



Revised Total Coliform Rule for Transient Systems



Wyoming Association of Rural Water Systems (WARWS) Pre-Conference
Casper, WY
April 18, 2023



Agenda

- Monthly Monitoring
 - Monitoring & Reporting Requirements
 - Drinking Water Watch
 - Sample Siting Plans
 - Chain of Custody
 - How to Sample
 - What to do if result TC+
 - Seasonal Startup Checklist
 - Assessments
- 



Monthly Monitoring

- ▶ **ALL** Public Water Systems are required to monitor for total coliform monthly and make sure EPA has sample results by the 10th of the following month.
- ▶ A sample is due in April, the April sample must be received by EPA by close of business May 10.
- ▶ An April sample cannot be collect March 31 or May 1, it must be collected in the calendar month of April.



Triggered Source Sample(s)

- ▶ A source sample, often called the Triggered Ground Water Rule sample, is required any time there is a total coliform positive (TC+) sample result (if your source is a well).
- ▶ Sample(s) must be collected from any well(s) that were in operation at the time of the TC+.
- ▶ No source water sample is required from a surface water system or a GWUDI system.
- ▶ If the GWR tap is near the pressure tank you should make sure the pump is running when you collect your sample so that you are getting source water and not water from the pressure tank.

**Monitoring and Reporting Requirements
for the Calendar Year 2023** February 11, 2023

PWS NAME _____ **PWS ID#:** WY5600000 (NC/GW)

Water Source: GW Water System Type: NC Contact: Address: Phone:	Water System Inventory	You must write the facility codes and sample point codes on the chain of custody or lab slip submitted to a lab with each water sample. The codes are listed with the sampling directions.

Where to monitor and Whom to call

The "rule managers" responsible for administering the various drinking water rules are listed here. Any questions or discussion should be directed to the appropriate rule manager at the number given below, or you can call toll-free at 1-800-227-8917 and ask for the appropriate contact.

Monitoring for these contaminants must be at the Entry Point to the Distribution System:			
Nitrate/Nitrite	Nitrate	Bailey Smith	303-312-6940
Monitoring for these contaminants must be within the Distribution System:			
Revised Total Coliform Rule	RTCR	Jamie Harris	303-312-6072

The following rules may apply:

Surface Water Treatment Rules	SWTR	Jake Crosby	303-312-6389
Ground Water Rule	GWR	Jamie Harris	303-312-6072

IMPORTANT

You must use a laboratory certified to test for each specific contaminant in drinking water. See a list of certified labs at Drinking Water Online at: <https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-laboratories>

Please send sample results to our office using one of the methods listed below. Include your PWS name and PWS ID on all correspondence.

Email: R8DWU@epa.gov Fax: 1-(877) 876-9101	Mail: US-EPA Region 8 1595 Wynkoop St. Denver, CO 80202-1129 Mail Code 8WD-SD	For after-hours emergency situations please contact EPA at 303-312-6327
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WATER SOURCE:
WATER SYSTEM TYPE:

CONTACT:
ADDRESS:
PHONE:

NITRATE RULE: Bailey Smith

RTCR & TRIGGERED GROUND WATER RULE:
Jamie Harris

AFTER HOURS EMERGENCY PHONE NUMBER:
303-312-6327

Revised Total Coliform (RTCR)

Take one Routine sample each month you are open. Our records indicate you are open to the public during June, July and August. Please let us know if your schedule is not correct by filling out a Seasonal Change Form at <https://www.epa.gov/region8-waterops/pws-seasonal-operational-change-form> and submit it to EPA as soon as possible.

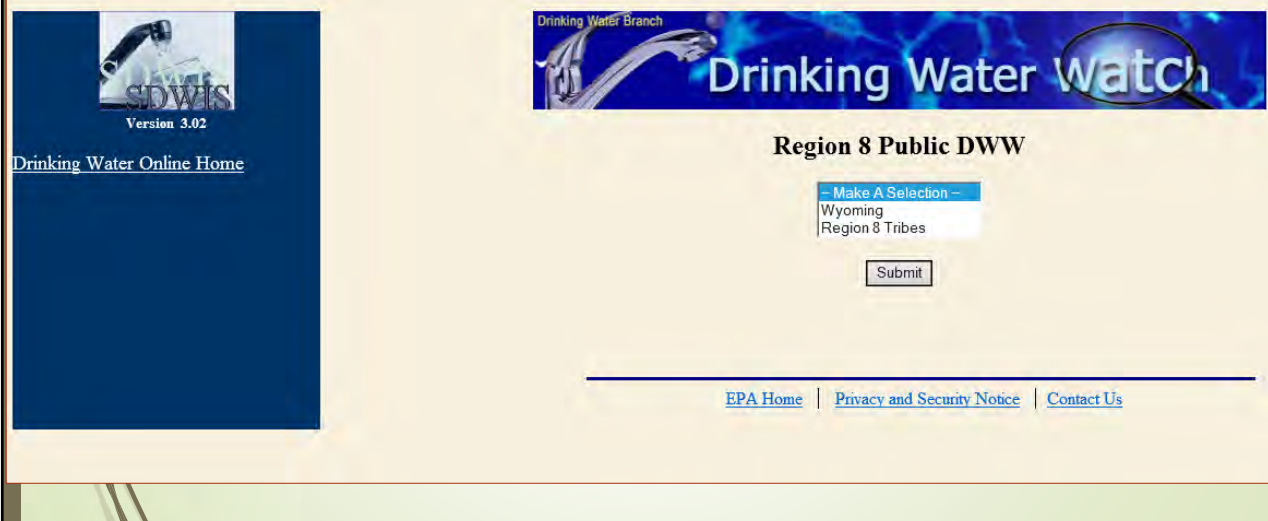
- Review your listed schedule.
- How many routine samples are required?
- Is a Seasonal Startup Checklist required?
- What other samples are required?

Drinking Water Watch

Internet search term: DRINKING WATER WATCH WYOMING

- ▶ No password needed.
- ▶ Check annual monitoring and reporting requirements.
- ▶ Check sample results for all reported analytes.
 - ▶ Give EPA about a week to enter results after you received them from your lab.
- ▶ Send all data to R8DWU@epa.gov with the PWSID and contaminant in the email subject line.

Drinking Water Watch



Drinking Water Branch

Drinking Water Watch

Region 8 Public DWW


– Make A Selection –
Wyoming
Region 8 Tribes

Submit

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SDWIS
Version 3.02
Drinking Water Online Home

Drinking Water Watch




SDWIS
Version 3.02

[Drinking Water Online Home](#)

[County Map](#)

[Glossary](#)



Drinking Water Watch

Public Water Supply Systems Search Parameters

Water System No.

Water System Name

Principal County Served:

Water System Type:

Primary Source Water Type:

Sample Search Parameters

Sample Class:

Sample Collection Date Range: To

Links

[Water System Facilities and Schematics](#)

[Sample Schedules, Reminders, and ChemRad Sample Form](#)

[Coliform/Microbial Sample Results](#)

[Coliform Sample Summary Results](#)

[Lead And Copper Sample Summary Results](#)

[Chem/Rad Samples/Results](#)

[Chem/Rad Samples/Results by Analyte](#)

[Violations/Enforcement Actions](#)

[Site Visits](#)

[Milestones](#)

Return Links

[Water Systems](#)

[Water System Search](#)

[County Map](#)

[Glossary](#)

Drinking Water Branch

Water System Details

Water System No. : WY5600 Federal Type : C

Water System Name : State Type : C

Principal County Served : LARAMIE Primary Source : GW

Status : A Activity Date : 05-01-1978

Points of Contact

Name	Job Title	Type	Phone	Address
	OWNER	OW		
	CONTRACT OPERATOR	DO		
	CONTRACT OPERATOR	EC		
	CONTRACT OPERATOR	AC		

Annual Operating Periods & Population Served

Start Month	Start Day	End Month	End Day	Population Type	Population Served
1	1	12	31	R	50

Service Connections

Type	Count	Meter Type	Meter Size Measure
RS	24	UM	0

Sources of Water

Name	Type Code	Status
	WL	A

Service Areas

Code	Name
R	MOBILE HOME PARK

SEARCH

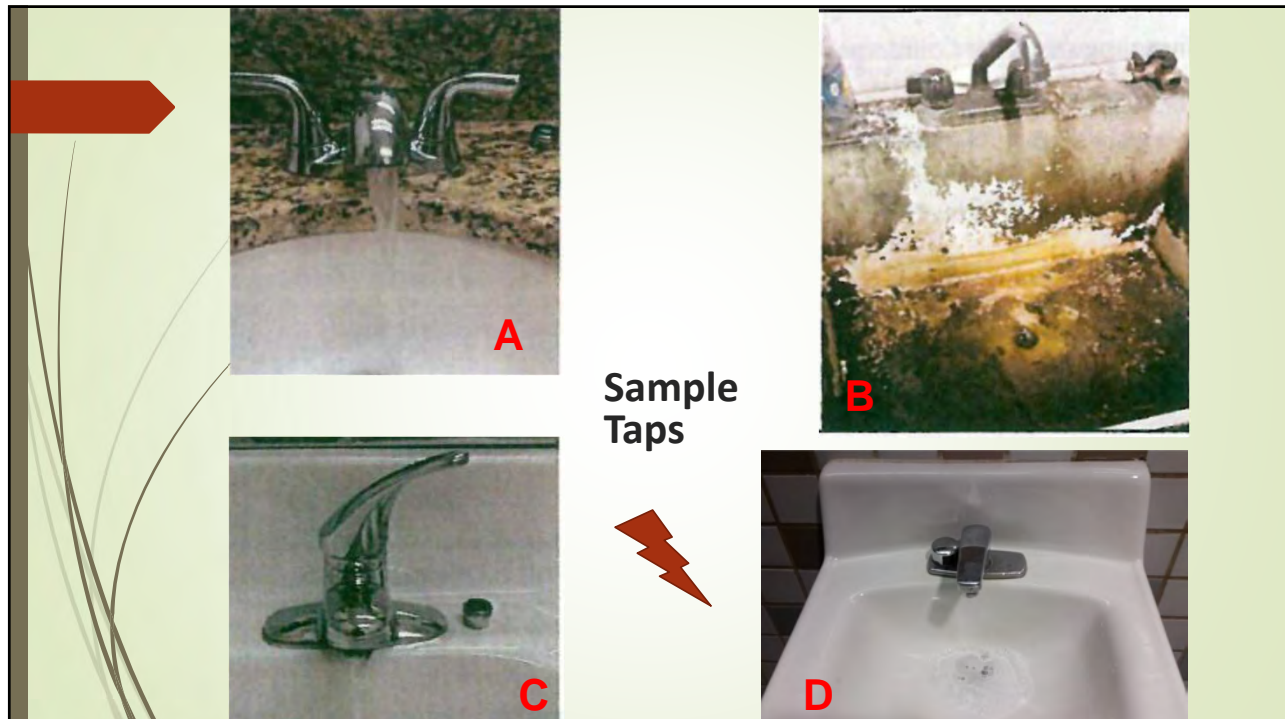
Sample Collection Date From To

Type	Lab Sample No.	Collection Date & Time	Sampling Point	Sample Location	Presence/Absence Indicator	Free CL Res	Tot CL Res	Analyte Code	Analyte Name	Monitoring Period Begin Date	Monitoring Period End Date	Laboratory
RT	S2209048-001	09-05-2022 14:15:00	DIST	DISTRIBUTION SYSTEM	A			3100	COLIFORM (TCR)	09-01-2022	09-30-2022	PACE ANALYTICAL SERVICES - SHERIDAN
RT	S2209048-001	09-05-2022 14:15:00	DIST	DISTRIBUTION SYSTEM	A			3014	E. COLI	09-01-2022	09-30-2022	PACE ANALYTICAL SERVICES - SHERIDAN
RT	S2208005-001	08-01-2022 06:00:00	DIST	DISTRIBUTION SYSTEM	A			3100	COLIFORM (TCR)	08-01-2022	08-31-2022	PACE ANALYTICAL SERVICES - SHERIDAN
RT	S2208005-001	08-01-2022 06:00:00	DIST	DISTRIBUTION SYSTEM	A			3014	E. COLI	08-01-2022	08-31-2022	PACE ANALYTICAL SERVICES - SHERIDAN
RT	S2207199-001	07-12-2022 16:30:00	DIST	DISTRIBUTION SYSTEM	A			3100	COLIFORM (TCR)	07-01-2022	07-31-2022	PACE ANALYTICAL SERVICES - SHERIDAN
RT	S2207199-001	07-12-2022 16:30:00	DIST	DISTRIBUTION SYSTEM	A			3014	E. COLI	07-01-2022	07-31-2022	PACE ANALYTICAL SERVICES - SHERIDAN

Sample Siting Plans

Sample Siting Plans

- ▶ Can't use the schematic for RTCR – must use a map that indicates all buildings in the distribution system.
- ▶ Do not write SS01 or SP01 on your sample siting plan or sample bottles.
- ▶ The chart and map must include the Routine, Repeat and Triggered Source sample locations.
- ▶ Sample locations must be representative of water in the distribution system.

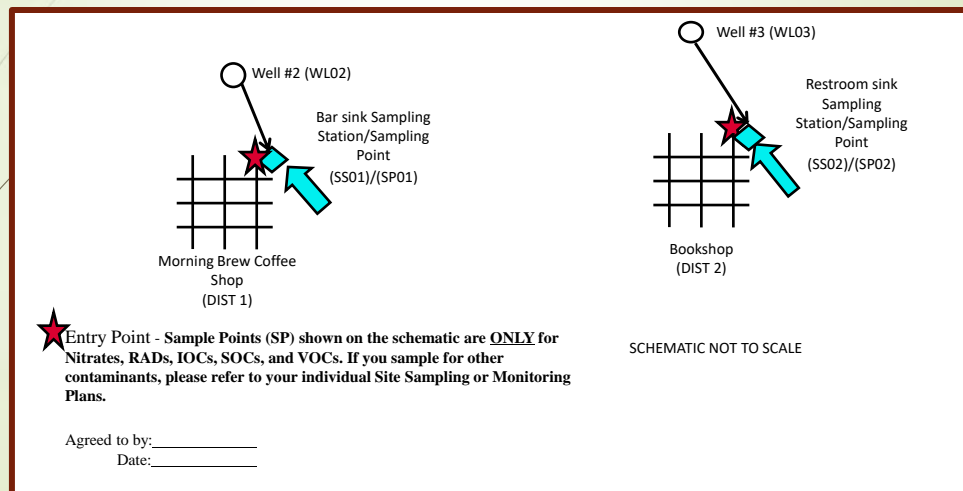


Sample Locations

- If possible, select taps that have separate hot and cold faucet handles.
- AVOID THE FOLLOWING TAPS:
 - taps that are pressure- or movement-activated
 - taps that have a boiled or chilled water loop
 - taps that have any other point-of-use treatment (charcoal filter, softener, etc.)
 - taps that have a pull-out or pulldown neck
 - hose or sprayer



Morning Brew Coffee House WY5601995



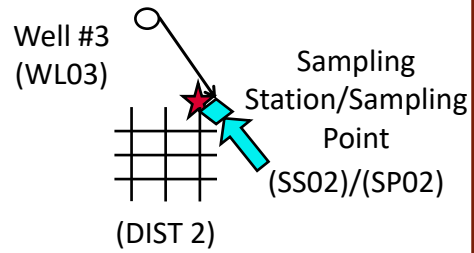
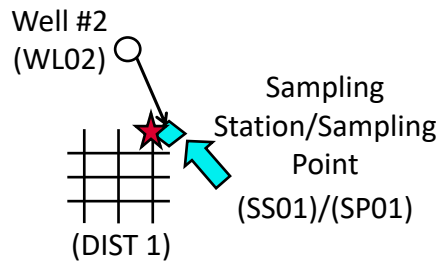
Sample Siting Plan - Chart

Month	Routine Sample Site	Repeat Sample Site	Source	Month	Routine Sample Site	Repeat Sample Site	Source
January	Bar Sink - DIST 1	1. (same as routine)	WL02	January	Restroom - DIST 2	1. (same as routine)	WL03
		2. Restroom - DIST 1				2. Unit #1 sink - DIST 2	
		3. Kitchen sink - Dist 1				3. Unit #2 sink - Dist 2	
February	Kitchen Sink - DIST 1	1. (same as routine)	WL02	February	Apartment sink - DIST 2	1. (same as routine)	WL03
		2. Restroom - DIST 1				2. Restroom - DIST 2	
		3. Bar Sink - DIST 1				3. Unit #2 sink - Dist 2	
March	Restroom - DIST 1	1. (same as routine)	WL02	March	Unit #2 sink - Dist 2	1. (same as routine)	WL03
		2. Bar Sink - DIST 1				2. Apt sink - DIST 2	
		3. Kitchen sink - Dist 1				3. Restroom - DIST 2	
April	Bar Sink - DIST 1	1. (same as routine)	WL02	April	Restroom - DIST 2	1. (same as routine)	WL03
		2. Restroom - DIST 1				2. Unit #2 sink - Dist 2	
		3. Kitchen sink - Dist 1				3. Apt sink - DIST 2	
May	Kitchen Sink - DIST 1	1. (same as routine)	WL02	May	Apartment sink - DIST 2	1. (same as routine)	WL03
		2. Restroom - DIST 1				2. Restroom - DIST 2	
		3. Bar Sink - DIST 1				3. Unit #2 sink - Dist 2	





Morning Brew Coffee House & Bookshop OR Town of Moosetrax?



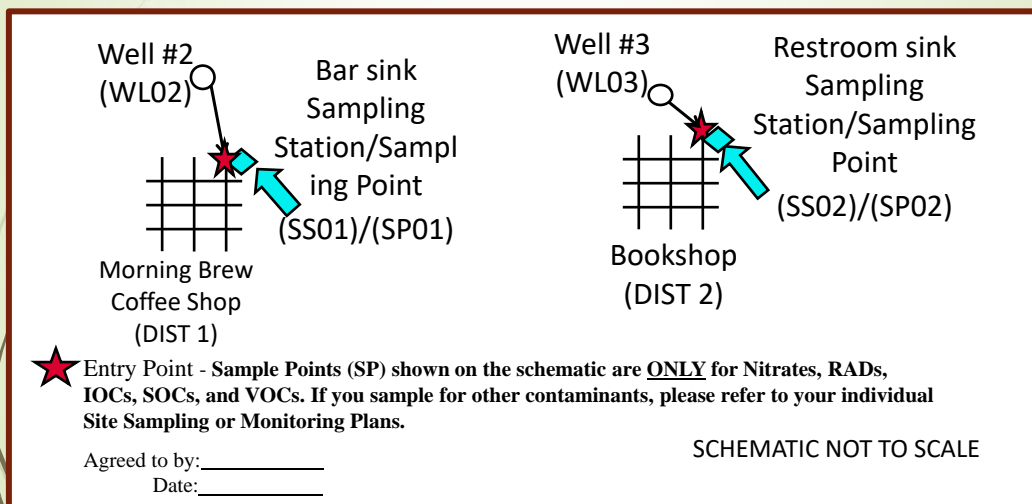
★ Entry Point - Sample Points (SP) shown on the schematic are ONLY for Nitrates, RADs, IOCs, SOCs, and VOCs. If you sample for other contaminants, please refer to your individual Site Sampling or Monitoring Plans.

Agreed to by: _____
Date: _____

SCHEMATIC NOT TO SCALE


What if the nitrate sample and total coliform sample are collected from the same location?

Morning Brew Coffee House & Bookshop WY5601995





Nitrate and Total Coliform Samples

- ▶ Samples collected from the same location in different bottles and labeled differently.
 - ▶ **Nitrate** samples called:
 - ▶ SP01 - Bar sink sampling point
 - ▶ SP02 - Restroom sink sampling point
 - ▶ **Total Coliform** samples called:
 - ▶ Bar sink – Dist 1
 - ▶ Restroom sink – Dist 2
- 



What if there are only one or two taps or it's just a hand pump?

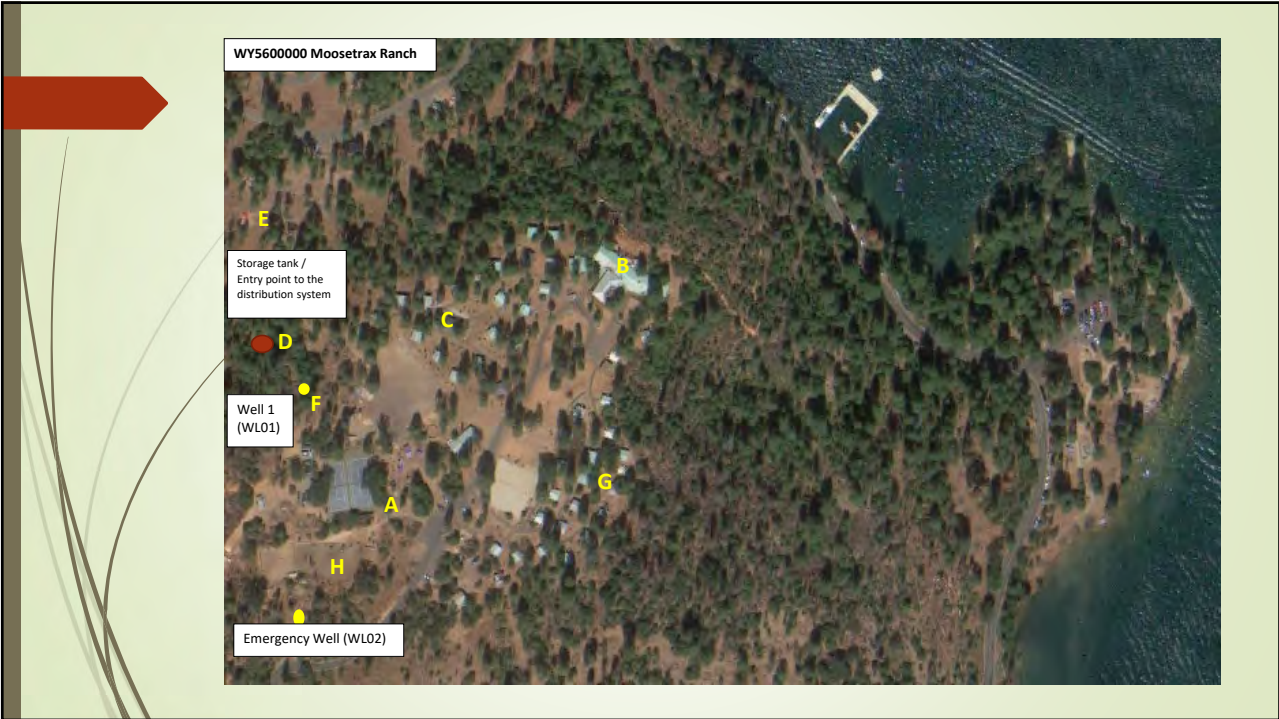
Hand Pumps



Hand Pumps & Sample Siting Plan

- ▶ What if you do not have a distribution system?
- ▶ On the Sample Siting Plan you will list the hand pump as the routine and repeat and source sample!
- ▶ This ONLY applies if the well is not hooked up to ANYTHING else, it is just a hand pump.

SAMPLE SITING PLAN EXERCISE



Sample Siting Plan Locations

The following locations have sample taps and are possible collection sites for your sample siting plan. Determine the most appropriate sample location for 1) winter/fall routine sample site, 2) spring/summer routine sample site, 3) Ground Water Rule sample site, 4) Nitrate sample site*.

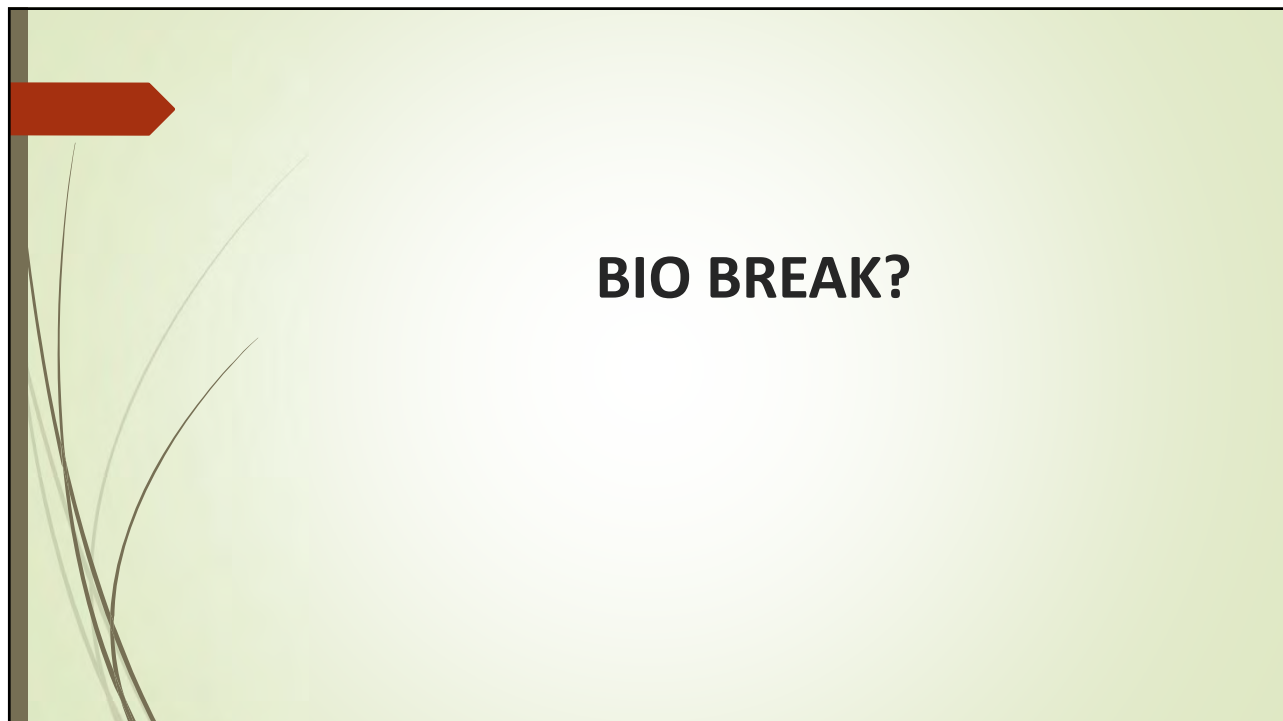
(*The nitrate sample site is extra credit!)

One Seasonal Distribution System

Site ID	Sample Site Description	RTCR Preferable Location?	Explanation for Choice of Sample Site
A	Tennis Court Water Fountain		
B	Lodge – kitchen faucet		

Site ID	Sample Site Description	RTCR Preferred Location?	Explanation for Choice of Sample Site
A	Tennis Court Water Fountain	No	<ul style="list-style-type: none"> • Outside faucets are not great locations since they are open to the elements. • Water fountains are difficult to sample from since the bottle must be held sideways and it's difficult to determine if the bottle is filled to the 100 mL line.
B	Lodge – kitchen faucet	Yes	The Lodge kitchen is one of the busiest area of the Ranch so this is a great sample location, as long as the faucet and sink area are clean!
C	Nurse's Station	Yes	Although there may be many germs in the Nurse's Station you will disinfect the faucet before collecting your sample. Since there is a steady stream of homesick kids and those needing band-aids and itch lotion this is a good location for a sample site.
D	Storage Tank	No*	The Storage Tank is not ok for RTCR sampling since it is not in the distribution system. But this may be the sample location for your <u>nitrate</u> sample. Routine total coliform samples collected from the Storage Tank (or marked as being from the Storage Tank) will be rejected. If you don't have a sample tap on your well it may be considered a significant deficiency during your next sanitary survey.
E	Caretaker's Residence	No	The Caretaker's Residence is hardly used while the camp is open to the public, from May thru October. It is not a very good sampling location. The residence is away from the main part of the camp and it is not open to the public. Although it is not required, we recommend taking samples from the Caretaker's Residence during the off-season but it is not a requirement.

Site ID	Sample Site Description	RTCR Preferred Location?	Explanation for Choice of Sample Site
F	Well 1	No*	Well 1 is not ok for monthly routine total coliform samples since it's not in the distribution system. However, this is the place where the triggered Ground Water Sample would be collected for Well 1 if there was a TC+ sample in the distribution system. Any Routine total coliform sample collected from Well 1 (or marked as being from Well 1) will be rejected. Possible nitrate location.
G	Yard Hydrant	MAYBE	Outside faucets are not an ideal sample location. By using it you are accepting the risk of a TC+ sample result and more repeat sampling. However, if there is no other location, then samples can be collected here. Remove any hoses or attachments before collecting the sample.
H	Horse Stable Restroom	Yes	The Horse Stable Restroom is a good sample location since water is running in that part of the distribution system for the horses and toilets flushing. It is important to remember to wash your hands and disinfect the faucet BEFORE collecting any samples so you don't get an <i>E. coli</i> positive (EC+) sample result!
I	Emergency Well (WL02)	No*	The Emergency Well is not an acceptable monthly routine sample site since it's not in the distribution system. Any Routine total coliform sample collected from the Emergency Well (or marked as being from the Emergency Well) will be rejected. Annual Nitrate samples may be required from Emergency Wells, if your Emergency Well requires an annual Nitrate sample it will be indicated on your Monitoring and Reporting Requirements. If the emergency well is running at the time of the TC+ then a triggered source sample is required from this well too.






CHAIN OF CUSTODY (aka Lab Form)



EPA Region 8 Revised Total Coliform Rule and Ground Water Rule Sample Labeling Instructions

These instructions are specific to the **Revised Total Coliform Rule (RTCR)** and the **Ground Water Rule triggered monitoring (TG GWR)** samples **ONLY**. They do not pertain to samples collected for Nitrates, Chemicals, Lead, Copper or any other contaminants. **ONLY RTCR and TG GWR.**

There are 4 types of samples that may need to be collected under the RTCR and GWR.

1. Routine
 2. Repeat
 3. Special
 4. **Ground Water Rule – Triggered (TG GWR)** – not applicable to surface water systems or those that only purchase water from another system.
- 

RTCR Chain of Custody (COC)

**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:	State:	Zip Code:
Comments:			

Sample Collection	Sample Point Address: (Found on your Sample Siting Plan.)	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 positive. SPECIAL - Is a non-compliance sample that may be collected, for example, to determine if disinfection is adequate after pipe replacement or repair or to find a source of contamination. It is also used for the Seasonal Startup Checklist required sampling and daily sampling required by an Emergency Administrative Order. It cannot be used to determine compliance with the maximum contaminant level.		
Date	Time		<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
			<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
			<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
			<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special

Sampler(s) name (Print):	Sampler(s) signature:	Date signed:
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PWS info

Sample info

Ground Water Rule (triggered source sample) COC

**WY and Tribal Ground Water Rule (GWR)
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 (Found in the yearly Monitoring and Reporting Requirements document in the GWR section.)	Groundwater Sample Type- Check One			
			Triggered - 1st source sample(s) after being notified of a routine RTCR positive Additional Routine- Required 5 source samples after a GWR EC+ routine result Replacement- If a sample wasn't analyzed previously (e.g. over holding time)		
Date	Time		<input type="checkbox"/> Triggered	<input type="checkbox"/> Additional Following EC+	<input type="checkbox"/> Replacement
			<input type="checkbox"/> Triggered	<input type="checkbox"/> Additional Following EC+	<input type="checkbox"/> Replacement
			<input type="checkbox"/> Triggered	<input type="checkbox"/> Additional Following EC+	<input type="checkbox"/> Replacement
			<input type="checkbox"/> Triggered	<input type="checkbox"/> Additional Following EC+	<input type="checkbox"/> Replacement
			<input type="checkbox"/> Triggered	<input type="checkbox"/> Additional Following EC+	<input type="checkbox"/> Replacement

Sampler(s) name (Print):	Sampler(s) signature:	Date signed:
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Laboratory Section (For laboratory use only):

PWS info

Sample info

Generic Chain of Custody

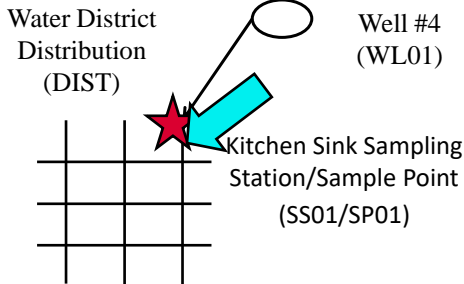
Page ____ of ____

Chain of Custody & Analytical Request Record

Account Information <small>(Billing Information)</small>				Report Information <small>(if different than Account Information)</small>				Comments				
Company Name				Company Name								
Contact				Contact								
Phone				Phone								
Mailing Address				Mailing Address								
City, State, Zip				City, State, Zip								
Email				Email								
Receive Invoice <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email		Receive Report <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email		Receive Report <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email								
Purchase Order		Quote		Bottle Order								
Project Information				Matrix Codes		Analysis Requested						
Project Name, PWSID, Permit, etc.				A - Air W - Water S - Solid V - Vegetation B - Biosolids O - Other DW - Drinking Water						All turnaround times are standard unless marked as RUSH. Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page		
Sampler Name		Sampler Phone										
Sample Origin State		EPA/State Compliance <input type="checkbox"/> Yes <input type="checkbox"/> No										
Sample Identification <small>(Name, Location, Interval, etc.)</small>		Collection		Number of Containers	Matrix <small>(See Codes Above)</small>					See Attached RUSH TAT	LAB ID <small>Laboratory Use Only</small>	
		Date	Time									
1												
2												
3												
4												

HOW WOULD YOU COMPLETE YOUR CHAIN OF CUSTODY FOR NITRATE AND TOTAL COLIFORMS?

Forever Snowy Bed & Breakfast PWSID WY5600000



★ Entry Point - Sample Points (SP) shown on the schematic are **ONLY** 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: _____

Month	Routine Sample Site	Repeat Sample Site	Source
May	Seasonal Startup - kitchen sink & WL01		
June	Kitchen Sink	1. (same as routine)	WL01
		2. Upstairs Bathroom	
		3. Downstairs Bathroom	
July	Upstairs Bathroom	1. (same as routine)	WL01
		2. Kitchen Sink	
		3. Downstairs Bathroom	
Aug	Downstairs Bathroom	1. (same as routine)	WL01
		2. Upstairs Bathroom	
		3. Kitchen Sink	
Sept	Kitchen Sink	1. (same as routine)	WL01
		2. Upstairs Bathroom	
		3. Downstairs Bathroom	

Account Information (Billing Information)				Report Information (if different than Account Information)				Comments	
Company Name: Forever Snowy B & B				Company Name:				Total Coliform samples are ROUTINE samples. Please email all results to R8DWU@epa.gov	
Contact: Althea Garcia				Contact:					
Phone: 307-444-4444				Phone:					
Mailing Address: 123 Snowy Dr				Mailing Address:					
City, State, Zip: Wyoming				City, State, Zip:					
Email:				Email:					
Receive Invoice: <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email		Receive Report: <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email		Receive Report: <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email					
Purchase Order		Quote		Bottle Order					
Project Information				Matrix Codes				Analysis Requested	
Project Name, PWSID, Permit, etc: WY5600000				A - Air				All turnaround times are standard unless marked as RUSH. Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page	
Sampler Name: Althea Garcia		Sampler Phone: 307-444-4444		W - Water					
Sample Origin State:		EPA/State Compliance: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		S - Solids/Solids					
				V - Vegetation					
				B - Bioassay					
				O - Other					
				DW - Drinking Water					
Sample Identification (Name, Location, Interval, etc.)		Collection		Number of Containers	Matrix (See Codes Above)			See Attached ↓ Issue TAT	LAB ID Laboratory Use Only
		Date	Time			Nitrate	Total Coliform		
1									
2 SP01 - Kitchen Sink Sampling Point		06/14/18	9:06 am	1	DW	✓			
3 Kitchen Sink DIST		06/14/18	9:15 am	1	DW		✓		
4									
5									



HOW TO COLLECT A TOTAL COLIFORM SAMPLE



Sample Bottle Labels

- ▶ Write on your bottle with permanent ink before you collect your sample.
- ▶ Bottle must indicate that samples were from the distribution system – write DIST along with the location, like kitchen sink – DIST.
- ▶ EPA database doesn't recognize a total coliform sample that is called SP01. It will reject the sample and a violation letter will be sent.



BEST PRACTICES TO COLLECT A TOTAL COLIFORM WATER SAMPLE

- ▶ https://www.youtube.com/watch?v=K_l294gppAk
- ▶ See if you can find any problems with the video?
- ▶ What do you do differently than the video?



Best Practices To Collect A Total Coliform Water Sample

Some tips on collecting total coliform samples

- ▶ Remove any attachments on the faucet
- ▶ Allow water to flow for 5 or 6 minutes before sampling (begin to fill out the Chain of Custody while flushing the water)
- ▶ Do not rinse or overfill container
- ▶ Always collect cold water; never sample hot water
- ▶ Do not touch the inside of the sample bottle or its cap

Best Practices To Collect A Total Coliform Water Sample

Avoid these sampling sites for total coliform, if possible:

- ▶ Outdoor faucets
- ▶ Faucets connected to cisterns, softeners, pumps, pressure tanks or hot water heaters
- ▶ New plumbing and fixtures or those repaired recently
- ▶ Faucets that hot and cold water come through
- ▶ Threaded taps
- ▶ Swing spouts
- ▶ Faucets positioned close to sink or ground
- ▶ Leaky faucets

Best Practices To Collect A Total Coliform Water Sample

Bottle to use

- ▶ Sterile 125 or 150 mL plastic bottles must be used (from the lab).

Preservatives to use

- ▶ Sodium thiosulfate if sample is chlorinated **and**
- ▶ Cool to $< 10\text{ }^{\circ}\text{C}$ ($< 50\text{ }^{\circ}\text{F}$) for source water and groundwater samples (recommended for drinking water as well) but do not allow samples to freeze

Holding times

- ▶ Holding times are generally very short – 30 hours for drinking water samples. Deliver samples to the lab the day of collection, if possible, or ship via overnight delivery.



Best Practices To Collect A Total Coliform Water Sample

Sampling instructions

- ▶ Wear (non-powdered) gloves when collecting samples.
- ▶ Do not rinse the bottle(s). The bottle(s) are sterile so care must be taken not to contaminate the bottle or cap.
- ▶ Once the distribution line is flushed and the flow reduced, quickly open the bottle (but do not set the cap down), hold the cap by its outside edges only, and fill the sample bottle to just above the 100 mL line leaving a one inch headspace.
- ▶ Cap the bottle immediately and place it into a cooler with ice for delivery or overnight shipment to the laboratory.



TOTAL COLIFORM POSITIVE

STEPS TO TAKE AFTER A ROUTINE TOTAL COLIFORM POSITIVE

- 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 three (3) REPEAT samples in the distribution system for each positive sample; use your regular lab form along with the RTCR Lab Sample form, and mark the samples as RTCR REPEATS.
- 2) Collect your triggered GWR source sample(s) if you use a groundwater (e.g., well or spring) source.

REMEMBER: 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.

Review Your Repeat Samples

Are any of the three (3) REPEAT samples positive? *or*
Is there more than one *ROUTINE* sample that is positive? *or*
Did you fail to collect all three (3) repeat samples?

N
O

Conduct ROUTINE
sampling the following
month.

Y
E
S

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

* Or a Level 2 Assessment.



Hand Pumps & TC+

- ▶ If your system does not have a distribution system, how do you do repeat samples?
- ▶ Collect 4 samples, in succession, from the hand pump, in 4 different bottles.
- ▶ Label 3 bottles as Repeat samples and 1 as the GWR Triggered Source sample.



SEASONAL SYSTEMS

SEASONAL STARTUP CHECKLIST

Seasonal Systems

A seasonal system is....

when your water system isn't open to the public year-round, or part of it is closed and re-opened during the year, even if it remains pressurized.

A seasonal startup checklist must be completed each year, and EPA must receive it PRIOR to your serving water to the public.

EPA Region 8 Seasonal Start-up Checklist

For Public Water Systems in Wyoming or on Tribal Lands in EPA Region 8

If your public water system (PWS) is open only part of the year, it is considered a seasonal system. Under the Revised Total Coliform Rule (RTCR), you are required to complete the following steps and submit this form to our office **prior to serving water to the public** for the season. You will be in violation of the RTCR and subject to enforcement action if you serve water to the public before completing these start-up procedures **and** submitting this form to our office.

Wyoming and EPA R8 Tribal water systems can submit this checklist to:

RTCR Manager
8WP-SDA
1595 [Wynkoop](#) Street
Denver, CO 80202
Or fax at: 1-877-876-9101 or email at: R8DWU@epa.gov

PWS Name: _____ Morning Brew Coffee House & Bookshop _____

PWS ID number: _____ WY5601995 _____

Today's Date: _____ 04/05/18 _____

Date water system opens to the public: _____ 05/01/18 _____

Estimated closure date for the season*: _____ 10/15/18 _____

SEASONAL STARTUP CHECKLIST


- EPA uses last season's schedule as the basis for the next year's season. Unless you tell us differently, that is schedule for the next year.
- EPA knows the opening and closing dates are subject to weather. If they are going to be different than projected it is **your** responsibility to notify EPA of the change, preferably via email.
- The opening date that you write down on the checklist should be the date the PWS opens to the public.
- The closing date is an estimate of when you think you will be closing. Put that date on a calendar because if it changes you need to tell EPA to avoid a violation.
- If you write that you close on 10/01/23 EPA will be expecting a sample result for October. If a PWS is open for even one day in a month a routine sample is required.
- This is not a yes/no document. Please write what you have actually done, you checked the filters and they are good, there are no leaks in the distribution, etc.
- You may have to collect a special and a routine sample in the same month.

Certification of Completion:

I hereby certify that the information in this form is the truth and each start-up procedure listed above was completed before water was delivered to my customers.

Name (Printed) _____ Jerry Garcia _____

Signature



Date _____ 04/05/18 _____

Phone Number _____ 307-444-4444 _____

Email _____ JGarcia@Moosetrax.net _____

Seasonal Startup Checklist

- **IF:** Your seasonal system has more than one source serving more than one distribution system (please see the article in the 2018 EPA Region 8 Newsletter).
- **IF:** Parts of the seasonal system distribution system(s) open or close during different months (i.e., one opens in June and the another in July).

<u>Well Name</u> (i.e., WL0x)	<u>Distribution System Name</u> (i.e., DS0x)	<u>Planned Startup Activity</u> (use additional space if necessary)	<u>Startup Date</u> (if different than other sources)	<u>Shutdown Date</u> (if different than other sources)	<u>Date Special Sample Collected</u>
WL02	Coffee House	All startup activities are listed in the main form.	05/01/2018	11/15/18	04/05/18
WL03	Book Shop	All startup activities are listed in the main form.	05/01/2018	10/15/18	04/05/18

Seasonal Startup Checklist

Special Samples vs Routine Samples

- **Special samples** are a requirement of the Seasonal Startup Checklist. You must mark these samples as Special. They must be collected prior to serving water to the public.
- **Routine samples** are required monthly and must be collected once water is being served to the public at sites identified in your sample siting plan.




ASSESSMENTS



What are Assessments?

- ▶ When sampling results show that your PWS may be vulnerable to contamination, PWSs must perform an Assessment (Level 1 or Level 2) and FIND AND FIX ANY "SANITARY DEFECTS."
- ▶ A sanitary defect can provide a **pathway** of entry **for microbial contamination** into the distribution system or indicate imminent failure in an existing barrier (e.g., cracked tank, rat droppings on wellheads, or broken well or hatch seals).



RTCR ASSESSMENTS VS. SANITARY SURVEYS

An RTCR Assessment is REACTIVE
and a Sanitary Survey is PROACTIVE!



Level 1 Assessment Triggers

Triggered by TC+ sample(s)

1. Have two or more TC+ samples (routine and/or repeat results) in one month*.

OR

2. Failure to collect and analyze at least 3 repeat samples for each routine TC+.

* For systems collecting 40 fewer samples per month

Review Level 1 Assessment Form

- ▶ [Level 1 Assessment Form](#) – 3 pages
- ▶ Completed by the PWS operator
- ▶ Corrective action must be completed already or include a timeline for completion (within 30 days)
- ▶ Example Sanitary Defects:
 - ▶ Rat poop around the well head
 - ▶ No sanitary seal on well

Level 1 Assessment Scenario (Multiple TC+)

- ▶ System had a Routine sample TC+ on a Thursday, called EPA immediately to notify of TC+ and ask for extension on 24-hour requirement to collect repeats.
- ▶ On Monday, the PWS collected 3 repeats and a source sample.
- ▶ On Tuesday the lab notified the PWS, who then called EPA, to report that one of the repeats was TC+.
- ▶ While completing the Level 1 Assessment the PWS found that the sanitary seal on the well was defective and there were insects in the well.
- ▶ The PWS immediately ordered a new sanitary seal and installed it.
- ▶ The PWS took a photo of the new well seal, labelled it and sent it to EPA along with the complete Level 1 Assessment within 30 days.
- ▶ The Assessment form stated that corrective action was taken on X date - replacement of sanitary seal. PWS emailed the completed Assessment to EPA.

Level 1 Assessment Scenario (too few RP & incomplete Assessment)

- ▶ System had a Routine TC+ on a Tuesday, and didn't contact EPA.
- ▶ The PWS didn't collect any Repeat samples.
- ▶ When EPA got the sample results 2 weeks later and saw that there was a TC+ sample with no repeats the PWS was triggered into completing a Level 1 Assessment.
- ▶ The system found that they had a missing bolt on their well head and that their chlorinator was out of chlorine.
- ▶ On the Level 1 Assessment the PWS identified the issues but didn't describe any corrective action.
- ▶ The PWS emailed the Assessment to EPA at 5.30 pm the day it was due. Since the PWS didn't completely fill out the Level 1 Assessment **AND** they submitted the Assessment on the very last possible day, the PWS received a violation for an incomplete Level 1 Assessment.

No Source Sample?

Failure to Monitor Violation

In order to come back into compliance
you must collect the source sample.

Level 2 Assessment Triggers

1. *E. coli* MCL violation:



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


2. Two Level 1 Assessment triggers in a rolling 12-month period.


Review Level 2 Assessment Form

- Level 2 Assessment Form – 10 pages
- Completed in cooperation between an EPA approved 3rd party and a PWS representative.
- Corrective action must be completed already or described and include a timeline for completion.
- Example Sanitary Defects:
 - SSUC said the well was disinfected but it wasn't.
 - No backflow prevention device on yard hydrant.

Level 2 Assessment (multiple TC+ / 2nd L1 in 12-months)


- **Sanitary Defects:** Sanitary Defects that were found included:
 - The operator was not sampling according to their sample siting plan and was taking samples from the pump house.
 - There was a hose in the stock tank that created a cross-connection.
 - The ground surface around the well was sloped so runoff from snow melt and rain was directed towards the well and not away from it.

 US EPA REGION 8 DRINKING WATER PROGRAM REVISED TOTAL COLIFORM RULE (RTCR) LEVEL 2 ASSESSMENT REQUIRED CORRECTIVE ACTIONS and DUE DATES						
PWS ID#: TRAINING EXAMPLE		PWS Name: Morning Brew				
Primary Operator (print name): Bob Weir						
Assessment trigger date: 08/01/2017		Date Assessment Conducted: 08/09/2017				
Seasonal System?: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Reason for Assessment: 2nd Level 1 Assessment in 12 months				
Was an Emergency Administrative Order Issued? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		EPA Drinking Water Program Contact: Jamie Harris (303) 312-6072				
Emergency Admin. Order Contact:						
Please note the required actions and due dates listed for each sanitary defect that was identified in the attached Level 2 Assessment. Failure to complete corrective actions by the due dates required by EPA <u>will</u> result in a violation. If a completion date cannot be met it is your responsibility to contact EPA <u>BEFORE</u> the due date and obtain approval for a different completion date. The recommended actions are not required but review them and strive to implement those changes. Please refer to the Level 2 Assessment Form for a description of the issues identified during the Assessment.						
Assessment Elements	Issues?		Recommended Action	Required Corrective Action	Completion Date Proposed by PWS	Due Date Required by EPA
	Yes	No				
1. Review of the sample sites						
1.1 Was the sample taken at the routine coliform site?	X			1.1) Revise Sample Siting Plan: - Routine site cannot be "at pump house". - Include a map (i.e., from a mapping computer program like Google) that adequately shows your distribution system	1.1) Sample Siting Plan will be revised and sent to EPA by <u>9/15/2017</u> .	1.1) Revised Sample Siting Plan due to EPA by <u>09/30/2017</u> .
1.8 Are there any possible cross connections around the sample site (including yard hydrants and stock tanks)?				1.8) Install cross-connection prevention device. Without an atmospheric breaker, bacteria can grow from	1.8 Operator is working with an engineer to install	1.8 Provide labeled photo documentation that back flow




Level 2 Assessment **(multiple TC+ / 2nd L1 in 12-months)**

- ▶ The PWS committed to the following Corrective actions:
 - ▶ During the Assessment the PWS committed to revising their Sample Siting Plan and finding other routine sample sites that were not at the pump house.
 - ▶ They installed a cross connection control device on the nozzle that the hose was attached to and installed a rack for the hose near the stock tank so that the hose did not get submerged when it was filling the tank.
- ▶ However, they did not indicate a fix for the ground surface around the well.



Level 2 Assessment **(multiple TC+ / 2nd L1 in 12-months)**

- ▶ In the Corrective Actions form sent to the PWS, EPA included the first two items, and the requirement to re-grade the ground surface around the well to re-direct water away from the well casing. The due date was 30 days from the date the PWS received the Corrective Actions in the mail.
- ▶ In order to fix the sanitary defect, the operator needed approval from the PWS owner to rent a small earth mover. The PWS couldn't meet the EPA deadline so she contacted EPA (a week before the due date) and requested an extension. EPA granted a 30-day extension to re-grade the land.



What Questions Do You Have?

Revised Total Coliform Rule (RTCR) Manager
(and GWR Triggered Source Sample Manager)

Jamie Harris

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