Coliform Tests

The coliforms are a diverse group of bacteria, many of them non-pathenogenic to humans.

TOTAL COLIFORMS includes all 19 genera, many of which are commonly found in soil or decaying vegetation. Their presence in water indicates contact with organic matter of some kind, so it's a clue to look further to see if dangerous varieties are present.

THERMOTOLERANT COLIFORMS are a sub-group that thrives at 44° C, and can tolerate bile salts.
They include the notorious **Escherichia genus**, which is found in feces, as well as others (Klebsiella, Enterobacter and Citrobacter) which may have other sources, though they can also make you sick. This group is often referred to as the **Fecal Coliforms,** although not all of them live in the GI tract.

E. COLI: These are the ones only found in the GI tract of warm-blooded animals, and are indicators of some source of recent fecal contamination.
(source: microbenotes.com)

THE TEST: The water sample is taken in a sterile bottle, upstream from the sampler to avoid personal contamination. It must be kept cool and taken to the lab promptly so that bacteria are not growing during this interval.

The sample is filtered through a membrane, and then cultured on two different agar plates. The one incubated at 35°C shows the number of Total Coliforms. The one incubated at 44.5°C shows the number of fecal coliforms. (Each bacterium grows a colony.) Results are given in cfu (colony forming units) / 100 ml

Visual inspection and further tests then determine whether E. Coli specifically is present.

WHAT IT MEANS: The Health Department standard is set for finding colis in <u>chlorinated water,</u> so it is set very low. Finding a few colis in unchlorinated water does not necessarily indicate a health hazard. It suggests you should look for the likeliest source.

Water sampled at the tap invariably shows a <u>higher</u> level of contamination than water sampled at the source, as the colis tend to grow where the lines warm up in the house.

WHEN ARE COLIS MOST LIKELY TO BE FOUND?

1 - Spring runoff, or heavy rain after a long dry spell could flush materials into the water.
2 - Periods of very low flow in late summer when the water is warmer could allow more organisms to grow.