

COLLECTING SAMPLES FOR *LEGIONELLA* TESTING

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**A GUIDE FOR THOSE USING COOLING TOWERS,
DECORATIVE WATER FEATURES, RAINWATER HARVESTING
AND OTHER ALTERNATIVE WATER SYSTEMS**



vancouver.ca/operating-permit

These guidelines provide instructions for collecting *Legionella pneumophila* samples for laboratory analysis. For the sampling and reporting frequency, visit vancouver.ca/operating-permit. It is the system owner's responsibility to arrange for laboratory testing. Please contact your chosen laboratory with any questions.

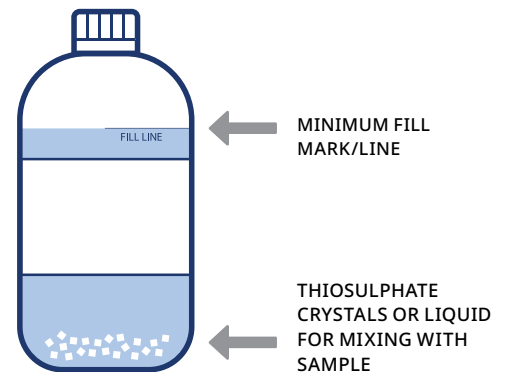
LABORATORY CHOICE

Verify the third-party commercial laboratory you are selecting for *Legionella* testing is:

1. using a plate or liquid culture method to identify '*Legionella pneumophila*—all serogroups' and that conforms to either ISO 11731 "Water Quality - Enumeration of *Legionella*" or ASTM D8429 "Standard Test Method for *Legionella pneumophila* in Water Samples Using Legiolert", and
2. accredited to ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories," or equivalent, and
3. enrolled in a bi-annual external proficiency testing program, such as the CDC ELITE Program.

SAMPLING SUPPLIES AND PROCEDURES

1. Ensure you use Personal Protective Equipment appropriate to the collection site and equipment.
2. Arrange with your lab for a culture test of '*Legionella pneumophila*—all serogroups' and confirm collection requirements and when samples should be received.
3. Get sample bottles from the lab: use only sterile, labelled sample bottles provided by the lab.
4. Fill-out the sample requisition/'Chain of Custody' form and sample bottle label details fully. The person collecting the sample must be the same individual who fills out this form. Record the building address, Operating Permit number, and sampling location.



5. Have a transport cooler and packing supplies ready for sample storage and transport.
6. Handle sample bottles with clean hands.
7. Only open sample bottles when you're ready to collect. *Caution: sample bottles come pre-treated with sodium thiosulphate (as either a clear liquid, pellet, or white crystals) for mixing with the sample. Don't dump or rinse the thiosulphate out of the sample bottle.*
8. Touch only the sides of the cap and bottle.
9. Fill the sample the bottle to slightly above the minimum fill line. *See image on page 1.*
10. Once the sample bottle is filled:
 - a) secure the lid carefully (if the specimen leaks during storage/shipping the lab may not be able to test it).
 - b) gently invert the bottle several times to dissolve and mix in the thiosulphate.
 - c) put the specimen and filled-out forms in the transport cooler, pack as directed by the lab, and secure the lid.

SHIPPING

1. Store samples in a secure location in a sealed shipping cooler protected from sources of heat and sunlight.
2. Follow lab guidelines regarding maintaining temperature (for example, ice packs) during storage and transport.
3. Ship only on same day or by overnight courier. Samples should be received by the lab within 24 hours of collection.

EQUIPMENT SAMPLING LOCATIONS

1. Cooling Towers:

Collect at the designated sampling port (just upstream of the treatment chemical injection point). If a sampling port is not available, use the location indicated in the maintenance log (which should be representative of water in the system, such as the tower basin).

2. Decorative Water Features:

- a) Recirculating systems: collect sample immediately upstream of the point where disinfectant is added.
- b) Non-recirculating systems: collect sample where water splashes or aerosols are created (for example, the fountain basin or distribution header).

In either case, if a bottle must be dipped into a basin or trough for sample collection, tilt the bottle downward below horizontal—but not so far that the thiosulphate is lost—and then dip the bottle to fill it.

3. Rainwater Harvesting or other Alternative Water Systems:

Collect at the designated sampling port.

RESULTS, REPORTING AND CORRECTIVE ACTIONS

1. Results will be reported by the laboratory as '*Legionella pneumophila* - all serogroups' (or '*Legionella pneumophila* - total') in CFU (colony forming units) or MPN (most probable number) per mL or per L.
2. You must report *Legionella* results on-line as part of your Operating Permit. Refer to vancouver.ca/operating-permit.
 - Use the sample collection date for your on-line report.
 - If your lab report includes a “less than” symbol, include this (for example, <10 CFU per mL or <10 MPN per mL)
 - If your lab report states “not detected” (sometimes abbreviated as “ND”), please select the “not detected” checkbox on the on-line form.
 - If your lab report is in units of CFU per L or MPN per L, you must convert this to CFU per mL or MPN per mL by dividing by 1,000.
3. *Legionella pneumophila* results greater than or equal to 10 CFU or MPN per mL require corrective action, including disinfection and retesting. A response flowchart and contact information for notification purposes are available at vancouver.ca/operating-permit.

RECORDS

Keep copies of all test results and follow-up actions in your Maintenance Log.

FOR MORE INFORMATION

Questions for City of Vancouver: operatingpermit@vancouver.ca

Operating permits: vancouver.ca/operating-permit

Vancouver Coastal Health: 604-675-3800 or vch.ca/en/about-us/contact-us/compliments-and-complaints/health-protection-feedback