Fact Sheet on Chloramine Requirements

Applicability

As of July 30, 2015, a public water system (PWS) that does not blend chlorinated and chloraminated water no longer requires an exception to use chloramines as a disinfectant. This guide explains how these new regulations apply to PWSs that use chloramines.

Monitoring Frequency and Location §290.110(c)

Your PWS is required to monitor the monochloramine, total chlorine, free ammonia and nitrate/nitrite levels periodically at different locations. This ensures that an adequate disinfectant residual is being maintained, and that nitrification is not occurring in the distribution system. Ammonia, nitrate and nitrite must be sampled at least once in your source water(s). The tables below summarize the monitoring frequency and location.

One Time Source Water Monitoring Requirement*

Test	Frequency at each source (including purchased water take points)
Ammonia *(as nitrogen)*	Once or more to determine the availability of ammonia for chloramine formation. • If source has more than 0.5 mg/L free ammonia (as nitrogen), monitor monthly for six months to establish baseline.
Nitrate and Nitrite *(as nitrogen)*	Once or more to provide a reference for downstream nitrate/nitrite levels that may indicate nitrification.

**If you have already completed this source water monitoring in the past and have the results, there is no requirement to take new samples.*

Baseline and Ongoing Routine Chloramines Monitoring Requirement

	At or After the **Entry Point(s)**	Upstream and Downstream of Any Chlorine or Ammonia **Injection Points**	In the **Distribution System**
Total Chlorine	At least weekly.	Weekly and before and after adjusting the chlorine or ammonia feed rate.	Daily/weekly.[a]
Free Ammonia	At least weekly.	Weekly and before and after adjusting the chlorine or ammonia feed rate.	At least weekly.[b]
Mono-chloramine	At least weekly.	Weekly and before and after adjusting the chlorine or ammonia feed rate.	At least weekly.[b]
Nitrite and Nitrate	Monthly for at least 6 months to set baseline, then quarterly.	Routine sampling not required.	At least quarterly, and in response to action level triggers.

a. *Total chlorine must be collected weekly/daily based on your system size at locations representing the entire distribution system in accordance with 30 TAC §290.110.*
b. *Free ammonia and monochloramine should be measured at same time as routine total chlorine monitoring.*

If levels are not as expected, more frequent monitoring will be needed.

Analytical Methods §290.110 (d); §290.46(s)

Your PWS can buy on-line monitors or laboratory test kits that allow you to analyze samples or you can use a TCEQ-approved facility for testing. Analyzers used to determine the effectiveness of chloramination (including monochloramine, ammonia, nitrite, and nitrate equipment) must be verified at least every 90 days in accordance with manufacturer's recommendations. This information should be documented in your NAP.

Test	Accuracy
Total Chlorine	(+/-) 0.1 mg/L
Free Chlorine	(+/-) 0.1 mg/L
Monochloramine[a]	(+/-) 0.15 mg/L
Free Ammonia *(as nitrogen)*	(+/-) 0.1 mg/L
Nitrate[b]	(+/-) 0.1 mg/L
Nitrite[b]	(+/-) 0.01 mg/L

a. *Must have the ability to distinguish between monochloramine and other forms of total chlorine.*
b. *Samples results must be provided within 48 hours of sample delivery.*

Record Keeping §290.46(f); §290.46(z)

Your PWS is required to develop a Nitrification Action Plan (NAP) and include this NAP as part of your Monitoring Plan. A copy of your NAP must be located on-site and made available to the TCEQ if requested. All chloramination records including monitoring results will need to be kept for at least three years. One time source water monitoring must be maintained as long as it is representative of the water quality of the source.

Notification §290.47(h)

Notification of the use of chloramines must be provided to your system's retail and wholesale customers at least 14 days before the water is delivered. Also, the notification must continue to be provided to all new customers. Notification must be maintained on site and made available to TCEQ during on-site investigations.

Design Requirements §290.42(e)

The design requirements for chemical injection, mixing and chemical containment for chloramine systems are now provided in §290.42(e). If you are planning to make any future changes or additions to your system, plans and specifications will be required to be sent to the TCEQ's Plan Review Team.

Required Distribution Disinfectant Levels

PWSs in Texas are required to maintain minimum disinfectant levels throughout the distribution system to protect public health. In addition, your PWS should be careful not to exceed the maximum residual disinfectant levels (MRDLs).

Type of Disinfectant	Minimum Disinfectant Levels	Maximum Residual Disinfectant Levels (MRDL)*
Chloramines *(measured as total chlorine)*	0.5 mg/L	4.0 mg/L
Free chlorine *(during chlorine burns)***	0.2 mg/L	4.0 mg/L

**Based on the running annual average (RAA) of quarterly averages reported on the Disinfectant Level Quarterly Operating Report (DLQOR).*
*** For more information about chlorine burns, please contact us at DBP@tceq.texas.gov.*