

# ***Bacteriological Monitoring of Drinking Water: Revised Total Coliform Rule (RTCR)***

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## **Abbreviations to Know**

RTCR – Revised Total Coliform Rule  
TC – Total Coliform  
EC – *E. coli*  
PN – Public Notice  
CCR – Consumer Confidence Report

TT – Treatment Technique  
MCL – Maximum Contaminant Level  
L1A – Level 1 Assessment  
L2A – Level 2 Assessment

## **Not All Bacteria Is Bad**

### **Overlapping Rules**

### **Major Rule Differences**

#### Old TCR

- Non-acute TC MCL
- Acute violation based on *E. coli* and fecal coliform
- Monitoring violation for failure to collect repeat samples
- M&R and MCL Violation Types

#### RTCR

- No longer a TC MCL; assessment triggered
- Acute violation based on *E. coli* only
- No additional sampling the following monitoring period (\*community water supplies only)
- M, R, TT, and MCL Violation Types

### **Routine Monitoring**

- All CWS must sample for TC monthly
- Must be analyzed by certified drinking water lab
- TC+ samples must be tested for *E. coli*

### **Sampling Site Plans (SSP)**

1. Supply's responsibility to update sample siting plan for DEQ review
2. All supplies need to adhere to SSP

### **Sample Submission**

- PLEASE BE ACCURATE!
- 30-hour clock!
- WSSN
- Site codes, purpose, date, time, etc.
- Follow SSP nomenclature

### **Total Coliform-Positive Monitoring**

For every positive routine compliance sample:

- Three repeat samples required within 24 hours
  - Original Location
  - Upstream (within 5 service connections)
  - Downstream (within 5 service connections)

- Record chlorine residuals for all repeat samples
- Triggered source sample(s) is(are) required for each routine TC+
  - Groundwater sources only
- Confirm that lab tests every TC+ result for *E. coli*
- Consecutive supplies must inform the wholesale supplier (TC+)
- If EC+, supply must contact DEQ within 24 hours  
R325.10704c, R325.10739

### Special Purpose Samples

- Construction, repair samples, etc.
    - Shall not be used to determine RTCR compliance\*\*
- \*\*Unless the sample is collected at SSP compliance location\*\*  
R 325.10704c(2)

### Assessments

- Applies “find and fix” approach
- Identify avenues of contamination
- Level 1 assessment
- Level 2 assessment

### Corrective Actions

- Completed within 30 days
  - Exceptions
- TT Violation for failure to complete corrective action

### No Defects Identified? - OK

- System must document this conclusion in the assessment
- Supporting evidence may be required
- Corrective actions may include activities such as flushing or disinfection

### Level 1 Assessment Triggers

- Supplies collecting  $\geq 40$  samples per month:
- $>5\%$  of routine & repeat TC+ samples in a month
- Failure to collect every repeat sample  
(—or—)
- Supplies collecting  $<40$  samples per month:
- 2 or more routine & repeat TC+ samples in a month
- Failure to collect every repeat sample  
R 325.10704i

### Level 1 Assessments

- Completed by the owner or operator
- Assessment and corrective actions completed within 30 days
- Corrective action plan schedule in place if unable to complete in 30 days

### Level 1 Assessment Review

- Is it complete?
- Is it accurate?
- Did it identify a likely cause?
- Defects corrected or has a schedule to complete the correction been submitted?

**Level 2 Assessment Triggers**

- *E. coli* Maximum Contaminant Level (MCL)
- Second L1 triggered within a rolling 12-month period R 325.10704i

**Level 2 Assessments**

- Completed by DEQ
- Assessment *and* corrective actions completed *within 30 days*

**Assessment – Common Causes**

- Lack of communication between management and operator
- Failing to collect all repeat samples
- Multiple TC-positive samples
- “Double” triggers
- *E. coli* MCL
- Second level 1 in 12 months

**Violations**

- Maximum Contaminant Level (MCL) - *E.coli*
- Treatment Technique
- Monitoring
- Reporting R 325.10704j

Routine Sample	Repeat Sample
<i>E. coli</i> positive	Total coliform positive
<i>E. coli</i> positive	<i>E. coli</i> positive
Total coliform positive	<i>E. coli</i> positive
Total coliform positive	Total coliform positive (no <i>E. coli</i> analyzed)
<i>E. coli</i> positive	Any missed repeat sample

***E. coli* MCL Violation**

**Public Notices**

- Tier 1
  - 24 hours (*E. coli* MCL)
- Tier 2
  - 30 days (TT violations)
- Tier 3
  - 12 months (M/R violations)

**RTCR recordkeeping**

- 5-year retention R 325.11506, R325.11509,R325.11510

**CCR requirements**

- Required language needs to be included in annual CCR
- Level 1 assessment
- Level 2 assessment
- *E. coli* MCL / level 2 assessment R 325.10413 (12)(g)

**Visit Our Website**

- [www.michigan.gov/deq](http://www.michigan.gov/deq)
- RTCR link on the Community Water Supply page

**Reporting To MDEQ**

**RTCR Analyst Contact Info**

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