

# Drinking Water Regulations

- Monitoring requirements
- Compliance reminders:

- ★ **Total Coliform Rule (TCR)**
- ★ **Ground Water Rule (GWR)**

DPH – Drinking Water Section



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# Focus

- Overview TCR & GWR
- Examples of TCR & GWR
- Requirements of compliance monitoring
- Requirements of notification and reporting

# Overview TCR & GWR

[www.ct.gov/dph/publicdrinkingwater](http://www.ct.gov/dph/publicdrinkingwater)



Dr. Jewel Mullen  
Commissioner

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# Overview TCR & GWR

STATE OF CONNECTICUT DEPARTMENT OF PUBLIC HEALTH  
DRINKING WATER SECTION

## WHAT TO DO IF COLIFORM BACTERIA ARE DETECTED IN A PWS

### Purpose:

To provide public water systems (PWS) with a procedure to follow when Total Coliform Rule (TCR) or Ground Water Rule (GWR) sample results indicate the presence of total coliform bacteria, E. coli or other fecal indicators.

### References:

Section 19-13-B102 of the Regulations of Connecticut State Agencies (RCSA)  
Code of Federal Regulations (CFR) Section 141.402

### TCR Maximum Contaminant Level (MCL) Compliance:

The results of all routine and repeat samples not invalidated by the Drinking Water Section (DWS) shall be included in determining compliance with the MCL for total coliforms. The three criteria for invalidation of a total coliform positive sample by the Department are outlined in Section 19-13-B102(e)(7)(F) of the RCSA. Requests for invalidation of positive samples must be in writing.

### Non-acute TCR MCL violation:

- For a PWS which collects fewer than 40 samples per month, if more than one sample collected during a month is total coliform positive, the PWS is in violation of the MCL for total coliforms.
- For a PWS which collects at least 40 samples per month, if more than 5 percent of the samples collected during a month are total coliform positive, the PWS is in violation of the MCL for total coliforms.

### TCR MCL Violation Examples:

- For a PWS which normally collects one routine TCR sample per month or quarter, if that routine sample is total coliform positive AND any repeat sample is also total coliform positive, the PWS is in violation of the MCL for total coliforms.
- For a PWS which collects more than one routine TCR sample per month or quarter but fewer than 40 samples per month, if more than one routine sample or any repeat sample is total coliform positive, the PWS is in violation of the MCL for total coliforms.
- If a PWS collects 50 samples per month and any combination of 3 or more routine or repeat samples are total coliform positive, the PWS is in violation of the MCL for total coliforms.

### Acute (fecal coliforms or E. coli) TCR MCL violation:

- A PWS has an acute MCL violation for total coliforms if **ANY** repeat sample is fecal coliform or E. coli positive **OR** if a routine original fecal coliform or E. coli positive sample is followed by a total coliform positive repeat sample.

- Provides procedures for TCR and GWR compliance monitoring with TC / E. Coli positive samples.  
\*addressing both TCR RP monitoring and GWR triggered monitoring
- Discusses monitoring requirements.
- Discusses notification requirements.

# Overview TCR & GWR

## Non-acute TCR MCL Violation determination (TC+ only):

- PWS collects less than 40 samples per month: If more than 1 sample during the monitoring period is Total Coliform (TC) positive (+) = TC MCL Viol.

✓ EX: Original RT sample TC+, **AND**,  
Any RP sample is also TC+ = TC MCL Viol.

- PWS collects at least 40 samples per month: If more than 5% of samples collected during the month are TC+ = TC MCL violation.

✓ EX: PWS collects 50 samples per month,  
any combination of 3 or more RT or RP  
samples are TC+ ( $3/50 \times 100 = 6\%$ ) = TC MCL Viol.



# Overview TCR & GWR

## Acute TCR MCL Violation determination (w/ E.Coli+):

- A PWS has an **Acute MCL** violation for TC
- ✓ If **any** RP sample is E. coli/fecal coliform+; **OR**,
- ✓ If a routine original E. coli/fecal coliform+ sample is followed by at least a TC+ repeat sample.
  
- Follows the same principals of the previous slide, dependent on # of samples collected.

# Overview TCR & GWR

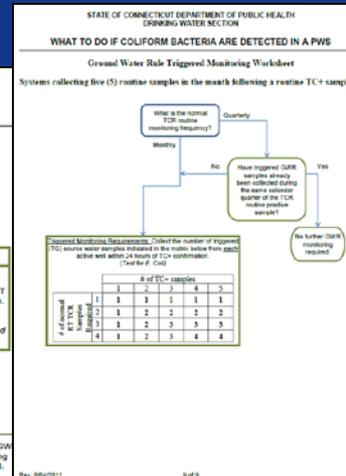
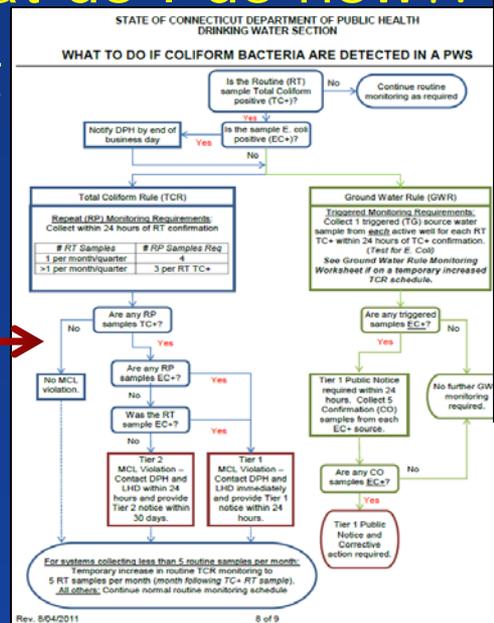
## GWR Triggered Source Water E.Coli+ samples:

- **Any** E.coli+ triggered GW source sample requires:
  - ✓ Tier 1 PN within 24 hours of notification; and,
  - ✓ 5 Confirmation (CO) samples within 24 hours of notification (unless DWS requires immediate corrective action)
- If any of the 5 CO samples are E. Coli+,
  - ✓ Additional PN to be posted within 24 hours; and,
  - ✓ A 120 day compliance period for Corrective Action goes into effect. Consultation with the DWS is necessary.

# Overview TCR & GWR

## I have a TC+, what do I do now?:

- Refer to guidance document



- For a PWS collecting 1 sample per monitoring period: \*Routine (RT) sample is TC+, E. Coli-
- ✓ Must collect 4 Repeat (RP) Distribution samples within 24 hours!
- ✓ Must also collect GWR Triggered (TG) source samples at each well within 24 hours!

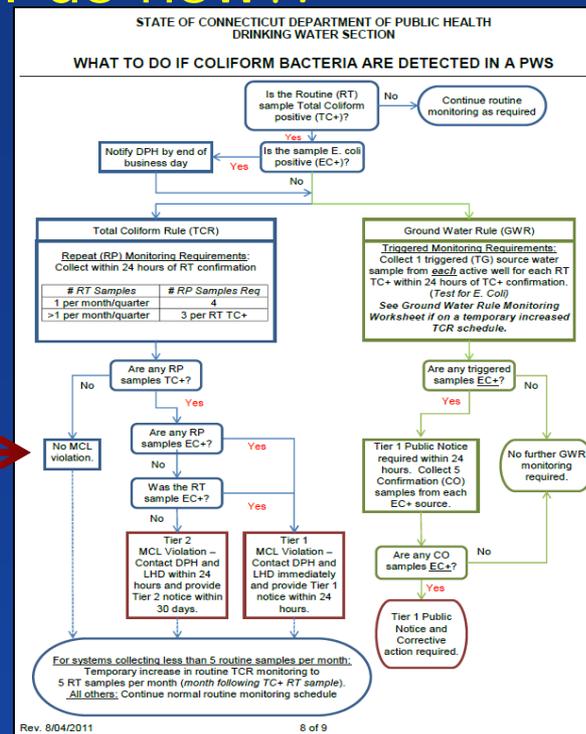
# Overview TCR & GWR

## I have a TC+, what do I do now?:

- Refer to guidance document

- For a PWS collecting MORE than 1 sample per monitoring period:

- ✓ Must collect 3 RP samples for each original TC+ sample within 24 hours!
- ✓ Must collect GWR Triggered (TG) source samples at each well for each TC+ RT sample within 24 hours!





# Overview TCR & GWR

I have a TC+, what do I do now? (Repeat Notes):

- Repeat (RP) samples must be collected from:
  - ✓ **Original** sample location;
  - ✓ **Upstream** of the original sample location; and,
  - ✓ **Downstream** of the original sample location.
- ✓ If required to collect 4 samples (PWS' collecting 1 RT per monitoring period), the 4<sup>th</sup> location is considered **Other** and can be collected as such from an appropriate location.

# Overview TCR & GWR

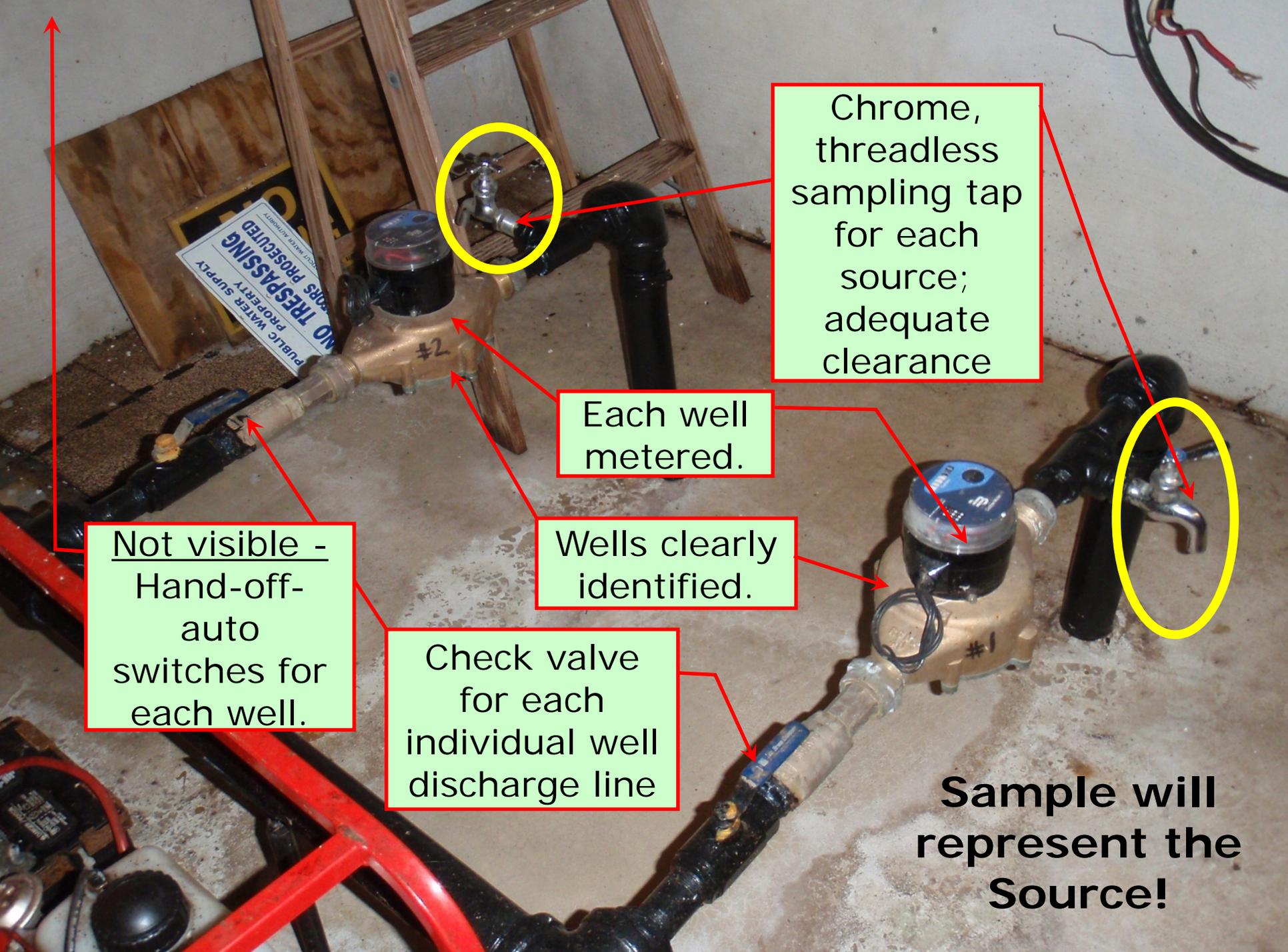
I have a TC+, what do I do now? (GWR Notes):

- GWR monitoring exemptions may apply if a:
  - ✓ PWS has DWS approved 4-log disinfection; or,
  - ✓ PWS has a DWS approved triggered source water monitoring plan.
- Triggered source water samples must be collected from each active source of supply “in use” at the time each positive routine TCR sample was collected. Where water from a source of supply is, or *could be*, at the monitoring site at the time of TCR sample collection.

# Overview TCR & GWR

Continuing On Example: If that original triggered source water sample is E. Coli+:

- 5 Confirmation (CO) source water samples must be collected and analyzed for E. coli within 24 hours for each E. Coli+ well.
  - \* If a source sample is TC+ with no E. coli, no additional monitoring required at the well.
- **Do NOT disinfect until you are sure that no additional monitoring will be required!**
- In order to comply with the triggered source water monitoring requirements of the GWR, each groundwater source of supply will be required to have a dedicated raw sample tap installed prior to storage or treatment.



Chrome, threadless sampling tap for each source; adequate clearance

Each well metered.

Wells clearly identified.

Not visible - Hand-off-auto switches for each well.

Check valve for each individual well discharge line

**Sample will represent the Source!**



# Overview TCR & GWR

## Notification Requirements to the **DWS**:

- **TCR (Non-Acute)**: Notify DWS of a confirmed TCR Non-Acute Violation as soon as practical, but within 24 hours of learning of the violation.
- **TCR (Acute E. Coli+)**: Notify DWS **and** LHD as soon as practical but no later than 24 hours after the PWS learns of the acute TCR MCL violation.
- **GWR**: Notify DWS of any E. Coli+ result at a groundwater source (both initial and confirmation samples) within 24 hours.

# Overview TCR & GWR

## Notification Requirements to the **Public** (PN):

- **TCR (Non-Acute)**: Notify consumers as soon as practical but no later than 30 days after the PWS learns of the violation. Consult with DWS for PN. (*RCSA Section 19-13-B102(i)(2)(A)*)
- **TCR (Acute E. Coli+)**: Notify customers as soon as practical but no later than **24 hours** after the PWS learns of the violation. Consult with DWS for PN. (*RCSA Section 19-13-B102(i)(1)(A)*)
- **GWR**: Notify customers as soon as practical but no later than 24 hours after the PWS learns of ANY triggered E. Coli+ sample result. Consult with DWS for PN. (*RCSA Section 19-13-B102(i)(1)(A)*)

# Overview TCR & GWR

## GWR Notification Requirements:

- Consecutive PWS': Note that there are additional notification requirements for consecutive / wholesale systems for TC+ & E. Coli+ results both under TCR in distribution and under GWR in raw source water samples.
- If a sample is E.coli+ the wholesale groundwater PWS must notify all consecutive systems served by that GW source of the E.coli+ sample within 24 hours of being notified of the groundwater source sample monitoring result.

# Example of Triggered Monitoring, TCR and GWR monitoring:

- A PWS is required to collect **4 Routine (RT) TC samples/month**. The PWS has **3 active GW sources**.
- Nov. 1, they collect RT - TCR samples at distribution locations A, B, C and D. \*Locations A, C & D are confirmed TC+ & E. Coli-. Sample B is clean.
- **Within 24 hrs. this PWS must now collect;**
  - ✓ Under TCR, 3 RP samples for each TC+ location
    - Total of 9 RP samples from *Distribution*; and,
  - ✓ Under GWR, 1 Triggered GW sample for **each** TC+ sample at **each** well (*raw well* locations) ...
    - 3 samples at EACH GW source = 9 GWR samples.

# Example of Triggered Monitoring, TCR and GWR monitoring (#2):

- A PWS collects: **1 RT TC sample/ quarter**.  
They have 1 active GW source.
- ✓ September: PWS has a RT TC+ sample, which triggers GWR sample collection in Sept, it is E. Coli-.
- October: **Temporarily Increase** TCR monitoring to: **5 RT samples** for the month of October.
- October: 3 of the 5 RT-TCR samples are TC+. 3 Distribution RP samples are required for each TC+ sample (total of 9 Dist RPs) ... *\*However, only 1 set of Triggered GW monitoring is required, when Temporarily Increased, revert back to PWS' ROUTINE schedule (ONLY when monitoring schedule is Temporarily Increased). ☆ **When in doubt – Call DWS!***

# Overview TCR & GWR

## Additional Monitoring Requirements:

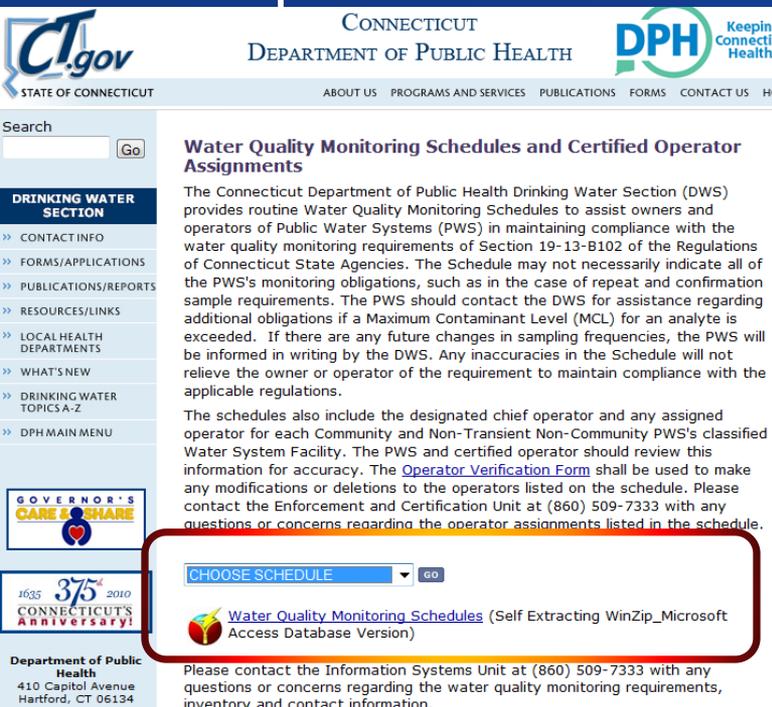
- RCSA Section 19-13-B102(7)(K)(iii)  
(WHO CAN COLLECT COMPLIANCE WATER SAMPLES?)

“Water samples shall be collected by technical personnel employed by an environmental laboratory approved by the department under section 25-40 of the Connecticut General Statutes, or a certified distribution system operator, or a certified treatment plant operator, or a sanitarian, or an employee of the department, or a person under the direct supervision of either a certified laboratory, a certified distribution system operator or a certified treatment plant operator.”

# Overview TCR & GWR

## Reminders:

- DWS maintains water quality testing schedules for each PWS, which details:
  - ✓ water quality monitoring requirements;
  - ✓ reporting requirements (frequency, due date);
  - ✓ public notification requirements.



The screenshot shows the website for the Connecticut Department of Public Health. The page title is "Water Quality Monitoring Schedules and Certified Operator Assignments". The content includes a search bar, a navigation menu with "DRINKING WATER SECTION" selected, and a main text area. A red box highlights a dropdown menu labeled "CHOOSE SCHEDULE" with a "GO" button next to it. Below the dropdown is a link for "Water Quality Monitoring Schedules (Self Extracting WinZip\_Microsoft Access Database Version)".

Schedules are available at:

[www.ct.gov/dph/publicdrinkingwater](http://www.ct.gov/dph/publicdrinkingwater)

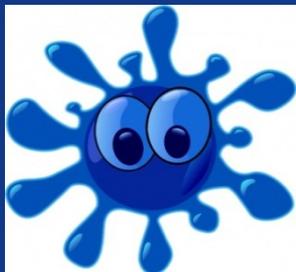
# Overview TCR & GWR

## Additional Reporting Requirements:

- Reminder: All compliance monitoring must be submitted to DWS electronically through EDI.
- Note: Water quality monitoring schedules and violation letters can only be updated as quickly as water quality monitoring results are electronically submitted to the DWS.
  - ✓ Strongly encouraged to have positive (TC+ / E. Coli+) results electronically submitted to the DWS as soon as possible so that monitoring schedules and violation letters can be generated in a timely fashion.

# THANK YOU ...

## Have a great afternoon!



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