



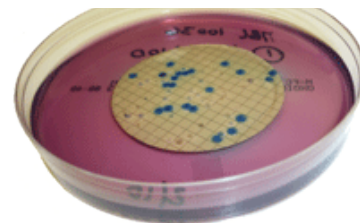
Accredited Laboratory Testing Services for Coliform

Why Use MBL's Mold and Bacteria Testing Services?

- MBL is fully accredited by the Canadian Association for Laboratory Accreditation (CALA) to ISO 17025, so you are assured of quality, scientifically strong results
- Consults with you on the most appropriate test methods to use for your samples, or what samples may be appropriate for a given investigation. Inappropriate test methods or samples cost more money and give results that may be difficult to interpret or defend and subsequently a waste of resources.
- Provide you with prompt and accurate bacteria testing.
- Provide you with data interpretation (if required) and relevant technical information. We don't just list molds and bacteria that were identified; we will also detail all the relevant identified analysis information.
- Always willing to provide services after working hours; we understand on-time completion of projects is critical to your business.
- Provide free unlimited after-sales consultation. As our client, you enjoy unlimited assistance by sending your questions directly to our [Help Desk](#) or by [filling out our Question Form](#). For immediate assistance, you are free to call our helpline at 905-290-9101.

Why Test For Total Coliform, Fecal Coliform and Enterococcus

Sewage backup could lead to sewage contamination of the occupied spaces. Exposure to sewage contamination increases the risk of contracting diseases of the digestive system and other related illnesses.



Potential disease causing organisms in sewage contamination include *Escherichia coli*, *Salmonella*, and *Shigella*. [Testing](#) for all possible disease causing microorganisms (pathogens) after sewage backup could be expensive, tedious and time consuming.

Therefore, the detection of indicator bacteria is more practical than direct pathogen detection because the former are considered to be normal, non-pathogenic intestinal inhabitants that are present in feces in much higher numbers than pathogenic microorganisms. The preferred indicator bacteria for sewage contamination are total coliforms, fecal coliforms and *Enterococcus*.



Sources of sewage contamination may include raw sewage backup, severe flooding and leaking sewer lines or septic tanks. To determine the potential health risks from sewage contamination swab samples could be collected and tested for total coliforms, fecal coliforms and *Enterococcus*.

Sampling Procedure for total coliforms, fecal coliforms and *Enterococcus*

Sampling for indicator organisms can be performed before and after clean up. Sampling after cleanup is recommended to determine if the cleanup was successful.

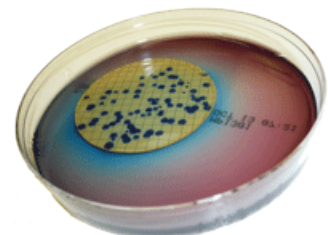
1. Wear suitable gloves
2. Using a measuring tape, measure an area of approximately 100 cm² of the surface suspected to be contaminated with sewage.
3. Collect a swab sample by removing a sterile, rayon (non-cotton) swab from a sterile tube. If the surface to be tested is dry, moisten the swab by inserting it into the tube which contains a sponge soaked with sterile buffer.
4. Swab the selected surface by rolling the swab back and forth across the surface with several horizontal strokes, then several vertical strokes.
5. After sampling, return the swab to the sterile tube (with the sponge) and label the sample
6. [Collect a control sample](#) from a non-contaminated area by repeating steps 2 to 5.
7. On the chain of custody clearly indicate what indicator organisms you want tested, i.e., total coliforms, fecal coliforms, E. Coli and/or *Enterococcus*. The section on results interpretation (see below) will help you decide what to test for. Bacterial testing is time sensitive so samples should be sent to the laboratory within 24 hours of sample collection if possible and should be shipped with an ice pack.

How to interpret positive sewage results

Positive sewage results should be interpreted with caution since not all coliforms are of fecal origin.

Total Coliforms

Coliforms are common in the intestines of animals including human beings and hence they end up in sewage. They are also present in the environment as part of the natural microflora. These non-fecal coliforms can potentially cause false positive results when testing environmental samples.





Therefore positive tests for total coliforms do not necessarily indicate sewage contamination. For recreational waters, total coliforms are no longer recommended as an indicator. For drinking water, total coliforms are still the standard test because their presence indicates contamination of a water supply by an outside source.

Fecal Coliforms

The term “fecal coliform” is rather misleading since not all bacteria found in this group are of fecal origin. Fecal coliforms include bacteria such as *E. coli*, *Klebsiella*, *Enterobacter*, and *Citrobacter*. With the exception of *E. coli*, these bacteria could also be associated with plants. Therefore, while the fecal coliform test is more specific than the total coliform test in indicating potential sewage contamination, this test is also subject to giving false negatives.

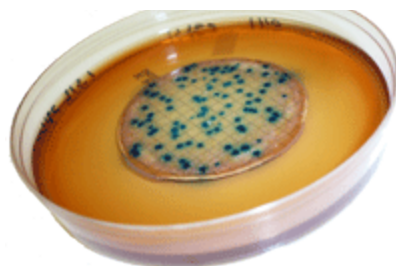
Escherichia coli (E. coli)

As mentioned above the *E. coli* belong to the fecal coliform group. Presence of *E. coli* is a reliable indication of fecal or sewage contamination. However, *E. coli* has also been isolated from soil suggesting that it may not be 100% reliable indicator of fecal or sewage contamination.

Enterococcus

Enterococci are a subgroup within the fecal streptococcus group. *Enterococci* are typically more human-specific than the larger fecal streptococcus group. EPA recommends enterococci as the best indicator of health risk. They are rarer than the coliforms in the environment and are always present in the feces of warm-blooded animals.

Research has indicated that enterococci might be a more stable indicator of sewage contamination than *E. coli* and fecal coliforms, but some species of *Enterococcus* are also associated with Plants.



What Indicator Bacteria Should You Test For?



From the above discussion it's clear that no single indicator organism on its own is 100% reliable to demonstrated sewage or fecal contamination. Which bacteria you test for depends on what you want to know.

Do you want to know whether the contaminated surface poses a health risk? If the answer to this question is yes, the best indicators of health risk *E. coli* and enterococci. Fecal coliforms as a group are a poor indicator of the risk of digestive system illness.

Some experts therefore recommend use of 3 or more indicators, i.e., total coliforms, fecal coliforms, *E. coli* and/or enterococci.

If you have questions about this articles or our [accredited mold and bacteria lab testing service](#), contact [Mold & Bacteria Consulting Laboratories](#) by telephone or email today.

If you would like to receive more information regarding our laboratory services or our prices, please **call us at 905-290-9101.**

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