Glossary

Term	Definition
Air flow-based test	Membrane filter, direct integrity test (DIT) in which air flow rate in L/min is measured to directly determine the removal efficiency of the membrane barrier by identifying any breaches/leaks larger than three microns.
Alternative compliance criteria (ACC)	Group of eight options from which a SWTP can choose to demonstrate that optimum TOC removal has been achieved even though the plant was unable to achieve a Step 1 removal ratio of at least 1.0.
Alternative technology	Any SWTP treatment process, like membrane filtration, UV disinfection, and bag/cartridge filtration, that does not have specific design requirements specified in 30 TAC Chapter 290.42(a). Alternative technologies allow SWTPs to receive pathogen removal or inactivation credit for non-conventional treatment.
Approved laboratory	A TCEQ-approved laboratory that uses EPA allowable methods to analyze water samples to determine compliance with state and federal regulations.
Baffling characteristics	Design features of a disinfection contact basin that influence how effectively the basin limits water from passing through it before being adequately disinfected.
Bag filter	Pressure driven separation device that removes particulate matter larger than one micron using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.
Bin classification	Classification and minimum treatment requirements assigned to a SWTP based on the amount of *Cryptosporidium* detected in a source water sample.
Boil Water Notice (BWN)	Notice sent by a PWS informing their customers to boil their drinking water before consumption. BWNs are typically issued when an unexpected condition has caused a potential for biological contamination of potable water.
Calculated dose approach (CDA)	UV disinfection method for calculating the UV dose using an equation based on operating conditions like flow rate, UV intensity, and UVT.

Term	Definition
Cartridge filter	Pressure driven separation device that removes particulate matter larger than one micron using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is either from the outside of the cartridge to the inside, or the inside to the outside.
Clearwell	A storage unit, usually located at a treatment facility that contains treated water before it is pumped to the distribution system. Some SWTPs refer to their clearwell as a ground storage tank.
Combined filter effluent (CFE)	Water produced by all filters at a SWTP after it has been blended.
Comment box	Note attached to a single cell in a worksheet. MOR workbook comment boxes contain useful information to help you with entering proper data in the cell.
Community water system	A PWS which has a potential to serve at least 15 residential service connections on a year-round basis, or serves at least 25 residents on a year-round basis. Most municipalities meet this definition, as do some boarding schools and prisons.
Comprehensive Evaluation Request (CPE Request)	TCEQ Form-10277 that SWTPs must complete and submit to TCEQ to request an mCPE. This is required after an individual filter, or any combination of filters has a confirmed effluent turbidity reading above 2.0 NTU on two separate occasions during any consecutive two months.
Concentration time (CT)	The result when the disinfection concentration at the end of a disinfection zone, C is multiplied by the contact time, T_{10} within the disinfection zone.
Corrective Action Plan (CAP)	Written plan that TCEQ develops following an mCPE at a PWS. The purpose of a CAP is to improve design, operational, maintenance, or administrative problems. It includes specific actions a water system must take to correct problems as well as a schedule for implementing the actions.
CT Study	Evaluation performed by a SWTP of its disinfection protocols to identify the number of disinfection zones at a plant; determine the effective contact time, T_{10} available in each zone; and define the minimum level of disinfection that must be provided at the plant.

Term	Definition
CT Study approval letter	Letter that TCEQ sends approving a PWS's proposed disinfection protocol. The letter identifies the approved disinfection zones and establishes the relationship between the flow rate through that zone and the T_{10} within the zone.
CT Study template	Form that SWTPs complete and submit to TCEQ to request approval for a new or revised CT Study.
Data validation	Data checking features programmed into MOR workbooks that control the accuracy and quality of data entered.
Direct integrity test (DIT)	Physical test applied to a membrane unit to identify and isolate integrity breaches or leaks that could result in contamination of the filtrate.
Disinfection	Process by which pathogenic organisms in the water are inactivated by chemical oxidants or equivalent agents.
Disinfection byproduct (DBP)	Chemical compound formed in water by the reaction of a disinfectant with naturally occurring organic matter.
Disinfection zone	Segment of the treatment plant that includes one or more treatment units and associated piping where disinfection occurs. The segment begins at a disinfectant injection point and ends at the associated monitoring point. Every injection point is the start of a new injection zone, even if it is not used. Every injection point must have an associated monitoring point. However, a plant may have only one disinfectant point and choose to monitor at more than one point, creating multiple disinfection zones.
Dissolved organic carbon	Portion of total organic carbon (TOC) that is present in the dissolved form. Dissolved organic carbon is difficult or impossible to remove using coagulation, flocculation, and sedimentation. Elevated levels may interfere with the effectiveness of disinfection processes and react with chlorine to form DBPs.
Distribution system	System of pipes that delivers treated water to customers. Typically, the distribution system begins after the water leaves the treatment plant and before the first customer connection.
Drinking water	Water distributed by any agency or individual, public or private, for the purpose of human consumption or which may be used in the preparation of foods or beverages or for the cleaning of any utensil or article used in the course of preparation or consumption of food or beverages for human beings. The term drinking water includes all water supplied for human consumption or used by any institution catering to the public.

Term	Definition
Drinking Water Watch (DWW)	Searchable database located on TCEQ web site that contains analytical results, schedules, and violations related to Texas PWSs.
Effluent	The point where water leaves a treatment unit, such as a filter.
Entry point	Any point where a source of treated water, or water purchased from another supplier first enters the distribution system. The entry point is also called water "leaving the plant."
Event	Period of time when a treatment facility is operating outside their established compliance criteria. An event begins when monitoring data indicate noncompliant conditions and ends when compliant conditions are reestablished.
Filter assessment	An in-depth evaluation of the design, maintenance, operation, and performance of an individual filter which includes the development of a filter profile, and the preparation of a FAR. SWTPs must perform a filter assessment when an individual filter has a confirmed effluent reading above 1.0 NTU on three separate occasions during any consecutive three months.
Filter Assessment Report (FAR)	Report SWTPs must prepare using TCEQ Form 10277 and submit to TCEQ following the completion of a filter assessment.
filter exceedance	An event when water produced by an individual filter has a turbidity level above the performance goal established by TCEQ for two consecutive 15-min. readings. A filter exceedance is not the same thing as a treatment technique violation, but a severe exceedance on one or more filters may cause the plant to violate a treatment technique requirement for treated water turbidity levels.
Filter profile	Graphical representation of individual filter performance to show the turbidity levels, or particle counts of the filtered water versus time for an entire filer run. A SWTP must perform a filter profile when an individual filter has effluent turbidity reading above 1.0 during two consecutive 15-min. readings. The evaluation must explain the cause of the elevated turbidity readings.
Filter Profile Report (FPR)	Report SWTPs must prepare using TCEQ Form 10276 and submit to TCEQ following the completion of a filter profile.
Finished water	The water leaving a treatment plant that has passed through all treatment units. Finished water is sometimes called treated water.

Term	Definition
Groundwater under the direct influence of surface water (GUI)	Any water beneath the surface of the ground with (1) significant occurrence of microorganisms, algae, or large diameter pathogens such as *Giardia* or *Cryptosporidium*; (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions; or (3) site-specific characteristics including measurements of water quality parameters, well construction details, existing geological attributes, and other features that are similar to groundwater sources that have been identified as being under the direct influence of surface water.
Haloacetic acids (HAA5)	Set of five haloacetic acid species formed when naturally occurring organic material is exposed to halogenated chemical disinfectants such as chlorine. Haloacetic acids include monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid.
Inactivation ratio	Method used to determine if a SWTP has met the daily minimum disinfection requirements. The value of an inactivation ratio is determined by dividing the value of CT_{actual} by that of $CT_{required}$. An inactivation ratio of 1.0 or above for both virus and *Giardia* is required to meet the disinfection requirements.
Indirect integrity test (IIT)	The monitoring of an aspect of filtrate water quality, such as turbidity that is indicative of particulate matter removal.
Individual filter	Filtration unit that has its own influent and its own effluent.
Individual filter effluent (IFE)	Water produced by a single filter.
Influent	The point where water enters a treatment unit, such as a filter.
Intensity setpoint approach (ISA)	UV disinfection method that relies on certain UV intensity setpoints, as measured by UV sensors, to ensure disinfection is effective.
Interim Enhanced Surface Water Treatment Rule	Federal regulation to require SWTPs serving 10,000 or more persons to begin enhanced treatment and monitoring.
Log removal credit (LRC)	Predetermined *Cryptosporidium* and *Giardia* removal amounts TCEQ assigns to treatment units, such as filters, based on manufacturer testing and data. SWTPs may claim this removal credit if compliance data proves the unit is operating within TCEQ-approved parameters.

Term	Definition
Log removal value (LRV)	Measure of the removal efficiency for a target organism, particulate, or surrogate expressed as the log10 of the influent organism concentration minus the log10 of the effluent organism concentration.
Long Term 1 Enhanced Surface Water Treatment Rule	Federal regulation that required treatment plants serving fewer than 10,000 people to meet essentially the same monitoring and performance requirements as larger treatment plants.
Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule)	Federal regulation that required additional treatment by plants with elevated *Cryptosporidium* levels in their source water.
Macro	Small computer program that automatically executes specific tasks when prompted. There are several macros in MOR workbooks that do things like update menu options based on how a workbook is optimized, circle empty cells that should contain data, and populate certain cells to match entered data.
Mandatory Compliance Performance Evaluation (mCPE)	Extensive, on-site analysis of the design, operation, maintenance, and administrative practices of a SWTP. Mandatory CPEs are conducted to identify the factors limiting a facility's ability to produce high quality drinking water.
Marker-based test (MBT)	Membrane filter, direct integrity test (DIT) in which a marker or particle, three microns or smaller, is introduced into the influent water to directly measure the removal efficiency of the membrane barrier.
Master file workbook	An MOR workbook that has been customized by an SWTP operator with data and information specific to the plant. An operator can save time and prevent overwriting daily compliance data by a creating a master file workbook and using it to save a new, monitoring period workbook file each month.
Maximum contaminant level (MCL)	The maximum concentration of a regulated contaminant that is allowed in drinking water before a PWS is cited for a violation. MCLs for regulated contaminants are defined in various sections of 30 TAC Chapter 290, Subchapter F.

Term	Definition
Membrane filtration	Pressure or vacuum driven separation process in which particulate matter larger than one micron is rejected by an engineered barrier, primarily through a size exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of direct integrity test.
Missing data (MD)	Abbreviation entered in a data entry cell of an MOR workbook when a plant collected some, but not all, of the required compliance data and none exceeded the minimum or maximum value defined for the data set.
Monitoring Plan	Water system document that describes its sampling locations and frequency. It also identifies its testing laboratory(ies) and analytical methods used to comply with regulatory monitoring requirements within all drinking water compliance areas. All PWSs must maintain current monitoring plans per 30 TAC Chapter 290.121.
Monitoring requirement	Required test, measurement, or observation to meet minimum state and federal rules, regulations, or standards.
Monitoring/ Reporting (M/R) violations	Result of a PWS's failure to comply with certain monitoring and reporting requirements as defined in 30 TAC Chapter 290.122(c).
Monthly average	Number obtained by dividing the sum of a set of values obtained during a given month by the number of values.
Monthly operating report (MOR)	Report due by the tenth day of the month following the end of the reporting period, containing all compliance data collected from a treatment plant during one calendar month.
Nephelometric turbidity unit	Unit of measurement for turbidity.
No data (ND)	Abbreviation entered in a data entry cell of an MOR workbook when a plant failed to collect the required compliance data for that portion of the MOR.
Nontransient noncommunity water system	A PWS 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. Many factories, schools, camps, recreational vehicle parks with long-term residents, and other businesses may fit this definition. Businesses that purchase and redistribute potable water may also fall under this definition.

Term	Definition
Point of diminishing returns (PODR)	Point at which an additional 10 mg/L of chemical coagulant, usually alum, results in the removal of no more than 0.3 mg/L of TOC when conducting a Step 2 jar test. The percentage of TOC removed in the jar where the PODR is reached is the percentage used to establish the target TOC removal requirement for the treatment plant.
Pressure-based test (PBT)	Membrane filter, direct integrity test (DIT) in which enough pressurized air is applied to a filter to detect a three micron or larger defect in the membrane barrier. The decay rate (psi/min) of the pressurized air must not exceed the approved rate to show that there is no membrane defect large enough to allow *Cryptosporidium* contamination in the filtrate.
Public Notice	A notice sent to customers served by a PWS that failed to meet drinking water quality requirements. The notice contains the cause of the violation, potential health effects associated with the violation (if any), and steps being taken to correct the problem.
Public notification (PN) tier	One of three classifications assigned to a rule violation as defined in 30 TAC Chapter 290.122. Assigned tiers indicate the level of potential public health impact the violation may have; and dictate how, and in what timeframe PWS must deliver a public notice.
Proof of notification	Documentation that a PWS distributed a public notice required by 30 TAC Chapter 290.122 to its customers. A copy of both the distributed public notice and the completed Certificate of Delivery (COD) must be submitted to TCEQ within 10 days of distribution.
Public water system (PWS)	A system that provides water for human consumption through pipes or other constructed conveyances, which includes all uses described under the definition for drinking water. Such a system must have at least 15 service connections or serve at least 25 individuals at least 60 days out of the year.
Quarterly average	Average of all compliance results obtained in a calendar quarter. For tests run on a daily or monthly basis, the quarterly average is determined by first calculating each monthly average, and then calculating an average of them.
Raw Water	Untreated water entering a treatment plant prior to any chemical injection.
Reclaimed water	Water used during the treatment process for a purpose that results in diminished water quality, such as filter backwashing. This water is reintroduced at the beginning stages of the treatment process to recycle and supplement source water.

Term	Definition
Recycling Practices Report	Report SWTPs must prepare using TCEQ Form 20100, and submit to TCEQ, as required by the Filter Backwash Rule. This Rule ensures recycled streams are adequately controlled and minimize interference with the treatment process.
Reporting month	The month during which you collected the data being reported in an MOR.
Running annual average (RAA)	Average of all the results obtained during four consecutive calendar quarters. For tests run quarterly, monthly, or daily, the RAA is calculated by summing the quarterly averages for four consecutive quarters and then dividing the sum by four. In the absence of quarterly results, the RAA is calculated based on the available data.
Settled water	The water leaving a sedimentation basin before it passes through the filter.
Specific ultraviolet light absorbance (SUVA)	Indirect indicator of whether the organic carbon in a water sample is humic or fulvic in origin. SUVA is calculated by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV254) (in inverse meters) by its concentration of dissolved organic carbon (in milligrams per liter). It is more difficult to remove the TOC in water that has a SUVA value less than or equal to 2.0 L/mg-m.
Stage 1 Disinfectants and Disinfectants Byproduct Rule (Stage 1 DBR)	Federal rule that established maximum residual disinfectant level goals and maximum residual disinfectant levels for three types of disinfectants and DBPs in an effort to reduce consumer exposure. This rule applied to all PWSs serving fewer than 10,000 persons and added a disinfectant to the water at any point in the treatment process.
Stage 2 Disinfectants and Disinfectants Byproduct Rule (Stage 2 DBR)	Federal rule that strengthened public health protections of the Stage 1 DBR by tightening the compliance monitoring requirements for TTHMs and HAA5.
Step 1 removal ratio	Ratio determined by dividing the percentage of the raw water TOC that a plant removed by the percentage of TOC that the plant should be able to remove using enhanced coagulation. The result is used to evaluate the TOC removal efficiency of the treatment process.

Term	Definition
Step 2 removal ratio	Ratio determined by dividing the percentage of the raw water TOC that a plant removed by the percentage of TOC the plant should be able to remove based on the PODR of a Step 2 jar test. This is an alternative method used to evaluate the TOC removal efficiency of the treatment process.
Supervisory Control and Data Acquisition (SCADA)	Data communication that connects with peripheral measurement devices to collect and manage water quality data and information at SWTPs and other treatment facilities.
Surface water	Water that has accumulated on the surface of the ground including water in lakes, rivers, streams, wetlands, and oceans.
Surface water treatment plant (SWTP)	Facility where surface water, or groundwater under the influence of surface water is treated to make drinking water.
Surface Water Treatment Rule (SWTR)	Federal rule that establishes filtration and disinfection requirements for SWTPs.
SWTR Coordinator	TCEQ employee responsible for determining treatment technique and M/R compliance for PWSs required to adhere to SWTR standards. TCEQ SWTR Coordinators can be contacted at 512-239-4691 or SWTR@tceq.texas.gov.
Texas Optimization Program (TOP)	Voluntary, non-regulatory program managed by TCEQ. The TOP helps improve the performance of SWTPs without major capital improvement by identifying and correcting performance limiting factors at each major treatment unit. The goal is to lower the risk of waterborne disease by reducing the number of pathogenic organisms passing through the treatment plant.
T_{10}	Amount of time it takes for ten percent of the water that enters a disinfection zone at a given time to pass through the treatment units within that zone.
Total organic carbon (TOC)	The organic carbon, both humic and fulvic, present in a water source. TOC can interfere with disinfection processes at water treatment facilities and react with chlorine to form DBPs.

Term	Definition
TOC sample set	Group of two samples that SWTPs using conventional treatment must collect and analyze. The raw water sample must be collected from a site before any chemicals are injected, and be analyzed for both TOC and alkalinity. The treated water sample must be collected from a site after the filters and be analyzed for just TOC. Sample collection should be timed such that both samples are representative of the same water. In other words, the treated water sample should be collected at least an hour after the raw water sample to allow time for water to flow through the plant.
Total trihalomethane (TTHM)	Group of chlorinated DBPs formed during the production of drinking water when naturally occurring organic and inorganic matter is exposed to halogenated chemical disinfectants, such as chlorine. Regulated trihalomethane species consist of chloroform, bromoform, bromodichloromethane, and dibromochloromethane.
Train	Treatment units that operate in a series within a treatment plant. SWTPs may contain one or more treatment trains that operate side by side.
Transient noncommunity water system	A PWS that is not a community water system and regularly 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. Gas stations and campgrounds often meet this definition.
Treated water	Water leaving a treatment plant that has passed through all treatment units. Treated water is sometimes called finished water.
Treatment technique requirement	Minimum treatment level that a PWS must achieve before drinking water is compliant with state and federal standards. Treatment technique requirements indirectly limits the risk posed by specific contaminants like *Cryptosporidium* and *Giardia* without setting limits on them directly. Instead, another treatment parameter, like turbidity must be monitored to indirectly assess the potential for contamination.
UV Transmittance (UVT)	A measure of the fraction, or percentage of incident light transmitted through a water column without being reflected.
Violation Report Form	Report that SWTPs must prepare using TCEQ Form 10449, and submit to TCEQ as soon as an operator identifies a treatment technique, a maximum contaminant level, or a maximum residual violation.
Wholesale system	PWS that delivers water to another public water system.

Term	Definition
Workbook	Spreadsheet forms created by TCEQ and used by SWTPs to report monthly data. Each workbook form is comprised of numerous worksheets, identified by tabs at the bottom of each page, which contain information for reporting aspects of plant operations and performance.
Worksheet	An individual page, or tab in a workbook. Each worksheet contains numerous cells organized in rows and column for SWTPs to report data specific to plant operations and performance.