

Public Water System Sampling Requirements

NHWWA Operator Training

December 7, 2021

Jacqueline Howarth

*NH Department of Environmental Services
Drinking Water and Groundwater Bureau*

What to Sample For?

- **Bacteria**
- **Lead/Copper**
- **Chemical**
 - IOC - inorganic compounds
 - SOC - synthetic organic compounds
 - VOC - volatile organic compounds
 - Nitrate/Nitrite
 - PFAS
 - Radionuclides
- **DBP** - TTHM, HAA5, Bromate, Precursors



When to Sample?

- **Bacteria**- monthly/quarterly
- **Lead/Copper**- semiannually/annually/triennially
- **Chemical**
 - IOC - every 1 or 3 year(s)
 - SOC - yearly (waiver)
 - VOC - 4 quarters 1st year; yearly (waiver)
 - Nitrate/Nitrite - yearly/every 3 years
 - Radionuclides - 4 qtrs 1st year; up to 9 years
 - PFAS - 4 qrts 1st year; up to 3 years

(all can be quarterly for individual contaminants)
- **DBP** - quarterly, yearly, triennially

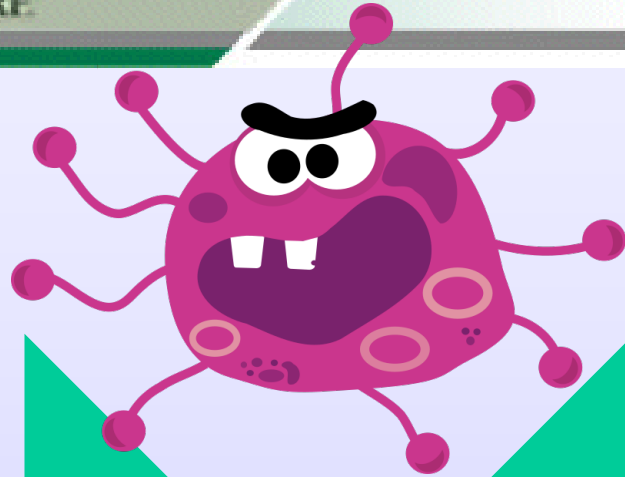


Where to Sample?

- **Bacteria** - distribution
 - source (for GWR)
- **Lead/Copper** - distribution
- **Chemical** - entry point to distribution
 - after treatment (**Except Nitrate/Nitrite & Cyanide**)
- **DBP** - distribution

~Each has specific requirements~





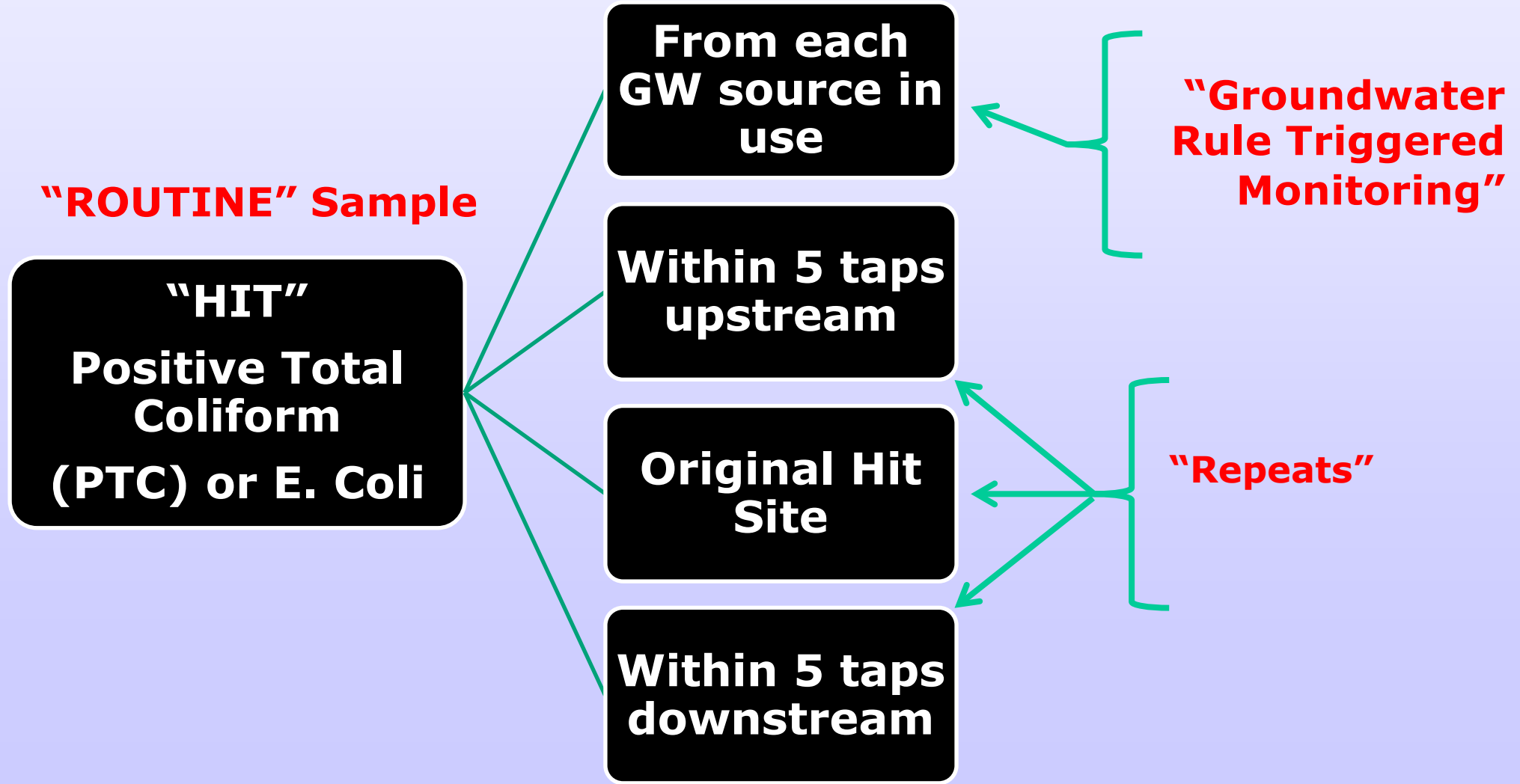
Bacteria Sampling

- **Early in monitoring period**
- **Preferably not on a Friday**
- **Get repeats and GWR done ASAP**
- **Ice the samples**
- **Chlorine residual (DBP)**

Bacteria Sampling

- **CWS – Monthly**
 - Serving <1000 – Reduced to Quarterly
- **NTNC – Quarterly**
 - Can be increased to monthly for compliance purposes

RESAMPLE WITHIN 24 HOURS



“REPEAT” Sample(s)

**“HIT”
Positive Total
Coliform
(PTC) or E. Coli**

**Assessment
- Find and Fix
- 30 days**

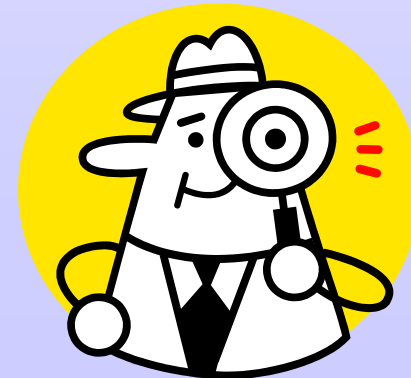
**3 Additional
Routines* –
following month**

*Systems sampling quarterly

Assessments: Find & Fix

Level 1

- Triggered by confirmed total coliform (TC+) or not taking repeats
- Report to State in 30 days



Assessments: Find & FIX

Level 2

- *E. coli*
- 2nd Level 1 in 12 months
- Report to State in 30 days





Lead & Copper

- **NHDES approved site**
- **Accessible/agreeable resident**
- **Representative of water consumed (kitchen tap)**
- **Sample tap must have been unused at least 6 hours**

Lead and Copper Sampling

- **Semi-annual if**
 - New system, new treatment or source change
 - Exceedance of 90th percentile
- **Annual following 1 year of semi-annual**
- **Triennial following 2 years of annual OR**
- **Accelerated Tri if low enough 90th percentiles following 1 year of semi-annual**

Lead and Copper Sampling

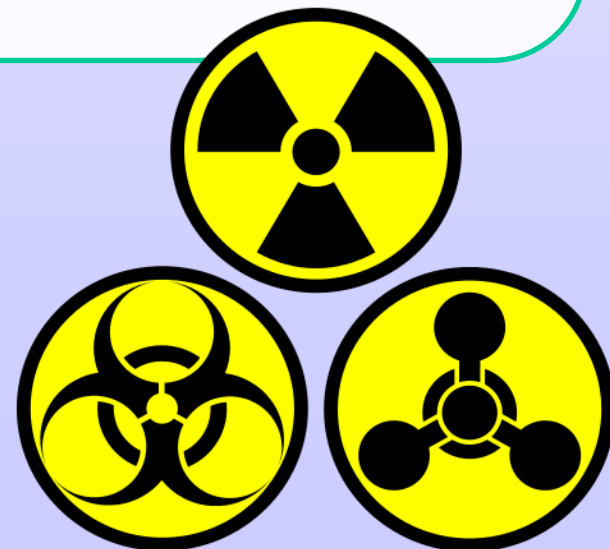
- **90th percentiles calculated using all lead and copper sample results**
- **Exceedance determined if 90th percentile is above action levels**
 - **15 ppb Pb**
 - **1.3 ppm Cu**

Revised LCR

- **Final rule from EPA this month**
- **Details to follow!**

Chemical

Early in monitoring period
Check waiver
Correct Sample Site
Check to see if you were credited for sample



Chemical - General

- **Compliance with MCLs based on RAA**
 - One sample 4X MCL
- **Confirmation samples required for systems with no history**
 - Will be averaged with original sample
 - Must be taken within 14 days, unless acute contaminant (24 hrs or 7 days)
- **Quarterly monitoring if treatment added**

Chemical - General

- **Quarterly schedules will be for that specific contaminant (Exception: PFAS)**
- **If put on quarterly for water quality issues...**
 - **may go back to standard monitoring after 4 quarters**
 - **if each value reliably and consistently below MCL (<80%)**

IOCs

- **Inorganic Compounds**
 - Every 3 years GW, 1 year for SW
 - Quarterly if confirmed $\geq 50\%$ MCL
- **Nitrate/Nitrite - yearly/every 3 years**
 - Quarterly if confirmed $\geq 50\%$ MCL
- **Cyanide – every 9 years**

SOCs

- **Synthetic Organic Compounds**
 - Yearly (waiver)
 - Quarterly with any detection

VOCs

- **Volatile Organic Compounds**
 - 4 consecutive quarters 1st year
 - Yearly (waiver)
 - Quarterly with confirmed detection

PFAS

- 4 contaminants (PFHxS, PFNA, PFOS, PFOA)
- 4 consecutive quarters 1st year
- Future frequency based on RAA, up to 3 years
 - All 4 contaminants together
- Confirmation required if result >50% MCL

Future PFAS Monitoring Frequency

- Based on Initial or Any Subsequent Monitoring Results
- Env-dw 709-713 Appendix D

Average Monitoring Result (ng/L)	Frequency
> MCL or Treating for PFAS	Quarterly
> 50% of MCL to MCL	Annually
<=50% of MCL	Once every 3 years

Radionuclides

- **Community Water Systems only**
- **Compliance Gross Alpha, Uranium, and Combined Radium 226 & 228**
- **4 consecutive quarters 1st year**
- **Future frequency based on RAA, up to 9 years**
 - Separate schedule for each contaminant
- **Quarterly monitoring with confirmed exceedance of MCL**

Asbestos

- **At sites where asbestos contamination is most likely to occur**
- **Every 9 years**
- **Confirmation if result $\geq 50\%$ MCL**
- **Quarterly if confirmed exceed MCL**
- **Next round Q3 2022!**

Notify NHDES if asbestos piping has been removed

Manganese

- **NHDES adopted 0.3 mg/L as a groundwater standard (AGQS) in December 2020.**
 - Per drinking water rules, groundwater standards are enforceable drinking water standards.
- **DWGB to begin enforcing AGQS July 1, 2022**
- **Annual Monitoring unless...**

Manganese

- **Sample result exceeds the 0.3 mg/L standard**
 - confirmation sample within 24 hrs
 - If cannot, PN and collect within 7 days
 - **Notice of Violation and requires acute public notification.**
 - **Quarterly sampling if still exceeding**
- **Sample result >50% to 0.3 mg/L standard**
 - Confirmation samples within 7 days
 - Quarterly sampling if confirmed >50%

Manganese

- **Place systems directly on quarterly starting July 1, 2022**
 - based on manganese treatment, or recent manganese results **>50% standard**
- **If any sample is above 0.3 mg/L, acute public notification required**
- **If any sample is above 0.1 mg/L, new health effects public notification required quarterly**

**Disinfection
By-Products
(DBPs)**

- **Systems that disinfect**
- **Approved Plan**
- **Chlorine residuals (RTCR)**
- **Quarterly Reports 10th day following quarter**



DBP Sampling

- **TTHM & HAA5**
 - Could be separate sites
 - Quarterly for sw or large systems
 - Reduced to Annual or Triennial
- **Bromate**
 - Ozone
 - Collected at treatment plant
 - Monthly first 12 months
 - Reduced to Quarterly

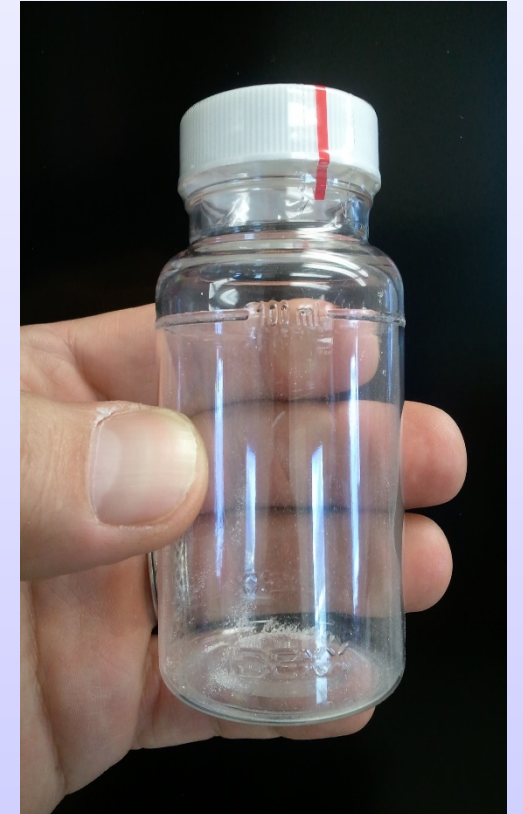
Compliance with MCLs based on LRAA

DBP Precursors

- **Total Organic Carbon (TOC)**
 - **Surface Water Systems with Filtration**
 - **Now on MSS!**
 - **Analysis Request Form**
 - **Monthly or reduced to Quarterly**
- **D/DBP Quarterly Report still required**

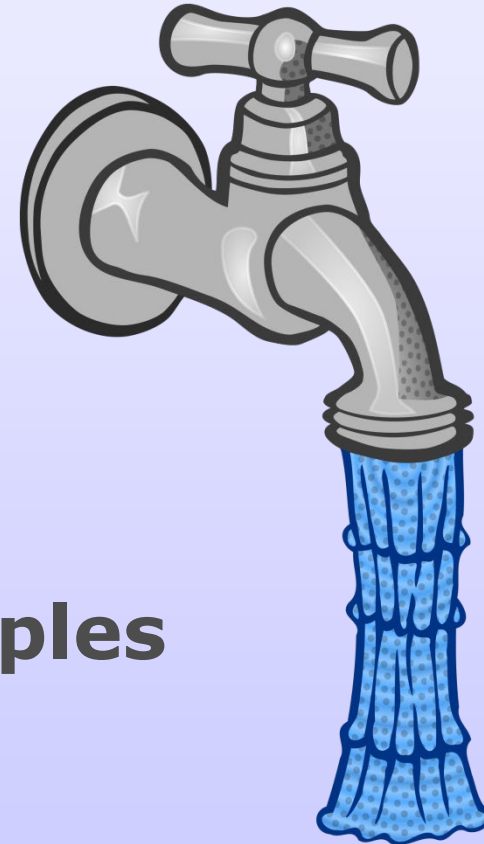
Sampling Tips

- **Check your Master Sampling Schedule (MSS)**
 - Don't depend on reminders
- **Non-routine monitoring is not on MSS**
 - GWR, Confirmation, LCR Water Quality, etc.
- **Reminders are not sent for non-routine monitoring**
- **Obtain the proper bottles**
- **Review other pertinent information**
 - Repeats
 - Groundwater Rule
 - Next month



Sampling Tips

- **Sample Early**
 - Compliance period
 - Week
- **Make sure Lab submits results**
- **Time for Repeat and GWR-TM samples**
 - 24 Hours
- **Results in time for regular reports**
 - DBPs



Sampling Tips

- **Analysis Request Forms**
 - Use updated NHDES forms
- **Fill out completely**
- **Field Analyses (Cl₂ residual, LCR Water Quality)**
- **Verify Correct Site**
- **Verify Conditions (blend - all wells on-line)**



DWGB Monitoring Contacts

Bacteria Monitoring:

- **Barbara Davis** (603) 271-2542

Chemical Monitoring:

- **Tricia Madore** (603) 271-3907

Lead & Copper and Disinfection By-products:

- **Jordan Vachon** (603) 271-2516

Consumer Confidence Reports:

- **Kimmi Durgin** (603) 271-6703

dwmonitoring@des.nh.gov