



Collecting Quality Water Samples

**New Guidelines Incorporated into the EPA Revised
Total Coliform Rule (RTCR-2013) for Collecting Quality
Bacteriological Samples**



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All About Kupferle



[YouTube.com/kupferle1857](https://www.youtube.com/kupferle1857)

Brief History of Potable Water

- Seven cholera pandemics killed over 10 million people around the world in the past 200 years (mostly in the 19th century)
- 1890s - the use of chlorine becomes commonplace in English municipal water systems
- 1908 - initial applications of chlorination in Chicago and Jersey City water districts prove effective
- 1918 – U.S. government calls for all drinking water to be disinfected by chlorine, by 1970 there are 20,000 systems using chlorine to disinfect drinking water
- 1974 – Congress passes the *Safe Drinking Water Act* requiring public water systems (PWS) to collect/test samples for microbial activity



Why Test for Total Coliforms?



- EPA Total Coliform Rule requires PWS to monitor for the presence of Total Coliform in distribution systems. Total Coliforms are a group of closely related bacteria that are, with few exceptions, not harmful to humans
- Total Coliforms are common inhabitants of ambient water and may be injured by water treatment (chlorine disinfectant) in a manner similar to most bacterial pathogens and many enteric pathogens
- EPA considers total coliforms a useful indicator to determine the adequacy of water treatment and integrity of the distribution system.
- The absence of total coliforms in the distribution system minimizes the likelihood that fecal pathogens are present and can assist in determining if the system may be vulnerable to fecal contamination



Revised Total Coliform Rule & Sampling Stations



The EPA's Revised Total Coliform Rule (RTCR-2013) now includes language allowing for the collection of water samples from dedicated sampling stations for the following benefits:

- “To reduce potential contamination of the sampling taps. Utilities will have more control to prevent contamination of the sampling tap by preventing its use by unauthorized persons and allowing no routine use of the tap except for sampling.”
- “To facilitate access to sampling taps. Currently systems may be constrained by where they sample, e.g., only at public buildings or in certain individual customer's house.”
- “To improve sampling representation of the distribution system. Allowing dedicated sampling taps in areas where systems have not been able to gain access will facilitate better sampling representation of the distribution system.”

Steps for Collecting a Quality Sample

1. Hand hygiene



- Latex gloves are the best method of hand hygiene
- Second option includes washing hands thoroughly or using a hand sanitizer

2. Avoid unsterile contact



- Ensure your fingers, clothing or other unsterile objects don't touch the interior or mouth of the container or the container cap

3. Remove nozzle cap/aerator



- Remove protective nozzle cap if using a dedicated sampling station or aerator if sampling from a sink
- Avoid samples from swivel faucets
- Avoid faucets leaking at handle
- Avoid faucets with attachments
- Avoid faucets for food preparation
- Avoid threaded nozzles/taps
- Avoid fire hydrants, yard hydrants or other units that drain to ground

4. Sterilize nozzle/tap

– Flaming method



- Blow torch or cigarette lighter
- Heat faucet, don't burn it
- Run flame back and forth over outlet

– Chlorine Bleach Solution



- Immerse the tap
- Spray the tap

5. Flush water before sampling



- Flush line for a period of time in order to obtain a sample from the water main
 - Home taps approximately 5-15 minutes
 - Sampling stations approximately 3-5 minutes

6. Prepare to take sample



- Reduce water flow to ¼" stream with no air gaps
- Avoid touching inside edge and threads of bottle or cap
- Do not rinse bottle, as a chemical preservative is intentionally added

7. Taking the sample



- Carefully remove bottle cap, leaving it facing downward, do not set cap down
- Turn head to side and avoiding breathing in the direction of the sample
- Fill bottle as instructed by your lab, hold container at an angle to reduce aeration

8. Storage and Shipping



- Replace cap immediately after taking sample
- Place sample in cooler with ice for transporting, store in refrigerator
- Send sample to lab within 24-48 hours or as lab directs

Kupferle Dedicated Sampling Stations

Eclipse #88 Series

- Eclipse #88
 - All brass 3/8" waterway, lockable cast-aluminum enclosure, unthreaded nozzle
- Eclipse #88-SS
 - All stainless steel 1/2" waterway, lockable cast-aluminum enclosure, unthreaded nozzle
- Eclipse #88WC
 - All brass 1" waterway, lockable cast-aluminum enclosure, unthreaded nozzle
- Eclipse #88WC-SS
 - All stainless steel 1/2" waterway, lockable cast aluminum enclosure, unthreaded nozzle

Only manufacturer of cold climate sampling stations that are serviceable from above ground!



Eclipse #88 Eclipse #88-SS



Eclipse #88WC-SS

Eclipse #88WC

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Go to www.youtube.com/kupferle1857

MainGuard #66 Series

- MainGuard #66
 - All stainless steel 1/2" waterway, lockable aluminum enclosure, unthreaded nozzle
- MainGuard #66WC
 - All stainless steel 1/2" waterway, lockable aluminum enclosure, unthreaded nozzle
- MainGuard #66MB
 - All stainless steel 1/2" waterway, wall-mounted lockable aluminum enclosure, unthreaded nozzle

Only manufacturer of cold climate sampling stations that are serviceable from above ground!



MainGuard #66WC MainGuard #66



MainGuard #66MB

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Go to www.youtube.com/kupferle1857

Eclipse #82 Series

- Eclipse #82
 - All stainless steel 2" waterway, UV resistant lockable enclosure, freeze-proof temperature control valve, 3/8" sampling point (1" model also available)
- Eclipse #82WC
 - All stainless steel 2" waterway, UV resistant lockable enclosure, freeze-proof temperature control valve, 3/8" sampling point (1" model also available)

Eclipse #82



Eclipse #82WC

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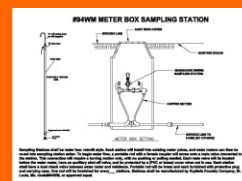
Go to www.youtube.com/kupferle1857

MainGuard #94WM & #95WM

- Below grade sampling station, fits inside meter box
- No disruption to customer's water service
- Sampling rod easily threads onto sampling point
- All stainless waterway with spring-loaded sampling point (with cap)
- Can be used for temporary (portable) or permanent site
- Available in 5/8" x 3/4", 5/8" x 1/2" (#94WM only) and 1" versions



MainGuard #94WM MainGuard #95WM



Sample Rod & Case

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