TCEQ REGULATORY GUIDANCE
Small Business and Environmental Assistance Division
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You're a Public Water System... Now What?

You may have just realized you own or operate a public water system (PWS). The Small Business and Local Government Assistance program is here to help you bring your PWS into compliance with TCEQ rules and regulations. First, read this guidance; then, if you still have questions, don't hesitate to contact us at 800-447-2827.

This guide is intended to help you understand the basic regulations the TCEQ requires you to follow. This guidance will help you get into compliance with the rules, but should not be used as a substitute for the Public Drinking Water Rules located in Title 30 of the Texas Administrative Code (30 TAC), Chapter 290. You can access the rules online at <www.tceq.texas.gov/rules/indxpdf.html#290>.

Getting and staying in compliance can be complicated. You may need to hire a consultant or engineer to help.

Abbreviations

ANSI-NSF—American National Standards Institute–National Sanitation Foundation

C—community public water system

DLQOR—disinfection-level quarterly operating report

DSHS—Department of State Health Services

ED—TCEQ executive director

GW—source of water is groundwater

MCL—maximum contaminant level

MRDL—maximum residual disinfectant level

NELAP—National Environmental Laboratory Accreditation Program (formerly the National Environmental Laboratory Accreditation Conference)

NP—nonpublic water system

NTNC—nontransient, noncommunity public water system

PE—professional engineer (licensed in Texas)

PWS—public water system

SW—source of water is surface water

TAC—Texas Administrative Code (**30 TAC *xx***—Title 30, Texas Administrative Code, chapter [section, paragraph, etc.] *xx*)

TNC—transient, noncommunity public water system

Step 1: Confirm That You Operate a PWS and Determine Which Type

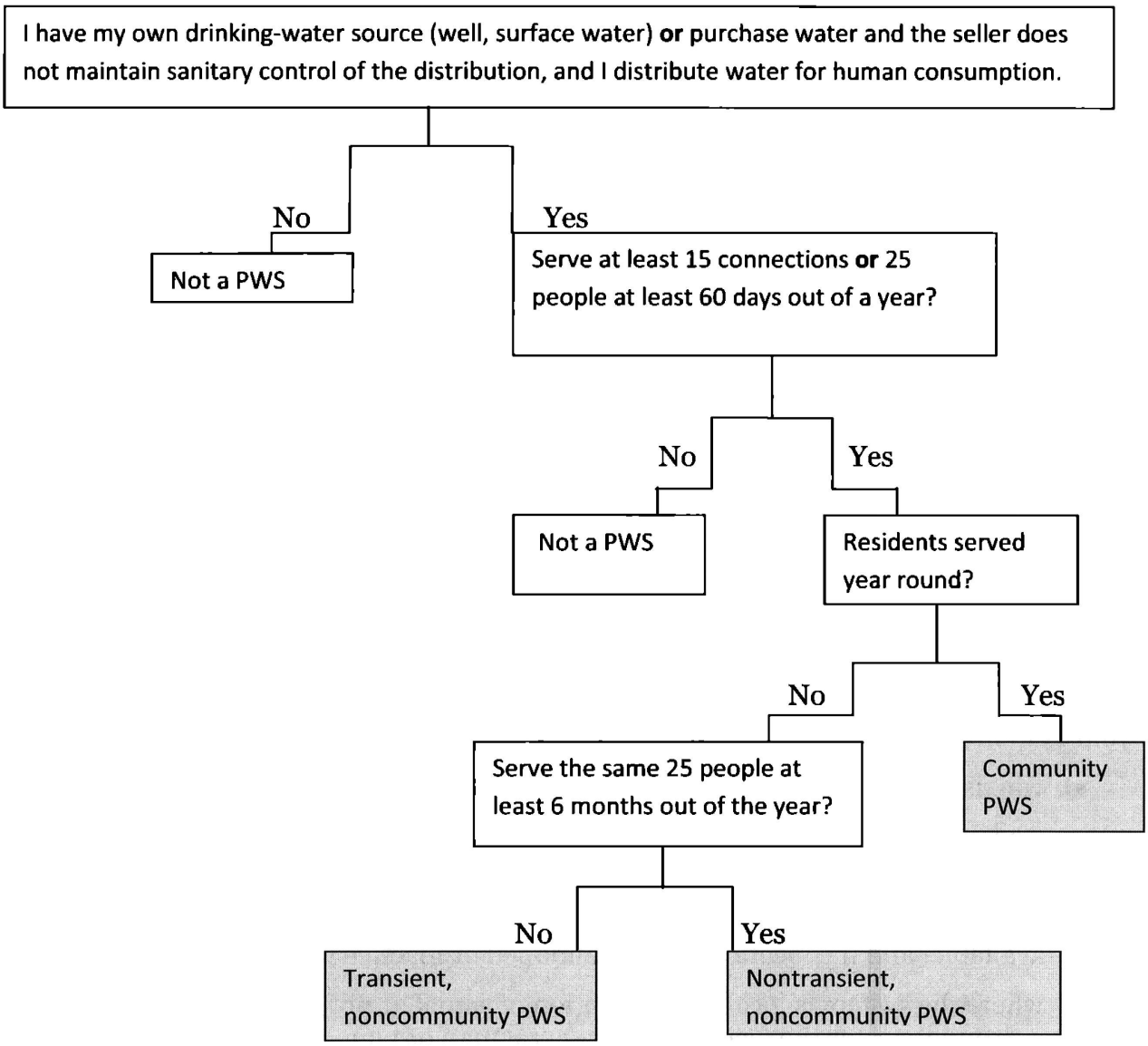
If you have your own water source such as a well, and supply water for human consumption, you may be operating a PWS. People may not realize they have a public water system because they don't serve food or have drinking fountains. In addition to the number of people who use the water, the key is in the definition of *human consumption* in 30 TAC 290.38(32): "Uses by humans in which water can be ingested into or absorbed by the human body. Examples ... include ... drinking, cooking, brushing teeth, bathing, washing hands, washing dishes, and preparing foods." So, if you have a rest room that is available to the public or you employ at least 25 people at least 60 days a year, you are considered a public water system.

There are three main types of PWSs:

1. **Community** (C)—A public water system which has the potential to serve at least 15 residential service connections year round, or serves at least 25 residents year round. A subdivision is a type of community PWS.
2. **Nontransient, noncommunity** (NTNC)—A public water system that is not a community water system and regularly serves at least 25 of the same persons at least six months out of the year. A school or day-care center is an example of a NTNC PWS.
3. **Transient noncommunity** (TNC)—A public water system that is not a community water system and serves at least 25 persons at least 60 days out of the year yet, by its characteristics, does not meet the definition of a nontransient, noncommunity water system. An example would be a restaurant or truck stop.

Use the following flow chart to help decide what type of public water system you have.

Am I operating a public water system?



Special categories of PWS

Systems that Purchase Treated Water

Some PWSs purchase treated water and redistribute it. In some cases, the system selling the water takes care of meeting the TCEQ's rules and regulations. However, **the system buying and redistributing the water is responsible** for meeting the regulations if:

- the water seller does not take sanitary control of the purchaser's distribution system (sanitary control occurs when the water system buying the water is

subject to plumbing restrictions and inspections by the public water system supplying the water)

or

- the purchaser changes the chemical nature of the water—for example, by adding more disinfectant.

Co-Regulated Water Systems

All food establishments in Texas are regulated by the Department of State Health Services. State regulations for food establishments require that the water used for food processes must also be approved by the TCEQ and meet the drinking water quality standards of 30 TAC 290 Subchapter F. Therefore, restaurants with their own wells must comply with both TCEQ and DSHS rules.

Supplying Bottled Water: You cannot avoid being a PWS by supplying bottled water. This is specifically stated in federal rules (Title 40, Code of Federal Regulations, Section 141.101).

Step 2: Provide Information to the TCEQ

You can view the data that the TCEQ has for your system on the TCEQ's Drinking Water Watch website at <dww.tceq.texas.gov/DWW/>. To request changes to your contact information, called *inventory data*, e-mail <PWSINVEN@tceq.texas.gov>, or call 512-239-4691 and ask for the PWS Inventory Group.

To help you comply with the rules, the TCEQ will need the following information about your system [30 TAC 290.39(e)]:

- who is in charge of the system: who owns and operates it.
- who you serve water to: present and future areas to be served, with population data.
- where you get the drinking water: the source, with quantity and quality of water available; and the location of all abandoned or inactive wells near any PWS wells.
- where the system is located: description of actual or proposed site and surroundings for the facility and a general map or plan of the area to be served.
- what the system's facilities are: type of treatment, equipment, and capacity of facilities.
- how much water the system uses: basic design data, including pumping capacities, water storage.
- how the system will operate: flexibility of system operation under normal and emergency conditions.

Step 3: Select a Licensed Operator

The number and type of licensed operators that a system must have are explained in 30 TAC 290.46(e). Table 1 shows the requirements for systems serving populations up to 750 people.

Only one operator is required if the system serves a population of 750 or fewer (or 250 connections), is using only groundwater or purchased, treated water, and is not operating any treatment facilities of its own.

TNC systems are not required to have a licensed operator. However, only licensed operators can take samples required for compliance. A TNC system may choose to have an employee get a license or hire a licensed operator to take samples. Long term, it may be cheaper for a TNC system owner to become a licensed operator.

Step 4: Sample the Water Your System Delivers

Sampling the water you are providing is critical to protecting public health. Table 2 shows some of the samples that your PWS may be required to take. (Refer to 30 TAC 290, Subchapter F, for the complete water sampling regulations.) The guide *How to Develop a Monitoring Plan for a Public Water System* (TCEQ publication RG-384) explains what samples need to be taken and how often to take them. See "Obtaining Publications" at the end of this guide for instructions on how to order or print TCEQ publications.

Table 1. Licensed-operator requirements for small systems [30 TAC 290.46(e)]

Type of System (Population of 750 or fewer)	Minimum Number and Level of Operators Required
Community	One Class D Licensed Operator
NTNC	
TNC	None (ensure that compliance samples are collected by a licensed operator)

Table 2. Types of Water Samples for Collection*

Type of Sample	Number and Frequency of Samples[a]	NELAC[b] Lab Required?	Who Collects
Raw-Water Sampling			
Coliform bacteria[c]	Monthly	Yes	Operator
Entry-Point[d] Sampling			
Bromate (if using ozone)	Monthly	No	Operator
Chlorine dioxide (if used)	1/day	Yes	Operator
Chlorite (if using chlorine dioxide)	1/day	No	Operator
Disinfectant level (Surface water treatment only)	< 501 people = 1/day 501–1000 people = 2/day 1,001–2,500 = 3/day 2,501–3,300 = 4/day	Yes	Operator
Inorganic chemicals (arsenic, fluoride—as listed in 30 TAC 290.106)	Every 3 years (unless the levels are high)	Yes	TCEQ contractor
Nitrate, nitrite	Annually (or quarterly if levels are over half the MCL)	Yes	TCEQ contractor
Secondary contaminants (listed in 290.118)	Every 3 years (or more frequently)	Yes	TCEQ contractor
Radionuclides (radium, uranium)[e] *Only applies to community systems*	Once within 90 days of initiating use of source. If detected: quarterly. Less-frequent sampling for lower levels.	Yes	TCEQ contractor
Synthetic organic chemicals (pesticides, herbicides)	Quarterly for 4 quarters, then once every 3 years	Yes	TCEQ contractor
Volatile organic compounds (such as octane, vinyl chloride, and ethanol, all of which may be emitted by PVC piping)	Quarterly for 4 quarters, then annually for 3 years, then once every 3 years if ED allows	Yes	TCEQ contractor

Type of Sample	Number and Frequency of Samples[a]	NELAC[b] Lab Required?	Who Collects
Distribution-System Sampling			
Asbestos (if asbestos cement pipe is present)	Once during first 3 years of each 9-year cycle, unless you have a waiver	Yes	TCEQ contractor
Coliform	< 1001 people = 1/month ≥ 1001–2500 = 2/month	Yes	Operator
Disinfectant residual at representative locations—free or total chlorine	< 250 connections or 750 people = 1/week ≥ 250 or 750 = 1/day	No	Operator
Disinfection by-product (chlorite, if chlorine dioxide is used)	1/month (3 samples)	Yes	Operator
Disinfectant residual (chlorine dioxide, if used)	1/month (3 samples) after an MCL exceedance	Yes	Operator
Disinfection by-products (TTHM, HAA5) *Only basic information is shown. More samples may be required.*	< 500 people = 1/year ≥ 500–9999 people = 1/quarter	Yes	TCEQ contractor
Lead, copper	< 101 people = 5 samples[f]/two 6-month periods 101–500 = 10 samples/two 6-month periods 501–3000 = 20 samples/two 6-month periods	Yes	Operator

** Not a comprehensive list*

[a] Frequency of samples may vary with type and size of system. Refer to 30 TAC 290, Subchapter F, for the complete water-sampling regulations.
[b] The National Environmental Laboratory Accreditation Conference, which certifies labs in certain testing procedures.
[c] Coliform bacteria are a commonly used indicator of sanitary quality of water.
[d] Entry-point sampling must be done at a point where treated water flows from the plant or well site into the distribution system.
[e] Radionuclide samples are taken at community systems. Please contact the Public Drinking Water Section at 512-239-4691 or at <PWSINVEN@tceq.texas.gov> for more information.
[f] Samples must be collected from separate sites, every 6 months. Please contact the Lead/Copper Program at 512-239-4691 if you have any questions.

Step 5: Determine the Type of Treatment for Your System and Begin Disinfection

One of a PWS's most important responsibilities is to disinfect the drinking water so that it won't make people sick [30 TAC 290.110]. All PWSs in Texas must chlorinate; some systems have permission to use monochloramine. The TCEQ has a simple guide to requirements, including reporting and record keeping for disinfection: *Disinfectant Residual Reporting for Public Water Systems* (RG-407). See "Obtaining Publications" at the end of this guide for instructions on how to order or print TCEQ publications.

Step 6: Get Your System's Source Approved through the TCEQ

Is your water currently being supplied through a well (groundwater), or is it being pumped from a lake or river (surface water)? If you are serving water obtained from a lake, spring, river, or rain water from a catchment system, then the risk of waterborne illnesses and diseases is much greater. These *surface water sources* are more easily contaminated than an aquifer that supplies water to a well. If you use water from rivers, streams, natural springs, creeks, tides, lakes, or bay areas, it is considered "state water" and you might be subject to TCEQ water-rights permitting. For more information, see <www.tceq.texas.gov/goto/wr_amiregulated>. In either case, you must get your water system's source approved by the TCEQ.

If your PWS is already in operation but has not received the TCEQ's approval for its facilities, you must have a PE submit as-built plans and specifications for your well and your water-treatment and storage facilities [30 TAC 290.42 and 30 TAC 290.43].

Converting Existing Wells to Water Supply Wells

The TCEQ has high standards [detailed at 30 TAC 290.41(c)] for the construction of wells that supply water to the public. Domestic-use and irrigation wells are not drilled to those standards. If you have a domestic-use or irrigation well and want to use it for public water supply, you will need the assistance of a Texas-licensed professional engineer (PE) to apply for the TCEQ's approval. If you are planning to use a domestic or irrigation well for public drinking water, you will need a well assessment to determine what aspects of your system (gravel pack, casing, wellhead, etc.) need to be upgraded to meet the standards.

What if you don't know what type of well you have?

You can use the online Water Well Report Viewer at <www.tceq.texas.gov/goto/waterwellview> and follow the directions to locate your well. If your well is not listed in the viewer, you may need to obtain the necessary well logs and driller information from your local groundwater conservation district. When you locate your well logs, you will be able to determine if your well was drilled as a domestic-water or irrigation supply, or if it meets the criteria for a PWS well.

Engineered facilities like wells, pipes, pumps, and treatment units must meet the TCEQ's requirements for design and maintenance. There are requirements for well casing, well location, interconnections, plant design, wellhead protection, storage and pressure maintenance capacity, and disinfection equipment. All plans must be designed and sealed by a PE, registered in Texas, preferably with expertise in drinking water design [30 TAC 290.39]. The Texas Board of Professional Engineers' website at <www.tbpe.state.tx.us/search.php> allows you to search for licensed PEs in your area.

The TCEQ has created several checklists to assist you in making certain that you are providing the right information. These include:

- Checklist for a Proposed Public Water Supply Well/Spring (TCEQ-10205): <www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/10205.pdf>
- Public Well Completion Data Checklist For Interim Approval (TCEQ-10234): <www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/10234.pdf>
- Water Distribution Construction Checklist: <www.tceq.state.tx.us/assets/public/permitting/watersupply/ud/forms/distchk.pdf>
- Pressure Tank Construction Checklist: <www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/presschk.pdf>
- Water Storage Tank Construction Checklist: <www.tceq.state.tx.us/assets/public/permitting/watersupply/ud/forms/storchk.pdf>

To locate numbered forms online, please go to the TCEQ form search page at <www.tceq.texas.gov/search_forms.html> and search by the five-digit form number.

If you have questions, call the Utility Technical Review Team at 512-239-4691 early in the process for help.

Wells and Wellhead Protection

PWS wells must be drilled in accordance with the Texas Department of Licensing and Regulation's standards. The TDLR has this information online at <www.license.state.tx.us/wwd/wwdrules.htm>. You can contact TDLR personnel by e-mail at <water.well@license.state.tx.us>.

Wells must also be drilled to meet the TCEQ's design standards and siting requirements. The rules in 30 TAC 290.41(c)(3) describe the design requirements for drilling wells that can be used to supply public drinking water.

Additionally, the well must be enclosed (in a well house), and locked to reduce the possibility of deliberate contamination [30 TAC 290.41(c)(3)(O)]. The TCEQ requires wells to be located at specific distances from certain activities or hazards, such as livestock grazing, septic tanks, abandoned wells, underground petroleum-storage tanks, and other potential pollution hazards. A complete list of the well-setback distances is in 30 TAC 290.41(c).

Step 7: Determine your System's Capacity, Storage, and Distribution

The TCEQ has rules about the sizing, capacity and flow rate of your tanks, pipes, and pumps. The intent of these rules is to ensure that customers have an adequate supply of drinking water.

Tanks and Pumps: The rules for sizing your system's tanks and pumps are in 30 TAC 290.45. Community systems have more stringent requirements than NTNCs or TNCs because they have a higher risk of causing health problems.

Plant Capacity: Plants must be big enough to treat all of the water the system produces. For a well system, the chlorinator is considered a "plant" and disinfection equipment has to be capable of producing at least 50 percent more disinfectant than the highest expected amount of chemicals required to treat the water effectively [30 TAC 290.42(e)].

Distribution Systems: PWSs must meet requirements for minimum pressure, pipe size, pipe material, interconnections, and backflow (30 TAC 290.44). For example, the system must be designed to maintain a minimum pressure of 35 psi at all points within the distribution system .

Changes to the system: All PWSs are required to submit plans for wells, interconnections, or other significant changes that would result in a change in production, treatment, storage, or pressure maintenance capacity to the TCEQ. All plans must be submitted by a professional engineer registered in Texas [30 TAC 290.39(j)].

Step 8: Develop Standards for Operations and Maintenance

The minimum requirements for operating a PWS are at 30 TAC 290.46. Developing and following an operations and maintenance (O and M) plan will help ensure the system is operating well. An O and M plan will also help in preparing a replacement schedule for equipment.

PWSs are required to maintain their system so that the drinking water is safe:

- Pumps should be in good working order.
- Meters should be accurate, and be calibrated periodically.
- Sampling equipment should be kept in good working order, and reagents must be fresh.
- Tanks must be inspected, and cleaned out.
- Distribution mains must be flushed.
- The grass around wells must be mowed.
- Sample sites must be clean, with no chance for contamination.

- Records of operations must be maintained.

Step 9: Securely Store Manuals and Plans

Listed below are some of the manuals and plans required by the TCEQ and the sections of 30 TAC 290 that require them. Maintain these documents in a safe location.

All PWS Systems

- copies of sanitary control easements for wells or a substitute approved by the executive director (ED) (290.41)
- engineering plans and maps approved by the ED and well-completion data (290.46)
- the plant operations manual (290.42)
- a list of operators and operating companies the public water system employs (290.46)
- evidence of compliance with the EPA's requirement for risk-management plans (290.42)
- an emergency-response plan (290.45)
- a drought contingency plan (288.30) (if receiving compensation for the water)

Community Systems

- a copy of any initial distribution-system evaluation plan, report, approval letters, and other compliance documentation (290.46)
- a consumer-confidence report and compliance documentation (290.46, 290.271)
- An emergency-preparedness plan approved by the TCEQ Executive Director and a copy of the approval letter (290.39, 290.46) **(Harris County only)**

Nontransient, Noncommunity Systems

- a copy of any initial distribution-system evaluation plan, report, approval letters, and other compliance documentation (290.46)

Purchased-Water Systems

- water-purchase contracts must be made available to the TCEQ Executive Director or his or her representative (290.45).

Step 10: Maintain Records

Your water system is required to maintain records of all operation and maintenance activities. It is important to keep these records organized, either in a paper file or stored electronically, so they can be accessed for review during inspections. For a detailed list of required records and retention time of these records, read 30 TAC 290.46(f). The "Records and Reporting" chart (Table 3) lists records that should be kept by public water systems.

Table 3. Records and Reporting

Reports, Manuals, and Registrations	Type of PWS: C, TNC, NTNC	Type of PWS (GW or SW)	Population Served	Monitoring Frequency	Reporting Frequency	Keep On-Site or Send to TCEQ?[a]	Assistance
TOP PRIORITY							
Plans and Specifications (submitted by PE)	All	GW, SW	NA	NA	Once	Send original to TCEQ	www.tceq.texas.gov/goto/pws-planreview
Monthly operating reports (water production, disinfectant residual, pH, temperature)	All	SW (GW if providing 4-log disinfection per GW rule)	NA	Daily	Monthly	Send to TCEQ	Fill out the report here: www.tceq.texas.gov/goto/swmor-form
Chlorine-residual monitoring, DLQORs	All	GW, SW	< 250 connections < 750 people	Weekly	Quarterly	C, NTNC: Send to TCEQ TNC: keep on-site	*Disinfectant Residual Reporting for Public Water Systems* (RG-407): www.tceq.texas.gov/publications/rg/rg-407.html
			≥ 250 connections ≥ 750 people	Daily	Quarterly		
Emergency-preparedness plan (Harris and Fort Bend Counties only)	C, TNC in an affected county	GW, SW	NA	NA	Once	Send copy to TCEQ	Fill out this form to create your EPP: www.tceq.texas.gov/goto/epp-harrisfb
Bacteriological monitoring	All	GW, SW	Up to 1,000 people	1 sample monthly	Monthly	Lab will send results to TCEQ	
			1,001–2,500 people	2 samples monthly			
Public notices	All	GW, SW	NA	NA	Post if exceeded MCL, MRDL, or acute treatment-technique violation	Send a copy of the public notice to TCEQ	Fill out the appropriate public notice template for the specific type of violation: www.tceq.texas.gov/goto/swmor-pn
ANSI-NSF 60 approval of chemicals	All	GW, SW	NA	NA	NA	Keep on-site	
START AFTER COMPLETION OF TOP-PRIORITY ITEMS							
Operations-and-maintenance manual	All	GW, SW	NA	NA	NA	Keep on-site	
Corrosion-control study	All (if exceeded lead or copper MCL)	GW, SW	NA	NA	Within 2 years of MCL violation	Send original to TCEQ	Fill out Form 141C: www.tceq.texas.gov/drinkingwater/chemicals/lead_copper/141c.html/at_download/file
Distribution map	All	GW, SW	NA	NA	Update as necessary	Keep on-site	
Consumer confidence report	C	GW, SW	NA	NA	Annually	Send copy to TCEQ	Fill out template: www.tceq.texas.gov/goto/ccr-update
Monitoring Plan	C, NTNC	GW, SW	NA	NA	NA	GW: Keep on-site SW/GUI: Send copy to TCEQ	See model plan: www.tceq.texas.gov/goto/rg-384

Sanitary control easements for wells (needed to get plans and the PWS approved)	All	GW	NA	NA	NA	Send originals to TCEQ with plans	Sample sanitary control easements 30 TAC 290.47(c) www.tceq.texas.gov/rules/indxpdf.html#290
Storage-tank inspection	All	GW, SW	NA	Annually	NA	Keep on-site	Storage-tank inspection form: www.tceq.texas.gov/assets/public/assistance/sblga/tankinspectform.pdf
Copies of exceptions	All	GW, SW	NA	NA	NA	Keep on-site	
Drought contingency plan (retail suppliers/ utilities)	C	GW, SW	< 3,300 connections	NA	NA	Keep on-site	Follow the appropriate model plan for your system: www.tceq.texas.gov/goto/rg-424
			≥ 3,300 connections	NA	Submit within 90 days of adoption and revise every 5 years	Send copy to TCEQ	
Service Agreements/ Plumbing ordinance	C, NTNC	GW, SW	NA	NA	NA	Keep on-site	Sample customer-service agreement and ordinance: 30 TAC 290.47(b) www.tceq.texas.gov/rules/indxpdf.html#290
Customer Service Inspection	All	GW, SW	NA	NA	NA	Keep on-site	Official customer-service-inspection form: 30 TAC 290.47(d) www.tceq.texas.gov/rules/indxpdf.html#290
Backflow Prevention Assembly Tests	All	GW, SW	NA	NA	NA	Keep on-site	Official BPA test-and maintenance form: 30 TAC 290.47(f) www.tceq.texas.gov/rules/indxpdf.html#290
Well meter calibration	All	GW	NA	Every 3 years	NA	Keep on-site	
Well-completion data	All	GW	NA	NA	NA	Keep on-site	
Accuracy testing of electronic disinfectant-residual-monitoring equipment	All	GW, SW	NA	Manual analyzers: every 30 days Continuous analyzers: use EPA Method 334[b]	NA	Keep on-site	

[a] Maintain copies on-site of all records that you send to the TCEQ.
[b] A new guidance document for approval of online residual chlorine analyzers is being developed based on the EPA's Method 334.

Supplementary Information

Publications

The listed publications can be printed from the TCEQ publications Web page: <www.tceq.texas.gov/goto/publications>.

You can type the "RG" (regulatory guidance) number in the "Search" box, then follow the

instructions to download the document. To order printed copies from the Publications Section, follow the instructions at <www.tceq.texas.gov/publications/order.html>.

Guidance documents that may help you include:

RG-407—*Disinfectant Residual Reporting for Public Water Systems*

RG-421—*Coliform Sampling for Public Water Systems*

RG-384—*How to Develop a Monitoring Plan for a Public Water System*

RG-195—*30 TAC Chapter 290 Subchapter D: Rules and Regulations for Public Water Systems*

RG-346—*30 TAC 290 Subchapter F: Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Systems*

Online

<www.TexasEnviroHelp.org> Search by industry: "public water supply," or by environmental issue: "water"

<www.TakeCareOfTexas.org/> Publications and other resources to assist you with environmental education efforts.

By Phone

Small Business and Local Government Assistance hotline: 800-447-2827