



Massachusetts Water Watch Partnership

Standard Operating Procedure Rivers-3

For Bacteria

Revision 0

MF Walk

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11-13-01

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Overview

This procedure describes how to collect a river grab sample for bacteria analysis.

1.0 Equipment List

- ___ Sterile High Density Polyethylene (HDPE) bottle, 250 ml
- ___ Pair of latex gloves
- ___ Rinse water and towel
- ___ Field data sheet and pencils
- ___ Cooler
- ___ Ice
- ___ Frozen koolit
- ___ Zip-loc bag (1-gallon size)

2.0 Sampling Protocol

- 2.1 Wash hands before starting sample run - if you sample in an area that may have high fecal levels rinse hands before handling the next sample bottle.
- 2.2 Be careful not to touch your hands to yourself before you have cleaned them in order to avoid coming into contact with pathogens. If you are sampling from waters known to be contaminated with sewage, wear latex gloves to protect yourself.
- 2.3 Use pre-labeled sterile bottle (obtained from program coordinator or laboratory).
- 2.4 Sample should be take from representative, flowing water. The water must be deeper than the sample bottles and free of surface scum and debris. If the water is not deep enough at your regular sampling site, look for another location nearby which is equally representative of the site but deeper. If there is none, do not collect a sample and indicate on your field sheet that water level is too low. Note that sampling from the streambank is discouraged, as it can result in non-representative samples.
- 2.5 Carefully wade into the stream, walking upstream and avoiding to stir up bottom sediment. Wait for pre-disturbance (from wading in) conditions to return before taking sample. If you are in a canoe, have your partner steady it.

- 2.6 Take sample in mid-stream, if possible. If not, get as far out from shore as is safe. Walk upstream and collect sample so that you are not standing or floating upstream of the bottle.
- 2.7 Always sample upstream of your body, and point the bottle opening upstream. Keep the bottle closed until just ready to sample. **Do not rinse** the bottle.
- 2.8 Remove cap and hold it to the side. Hold the bottle near its base in the hand and plunge it, neck downward, below the surface.
- 2.9 Turn bottle until neck points slightly upward and mouth is directed toward the current. If there is no current, create a current artificially by pushing bottle forward horizontally in a direction away from the hand. Be sure not to collect any sediment you may have suspended by walking on the streambed. Also avoid collecting any water from the surface layer of the water as this is uncharacteristic of the water flowing through.
- 2.10 Replace cap leaving 1" of air space in bottle. It is important to leave the air space so that the sample will constantly mix while transported.
- 2.11 On river field sheet, record sample ID and check the 'Bacteria' column

3.0 Transporting the Sample

- 3.1 Place sample bottle in cooler with ice.
- 3.2 If you cannot put ice directly in your cooler because you store other materials in there, use a gallon-size zip-loc bac filled with ice. Put your sample in that zip-loc bag, zip shut and place in cooler with koolit.
- 3.3 Deliver to lab within 6 hours of collection.