



EMSL *Cryptosporidium* and *Giardia* (EPA 1623.1) Sampling Instructions



**Customers may choose to collect and submit 10 or 50 L field filtered samples (See Pages 1-3) or 10 L bulk water samples (See Page 4-5) for analysis.*

Instructions for Field Filtered Samples (10 or 50 Liters)

EMSL Field Filter Sampling Kit includes:

- 1 Shipping container (Cooler box)
- 2 Temperature labels (ColdMark® and WarmMark®) or 1 Temperature logger
- 1 Chain of Custody (COC)
- Envirochek™ filter capsule(s)

EMSL Field Filtration Unit (optional, Fig. 1) includes:

- Inlet and outlet hoses
- Pressure regulator with pressure gauge
- Water meter (flow rate and totalizer)
- Flow control valve
- Pump (optional, for unpressurized water source only)
- Clamps

Items that are required and not provided include:

- Waterproof pen
- Turbidimeter

Sampling

1. For pressurized water sources, connect the field filtration unit (Fig. 1), **without the Envirochek™ filter**, to the water source. Adjust the pressure to below **60 PSI** using pressure regulator and to a flow rate no greater than **2.0 L/min** (0.5 G/min) using flow control knob. Flush the sampling unit for 2-3 minutes (or 2- 10 L of sample water). The water meter functions as both a totalizer and flow rate meter. The units of measure are displayed to the right as Qts, Pts, L, or Gal. To reset the batch total simply press the **RESET** button momentarily. The small digit register across the bottom of the display shows either the total volume (totalizer) or the current flow rate. This is indicated by the words “**FLOW RATE**” above the small digits, or “**RESET TOTAL**” to the right of them. To toggle back and forth between the two, simply press the **CAL** button momentarily. To reset the totalizer, press and hold the **RESET** button until all 0's show (approx. three seconds.) The totalizer will be reset regardless of whether the meter is displaying the totalizer or flow rate.
2. For unpressurized water sources, connect the field filtration unit (Fig 2), **without the Envirochek™ filter**, to a carboy with 30+ L water. Adjust the flow rate to no greater than **2.0 L/min** (0.5 G/min) using flow control knob. Flush the sampling unit for 2-3 minutes (or 2- 10 L of sample water).
3. Insert and connect the filter capsule into the filtration unit (Fig. 1 or Fig. 2). **Ensure the directional flow arrow is pointing toward the water meter.** Use clamps to secure the inlet and outlet if needed.
4. Record date, time, initial/final flow totalizer reading, sample ID, sample turbidity, sampling location, and the Operator's name on the label of the filter using a waterproof pen.
5. Keep filter capsule vertical. Vent residual air by gently tapping the capsule or using the bleed valve/vent port, if necessary.
6. Filter 10 L (2.64 Gal) or 50 L (13.21 Gal) of water sample. Record stop time and final flow totalizer reading.



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7. Hold inlet end of filter capsule pointing up and allow water to drain. Open bleed valve/vent port to speed the draining process, if needed.
8. Replace the blue vinyl caps on each end of the filter.
9. Seal each filter in a separate Ziploc style bag.
10. Refrigerate each filter as soon as possible and store under refrigeration (1-10°C) until shipment.

Instructions for Matrix Spike (MS) Samples

1. MS samples must be collected every 20 routine field filtered samples and for each water source. The MS sample and routine field filtered sample must be collected from the same location at the same time. The collected MS sample volume must be within 10% of the collected routine field filtered sample volume.
2. For a 10 L MS sample, collect one bulk water sample according to the instructions on page 4.
3. For a 50 L MS sample, filter all but 10 L of the MS sample at your sampling location and collect the remaining 10 L as a bulk water sample. Clearly label both the bulk water and the filter sample as comprising 2 parts of a single sample.
4. Refrigerate your bulk water and filter samples as soon as possible and store under refrigeration (1-10°C) until shipment.

Cleaning procedure between samples

1. Thoroughly clean inlet hose and pressure regulator/gauge (for pressured sources only) with a warm detergent solution.
2. Expose to hypochlorite solution (25 mL of 5% household bleach for every 1 gallon of pH 7 water) for at least 30 minutes at room temperature.
3. Thoroughly rinse with reagent grade water that is free of *Crypto/Giardia*. Dry in an area free of *Crypto/Giardia*.

Packing and Shipping

1. Insert two large plastic trash bags into the cooler to create a double liner.
2. ColdMark® is ready to use. Activate the WarmMark® label by folding up and pulling the upper portion (or firmly squeezing the blister on the indicator until it is flat). Apply ColdMark® and WarmMark® labels to the clean and dry outside surface of the cubitainer and/or Envirochek™ filter capsule(s).
3. Place each Envirochek™ filter, with temperature labels affixed, inside its own, sealed, Ziploc bag.
4. If a temperature logger is provided rather than the temperature labels, wrap the logger in a Ziploc bag and place it immediately next to the filter sample(s) within the shipping container (cooler).
5. Place sufficient refrigerant packs and/or ice bags (sealed in Ziploc bags or equivalent) around bubble wrapped filter(s) to maintain a sample temperature range of 1-20°C during shipment. NEVER USE DRY ICE.
6. Knot and seal the two large plastic bags. Place completed Chain of Custody form (in sealed Ziploc style bag) on top of knotted plastic bags. Seal the cooler for shipping.
7. Refer to instructions on page 4 to pack and ship the 10 L bulk water sample as MS sample.
8. Ship all samples and sampling kits via OVERNIGHT delivery to the address below:

**Attn: Aquatic Microbiology EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077**



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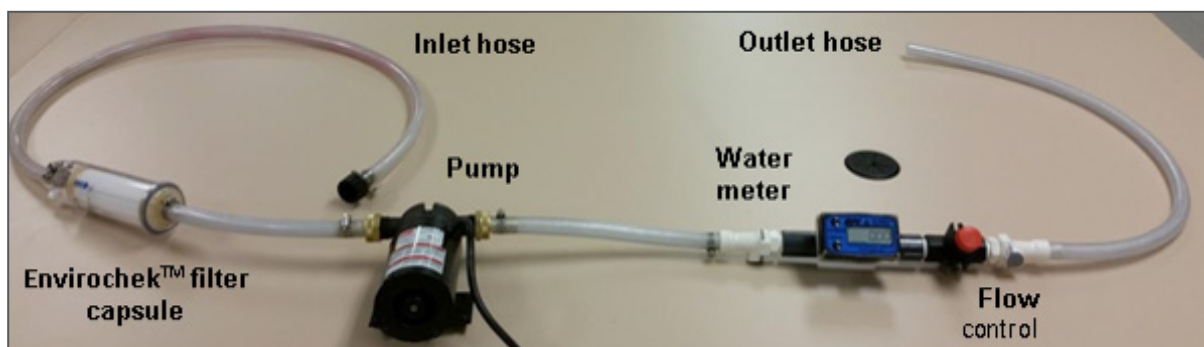
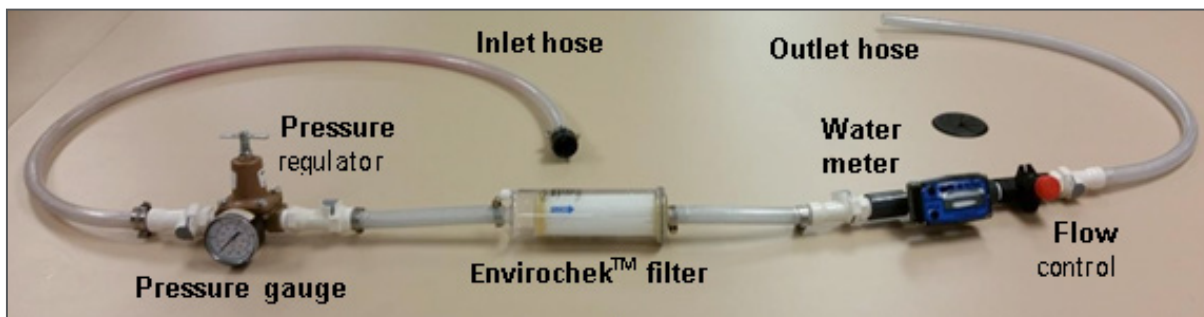
Phone: 800-220-3675
Fax: 856-786-0262
Email: info@emsl.com

IMPORTANT NOTES:

- *Samples will be rejected if sample temperature upon laboratory receipt is >20°C or frozen per EPA method.*
- *Please schedule sample collection to allow samples to be received at the laboratory Monday through Thursday.*
- *Please contact EMSL with any sampling and/or shipping questions.*

Fig. 1 Field filtration unit for pressurized water sources

Fig. 2 Field filtration unit for unpressurized water sources





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Instructions for 10 Liter Bulk Water Samples

EMSL Bulk Water Sampling Kit includes:

- 1 Shipping container (Cooler)
- 2 Temperature labels (ColdMark® and WarmMark®) or 1 Temperature logger
- 1 Cubitainer (10 L)
- 1 Chain of Custody (COC)

Items that are required and not provided include:

- Refrigerant packs or ice bags
- Waterproof pen
- Trash bags
- Gloves

Sampling

1. Fill the 10 L cubitainer to the neck and store under refrigeration (1-10°C) until shipment. If samples are collected later in the day, these samples may be chilled overnight in a refrigerator (1-10°C).
2. Indicate sampling date, time, location, and name of sampler on the cubitainer using waterproof pen.

Instructions for Matrix Spike (MS) Samples

1. MS samples must be collected every 20 routine bulk water samples and for each water source. The MS sample and routine bulk water sample must be collected from the same location at the same time. The collected MS sample volume must be within 10% of the collected routine bulk water sample volume.
2. Refrigerate your MS sample as soon as possible and store under refrigeration (1-10°C) until shipment.

Packing and Shipping

1. Before shipment, insert two large plastic trash bags into the cooler to create a double liner.
2. Place the chilled bulk water sample inside the double lined trash bags.
3. ColdMark® is ready to use. Activate the WarmMark® label by folding up and pulling the upper portion (or firmly squeezing the blister on the indicator until it is flat). Apply ColdMark® and WarmMark® labels to the clean and dry outside surface of the cubitainer.
4. If a temperature logger is provided rather than the temperature labels, place it immediately next to the bulk water sample (inside of the trash bags).
5. Knot and seal the innermost plastic trash bag containing the bulk water sample (with temperature labels affixed) and/or the temperature logger.
6. Add sufficient SEALED ice bags or refrigerant packs around the sealed sample and inside the second, outermost plastic trash bag to maintain a sample temperature range of 1-20°C during shipment. NEVER USE DRY ICE.
7. Knot and seal the outermost second plastic trash bag. Place completed Chain of Custody form (in sealed Ziploc style bag) on top of knotted plastic bags. Seal the cooler for shipping.
8. Ship all samples and sampling kits via OVERNIGHT delivery to the address below:



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