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EPA REGION 8 DRINKING WATER PROGRAM TRIBAL SYSTEMS NEWSLETTER

INSIDE THE ISSUE

United States Environmental Protection Agency

Region 8

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AFTER-HOURS EMERGENCY PHONE NUMBER

The Region 8 Drinking Water Program has an after-hours emergency phone number! If you experience an emergency situation during non-workday hours or the weekend, such as an issue that disrupts your water supply or the water is contaminated with *E coli* bacteria or other contaminants, please call **303-312-6327** for assistance. During Monday-Friday working hours please contact one of our staff members for assistance.

STAFFING CHANGES IN EPA REGION 8's DRINKING WATER PROGRAM

Please congratulate Kyle St. Clair as he takes on a new role as the Wyoming Liaison and Sanitary Survey Technical Review Team Lead. Kyle joined the Drinking Water Program in 2017 as the Nitrate Rule Manager and Water Security Coordinator. When Michael Copeland retired in July 2021, Kyle took over Michael's responsibilities for maintaining EPA's partnerships with Wyoming water-sector stakeholders as well as managing the reviews of about 200 Wyoming sanitary surveys per year. Please feel free to contact Kyle at StClair.Kyle@epa.gov or 303-312-6791.

Please welcome Bailey Smith as the Nitrate Rule Manager. Bailey was hired into EPA Region 8 in May 2020 and joined the Drinking Water Program full-time in August 2021. Bailey is responsible for managing the Nitrate Rule for regulated water systems, including compliance and monitoring. She will also take over management of the Consumer Confidence Report (CCR) Rule and the Aircraft Drinking Water Rule in early 2022, when she switches some roles with Nara Jirik. Bailey comes to Region 8 from EPA Region 3 where she worked primarily on agriculture best management practices to improve water quality. Prior to EPA, Bailey worked in urban forestry on projects aimed at increasing Philadelphia's tree canopy. She has her Master's degree in Environmental Sustainability from the University of Pennsylvania and a Bachelor's degree in Environmental Studies from the Pacific Lutheran University. Bailey can be reached by email at smith.bailey@epa.gov or by phone at 303-312-6940.

As mentioned above, Nara Jirik is changing some of her roles in early 2022. She will continue to oversee Region 8 primacy states' drinking water programs, with a lead role for North Dakota and South Dakota. Nara will take over leading Region 8 water security activities, including managing cybersecurity incidents, providing training and hosting water system workshops with EPA Headquarters for issues such as drought and extreme weather events, and coordinating Region 8's Water Emergency Response Team. Nara can be reached at jirik.nara@epa.gov or 303-312-6789.
Please see the Contact List (https://www.epa.gov/region8-waterops/epa-region-8-drinking-water-program-contact-list) on Region 8's WaterOps (https://www.epa.gov/region8-waterops) website for a full run-down on our staff.

EPA RECOMMENDS USE OF NITRATE LAB ANALYSIS METHOD TO PROTECT PUBLIC HEALTH

In 1991, EPA established the maximum contaminant level (MCL) for nitrate of 10 mg/L under the authority of the Safe Drinking Water Act (SDWA). Nitrate levels in drinking water above this MCL can cause methemoglobinemia (blue baby syndrome) in infants, and even short-term exposures can result in severe illness or death. Therefore, EPA encourages public water systems (PWSs) with elevated nitrate levels in the water supply to request that the lab use an analytical method with the shortest turnaround time for the samples to be analyzed and the results finalized. This would allow you to provide rapid public notification of elevated nitrate sample results and protect public health.

Many water systems currently request their lab use a method that analyzes for combined total nitrate and nitrite in the water sample. For this method, the samples are preserved with sulfuric acid and must be analyzed by the lab within 28 days. In contrast, when the lab analyzes samples only for nitrate, the samples must be kept at 4°C

and analyzed within 48 hours (or 14 days for certain chlorinated samples). With the extended 28-day holding time for the total nitrate and nitrite analysis, in the event of an elevated result (over 5 mg/L), the delayed release of the sample results could prolong possible risks for infants exposed to nitrate through drinking water.

Because each of the analytes - nitrate, nitrite, and total nitrate and nitrite are considered acute contaminants, it is especially critical when determining compliance with the nitrate MCL that samples be analyzed as soon after collection as possible. Once a sample exceeds 5 mg/L, the PWS's source has shown a potential for nitrate contamination and EPA requires nitrate samples be collected and analyzed quarterly.

Though not required by regulation, EPA requests that future nitrate analyses at Wyoming water systems with detectable nitrate levels be conducted using the nitrate method rather than a total nitrate and nitrite method. When submitting quarterly nitrate samples, and any confirmation samples that follow a nitrate analysis greater than 10 mg/L, please request that your lab analyze the samples solely for nitrate within 48 hours after the samples were collected, and not for total nitrate and nitrite.

If you have questions, please contact Nitrate Rule Manager Bailey Smith at (303) 312-6940 or by email at smith.bailey@epa.gov.

WHAT TO DO FOR A LOSS OF PRESSURE INCIDENT

Distribution systems can lose pressure for various reasons that include water main breaks, equipment failures, losses of power, etc. Loss of pressure in a drinking water distribution system may cause a net movement of water from outside the pipe to the inside through cracks, breaks or joints in the distribution system. Backsiphonage is also a condition resulting from low or no pressure. Such system failures carry a high potential for fecal contamination or other disease-causing organisms to enter a distribution system and can cause serious health concerns for people who drink the contaminated water. Pressure loss is defined as a distribution system pressure of less than 20 pounds per square inch (psi).

Measures to Take in the Event of Partial or Full Pressure Loss at a Public Water Supply System

The response to pressure loss and the remedial action that follows will vary depending on the situation. However, listed below are the actions that an operator should take in the event of a loss of pressure in the distribution system that is likely to last longer than one hour:

1. If the area of lost pressure can be valved off and contained, you should isolate this area from the rest of the system. This may limit the degree of contamination and the number of service connections affected by the loss of pressure.

2. **Immediately notify the EPA Region 8 Drinking Water Program**
   - **Tribal PWS in Utah, Wyoming, or Colorado: 303-312-6318**
   - **Tribal PWS in Montana: 406-457-5009**
   - **Tribal PWS in North Dakota, South Dakota: 605-945-1192**
   - **If outside of normal business hours, call the after-hours emergency number: 303-312-6327**
   - **Be prepared to describe** what happened, when, where and the scope of the problem (if known).

3. We recommend that you notify the laboratory that you use to alert them regarding the emergency and to obtain bacteriological sampling bottles, materials, and instructions (for taking Special bacteriological samples).

4. In order to protect your customers, immediately issue a Tier 1 Public Notice (PN) that includes a Loss of Pressure Boil Water Advisory. If boiling the water is a hardship for customers, consider providing bottled water or another alternate water supply to customers.

5. Locate/identify and fix the problem that caused the pressure loss.

6. When system pressure is restored to normal, disinfect and flush the affected distribution system in accordance with AWWA Standard C651 as necessary.

7. After the excess chlorine has been flushed out of the water supply, ensure that chlorine residuals have returned to normal levels. Collect and submit to the lab a Total Coliform (TC) bacteriological sample from both upstream and downstream of the affected area of the distribution system. These samples should be designated/marked as "special" samples on the lab slip. Maintain the boil water advisory until two consecutive days of "safe" TC samples have been collected, or until EPA notifies you that the boil order can be lifted.

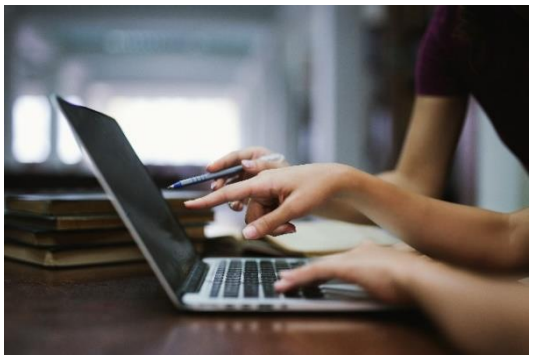
EPA may issue an Emergency Administrative Order (EAO) for incidents that can result in contamination in or near a public water system that may pose an "imminent and substantial" endangerment to human health. If an EAO is issued to the system owner, the operator must follow all the requirements (e.g., issue a Tier 1 Public Notice, complete corrective actions, disinfect and flush the system, collect special total coliform samples) listed within it.

Prepare for the Unexpected

Every water utility should have an Emergency Response Plan (ERP) that addresses emergencies, such as loss of pressure, with a checklist of steps to take. The ERP must be exercised periodically in order for all personnel to be familiar with it. Regular maintenance and timely implementation of sanitary survey recommendations may also help in preventing or reducing emergencies.

DO YOU KNOW THAT EPA HAS A DRINKING WATER WEBSITE?

We do! EPA Region 8 has a website for drinking water system operations in Wyoming and on Tribal lands and it has many resources you may need or find helpful. The website is divided into six sections: (1) Water Systems, (2) Emergency Preparedness, (3) Reporting Results, (4) Regulations and Compliance, (5) Monitoring and Sampling and (6) Operations and Assistance.



Some key highlights of the website by section include the following:

Water Systems

- Access to Drinking Water Watch, the tool that enables you and the public to view data EPA maintains about your water system

Emergency Preparedness

- What to do if you have a loss of pressure
- Access to a boil water advisory template when an *E.coli* maximum contaminant level (MCL) exceedance occurs

Reporting Results

- Access to reporting forms for changes to: water source, treatment, water system facilities, system contacts and/or management as well as seasonal operations
- Access to consumer confidence report certification forms, emergency response plan templates, lead and copper tap sample site plan template, maximum residual disinfectant level form, basic information form for new public water systems, sampling forms, public

notification templates, sanitary survey forms and many others

Regulations and Compliance

- EPA's regulated analytes list
- Tips to stay in compliance

Monitoring and Sampling

- List of certified laboratories
- Sample collection guide

Operations and Assistance

- Preparing for a sanitary survey and tech tips
- Presentations from training conferences.

Our staff contact list is available in the yellow "Need Help" box on the right-hand side of the home screen.

Please take a look and contact us about any other needs by visiting the WaterOps website: https://www.epa.gov/region8-waterops.

MANAGING THE REPLACEMENT OF ASBESTOS CEMENT PIPE

The use of asbestos cement (AC) pipe (or transite pipe) in drinking water distribution systems was once common in the U.S. It was installed as early as the 1930s with the peak of installation and use between the 1950s and 1960s. EPA estimates that 15% of water distribution pipes are asbestos cement. Due to the serious health risks associated with asbestos exposure, the EPA attempted to ban all asbestos containing products on the market in 1989. While that was ultimately overturned, the use of AC pipe was largely discontinued at the end of the last century due to health concerns associated with the manufacturing process and the possible release of asbestos fibers from deteriorated pipes. In 2019, the EPA promulgated a Significant New Use Rule under the Toxic Substances Control Act to ensure that any discontinued uses of asbestos cannot re-enter the marketplace without EPA review, including asbestos cement pipe and fittings.

Much of our drinking water infrastructure has reached or is nearing the end of its useful life and approaching the age at which it bneeds to be replaced. AC pipe has a typical design life of 50 years. As AC pipes are managed and replaced, special care is required to prevent the release of hazardous asbestos fibers.

Photo credit: Colorado Hazard Control, LLC.

The Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, subpart M, sets forth requirements intended to minimize the release of asbestos fibers during renovation and demolition activities involving the handling of asbestos. Prior to the renovation or demolition of a facility, including activities involving AC pipe, the Asbestos NESHAP requires the removal of all regulated asbestos-containing material (RACM). RACM includes any existing friable asbestos material or material which would likely become friable during the course of the planned demolition or renovation operations. That is, any asbestos-containing material that can be crumbled or reduced to powder by hand pressure must be safely removed prior to conducting activities that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. Pipe replacement is considered a renovation activity which is subject to these requirements.

Conventional and acceptable work practices to replace AC pipe include open-cut trench and abandonment in place. Open trenching is the practice under which the entire AC pipe is excavated, wet-cut into 6- and 8-foot sections using a snap cutter or similar tool, wrapped for containment, and removed for disposition at an approved disposal location. Asbestos cement pipes may also be abandoned in place, with the new pipeline laid in a separate area.

While pipe bursting and breaking are popular methods for various types of pipe replacement projects in general, pipe bursting or breaking AC pipe is

not permitted under the Asbestos NESHAP. Pipe bursting or breaking of AC pipe renders the AC pipe friable, leaving friable pipe fragments, consisting of RACM, underground. This method does not comply with the requirements of the asbestos NESHAP and has not been approved by EPA.

EPA has approved a closed trench method for AC pipe replacement, which may be used as an alternative to the open-cut trench and abandonment in place approaches allowed under the Asbestos NESHAP. This EPA-approved alternative work practice standard is known as Close Tolerance Pipe Slurrification (CTPS). CTPS utilizes trenchless technology and does not leave friable asbestos in the ground. CTPS involves grinding the AC pipe while simultaneously injecting fluid to form a liquid cement slurry which is vacuumed out through vertical access points. The new pipe is pulled into the existing pipe cavity directly behind the grinding apparatus. A skim coat of nonfriable cementitious asbestos-containing material is left and solidifies on the outside rim of the new pipe. For more information on the CTPS method see the Notice of Final Approval for an Alternative Work Practice Standard for Asbestos Cement Pipe Replacement page at https://www.epa.gov/stationary-sources-air-pollution/notice-final-approval-alternative-work-practice-standard-asbestos. For more information about the asbestos NESHAP, visit the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) page at https://www.epa.gov/stationary-sources-air-pollution/asbestos-national-emission-standards-hazardous-air-pollutants.

If you have any questions, please contact the Chemical Phase II/V Rule Manager Kendra Morrison, at morrison.kendra@epa.gov or (303) 312-6145.

PROTECT YOUR SYSTEM AGAINST RANSOMWARE ATTACKS

The number and size of ransomware incidents have increased significantly and strengthening our nation's resilience from cyberattacks –in both the private and public sector – is a top priority of EPA. The U.S. government is stepping up to do its part, working with like-minded partners around the world to disrupt and deter ransomware actors. These efforts include disrupting ransomware networks, working with international partners to hold countries that harbor ransomware actors accountable, developing consistent policies towards ransom payments and enabling rapid tracing and halting of virtual currency payments.

All organizations must recognize that no entity is safe from being targeted by ransomware, regardless of size or location, and this is especially important with the security of water systems. But there are immediate steps you can take to protect your facilities, as well as your customers and the broader economy. Much as our homes have locks and alarm systems to meet the threat of theft, we urge you to take ransomware crime seriously and ensure your water system's cyber defenses match the threat. Below you will find the U.S. government's recommended best practices – we've selected a small number of highly impactful steps to help you focus and make rapid progress on driving down risk.

What We Urge You to Do Now:

Implement the five best practices from the President's recent Executive Order: These five best practices can provide high impact: multifactor authentication (because passwords alone are routinely compromised), endpoint detection and response (to hunt for malicious activity on a network and block it), encryption (so if data is stolen, it is unusable) and a skilled, empowered security team (to patch rapidly, and share and incorporate threat information in your

defenses). These practices will significantly reduce the risk of a successful cyber-attack.

Backup your data, system images and configurations, regularly test them and keep the backups offline: Ensure that backups are regularly tested and that they are not connected to the organization's network, as many ransomware variants try to find and encrypt or delete accessible backups. Maintaining current backups offline is critical because if your network data is encrypted with ransomware, your organization can restore systems.

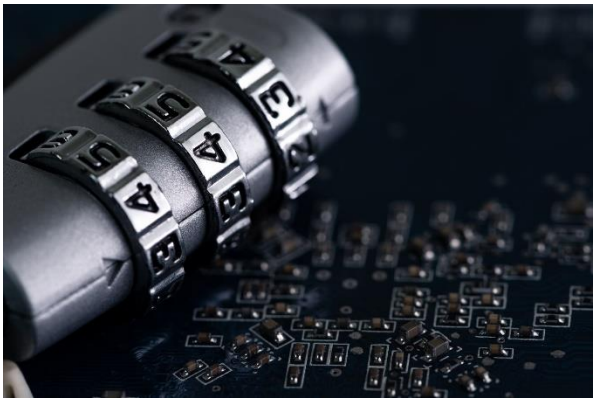
Update and patch systems promptly: This includes maintaining the security of operating systems, applications, and firmware, in a timely manner. Consider using a centralized patch management system; use a risk-based assessment strategy to drive your patch management program.

Test your incident response plan: There's nothing that shows the gaps in plans more than testing them. Run through some core questions and use those to build an incident response plan: Are you able to sustain business operations without access to certain systems? For how long?

Check Your Security Team's Work: Use a 3rd party pen tester to test the security of your systems and your ability to defend against a sophisticated attack. Many ransomware criminals are aggressive and sophisticated and will find the equivalent of unlocked doors.

Segment your networks: There's been a recent shift in ransomware attacks – from stealing data to disrupting operations. It's critically important that your water system functions, and other operations are separated and that you carefully filter and limit internet access to operational networks, identify links between these networks and develop workarounds or manual controls to ensure networks can be isolated and continue operating if your business network is compromised. Regularly test contingency plans such as manual controls so that safety critical functions can be maintained during a cyber incident.

Ransomware attacks have disrupted organizations around the world, from hospitals across Ireland, Germany and France, to pipelines in the United States and banks in the U.K. The threats are serious, and they are increasing. We urge you to take these critical steps to protect your systems and the American public. The U.S. government is working with countries around the world to hold ransomware actors and the countries who harbor them accountable, and we stand ready to help you implement these best practices.



Additional Resources

FACT SHEET: President Signs Executive Order Charting New Course to Improve the Nation's Cybersecurity and Protect Federal Government Networks CISA – Ransomware Guidance and Resources Recommended Mitigation (https://www.whitehouse.gov/briefing-room/statements-releases/2021/05/12/fact-sheet-president-signs-executive-order-charting-new-course-to-improve-the-nations-cybersecurity-and-protect-federal-government-networks/).

Additional EPA cybersecurity best practices for the water sector can be found at the following link: EPA Cybersecurity Best Practices for the Water Sector (https://www.epa.gov/waterriskassessment/epa-cybersecurity-best-practices-water-sector). Questions about water security can be sent to Region 8 Water Security Coordinator, Bailey Smith at smith.bailey@epa.gov.

GROUND WATER RULE (GWR) SOURCE SAMPLE TAP INSTALLATION

Starting in the Spring of 2022, sanitary surveys conducted by EPA Region 8 at Wyoming and Tribal public water systems will look for dedicated groundwater source sample taps as required by the National Primary Drinking Water Regulations (NPDWRs) found in 40 CFR 141.400. If sample taps are not located during the survey for each groundwater source a Significant Deficiency will be included in the sanitary survey report.

WHAT'S IN A SAMPLE BOTTLE LABEL NAME

The way you label your water samples tells EPA a lot about the sample. It also determines whether your sample results will be credited to your water system or if you end up with a monitoring violation when the correct sampling location is not clearly indicated. Every year around mid-February, EPA sends out the annual Monitoring and Reporting Requirements ("To Do" lists), along with a "schematic" of your water system. The schematic is an overly simplified, not-to-scale diagram of your water system. Instead of showing individual buildings and streets as your distribution system, it has a large pound sign or hashtag, that looks like this #. There is also at least one red star and blue arrow indicating where a sample should be collected for Nitrate-Nitrite other Inorganic Compounds (IOCs), Synthetic Organic Compounds (SOCs), Volatile Organic Compounds (VOCs) and Radionuclides (RADS) (if required). In most cases, this is NOT the sampling point for total coliform, disinfection byproducts and lead or copper. There is a note on the schematic that says, "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."

The following article discusses labeling requirements only for total coliform, nitrate-nitrite and triggered Ground Water Rule (TG GWR) samples. The information is applicable to all public water systems (PWSs), but there is no discussion on how to label samples for lead, copper, disinfection byproducts, chemicals, asbestos, radionuclides or any other parameters that may be required.

Nitrate/Nitrite Monitoring Location

If your system is required to sample for nitrate-nitrite per your Monitoring and Reporting Requirements, the sampling point on the schematic is marked as SPxx (i.e., SP01 or SP04) with a description of the sample point location (i.e., storage tank). The EPA database will only accept samples labeled in this manner for nitrate-nitrite, other IOCs, SOCs, VOCs and radionuclides. The SPxx designation tells EPA that a water sample was collected AFTER any water treatment processes and BEFORE it gets to the first consumer and is from the location we call "the entry point to the distribution system." Please note that you may have more than one sampling point for nitrate-nitrite due to the number of entry points to the distribution system representing separate sources of water. Please use a certified lab of your choice to analyze the samples. It is the PWS's responsibility to make sure that the lab analyzing your sample(s) for compliance is State or EPA certified for the specific analyte and method being requested. Make sure the sampling point and sample point description (the SPxx number previously mentioned) is clearly noted on the lab's chain

of custody or other form that is submitted with your water sample(s). This will ensure that the sample result is accurately recorded in the EPA database as a sample for compliance. Without the correct sample point location, your PWS will get a nitrate-nitrite failure to monitor (FTM) violation.

Total Coliform Monitoring Location

Total coliform water sample(s) must be labeled with a sample location name that clearly indicates that it is in the distribution system, preferably with the letters "DIST" and according to your Revised Total Coliform Rule (RTCR) Sample Siting Plan. For example, "men's restroom-DIST" or "DIST 123 Main St." Total coliform samples must be collected within the distribution system where the water is used (not at the storage tank or pump house). If you write on your sample bottle or laboratory chain of custody form that a total coliform sample was collected at SPxx, the sample will be rejected, and you will receive a total coliform failure to monitor (FTM) violation.

Ground Water Rule (GWR) (Source) Monitoring Locations

If your water source is a well or spring, you are required to collect a groundwater source sample at the well or spring if your PWS has a routine RTCR total coliform positive (TC+) result. Samples must be collected from all groundwater sources that were in use during the collection of the routine RTCR TC+ sample, and they must be analyzed for total coliforms and *E. coli*.

If you have a surface water source, this requirement does not apply to your PWS. If you purchase water from another system, this requirement does not apply to you either. However, you must notify the PWS that you purchase water from so that they can take their source water sample to meet the GWR sampling requirement. Collect the source sample(s) at the groundwater source(s) (well or spring) BEFORE any treatment.

You are required to have a designated sample tap at a location that allows testing from the water source. If there is no sample tap on each of your well(s) or springs, you will need to install one before your next sanitary survey, as it will be considered a Significant Deficiency in most cases where a source sample tap is absent. If you must collect GWR source samples within 24 hours after a routine RTCR TC+ sample and you do not yet have a sample tap for your groundwater source(s), then you may be able to collect the source sample from the faucet or tank inlet closest to the well and then install a more appropriate sample tap at the source afterwards. If you do not yet have a tap at each source and your groundwater sources combine before treatment, you may take a combined source sample, but make sure to mark the sample location as "combined" and note the groundwater sources' facility codes that were combined (e.g., Combined WL01, WL02, and WL03). This sample must be labeled as the Triggered Monitoring Ground Water Rule sample (or "TG GWR" for short). You must indicate that it is a source sample or collected from the well or spring so that we know it is not one of the required RTCR repeat samples from the distribution system. Remember: This sample is only required if you use groundwater for your source water and have a routine total coliform positive result.

What if SPxx and/or DIST and/or TG GWR are the same location?

What if your PWS does not have a way to collect a sample from the source (for the TG GWR) or from the entry point to the distribution system (for the SPxx for nitrate/nitrite)? Please discuss this situation with EPA, and EPA may designate the first tap within the distribution system as the same sampling location for all three water samples, the TG GWR, the nitrate-nitrite and the total coliform routine sample. If this is the case, you will need to remember to label each sample bottle differently according to the naming conventions described above. Even though the sample location is the same, the EPA database will not accept samples that are labeled improperly.

If a nitrate-nitrite sample is labeled as being in the distribution system and says DIST, you will get a nitrate FTM violation. If the water sample from the same location is labeled as "TG GWR," and you intended it to be a routine total coliform sample, it will not be accepted as such, and you will get a monthly total coliform FTM violation. If a total coliform sample is labeled as being from SPxx, you will get a total coliform FTM violation since the database will think the total coliform sample was collected from the entry point to the distribution system and not from the distribution system itself. Although it sounds confusing, if you print out your Monitoring and Reporting Requirements, and keep the form(s) with the correct sample point code(s) with your sample bottles, then you can always refer to it for the proper way to label your samples. We also recommend keeping your RTCR Sample Siting Plan close by so that you remember where to collect your sample(s) each month and the proper sample naming convention to write on your sample bottles and laboratory chain of custody.

If you do not have an agreement with your lab to send sample results to EPA, then please send ALL lab reports to R8DWU@EPA.GOV as soon as you receive them from the lab. You must include your public water system identification number (PWS ID# – begins with 08 or WY560 or WY568) and the contaminant that was analyzed in the subject line. If you are unsure which of your monitoring requirements you have fulfilled already, please take a look at your water system on the Drinking Water Watch website: https://sdwisr8.epa.gov/Region8DWWPUB/. Simply type in your PWS ID# to search for your water system. Click on your PWS ID# to bring up your water system profile. On the left-hand side of the profile, you will see an option to view the contaminants that were analyzed.

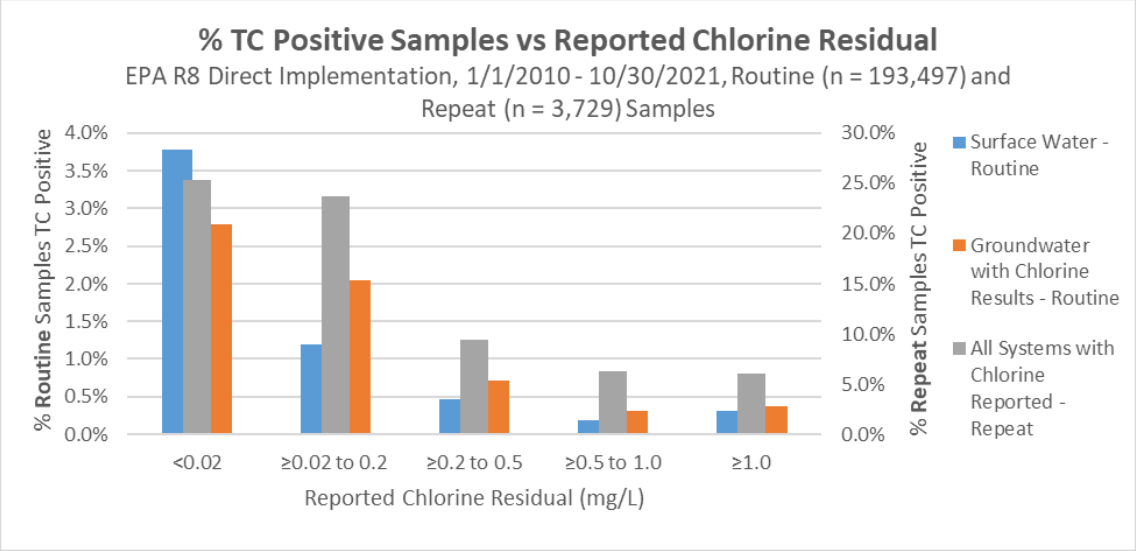
EPA Regulation	Contaminant Analyzed	Physical Sample Location	Sample Site Name
Nitrate-Nitrite Rule	Nitrate, Nitrite, or Nitrate-Nitrite	Entry point to the distribution system, after treatment*	Example: SP01 – storage tank, SP04 – pressure tank
Revised Total Coliform Rule	Total Coliform and *E. coli*	Within the distribution system*	Example: DIST – Men's restroom, or DIST-123 Main Street
Ground Water Rule	*E. coli*	Directly from the well or spring, before treatment*	Example: TG GWR – WLO1 - source
* If the sample location is the same for all 3 regulations, please collect your samples and label each bottle according to the naming convention above.			

PROTECT YOUR DISTRIBUTION SYSTEM—HOW MUCH CHLORINE RESIDUAL DO YOU NEED?

Maintaining an adequate chlorine residual in your distribution system reduces the health risk posed by disease-causing pathogens that may exist in the pipes; offers protection against waterborne diseases from cross-connections, low pressure events, or localized issues; and limits biological growth and nitrification along the pipe walls. The health risks associated with opportunistic pathogens in the distribution system, like *Legionella* and nontuberculous mycobacteria (NTM), have been identified as a national issue in recent years. Researchers have found that concentrations of *Legionella* are significantly higher in water with low chlorine residual levels. This appears to be true regardless of the water system's source water type (i.e., surface water or groundwater).

Failure to maintain an adequate chlorine residual in the distribution system is also associated with an increased incidence of total coliform (TC) positive sample results. Below is a graph with a summary of the historic total coliform samples and associated chlorine residual results, collected during the timeframe from January 2010 to October 2021, at all public water systems in Wyoming and Region 8 Indian Country. In this summary, it appears that maintaining a

chlorine residual greater than 0.02 mg/L results in a significant decrease in total coliform detections in routine samples (no change for repeat samples), with a decrease observed for both routine and repeat samples when the residual is maintained at greater than 0.2 mg/L. An additional small improvement in the percentage of total coliform positive samples is observed for both routine and repeat sample results with a reported chlorine residual of greater than 0.5 mg/L.



EPA Region 8 recommends that all systems, including groundwater systems, maintain a minimum chlorine residual of 0.2 mg/L free chlorine or 0.5 mg/L total chlorine throughout the distribution system. This recommendation is consistent with the results of the above analysis.

EPA ANNOUNCES INTENT TO STRENGHTEN THE LEAD AND COPPER RULE

On December 16, 2021, EPA announced next steps to strengthen the regulatory framework on lead in drinking water. Following the agency's review of the Lead and Copper Rule Revisions (LCRR) under Executive Order 13990, EPA has concluded that there are significant opportunities to improve the rule to support the overarching goal of proactively removing lead service lines and more equitably protecting public health.

In a Federal Register Notice, EPA announced that the LCRR will go into effect to support near-term development of actions to reduce lead in drinking water. At the same time, EPA will develop a new proposed rulemaking to strengthen key elements of the rule. The agency anticipates finalizing the forthcoming Lead and Copper Rule Improvements (LCRI) prior to October 16, 2024, the initial compliance date in the LCRR. For additional information, including fact sheets and the Federal Register Notice, visit: https://www.epa.gov/ground-water-and-drinking-water/review-national-primary-drinking-water-regulation-lead-and-copper.

LEAD AND COPPER RULE SAMPLING REQUIREMENTS

The Lead & Copper Rule (LCR) requires water system operators to sample at locations that may be particularly susceptible to high lead or copper concentrations, such as those where lead and copper fixtures and/or pipes have been installed during a particular time period. The LCR establishes a tiering system for prioritizing sampling sites. Note that while EPA does not "approve" sampling plans, we are currently in the process of performing a desk audit and reaching out to systems where sample location errors exist. The two most common errors are incorrect tiering based on the construction materials and year of build as well as systems sampling at Tier "Other" sites when Tier 1, 2 or 3 sites exist. Systems are required to sample according to

the tiering criteria listed in the rule and reiterated below, independent of what their sampling plan says. EPA has been and will continue to invalidate samples that are not shown to be collected according to the required tiering criteria. In these situations, the onus is on the system to provide EPA the required information in a timely manner or a failure to monitor violation will be issued. Note that locations with lead levels at or above the action level (15 parts per billion) in the past would fall under Tier 1 (single family homes in a CWS and buildings in a NTNCWS) and Tier 2 (buildings for a CWS) unless pipes on both customer and water system side have been replaced.

Generally, the tiering criteria is as follows (please see 40 CFR § 141.86(a) of the Lead and Copper Rule for more details).

Sampling sites for Community Water Systems (CWS) - Three Tiers:

Tier #1 sites: **Single family structures that**:

- Contain copper pipes with lead solder installed between 1983 to 1988 and/or
- Contain lead pipes, and/or
- Are served by a lead service line.

Tier #2 sites: Buildings, including multiple family residences that:

- Contain copper pipes with lead solder installed between 1983 to 1988 and/or
- Contain lead pipes, and/or
- Are served by a lead service line.

Tier #3 sites: Single family structures that:

- Contain copper pipes with lead solder installed before 1983.

Tier "Other" sites:

- Must contain sites representative of locations and plumbing materials within the water system (for instance they cannot all be from one newer PVC neighborhood if multiple neighborhoods and/or other copper piping exists).

Sampling sites of a Non-Transient Non-Community Water System (NTNCWS) – Two Tiers:

Tier #1 sites: Buildings that:

- Contain copper pipes with lead solder installed between 1983 to 1988 and/or
- Contain lead pipes, and/or
- Are served by a lead service line.

Tier #2 sites: Buildings that:

- Contain copper pipes with lead solder installed before 1983.

Tier "Other" sites:

- Must contain sites representative of locations and plumbing materials within the water system.

A water system may only use **Tier 2** sites once all **Tier 1** sites are exhausted. A community water system may only use **Tier 3** sites once all Tier 1 and Tier 2 sites are exhausted. A system may only use Tier "Other" sites if not enough sites exist within the system to fill out the sampling pool with Tier 1, Tier 2or Tier 3 sites (community water systems only).

Samples must be collected from taps that are typically used for drinking and cannot be collected from taps that have a point of use filter.

EPA understands this information can be difficult to obtain. A list of documents that should be reviewed to obtain this information can be found on page 25 of the *Lead and Copper Rule Monitoring and Reporting Guidance for Public Water Systems*, found here: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100DP2P.txt.

Once samples are collected by a system, the system is required to provide the individual lead sample results to the consumers who occupy the homes or buildings. The notification is required independent of the results and whether or not the action level has been exceeded. Along with this form, additional information must be provided including the health effects of lead, steps consumers can take to reduce exposure to lead in drinking water, contact information for the water utility, the maximum contaminant level goal (MCLG) and action level for lead and the definitions of these terms. Templates with this information can be found here and include forms for results reported in mg/L and ug/L: https://www.epa.gov/region8-waterops/lead-and-copper-consumer-notification-lccn-form-notice-lead-tap-water-results.

Once the results are distributed to the consumers using the above form, a certification form must be signed and dated and sent to EPA with one of the consumer notice forms mentioned above. This certification is attesting to EPA that the individual results have been distributed to the individual occupants of the buildings for the monitoring period indicated. The certification form can be found at the following website: https://www.epa.gov/region8-waterops/lead-consumer-notice-certification-form.

EPA EFFORTS ON POSSIBLE MICROBIAL AND DISINFECTION BYPRODUCT RULE REVISIONS

EPA reviews each National Primary Drinking Water Regulation (NPDWR) every six years and evaluates any newly available data, information, and technologies to determine if any regulatory changes are needed. Any revision to a NPDWR must at least maintain or improve public health protection.

In January 2017, the 3rd Six-Year Review identified eight candidate contaminants for revision, including Chlorite, Cryptosporidium, Haloacetic acids, heterotrophic bacteria, Giardia lamblia, Legionella, Total Trihalomethanes and viruses. Additional information on the 3rd Six-Year Review may be found here: https://www.epa.gov/dwsixyearreview/six-year-review-3-drinking-water-standards.

These eight contaminants are included in the following five Microbial and Disinfection Byproduct (MDBP) rules: the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Surface Water Treatment Rule (LT1SWTR) and the Stage 1 and Stage 2 Disinfection Byproduct Rules (DBPRs).

On June 1, 2020, EPA and the Waterkeepers Alliance entered a settlement agreement, which established a schedule for EPA to evaluate the MDPB rule revisions. In October 2020, EPA hosted an initial public meeting seeking input on these rule revisions. Between May and November 2021, EPA hosted virtual public meetings to gather additional concerns and comments on specific aspects of the MDBP Rules. In November 2021, EPA requested the National Drinking Water Advisory Council (NDWAC, www.epa.gov/ndwac) to form a working group to provide advice and recommendations to EPA on possible revisions to the five MDBP rules to address these eight regulated contaminants.

In particular, EPA seeks consensus recommendations from the NDWAC on:

- Advancing public health protection while balancing the risks of microbial control with managing disinfection byproduct formation.
- Addressing public health concerns caused by opportunistic pathogens (e.g., Legionella), disinfection byproducts (e.g., unregulated haloacetic acids), and possibly other emerging contaminants.
- Addressing implementation challenges to reduce the burden of existing MDBP regulations while maintaining or enhancing public health protection.
- Ensuring efficient simultaneous compliance with other drinking water regulations when implementing any proposed revisions to the MDBP rules.

- Additional potential non-regulatory approaches that may improve public health protection from the contaminants under consideration.
- Opportunities to advance environmental justice in regulatory revisions to equitably protect consumers' health, particularly disadvantaged and historically underserved consumers.

These consensus recommendations are anticipated to cover the following topics:

- Disinfectant residuals and opportunistic pathogens
- Regulated and unregulated DBPs
- Finished water storage facilities
- Distribution system water quality management
- Source water approach, including DBP precursor removal
- Mischaracterized ground water under the direct influence of surface water (GWUDI) systems
- Sanitary Surveys
- Water Safety Plans
- Consecutive and small systems

In accordance with the settlement agreement, EPA must issue a proposed rule or a formal decision not to propose amended MDBP rules by July 31, 2024. However, this may be delayed another year, depending on the status of the technical workgroups. If EPA issues a proposed rule, EPA will issue a final rule or withdraw the proposal by September 30, 2027. However, this may be delayed until July 31, 2028, depending on the rule revision procedures. EPA Region 8 will share information as the MDBP rule revision efforts progress.

PREPARING FOR EPA'S FIFTH UNREGULATED CONTAMINANT MONITORING RULE

One of the actions EPA will take to address emerging (currently unregulated) contaminants like per- and polyfluoroalkyl substances (PFAS) is to conduct expanded nationwide monitoring for PFAS in drinking water through the Unregulated Contaminant Monitoring Rule (UCMR).

The 1996 Amendments to the Safe Drinking Water Act (SDWA) require that once every five years, the EPA issue a new list of no more than thirty unregulated contaminants to be monitored for by public water systems. EPA uses the UCMR to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards set under the SDWA. This occurrence information provides knowledge about how much of the population is exposed.

This national survey is one of the primary sources of scientific information on occurrence and levels of exposure the Agency uses to develop regulatory decisions for contaminants in public drinking water supplies. The data also provides information to agencies and the public for use in decisions about public health protection.

The proposed rule for the Fifth UCMR (UCMR5) was published on March 11, 2021, and proposes monitoring for 29 PFAS contaminants and lithium in drinking water supplies across the country. It will provide new data that is critically needed to improve EPA's understanding of the frequency that these contaminants are found and at what concentrations.

America's Water Infrastructure Act (AWIA) is a federal law enacted by the U.S. Congress in 2018 that provides for water infrastructure improvements throughout the country, and it amended the SDWA in significant ways. AWIA significantly expanded the scope of small water systems required to monitor under UCMR5, basically doubling the number of water systems that will be required to sample under the next round. However, these changes will take place only if adequate funds to carry out this greater sampling scheme are appropriated to EPA by Congress. The proposed UCMR5 rule requires community water systems (CWS) and non-transient non-community (NTNC) water systems serving more than 3,300 persons, and a representative sample of CWS and NTNC water systems serving fewer than 3,300 people, to monitor between 2023 and 2025. Previously water systems serving more than 10,000

persons and a representative sample of systems serving 10,000 or fewer persons were required to monitor.

The proposed monitoring design for UCMR5 includes collecting samples at the entry point to the distribution system (after treatment, if applicable, and prior to the first customer). Surface water systems and groundwater under the direct influence of surface water systems would sample for four consecutive quarters during a year of monitoring. Groundwater systems would sample twice over the course of a year, with each sample event five to seven months apart.

EPA covers the shipping and analytical costs for small water systems serving 10,000 or fewer persons, whereas large water systems serving more than 10,000 persons are responsible for their own costs.

The data collected through the UCMR are publicly available online every quarter in EPA's National Contaminant Occurrence Database.

When will the rule be finalized and who will be affected by this rule?

The final rule was published on December 27, 2021. Our office sent emails on September 3 and October 21, 2021 to operators and administrative contacts of Tribal water systems and Wyoming water systems, respectively, that have been tentatively identified as being required to sample under UCMR5. This included notification to 33 Wyoming water systems and 13 Region 8 Tribal water systems. Water systems required to sample based on final rule requirements and current agency funding were notified in late January 2022 by email. All large CWS and NTNC systems serving more than 10,000 people will be required to monitor, while current funding supports monitoring by all very small and small CWS and NTNC public water systems (serving fewer than 3,300 people) and a few randomly selected medium sized public water systems (serving between 3,300 and 10,000 people). If the US Congress allocates sufficient funding, all medium sized CWS and NTNC water systems will be required to conduct UCMR5 sampling. Region 8 will continue to communicate with the medium sized systems that were tentatively identified for sampling, as they may be required to take preliminary steps described below to prepare for sampling prior to the funding decisions being made.

What are next steps after the rule is finalized?

For those water systems required to sample under UCMR5you will begin steps in 2022 to access EPA's Safe Drinking Water Accession and Review System (SDWARS) national database to download your notification letter, confirm your inventory of sample location and add relevant contacts for your water system. SDWARS will house all sample results from UCMR5 monitoring.

What training is available?

EPA Headquarters will conduct outreach and trainings in 2022. Two identical virtual meetings will be held on March 16 and 17, 2022, to provide public water systems, states, laboratories, and other stakeholders with a comprehensive overview of the UCMR5 program. The meetings will address a general introduction to the UCMR program, public water systems subject to UCMR5 requirements, the analytes to be monitored, monitoring locations and frequency, reporting requirements, ground water representative monitoring plans, and the laboratory approval program. Summer trainings will be offered on best practices for sample collection.

Two identical webinars were hosted on April 6 and 7, 2021, to discuss the proposed UCMR5. The meeting scope included the proposed monitoring requirements, analyte selection, analytical methods, laboratory approval process and groundwater representative monitoring plans.

Visit the homepage for UCMR5 at https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule and visit the "Meetings & Materials" link on the left-hand side of the page for the April 2021 webinar materials and the March 2022 webinar registration information.

The EPA Region 8 Denver office also plans to hold specific training in the spring of 2022 for the Wyoming and Tribal water systems affected by this rule. Details about the training will be available at a later date and direct email outreach will be conducted if you are required to monitor under this rule.

What other resources are available?

EPA's homepage for monitoring the occurrence of unregulated drinking water contaminants is www.epa.gov/dwucmr. The "UMCR 5 (2022-2026)" link provides information on the final rule, the press release, contaminants and minimum reporting levels, and the monitoring scope and design. Future posts will include an overview fact sheet, the list of EPA approved laboratories for analytical services, and occurrence data.

What if I have additional questions?

Please contact Kendra Morrison, Region 8's UCMR Coordinator, at morrison.kendra@epa.gov or (303) 312-6145.