

Revised Total Coliform Rule

Monitoring and Reporting Requirements.

- Routine & Repeat Monitoring
 - Sample Invalidation
 - Reporting Requirements
 - Recordkeeping

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Routine Monitoring

RTCR Baseline Monitoring

- Sampling varies based on system type/population
 - Quarterly for Non-Community GW systems supplying $\leq 1,000$ people
 - Monthly for everyone else (including all seasonal systems)
- Systems must collect at least the required number of routine samples
 - Even if the system has had an E. coli MCL violation or has incurred a TT trigger they still must collect the minimum number of samples.

Additional Compliance Monitoring

- For public health protection and increased coverage of the distribution system
- Use as a tool to investigate potential problems in the system
- Must be used in determining whether the TT trigger has occurred
- Must be taken in accordance with the sample siting plan

Routine Monitoring Frequency GW Serving $< 1,000$ People

- GW systems serving less than or equal to 1,000 people must monitor as follows:
 - CWS: 1 sample per month
 - Seasonal NCWS: 1 sample per month
 - Non-seasonal NCWS: 1 sample per quarter
- * Any system that has a SW, GWUDI, SW or GWUDI blended source(s) are considered surface water systems for purposes of RTCR total coliform monitoring and must monitor monthly.

Routine Samples & NCWS with Varying Population

- For GW NCWSs serving $\leq 1,000$ in some months & more than 1,000 in other months
 - State may allow system to reduce monitoring during months when it serves $\leq 1,000$
 - System must monitor monthly during months it serves more than 1,000 people
 - State has authority to determine how transition will occur

Routine Monitoring Frequency GW Serving > 1,000 People

- ALL GW systems serving more than 1,000 people must monitor monthly including:
 - CWS
 - Seasonal NCWS
 - Non-seasonal NCWS
- Systems must collect samples at regular time intervals throughout the month
- Systems serving 4,900 or fewer people may collect all samples on a single day **if taken from different sites**

Monthly Routine Sample Table

TOTAL COLIFORM MONTHLY MONITORING FREQUENCY FOR GW SYSTEMS	
Population served	Min # of Samples/Mo
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9

And so forth, according to chart in Federal Regulations . . .

Additional Routine Monitoring the Month Following a TC+ for Small Systems Taking < 5 Routine Samples per Month.

- For PWSs monitoring monthly, the month following a TC+, systems serving 4,900 or fewer people must sample at their normal routine sample sites:

TC MONTHLY MONITORING FREQUENCY FOR GW SYSTEMS	
Population served	Min # of Samples/Mo
Up to 1,000	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5

Additional Routine Monitoring the Month Following a TC+ for Small Systems Monitoring Quarterly

TCR	RTCR
Must take at least 5 routine samples in the month after a TC+ sample.	System must collect at least 3 routine samples the month following one or more TC+ samples

- Collected at regular time intervals throughout the month or on a single day if taken from different sites
- Collected consistent with the sampling siting plan

** NOTE **

- States may waive the requirement of additional routines if:
 - State or state-approved party performs a site visit before the end of the next month
 - State determines what caused the TC+ & that the problem has been fixed
 - State determines that PWS has corrected the problem before PWS takes the required repeat samples, & all repeat samples are TC-
 - **We rarely (if ever) waive the sampling requirement.**

State may not waive requirement solely on grounds that all repeat samples are TC-

RTCR Reduced Monitoring

- Only GW systems serving 1,000 or fewer people can qualify for reduced monitoring
- State may reduce the monitoring frequency for a well-operated ground water system **from quarterly routine monitoring to no less than annual** monitoring, if the system demonstrates that it meets the criteria for reduced monitoring
- (Slide 15 covers criteria for reduced monitoring)
- **But Not so fast.....**

- NJ State regulations (N.J.A.C. 7:10-5.2(a)) do not currently allow for reduced monitoring
 - CWS must sample no less than monthly
 - NCWS must sample no less than quarterly
 - NCWS that are **Seasonal** must sample no less than monthly

Increased Monitoring – GW non-seasonal NCWS Serving ≤ 1,000 People

- Increases from quarterly to monthly monitoring the month following any of these events:
 - Triggered Level 2 assessment or a 2nd Level 1 assessment in a rolling 12 months
 - *E. coli* MCL violation
 - Coliform TT violation
 - For a system on quarterly monitoring, two RTCR monitoring violations, or one RTCR monitoring violation and one Level 1 assessment, in a rolling 12 months

Return to Quarterly Monitoring – GW non-seasonal NCWS Serving ≤ 1,000 People

- The state may reduce the increased monthly monitoring to quarterly if:
 - Within the last 12 months, the system has a completed sanitary survey or site visit by the state or voluntary Level 2 assessment by a party approved by the state;
 - Is free of sanitary defects;
 - Has a protected source; AND,
 - Has a clean compliance history for a minimum of 12 months



Summary TCR vs. RTCR

SYSTEM TYPE		1989 TCR		RTCR	
		FEDERAL	NJ REGS	INCREASED	ROUTINE
CWS ≤ 1,000	GW	1/QT	1/MN	NA	1/MN
	SW	1/MN	1/MN	NA	1/MN
NCWS ≤ 1,000	SW	1/MN	1/MN	NA	1/MN
	GW (NON-SEASONAL)	1/YR	1/QT	1/MN	1/QT
	GW (SEASONAL)	1/YR	1/QT	NA	1/MN
CWS/NCWS ≥ 1,000	GW/SW	Monthly (pop based)	Monthly (pop based)	NA	Monthly (pop based)

Repeat Monitoring

Number of Repeat Samples

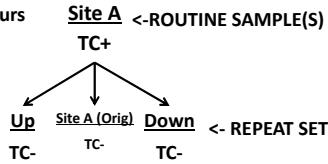
- **ALL PWSs of any size now take only 3 repeat samples for each TC+**
- Small GW systems (serving ≤ 1,000 people) only take 3 repeat samples
 - Under TCR, 4 samples required

TCR - # of Repeats	RTCR - # of Repeats
4 Samples	3 Samples

DON'T FORGET THE GWR TRIGGER SAMPLE EITHER!!!!

Follow-up Monitoring for TC+ ROUTINE Sample(s)

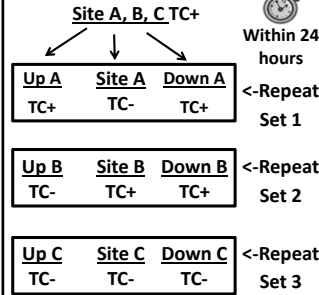
Within 24 hours



Systems must collect a set of repeat samples for EACH routine TC+ sample, even if an MCL or TT exceedance has occurred

- For every routine sample that is TC+:
 - Collect 3 repeat samples
- All TC+ samples must be tested for *E. coli*

Follow-up Monitoring for TC+ REPEAT Sample(s)



In this example, there are a total of 9 repeat samples at 3 sites.

- For each routine TC+ sample, when there are multiple TC+ repeat samples in a set:
 - Collect one set of 3 repeat samples until either:
 - TC are not detected in one complete set of repeats
 - OR
 - System determines that a TT trigger has been exceeded and notifies the state

Frequently Asked Question

Does each TC+ routine sample need 3 repeat samples?

ANSWER: Yes, each TC+ routine sample needs 3 repeat samples (also known as 1 set of repeats) regardless of whether an assessment has been triggered.

Repeat Sample Locations

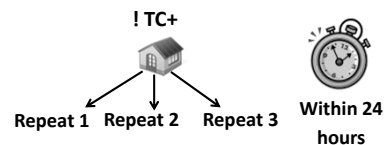
- PWS can collect repeat samples using the same procedure as in the TCR
 - 1 at original location
 - 1 within 5 service connections upstream
 - 1 within 5 service connects downstream
- If you have a positive at a dead end, contact your county compliance manager. The repeat location for upstream/downstream may be waived.



Repeat Sample Locations (cont.)

- Systems can propose different repeat monitoring locations to the state as long as they are representative of a pathway for contamination of the distribution system
- Systems must specify the reasoning in the sampling plan for:
 - **Alternative fixed locations,**
 - or
 - **Criteria for selecting repeat sampling sites on a situational basis.**

Repeat Monitoring Deadline



- System has 24 hours after learning about TC+ routine sample to take repeat samples
- State may extend the 24-hour deadline (new deadline must be specified)
- But.....

24 hours, means 24 hours!!

- **Lab Availability:** NJ Most Densely populated State
- **The only time, the deadline will be extended is really when there is a threat to the sample collector**
- **Request should be made in writing (Email Chain)**



Repeat Monitoring Timing



- Must collect all repeats on same day
 - 3 repeat samples are needed for each TC+ routine sample
- State may allow systems with single service connection to:
 - Collect over a 3-day period if taken from the same tap
 - Collect a larger volume container(s) of any size as long as the total volume collected is at least 300mL



Repeat Monitoring Scenario

- A routine sample is collected
- Before that first sample is analyzed, another routine sample is taken within 5 service connections
- The first sample is TC+
- The second routine can be counted as a repeat (instead of being counted as a routine sample)
- System needs to take another routine sample



Dual Purpose Samples-

•No longer being allowed by NJ.

Clarification on Dual Purpose Samples for GW systems <1000 people.

- Under old rule you were required to take 4 repeats (one could be from raw water).
- Under new rule you are required to take 3 repeats plus the raw samples for a total of 4.
- So in both cases nothing has really changed because 4 samples are required.

Sample Invalidation

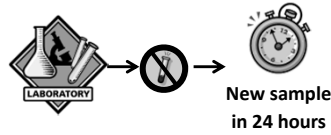
Invalidation of Samples

- State may invalidate a sample if:
 - Lab establishes that improper sample analysis caused the TC+
 - State determines from repeat sample results that the TC+ was caused by domestic or other non-distribution system plumbing problem
 - State finds that the TC+ is a result of something that does not reflect water quality in the distribution system

Systems must collect replacement samples for all invalidated samples within 24 hours!

Invalidation of Samples CFR 141.853 (c)

- Invalidated samples cannot be used to determine if the system had an *E. coli* MCL violation or TT trigger



Documentation of Sample Invalidation

- ✓ Rationale for invalidation
- ✓ Cause of TC+
- ✓ Action to correct problem

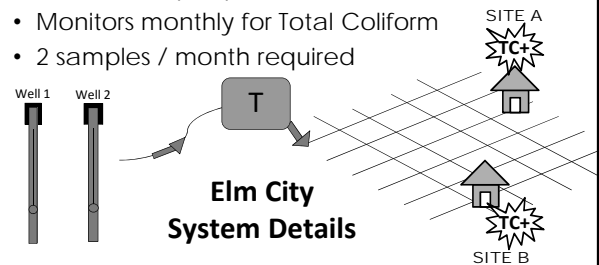
State Signature

- Re-samples must be taken at same locations and used for calculations

Case Scenarios

Case Scenario 1 – APRIL 2016

- CWS- Elm City, NJ001100
- Ground Water only; 2 wells
- Disinfects (<4 log)
- Serves 1100 people
- Monitors monthly for Total Coliform
- 2 samples / month required



Elm City PWS – Case Scenario 1

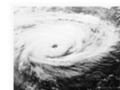
A total of **6** repeat samples are required within 24 hours of 4/16/2016 at the following locations:

- Site A
- Upstream Site A
- Downstream Site A
- Site B
- Upstream Site B
- Downstream Site B

Elm City PWS – Case Scenario 1

But WAIT!

A storm has hit the area and it is not safe to collect the repeat sample.



NJ is planning to extend the 24-hour timeframe for collecting repeats if the sample collector is in danger.

Elm City PWS – Case Scenario 1

In May 2016 (following month) the CWS is required to take its normal **2** routine samples because they are on monthly monitoring.

This is a change from the **5** samples required for systems serving 4,900 or fewer under the current rule.

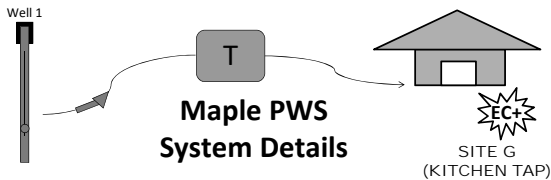
Maple PWS

Case Scenario 2

A different PWS and story...

Case Scenario 2 – APRIL 2016

- NTNCWS
- Ground Water only, 1 well
- Not seasonal
- Disinfects (<4 log)
- Serves 956 persons
- Monitors quarterly for Total Coliform
- 1 sample per monitoring period required



Maple PWS – Case Scenario 2

Repeat sample results

1 at original location (Site G)

1 upstream

1 down stream

All TC-
What happens next?

Maple PWS – Case Scenario 2 STATE RESPONSE

PWS is required to notify State within 24 hours of EC+ sample result(s)

Maple PWS – Case Scenario 2 STATE RESPONSE

- **No** E. coli **MCL violation** for April 2016
- Remind PWS to take **3** routine samples in May 2016 because it had been on quarterly monitoring prior to April 2016.

Reporting Requirements and Violations

Reporting Requirements – RTCR

Systems must report to the state:	
REQUIREMENT	TIMING
<i>E. coli</i> MCL violation, or <i>E. coli</i> positive routine sample	By end of current business day (if state office is closed report to 1-877 Warn DEP)
TT violation	By end of next business day
Level 1 or 2 assessment report	Within 30 days of learning that the system has exceeded a TT trigger

40 CFR 141.861(a)(1)-(3)

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Reporting Requirements (cont.)

Systems must report to the state:	
REQUIREMENT	TIMING
Coliform monitoring violation	Within 10 days of learning of violation
Completion of corrective action, if occurring after submittal of an assessment report	When each corrective action is completed
Seasonal system certification of compliance with state-approved start-up procedures	Prior to serving water to the public

40 CFR 141.861(a)(3)-(5)

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Reporting Violations

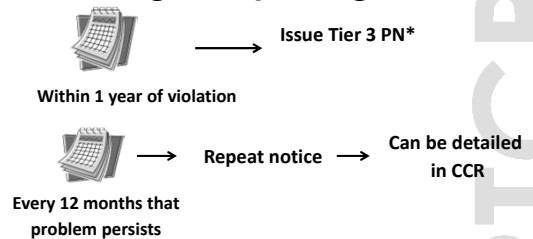
- Monitoring and Reporting violations will be tracked separately
- Require a Tier 3 PN. (1 year to post or include in CCR)

Violations/Situations Requiring Tier 3 PN

- Monitoring
 - Failure to take required routine or additional routine sample
 - Failure to analyze for *E. coli* following a TC+ routine sample
- Reporting
 - Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner
 - Failure to notify the state following an *E. coli* + sample in a timely manner (w/in 24 hours)
 - Failure to submit certification of completion of state approved start-up procedures by a seasonal system

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Tier 3 PN Requirement – Monitoring & Reporting Violations



* Tier 3 PN can be issued in the CCR if it is distributed within 12 months of the violation

40 CFR 141.204

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Recordkeeping Requirements

Recordkeeping

REQUIREMENT	TIMING
Records of action taken by the system to correct violations of primary drinking water regulations	3 years
Public notices issued & certifications made	3 years
Records of microbiological analysis	5 years
Copies of monitoring plans	As long as sampling is required

40 CFR 141.33(a)-(c) & (f)

Recordkeeping (cont.)

REQUIREMENT	TIMING
Level 1 or 2 assessment forms	5 years
Documentation of corrective actions	5 years
Other available summary documentation of sanitary defects & corrective actions	5 years
Records of any repeat samples taken that meet the state's criteria for an extension of the 24-hour period for collecting repeat samples.	5 years

40 CFR 141.861(b)



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