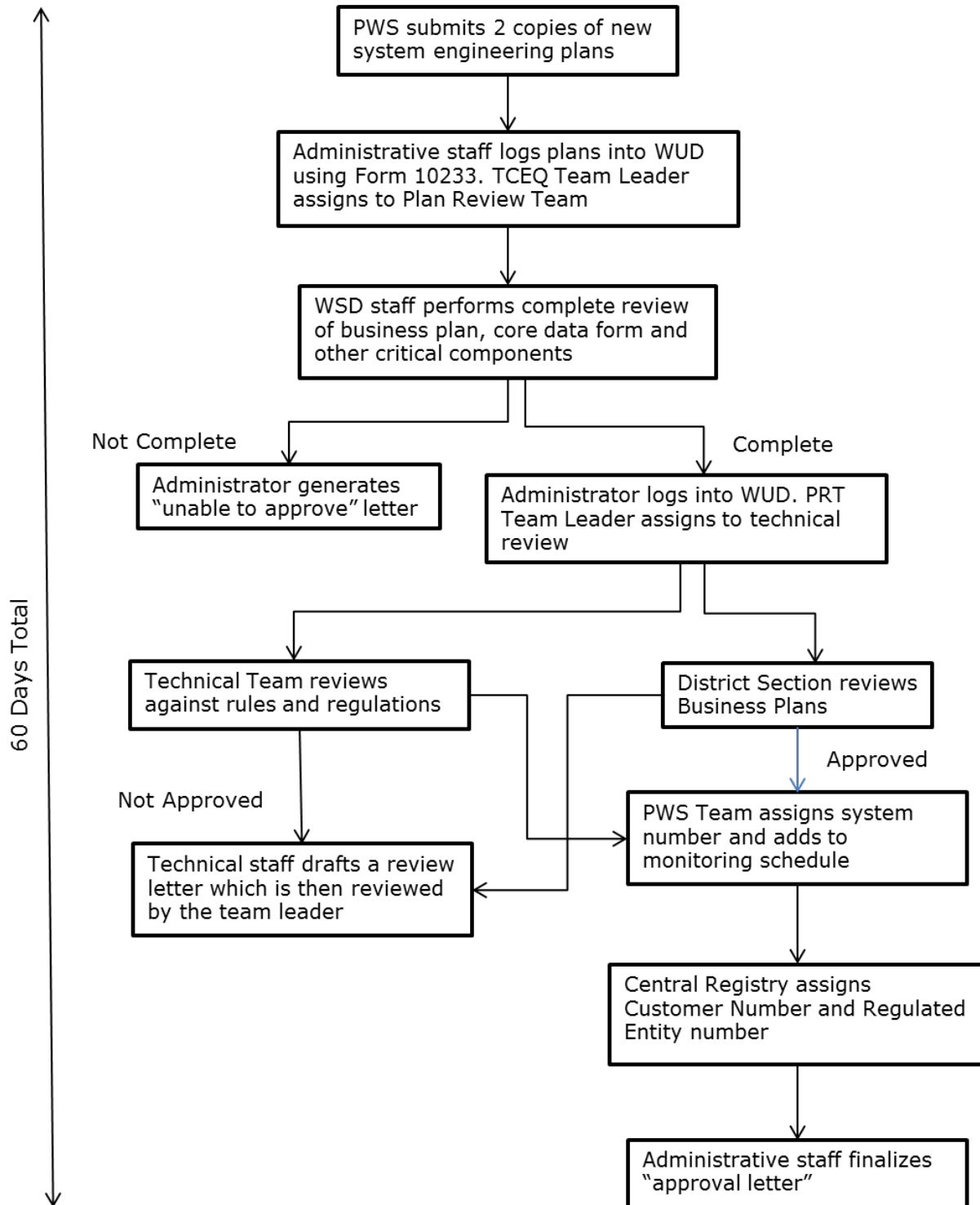


Exhibit 2: Engineering Plan Review and Approval of PWS Modifications

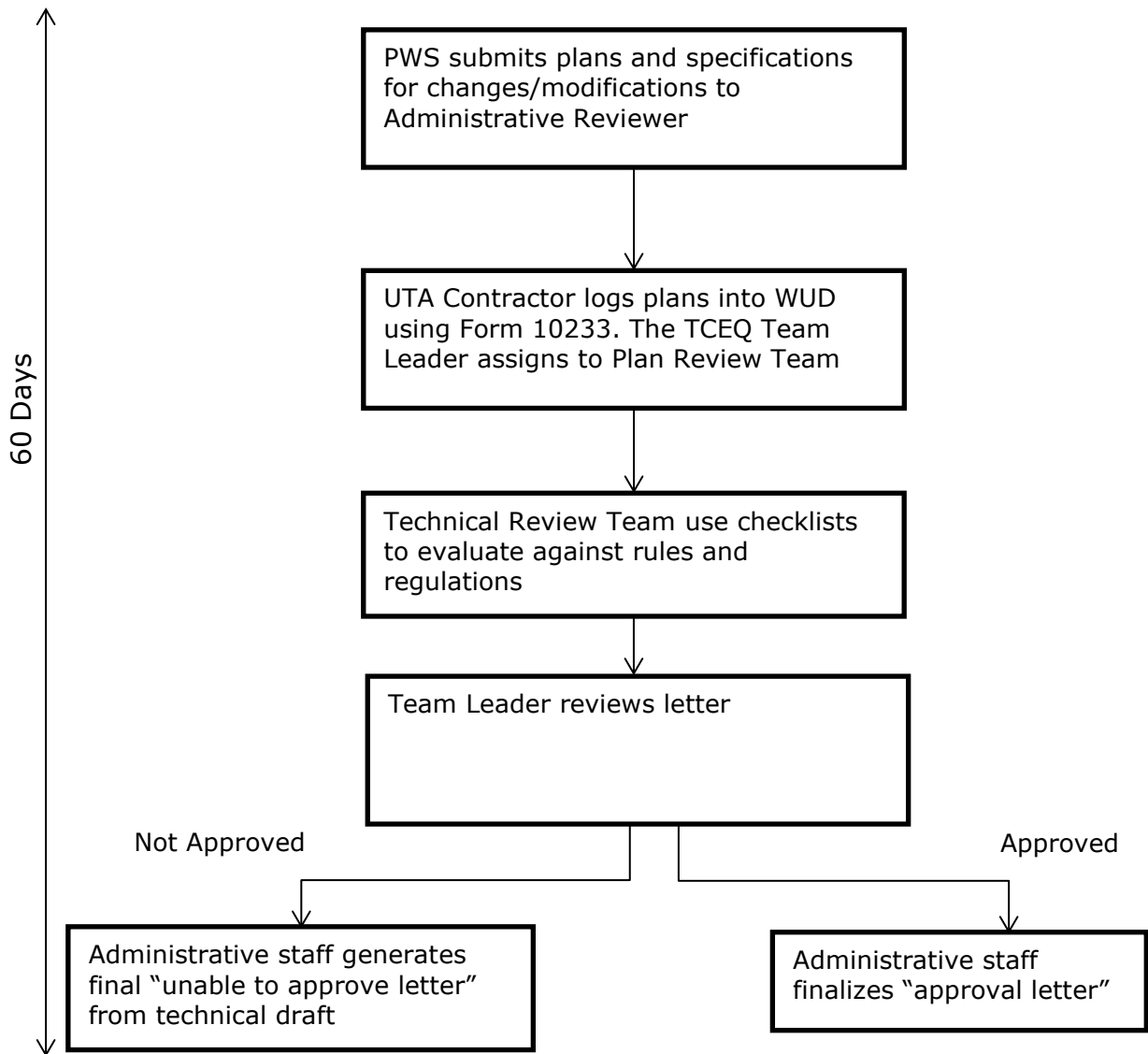


Exhibit 3: Public Well Completion Data Checklist

Public Well Completion Data Checklist for Approval to Use (Step 2)

Texas Commission on Environmental Quality

Public Water System I.D. No. _____

Water Supply Division

TCEQ Log No. P- _____

Plan Review Team MC-159

P.O. Box 13087, Austin, Texas 78711-3087

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Completion. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: <http://www.tceq.texas.gov/rules/indxpdf.html>

Any well proposed as a source of water for a public water supply must have plans approved for construction by TCEQ. Please include the well construction approval letter with your submittal of well completion data listed below for TCEQ evaluation. Based on review of this submitted data, approval may be given for use of the well.

1. Site map(s) at appropriate scales showing the following: [§290.41(c)(3)(A)]
 - (i) Final location of the well with coordinates;
 - (ii) Named roadways;
 - (iii) All property boundaries within 150 feet of the final well location and the property owners' names;
 - (iv) Concentric circles with the final well location as the center point with radii of 10 feet, 50 feet, 150 feet, and ¼ mile;
 - (v) Any site improvements and existing buildings;
 - (vi) Any existing or potential pollution hazards; and
 - (vii) Map must be scalable with a north arrow.
2. A copy of the recorded deed of the property on which the well is located showing the Public Water System (PWS) as the landowner, and/or any of the following: [§290.41(c)(1)(F)(iv)]
 - (i) Sanitary control easements (filed at the county courthouse and bearing the county clerk's stamp) covering all land within 150 feet of the well not owned by the PWS (for a sample easement see TCEQ Form 20698);
 - (ii) For a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement; and/or
 - (iii) A copy of a letter granting an exception to the sanitary control easement rule issued by TCEQ's Technical Review and Oversight Team.
3. Construction data on the completed well: [§290.41(c)(3)(A)]
 - (i) Final installed pump data including capacity in gallons per minute (gpm),

- (ii) total dynamic head (tdh) in feet, motor horsepower, and setting depth;
 - (iii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - (iv) Casing size, length, and material (e.g. 200 lf of 12" PVC ASTM F480 SDR-17);
 - (v) Length and material of any screens, blanks, and/or gravel packs utilized;
 - (vi) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods);
 - (vii) Driller's geologic log of strata penetrated during the drilling of the well;
 - (viii) Cementing certificate; and
 - (viii) Copy of the official State of Texas Well Report (some of the preceding data is included on the Well Report).
4. A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number) or a legible copy showing the location of the completed well; [§290.41(c)(3)(A)]
5. Record of a 36-hour continuous pump test on the well showing stable production at the well's rated capacity. Include the following: [§290.41(c)(3)(G)]
- (i) Test pump capacity in gpm, tdh in feet, and horsepower of the pump motor;
 - (ii) Test pump setting depth;
 - (iii) Static water level (in feet); and
 - (iv) Draw down (in feet).
6. Three bacteriological analysis reports for samples collected on three successive days showing raw well water to be free of coliform organisms. Reports must be for samples of raw (untreated) water from the disinfected well and submitted to a laboratory accredited by TCEQ, accredited to perform these test; and [§290.41(c)(3)(F)(i)]
7. Chemical analysis reports for well water samples showing the water to be of acceptable quality for the most problematic contaminants listed below. Reports must come from a laboratory accredited by TCEQ; accredited to perform these tests. Maximum contaminant level (MCL) and secondary constituent level (SCL) units are in milligrams per liter (except arsenic which is in micrograms per liter). [§290.41(c)(3)(G) and §290.104 and §290.105]

Table 1: Primary Constituents with Maximum Contaminant Level (MCL)

PRIMARY	MCL
Nitrate	10 (as N)
Nitrite	1 (as N)
Arsenic	10
Fluoride	4.0

Table 2: Secondary Constituents with Secondary Contaminant Level (SCL)

SECONDARY	SCL
Aluminum	0.2
Copper	1.0
Iron	0.3

SECONDARY	SCL
Manganese	0.05
Zinc	5.0
Total Dissolved Solids	1,000
Fluoride	2.0
Sulfate	300
Chloride	300
pH	> 7.0

Table 3: Water Quality Parameters

PARAMETER	UNITS
Alkalinity as CaCO ₃	mg/L
Calcium as CaCO ₃	mg/L
Sodium	mg/L
Lead*	mg/L

Lead is regulated by the lead and copper rule. This analyte is to document the amount of lead in the source water. The level shall be less than 0.010 mg/L for approval to use.

All systems located in a high-risk county (see page 3) shall submit radiological analysis reports for water samples showing the water to be of acceptable quality for the contaminants listed below. Reports must come from a TCEQ accredited laboratory for approval to use of the well.

Table 4: Radionuclides with Maximum Contaminant Level (MCL)

CONTAMINANT	MCL
Gross alpha	15 pCi/L
Radium-226/228	5 pCi/L
Beta particle	50 pCi/L
Uranium	30 µg/L

WHERE: pCi/L = pico curies per liter, µg/L = micrograms per liter

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and individual uranium isotopes are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5

pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results.

List of Counties Where Radionuclide Testing Is required

Please be aware that we have added the requirement for analysis for radionuclides for high risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required.

Table 5: List of Counties where Radionuclide Testing is required

COUNTY				
Atascosa	Bandera	Bexar	Bosque	Brazoria
Brewster	Burnet	Concho	Culberson	Dallam
Dawson	Erath	Fort Bend	Frio	Garza
Gillespie	Gray	Grayson	Harris	Hudspeth
Irion	Jeff Davis	Jim Wells	Kendall	Kent
Kerr	Kleberg	Liberty	Llano	Lubbock
McCulloch	Mason	Matagorda	Medina	Midland
Montgomery	Moore	Parker	Pecos	Polk
Presidio	Refugio	San Jacinto	San Saba	Tarrant
Travis	Tyler	Upton	Val Verde	Victoria
Walker	Washington	Wichita	Williamson	Zavala