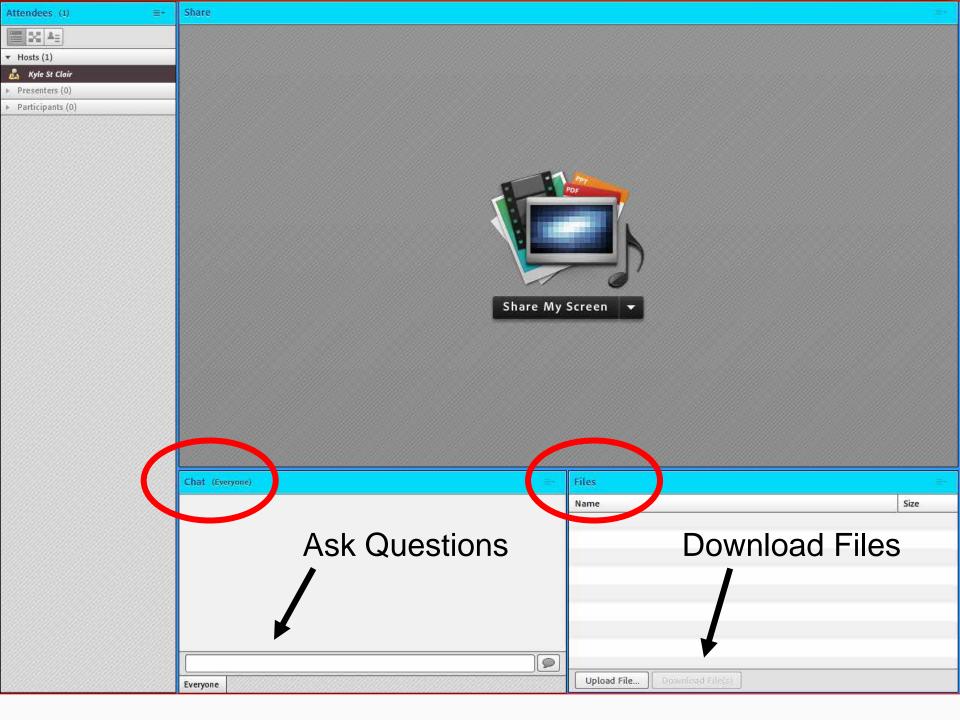
### Revised Total Coliform Rule, Ground Water Rule, Nitrate Rule and Chlorine Residuals for Region 8 Laboratories

Webinar June 6, 2018





#### Agenda

- Relationship between EPA and Labs
- Sending Results to EPA
- Analytical Report Information
- Nitrate Rule
- Revised Total Coliform Rule
- Chlorine Residuals
- Ground Water Rule Triggered Sampling
- Questions



### Disclaimer

This webinar will provide information that ONLY applies to the following National Primary Drinking Water Regulations:

Revised Total Coliform Rule (RTCR), Ground Water Rule (GWR), Nitrate Rule and Chlorine Residuals



#### Relationship between EPA and Labs

- EPA regulates the water systems.
- EPA does not regulate laboratories.
- EPA certifies states and labs to be approved to analyze certain contaminants.
- If there is a problem with the information getting from the lab to EPA the water system will get a violation, not the lab a unhappy customers!
- Chain of Custody
- Transferring information from the chain of custody to the lab slip
- Revising analytical reports



### Relationship between EPA and Labs

- When a laboratory is responsible, either by contract or State policy, to report sample results which would indicate a system is out of compliance, the laboratory must promptly notify the proper authority so that the authority can request the water utility to resample from the same sampling location(s) immediately.
- For the RTCR and GWR, laboratories must promptly notify the proper authority of a positive total coliform, fecal coliform, or *E. coli* result, so that appropriate follow-up actions (e.g., collection of repeat samples) can be conducted.



### **Sending Results to EPA**

- It is ultimately the PWSs responsibility to make sure EPA gets lab results.
- Some labs offer a service to send EPA results on behalf of the PWS. If the result is late, the PWS gets the violation.
- Three ways for EPA to receive sample results:
  - Email to: <u>R8DWU@epa.gov</u>
  - Fax to: 877-876-9101
  - Paper mail to: RTCR Manager, 8WD-SDA
     1595 Wynkoop Street
     Denver, CO 80202



#### **Emailing Lab Results to EPA**

#### **R8DWU E-mail Rules:**

- 1. Include the PWS ID# in the subject line of the e-mail.
- Include the correct keyword or abbreviation for the documentation being submitted in the subject line of the e-mail (see the table on the next slide).
- 3. More than one type of documentation can be submitted in the same e-mail as long as the subject line of the e-mail contains the correct keyword or abbreviation for each type of document being submitted. Each keyword should be separated by a comma. For example, if an e-mail contains both nitrates and total coliform, results; the e-mail subject could be: "WY5600000 NIT, RTCR".

#### 4. Do not copy any EPA staff on the e-mail.



#### **R8DWU Documentation Keyword List**

	<i>,</i>		
Type of Documentation	Required Keywords Example E-mail Subject	E-mail Subject	
Nitrate or Nitrite Results	"Nitrate" or "Nitrite" or "NO3" or "NO2" or "N03" or "N-N"	WY5600000 NIT	
Revised Total Coliform Rule (RTCR) Results - Tribal	"Tribal BACT" or "Tribal BAC-T" or "BACT 08" or "Tribal RTCR" or "RTCR 08"	BACT 083890000 or RTCR 084690000	
Revised Total Coliform Rule (RTCR) Results - Wyoming	"Wyoming BACT" or "WY BACT" or "WY RTCR" or "RTCR WY"	WY5600000 WY BACT	
Ground Water Rule (GWR) Triggered Results - Wyoming or Tribal	"GWR TG Wyoming BACT" or "GWR TG WY BACT" or "WY TG GWR" or "TG GWR WY"	WY5600000 WY GWR TG	

Information about how to send data for all the other EPA drinking water regulations is found at: https://www.epa.gov/region8-waterops/how-submit-sample-results-r8dwu



### **Analytical Report**

- PWS ID
- PWS Name
- Sample Collection Time & Date
- Lab Received Time & Date
- Analysis Begin Time & Date
- Sample Location
- Analytical Results

- Sample ID
- Method Detection Limit
- Sample Type for RTCR and GWR (Routine, Repeat, Special, Triggered)
- Sample Type for Nitrate (confirmation sample)
- Chlorine Residual
- Analytical Technique/Method Used
- Notes

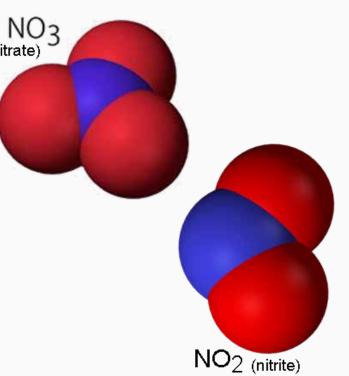


# NITRATE, NITRITE AND TOTAL NITRATE + NITRITE



#### Nitrate and Nitrite Rule

- PWSs are required to sample annually at minimum for nitrate (nitrate)
   (1040 or 1038).
- New source or new PWS sampling is required for nitrate (1040) and nitrite (1041) separately.
- Please instruct the water system on how to sample properly (preservatives or not).



- All regulated public water systems receive a list of analytes they are required to sample for each year in February.
- Let the water system and EPA know if they have a maximum contaminant level (MCL) for nitrate which is >10 mg/L.
- All systems at minimum sample for Total Coliform and Nitrate (others may apply).
- Increased analysis at the end of monitoring period.

#### Monitoring and Reporting Requirements for the Calendar Year 2018

#### **Forever Snowy NF**

#### **PWS ID # WY5600000 (NC/GW)**

The facility codes and sample point codes listed with the sampling directions below MUST be used in the chain of custody or lab slip submitted to a lab with the water sample. Optionally, operators may also use the Chemrad Sample Collection Form in the Drinking Water Watch (DWW).

The requirements presented here are based on EPA's current information and sampling results received as of the date of this notice. We advise you to compare this information with data from your own files and contact the appropriate EPA rule manager for corrections or clarification if needed

#### Revised Total Coliform (RTCR)

Take one Routine sample each month that you are open. Our current schedule says that you are open to the public during June, July, August and September. Please let us know if your schedule is not correct by going to

https://www.epa.gov/region8-waterops/pws-seasonal-operational-change-form and fill out a Seasonal Change Form and submit it to EPA as soon as possible.

Take all samples throughout the distribution system following your Sample Siting Plan. Please take your samples on a Monday or Tuesday at the beginning of each month in case you need to collect Repeat samples. If you have a positive Routine sample be sure to consult: https://www.epa.gov/region8-waterops/emergenciesand-security-follow-unsafe-total-coliform-rule-positive-sample for instructions on further sampling and notification requirements. If any sample results are E. coli positive, you must contact EPA the same day that you receive the sample results. Please use the RTCR Lab Sample Form in addition to your lab's chain of custody when you submit sample results. The RTCR lab form is found at https://www.epa.gov/region8-waterops/reporting-forms-and-instructions-reportingforms#rtcr.

BEFORE serving water to the public you must complete and certify a Seasonal Startup Checklist and submit it to EPA. The checklist can be found at https://www.epa.gov/region8-waterops/revised-total-coliform-rule-seasonal-startupchecklist. The sample collected for the Startup must be marked Special and cannot be used for compliance. Failure to complete the Startup Checklist prior to serving water may result in a violation. If you complete the Checklist the same month you serve water to the public you will need to conduct 2 rounds of monitoring, one for Special samples and the other for Routine samples. Only the Routine sample(s) will be used for compliance. For help on labeling samples for RTCR or GWR please go to https://www.epa.gov/region8-waterops/rtcr-and-gwrsample-labeling-instructions.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
DIST	Location description from Sample Plan	DIST	DISTRIBUTION SYSTEM

#### Ground Water Rule

Within 24 hours of being notified of a routine Revised Total Coliform Rule (RTCR) positive (TC+) sample, you must sample for the presence of E. coli at ALL ground water sources in use at the time of the original TC+. Collect one source sample for every routine RTCR positive sample. Utilize the Triggered Groundwater Source Sampling Form found at the following website:

https://www.epa.gov/region8-waterops/wyoming-and-tribal-triggered-groundwatersource-sampling-form. On the form you must write the correct Sample Point Code (ex: GWR WL01), which can be found below, and mark the sample as 'Triggered'.

This sampling is in addition to your RTCR repeat samples

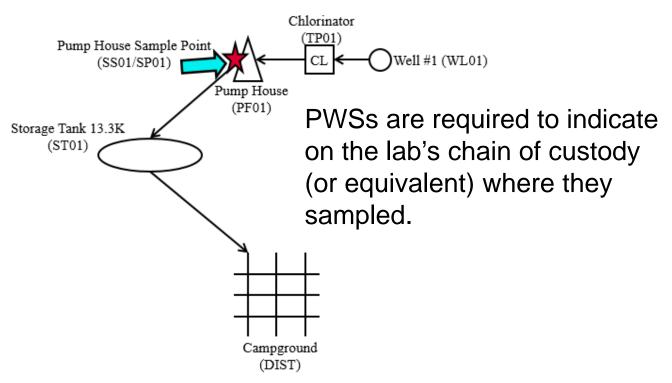
Nitrate (NO3)	You are required to monitor annually for nitrates. Collect a sample between			
WL01	WELL#1	GWR WL01	TRIGGERED GWR SOURCE	
FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION	
	This sampling is in addition to your trior repeat samples.			

January 1 and December 31, 2018 at the entry point(s) to the distribution system shown on the system schematic and as listed below.

If any sample result exceeds 10.4 mg/L, you MUST collect a confirmation sample within 24 hours of receiving the results and you should consult with the EPA as soon as possible. Failure to complete follow-up actions may result in monitoring

	violations and chadingerine	int of public ficular.	
FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
\$\$01	DUMP HOUSE SAMPLE POINT	SP01	DUMP HOUSE SAMPLE POINT

#### Forever Snowy National Forest PWS ID # WY5600000 GW/NC



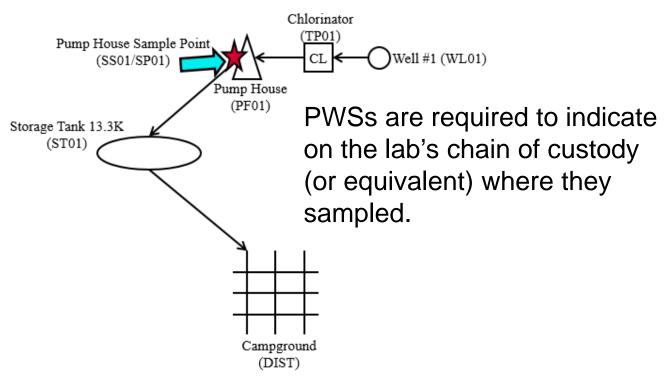
Nitrate: SP01 – Pump House Sample Point

Bacteria: Restroom Sink - DIST

Sample Points (SP) shown on the schematic are <u>ONLY</u> for Nitrates, RADs, IOCs, SOCs, and VOCs. If you sample for other contaminants, please refer to your individual Site Sampling or Monitoring Plans.

Agreed to by:	
Date:	

#### Forever Snowy National Forest PWS ID # WY5600000 GW/NC



Nitrate: SP01 – Restroom Sink Bacteria: Restroom Sink – DIST

Sample Points (SP) shown on the schematic are <u>ONLY</u> for Nitrates, RADs, IOCs, SOCs, and VOCs. If you sample for other contaminants, please refer to your individual Site Sampling or Monitoring Plans.

Agreed to by:	
Date:	



### REVISED TOTAL COLIFORM RULE



### **Total Coliform Monitoring**

- ALL EPA Region 8 public water systems are required to monitor for total coliform monthly.
- If a sample result is TC+ it MUST be analyzed for E. coli too (or the PWS will get a violation).
- When a system that disinfects collects a total coliform sample they must also measure their chlorine residual in the field and report it.
- The Code of Federal Regulations lists acceptable EPA methods for total coliform and *E. coli* analysis.



### **Sample Holding Time**

- The time from sample collection to initiation of test medium incubation may not exceed 30 hours.
   Systems are encouraged but not required to hold samples below 10 deg. C during transit.
   40 CFR 141.852(a)(3)
- When EPA gets an analytical report that says a sample was not tested and a reason is listed, EPA assumes the lab contacted the PWS to notify them of the need to collect another routine sample. If another sample is not collected within the monitoring period, the PWS will get a monitoring violation.



### **CHAIN OF CUSTODY**



#### **RTCR Sample Types**

- Routine Compliance Sample
- Repeat Compliance Sample
- Special NON Compliance Sample

### **GWR Sample Type**

• Triggered GWR (source) - Compliance Sample

#### WY and Tribal Revised Total Coliform Rule (RTCR) LABORATORY SAMPLE FORM

Sampler(s) Section (For field sampler use only):

Reminder: Collect RTCR samples every month. If you have a total coliform positive or an E. Coli-positive, you must collect three (3) REPEAT samples according to your Sample Siting Plan. For each positive ROUTINE sample, you must collect REPEAT samples from:

1) the same site as the positive ROUTINE sample, 2) a REPEAT sample from a site within 5 taps upstream from the positive sample, and

3) a REPEAT sample from a site within 5 taps downstream of the positive sample. You must also collect a ground water source sample from any wells or springs in use at the time the positive ROUTINE sample was collected. This is the triggered GWR sample. Write the correct Sample Point Code on the form below (e.g., DIST), which may be found in the yearly Monitoring and Reporting Requirements and the address where the sample was taken. Chlorine Residuals are required on routine and repeat samples.

You cannot use RTCR samples as a GWR source sample, or vice versa.

Public Water System (PWS) Name:					Sampler's Name:				
PWS Identification Number (PWSID):					Cell Phone Number:				
PWS Street Address:				City:	y: State: Zāg		Zip Code:		
Comments:									
Sample Collection  Sample Point Address  (circle or Total or Free  (Found on your Sample Siting Plan.)			(circle one) Total or Free	nal ROUTINE - First set of required samples collected during a month.  REPEATS - samples required AFTER any routine sample is positive SPECIAL - Is a non-compliance sample that may be collected, for example, to determine if disinfection is adequate after pipe replacem or repair or to find a source of contamination. It is also used for the Seasonal Startup Checklist required sampling and daily sampling					
Date	Time		4		mg/L	required by an I determine comp	mergenc liance wi	y Administrative Or th the maximum co	rder. It cannot be used ntaminant level.
						□ Routin	ne .	□ Repeat	□ Specia
						□ Routir	ne .	□ Repeat	□ Specia
						□ Routin	ne .	□ Repeat	□ Specia
						□ Routin	ne .	□ Repeat	□ Specia
sampler(s) na	une (Print):	•			Sampler(s) :	iguature:	•		Date signed:
		(For labor							
aboratory N	ame:		Laboratory	Phone Numbe	r:		Date/Tr	ime Sample Receiv	ed:
Lab Specimen ID	Sample Location	Analytical Method Used	Total Coliform P/A/NA			alysis Start Analysis Complete Time Date Time		Comments	
$\overline{}$									
Samments & a	chlorine mi	dual present over	r 30 hour holdie	ng (ime)					
Comments: (c.g	, chlorine resi	dual present, ove	r 30 hour holdin	ng time)					

Send Copies of Completed Forms to: EPA Region 8 Revised Total Coliform Rule Manager

Fax: 1-877-876-9101

Email: r8dwu@epa.gov

10/12/2017

### WY and Tribal Revised Total Coliform Rule (RTCR) LABORATORY SAMPLE FORM

Sampler(s) Section (For field sampler use only):

REPEAT samples according to your Sample Siting Plan. For each positive ROUTINE sample, you must collect REPEAT samples from:

1) the same site as the positive ROUTINE sample, 2) a REPEAT sample from a site within 5 taps upstream from the positive sample, and

3) a REPEAT sample from a site within 5 taps downstream of the positive sample. You must also collect a ground water source sample from any wells or springs in use at the time the positive ROUTINE sample was collected. This is the triggered GWR sample. Write the correct Sample Point Code on the form below (e.g., DIST), which may be found in the yearly Monitoring and Reporting Requirements and the address where the sample was taken. Chlorine Residuals are required on routine and repeat samples.

You cannot use RTCR samples as a GWR source sample, or vice versa.

Public Water System (PWS) Name:				Sampler's Name:		
PWS Identification Number (PWSID):				Cell Phone Number:		
PWS Street Address:		City:	State:		Zip Code:	
Comments:					<b>'</b>	
Sample Collection  Sample Point Address  (Found on your Sample Siting Plan.)  Date Time		Chlorine Residual (circle one) Total or Free mg/L	RTCR Sample Type - Check One ROUTINE - First set of required samples collected during a month REPEATS - samples required AFTER any routine sample is positi SPECIAL - Is a non-compliance sample that may be collected, for example, to determine if disinfection is adequate after pipe replacen or repair or to total a source of contamination. It is also used for the Seasonal Checklist required sampling and daily sampling required to Emergency Administrative Order. It cannot be used to compliance with the maximum contaminant level.		ed during a month.  ne sample is positive.  y be collected, for  after pipe replacement  s also used for the  daily sampling  It cannot be used to	
				Routine	Repeat	☐ Special
				□ Routine	Repeat	☐ Special
				□ Routine	Repeat	☐ Special
				Routine	Repeat	☐ Special
Sampler(s) 1	name (Print):		Sampler(s)	signature:		Date signed:



### **TOTAL COLIFORM POSITIVE**



#### STEPS TO TAKE AFTER A <u>ROUTINE</u> POSITIVE/UNSAFE TC+ TOTAL COLIFORM SAMPLE

- 1) Within 24 hours of notification of the *routine* TC+ sample result:
  - -Notify EPA of your TC+ by calling 1-800-227-8917, and ask to speak to the RTCR Manager.
  - –Collect <u>three</u> (3) <u>REPEAT</u> samples in the distribution system for <u>each</u> positive sample; use your regular lab form along with the <u>RTCR Lab Sample</u> form, and mark the samples as RTCR REPEATS.
- 2) Collect your GWR source samples if you use a groundwater (e.g., well or spring) source.

<u>REMEMBER</u>: Anytime you have an *E. coli* positive (EC+) sample, call EPA IMMEDIATELY at 1-800-227-8917 and ask to speak to the RTCR Manager. See the last section of this guidance for EC+ information.

For help labelling samples: <a href="https://www.epa.gov/region8-waterops/revised-total-coliform-rule">https://www.epa.gov/region8-waterops/revised-total-coliform-rule</a>.



### Is there more than one *ROUTINE* sample that is positive? *or*After a TC+/EC- Routine sample:

Are any of the three (3) REPEAT samples positive? *or* Did you fail to collect all three (3) repeat samples?

N O

Conduct ROUTINE sampling the following month.



- You will need to complete a Level 1
   Assessment\* and submit it to the
   EPA R8 Office within 30 days.
- Conduct ROUTINE sampling the following month.

<sup>\*</sup> If you have already triggered a Level 1 Assessment within the last 12 months you will need to complete a Level 2 Assessment.



#### E. coli MCL violation

Routine	Repeat
TC+ & EC-	E. coli-positive (EC+)
TC+ & EC-	TC+ but not analyzed for EC
TC+ & EC+	TC+
TC+ & EC+	One or more samples is missing



#### **Hand Pumps & TC+**

- Collect 4 samples, in succession, from the hand pump, in 4 different bottles.
- Label 3 bottles as repeat and one as the source (TG GWR) sample.



### **CHLORINE RESIDUALS**



All Community and Non-Transient
 Non-Community Water Systems
 adding chlorine disinfection
 must measure a chlorine residual
 at same time and location
 as Total Coliform Samples.

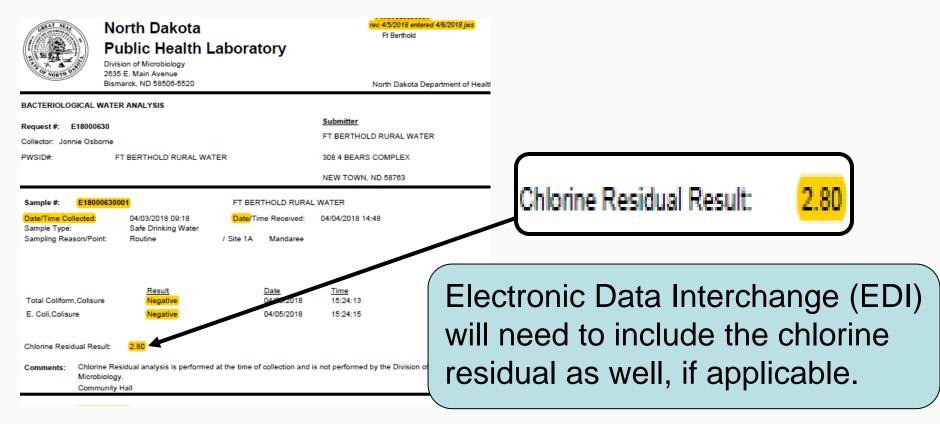
 Transient or non-chlorinating systems <u>do not have to report</u> a residual. Lab may ask:

How would I know if it is supposed to be there?

Operators must measure it in the field and tell you.

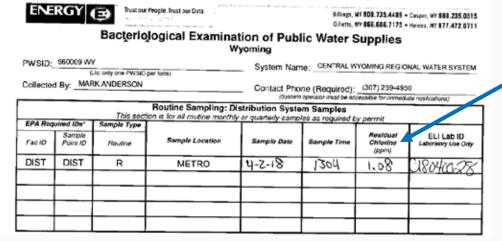


#### Chlorine Residuals – What does EPA need?





#### Chlorine Residuals – How to get it?

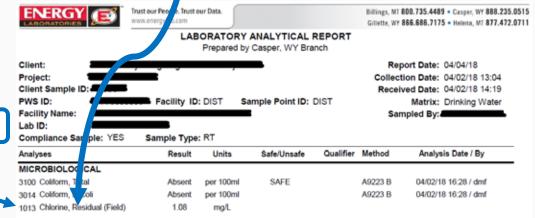


Residual Chlorine (ppm)

Chain of Custody or lab slip

#### **Analytical Report**

1013 Chlorine, Residual (Field) 1.08 mg/L





#### Chlorine Residuals - Responsibility

- Water Systems are responsible for measuring
- Water Systems must show the chain of custody or lab slip to demonstrate same time and location of Total Coliform Sample
- Labs can help their clients avoid extra work



### **GROUND WATER RULE**



### **Triggered Monitoring under the GWR**

- Triggered monitoring samples:
  - Collected and analyzed after <u>routine</u> Revised Total Coliform Rule (RTCR) TC+ or EC+ results at groundwater systems using wells or springs for source water.
  - Purpose is to determine if the groundwater source is origin of coliform contamination.
  - Collected at same time as the repeat RTCR samples.
  - Must be collected from well(s) or spring(s) in use at time of the routine RTCR TC+ or EC+.
  - Must be collected from well(s) or spring(s) BEFORE any treatment (including chlorination).



#### **Triggered Monitoring under the GWR**

#### Actions to be taken by drinking water system:

- Within 24 hours of being notified of routine RTCR positive TC+ and/or EC+ sample, the system must sample for total coliform and *E. coli* at <u>ALL groundwater sources in use at time of the original routine TC+.</u>
- Collect one source sample for every routine RTCR positive sample (e.g. if 3 routine TC+ samples, system will need to take one sample from each water source being used = 3 samples total).
- If groundwater sources combine before treatment, system may take a combined source sample, but must mark as "combined", and the sources that are being combined (ex: WL01 and WL02) on the chain of custody form.
- Wholesaler systems using well(s) or spring(s) as source water must be notified of the routine TC+ or EC+ at one of their consecutive systems, and collect the triggered monitoring samples.



### **Triggered Monitoring under the GWR**

#### Laboratory considerations:

- On the chain of custody form, system should indicate that the well or spring sample(s) taken after the routine RTCR TC+ or EC+ is for triggered monitoring (TG).
- System should use the sample point code located on their system schematic or annual <u>Monitoring and Reporting</u> <u>Requirements</u> list (ex: Well #1=WL01, Spring #2=SPR02, etc.) to label their triggered monitoring sample.
- Laboratory can use their regular analysis reporting form and/or the EPA Region 8 <u>Triggered Groundwater Source Sampling</u> <u>Form</u> to report the triggered monitoring sample results.

#### TRIGGERED GROUNDWATER SOURCE SAMPLING FORM

Sampler(s) Section (For field sampler use only) Reminder: Collect GWR source samples anytime you have a routine RTCR positive result. Collect the same number of samples from each active groundwater source as the number of routine TC+ results received (e.g., if you have two routine TC+ results, you will need to collect two source water samples from each active groundwater source). Write the correct Sample Point Code on the form below (e.g. GWR WL), which may be found in the yearly Monitoring and Reporting Requirements document sent to all systems. The GWR source samples are in addition to your RTCR repeat samples. You cannot use RTCR samples as a GWR source sample, or vice versa. Public Water System (PWS) Name: Sampler's Name: PWS Identification Number (PWSID): Cell Phone Number: PWS Street Address: City: State: Zip Code: Comments: (List sources that were inactive or any other information regarding why all groundwater sources were not sampled) Sample Collection Sample Point Code Groundwater Sample Type- Check One Triggered - 1st source sample(s) after being notified of a routine RTCR positive (Found in the yearly Monitoring and Additional Routines - Required 5 source samples after a GWR EC+ routine result Reporting Requirements document Replacement- If a sample wasn't analyzed previously (e.g. over holding time) in the GWR section.) Date Time Triggered Additional Following EC+ Replacement Additional Following EC+ Triggered Replacement Triggered Additional Following EC+ Replacement Triggered Additional Following EC+ Replacement Additional Following EC+ Triggered Replacement Sampler(s) name (Print): Sampler(s) signature: Date signed: Laboratory Section (For laboratory use only): Laboratory Name: Date/Time Sample Received: Laboratory Phone Number: Lab Specimen ID Sample Analytical Total E. coli Analysis Start Analysis Comments Location Method Coliform Complete Used P/A/NA P/A/NA Date Time Date Time Comments: (e.g. chlorine residual present, over 30 hour holding time)

Date:

3/5/2024

Analyst(s) Name:



### Requirements for Ground Water Rule Triggered EC+

- An EC+ in Ground Water requires collection of 5 additional EC samples for each well or spring in use when the first EC+ was taken.
- If any of the 5 results are EC+ a Corrective Action Plan, Consulting, and Correction is required.



## Compliance Monitoring Data Portal (CMDP)

- What is CMDP?
  - **ü** A change in submitting sample results to drinking water primacy agencies from paper to electronic.
- CMDP is CROMERR compliant!
  - **ü** CROMERR: CROss-Media Electronic Reporting Rule
  - **ü** This is the federal legal framework for electronic reporting.
- What does that mean to you?
  - **ü** Electronic reporting that meets federal law requirements.



#### **EPA Resources**

EPA Region 8 Drinking Water Website (Water Ops)

https://www.epa.gov/region8-waterops

EPA Region 8 Reporting Forms (all Regulations)

https://www.epa.gov/region8-waterops/reporting-forms-drinking-water-systems-wyoming-and-tribal-lands-epa-region-8

#### GWR Chain of Custody

https://www.epa.gov/region8-waterops/wyoming-and-tribal-triggered-groundwater-source-sampling-form

#### RTCR Chain of Custody

https://www.epa.gov/region8-waterops/revised-total-coliform-rule-lab-sampling-form





#### **QUESTIONS?**

Revised Total Coliform Rule (RTCR) Manager
Jamie Harris, Harris.jamie@epa.gov 303-312-6072

Ground Water Rule (GWR) Manager
Matt Langenfeld, Langenfeld.Matthew@epa.gov,
303-312-6284

#### **Nitrate Rule Manager**

Bailey Smith, Smith.Bailey@epa.gov, 303-312-6940

#### **Chlorine Residuals**

Seth Tourney, Tourney.Seth@epa.gov, 303-312-6579

Compliance Monitoring Data Portal (CMDP) Shirley Mlachak, Mlachak.Shirley@epa.gov, 303-312-6061