

REVISED TOTAL COLIFORM RULE [RTCR]

RULE: 15A NCAC 18C Section .1539 – “Revised Total Coliform Rule” (Note Federal Rule 40 CFR 141 Subpart Y was incorporated into Section .1539 of NC’s Regulations by reference.)

APPLIES TO: All water systems including, community (C), non-transient non-community (NTNC), transient non-community (TNC), and adjacent non-public (NP) water systems.

SAMPLING REQUIREMENTS:

- **Sampling Location:** Distribution system
- **Required samples types:**
 - Total Coliform (TC) and *E. coli* (EC): Routine and Repeat samples, as necessary.
 - Chlorine or chloramine residuals: For each total coliform sample collected, systems that add a disinfectant must report the chemical used and disinfectant residual measured at the time of collection.
- **Sampling Frequency:**
 - Non-transient (NTNC) and transient non-community (TNC) water systems serving 1,000 or fewer people using only ground water (GW) – quarterly monitoring, unless the State requires system to begin increased monthly monitoring
 - Community (C) water systems serving 1,000 or fewer people using only ground water – monthly monitoring
 - Surface water (SW) and ground water under the direct influence (GWUDI) of surface water systems serving 1,000 or fewer people – monthly monitoring
 - All water systems including, community (C), non-transient non-community (NTNC), transient non-community (TNC), and adjacent non-public water systems serving more than 1,000 people – monthly monitoring
- **Number of Sample Required:**
 - Non-transient and transient non-community water systems serving 1,000 or fewer people using only ground water (GW) – 1 sample
 - Community (C) water systems serving 1,000 or fewer people using only ground water (GW) – 1 sample
 - Surface water (SW) and ground water under the direct influence of surface water (GWUDI) systems serving 1,000 or fewer people – 1 sample
 - All water systems including, community (C), non-transient non-community (NTNC), transient non-community (TNC), and adjacent non-public water systems serving more than 1,000 people – number of samples based on the population served by the system as in the table that follows:

Total Coliform Monitoring Frequency for Public Water Systems Serving More than 1,000 People			
Population Served	Minimum Number of Samples per Month	Population Served	Minimum Number of Samples per Month
1,001 to 2,500	2	70,001 to 83,000	80
2,501 to 3,300	3	83,001 to 96,000	90
3,301 to 4,100	4	96,001 to 130,000	100
4,101 to 4,900	5	130,001 to 220,000	120
4,901 to 5,800	6	220,001 to 320,000	150
5,801 to 6,700	7	320,001 to 450,000	180

6,701 to 7,600	8	450,001 to 600,000	210
7,601 to 8,500	9	600,001 to 780,000	240
8,501 to 12,900	10	780,001 to 970,000	270
12,901 to 17,200	15	970,001 to 1,230,000	300
17,201 to 21,500	20	1,230,001 to 1,520,000	330
21,501 to 25,000	25	1,520,001 to 1,850,000	360
25,001 to 33,000	30	1,850,001 to 2,270,000	390
33,001 to 41,000	40	2,270,001 to 3,020,000	420
41,001 to 50,000	50	3,020,001 to 3,960,000	450
50,001 to 59,000	60	3,960,001 or more	480
59,001 to 70,000	70		

○ **Additional/Special Sampling Requirements:**

- If a routine sample is found to be total coliform-positive, the system must collect a set of three repeat samples for each total coliform-positive sample. Repeat samples should be collected from the original positive location, a location within 5 service connections upstream, and a location within 5 service connections downstream. Repeat sample collection must continue at the same 3 locations until all repeat samples are total coliform-negative OR until the water system has a coliform treatment technique trigger which requires completion of an assessment.
- If a routine sample is found to be total coliform-positive, ground water (GW) systems must collect a sample from each well in use at the time the routine total coliform-positive sample was collected. Ground water system serving 1,000 or fewer people with only one well may use the ground water sample as its repeat upstream location to satisfy both requirements. However, the ground water sample must be used in the calculation of the coliform treatment technique trigger if the sample is total coliform-present.
- A system on quarterly monitoring must perform additional routine monitoring the month immediately following the routine total coliform-positive sample, collecting a total of three routine samples. If a routine total coliform-positive sample is collected at the end of the month and repeat sample collection falls into the next month, the three additional routines are still required to be collected the month after the original routine positive and so would be collected during the same month as the repeats.
- A system on quarterly monitoring must immediately begin monthly monitoring the month after any of the following events occur: the system triggers a level 2 assessment or two level 1 assessments in a rolling 12-month period, the system has an *E. coli* MCL violation, the system has had an RTCR treatment technique violation, the system has two RTCR monitoring violations in a rolling 12-month period, or the system has one RTCR monitoring and one level 1 assessment in a rolling 12-month period. The system may be eligible to return to quarterly after 12 months of consistent monthly sampling. However, the system must remain on monthly monitoring until the state has performed a site visit and given written approval for the system to return to quarterly monitoring.

COMPLIANCE BASED ON:

- **Maximum Contaminant Level (MCL)** based on presence of *E. coli*. Samples must be confirmed by repeats. The following situations result in an *E. coli* MCL:
 - The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

- The system has a total coliform-positive repeat sample following an *E. coli*-positive routine samples.
- The system fails to take all required repeat samples following an *E. coli*-positive routine sample.
- The system fails to test for *E. coli* when any repeat sample is total-coliform positive.
- **Treatment Technique (TT)** based on presence of total coliform bacteria. For systems collecting fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same monitoring period. For systems collecting 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples during the monthly monitoring period.

INCOMING REPORT/PLAN SUBMITTALS FROM SYSTEMS TO THE STATE:

- **Analytical Results for All Compliance Samples** MUST be submitted to the State by NC certified laboratories in required format. (15 NCAC 18C Section .1525; [40 CFR 141.31])
- **Sample Siting/Location Plans:** All systems must develop a written sampling siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system. Plans should be kept onsite. Although State approval is not required, the State may require that any system submit a plan and can require any changes in the plan elements.
- **Waiver Applications:** N/A
- **Monthly Operating Report:** N/A
- **Quarterly Status Reports and Corrective Action Plan Following MCL Violations:** When MCL violations are issued, a system must contact the State to have a Level 2 Assessment performed, documenting any sanitary defects and pathways for microbial contamination. Corrective actions must be completed for the identified issues.
- **Other Misc. Submittals if triggered by conditions of the rule:**
 - All systems must conduct an assessment after exceeding treatment technique triggers. A level 1 assessment is required if the system has had no other treatment technique triggers in the past 12 months. A level 2 assessment is required if the system has had two treatment technique trigger in the past 12 months OR if the system has had an MCL violation. Assessments must be conducted consistent with State requirements and documented on State provided assessment forms. A level 1 assessment may be completed by the state OR by a water system representative. A level 2 assessment must be completed by the State OR by a professional engineer or certified operator that has been approved by the State to conduct the assessment.
 - Seasonal systems operating for only a portion of the year that de-pressurize either partially or fully during the offseason are required to complete a State-approved start-up procedure prior to serving water to the public. Start-up procedures must be conducted consistent with State requirements and documented on State provided seasonal start-up forms. A total coliform-negative sample is required prior to serving water to the public and may be collected either as a compliance or noncompliance sample. A copy of the sample result should be submitted with the seasonal start-up form.

OUTGOING ENFORCEMENT/REPORTS/APPROVALS FROM STATE TO SYSTEMS:

- **Violation Letters:** Includes monitoring and reporting violations, MCL violations, treatment technique violations, failure to perform any follow-up actions, etc.

- MCL Violations: Tier 1 violations issued when presence of *E. coli* is confirmed by total coliform-present repeats or a failure to collect repeats.
- Treatment Technique Violations: Tier 2 violations issued when a system exceeds a treatment technique trigger and fails to conduct the required assessment or corrective actions within 30 days of the trigger or within an extended timeframe that was granted by the State. Also issued when a seasonal system that de-pressurizes either partially or fully during the offseason fails to complete a State-approved start-up procedure prior to serving water to the public.
- Monitoring and Reporting Violations: Tier 3 violations issued if a sample required under the rule is not collected or reported to the state within the specified time frame. Total coliform-absent samples are required to be submitted to the State by the 10th day of the month following the sample collection date. Total coliform-present and repeat samples are required to be submitted to the State within 48 hours after the analysis is completed. *E. coli*-present samples must be submitted to the state within 24 hours after the analysis is completed.
- **Administrative Orders**
- **Administrative Penalties**
- **Exceedance Letters:** N/A
- **Approvals:**
 - Sample Invalidation Requests
 - Return to Quarterly Monitoring Requests

(May 2019)