

Operational Guideline for Manitoba Water Suppliers

Collecting Bacteriological Water Samples

PURPOSE

This guideline has been established to provide public and semi-public drinking water suppliers throughout the Province of Manitoba with information on taking bacteriological water samples.

Bacteriological testing is the last step in the verification of the safety of the water supplied to the customer.

Legislation

The [Drinking Water Safety Act](#) states that every public and semi-public water supply must comply with the drinking water quality standards specified in the regulations.

[The Drinking Water Quality Standards Regulation \(MR 41/2007\)](#) requires all water suppliers to ensure that all water in the water distribution system meets the following bacteriological standards:

- less than one *E-coli* detectable per 100 ml;
- less than on total coliform detectable per 100 ml

The Drinking Water Safety Regulation, Schedule A specifies the minimum number of samples to be collected and submitted for compliance with to Bacteriological Standards. The number and frequency of samples is based on the [type of water system](#), source water and population served.

Operating Licence

The Licensee shall ensure monitoring (frequency and location) is completed as set out in the operating licence.

Water Sample Bottles

The laboratory that will be analyzing your water sample will provide sterile non-reactive sample bottles and sample submission (or chain of custody – COC) forms. The bottle comes with a small amount of a chemical (typically a white powder) that is required to neutralizes the chlorine residual present in treated and distributed water samples. Do not rinse bottles before sampling. The chemical will not affect raw untreated water results.

Water Sample Collection

- Collect water samples early in the week to ensure sufficient transport and analysis time. Water samples must be analyzed within 24 hours of collection.
- Water samples should be collected within 2 hours of transport. Don't leave samples overnight for morning transport.
- Water samples should be taken from taps that can be properly disinfected. **Do Not** take samples from a garden hose, spray tap, or a container.
- A separate water sample bottle is required for each sampling location.

Whether following the instructions provided by the laboratory or as listed below, it is important to follow the directions carefully or your water sample may become contaminated.

1. Remove any screens (aerators) including rubber washer, if present, from the end of a cold water tap or faucet.
2. Sterilize the end of the tap, faucet or spigot. This can be done by flaming the end of the tap with the flame from a lighter or washing it with a strong disinfectant solution made by mixing 10 millilitres (two teaspoons) of unscented, detergent-free household bleach with one litre (four cups) of water and swab inside and outside of the end of the sample tap.,

Avoid flaming the end of the tap if there are any plastic components as they could be damaged.

3. Sample the cold water only. Allow the tap, faucet or spigot to run for three to five minutes before taking the sample. Be sure the water doesn't spray around the sink and tap.
4. At this time, field tests such as disinfectant residuals, turbidity and/or other tests specified in your operating licence can be taken and recorded on your bacteriological sample submission /chain of custody form (COC).

5. Reduce the flow of the water to avoid splashing from the sides of the sink contaminating the sample.
6. Wash or sanitize your hands before handling sample bottles
7. Remove the cap from the sample bottle by carefully breaking the protective seal.

Do not use a sample bottle if the seal is broken or if you cannot see the preservative (white powder).

8. Hold the cap in one hand while you fill the bottle. Do not lay the cap down or touch the inside of the cap. Keep fingers below the threaded rim of the bottle to avoid contamination.

Do not rinse the bottle as it contains a preservative.

9. The sample bottle should be filled to the line on the bottle. Be careful not to overfill/under fill the sample bottle.
10. Replace the cap and tighten. Turn the sample over three times to dissolve preservative.
11. Label the bottle and name the sample as raw, treated, distribution, or drinking water. Note the date and time the sample was taken.
12. Keep the sample bottle sealed and in a cool place such as a refrigerator until the samples are to be shipped.
13. Fill out the sample submission form (COC) provided by the laboratory. Existing water systems will have pre-printed forms. Ensure that your contact information is correct and that the water system code is included on the COC. Indicate any changes to emergency contact information in the space provided on the COC.

Do not use the bacteriological COC for other types of water samples (ex: lagoon tests, barn water or beach samples).

14. Pack the water sample in a cooler with an ice pack and packing paper to keep it cool and secure until it gets to the laboratory.

Water samples must be kept cool. Water samples that get too warm, freeze or sit too long will give incorrect results and you will have to resubmit water samples.

15. Drop off the sample(s) and COC at the laboratory or at the bus or courier location for transport.

If you are shipping the sample by bus or courier, put the completed sample submission form in a sealable plastic bag, seal it and put it inside the cooler. In addition, you may want to tape a label or note to the cooler informing the courier: *PRIORITY Time sensitive material, please call "Name of Lab" and phone number for pick up and/or DO NOT FREEZE*. Ensure the label is secured to the outside of the lid to avoid accidental removal while in transit.

Once the laboratory has completed the analysis of your water samples, the results will be mailed, faxed, or emailed to you.

Laboratories

Water samples must be submitted to an accredited laboratory for analysis.

Sample bottles, sampling instructions and the sample submission (COC) forms to submit water samples are available from each laboratory.

The Province of Manitoba subsidizes bacteriological (total coliform and *E. coli*) analysis for public and semi-public water systems. Subsidy pricing is only available through the contracted laboratory. If you choose to submit your samples to another lab, you will not receive the subsidy pricing. For additional information on the subsidy program please contact the regional drinking water officer.

Office of Drinking Water

Regional [Drinking Water Officers](#) are available for operational and monitoring advice and to provide technical assistance.

After hours, please call the Environmental Emergency Response line at 204-944-4888 and ask for the on-call drinking water officer

For more information related to Manitoba's drinking water and how it is regulated visit:
www.manitoba.ca/drinkingwater