

Bacteroides Sewage Screen

Identify fecal contamination

Bacteroides is a genus of bacteria that are gram-negative, anaerobes (they only live in oxygen-free environments) that live within mammalian gastrointestinal tracts. They are present in huge quantities in human feces and do not persist for very long outside of the gut. This makes them a highly specific indicator of sewage contamination.

Bacteroides is becoming the fecal indicator of choice for assessing sewage contamination in the indoor environment. Not only are they much more prevalent than coliforms, their anaerobic physiology means it can not grow in the environment.



Key Benefits:

- Definitive results for fecal contamination
- Eliminates false positives from environmental coliforms
- Higher Specificity and Sensitivity
- Maintain the same sampling method with results as quick as 24hrs
- PCR analysis eliminates interpretation of biochemical reaction

"In fecal matter, *Bacteroides* is 1,000 times more prevalent than coliforms and 10,000 times more prevalent than *E. coli*"

Service options:

Swabs (with or without transport medium) for PCR analysis

Submit swabs samples with any turn around time listed below:



Tests for Sewage Contamination

To assess if the indoor environment is impacted by sewage contamination an indicator bacteria is analyzed for. In the past, one or more of the following tests were conducted:

Total Coliforms

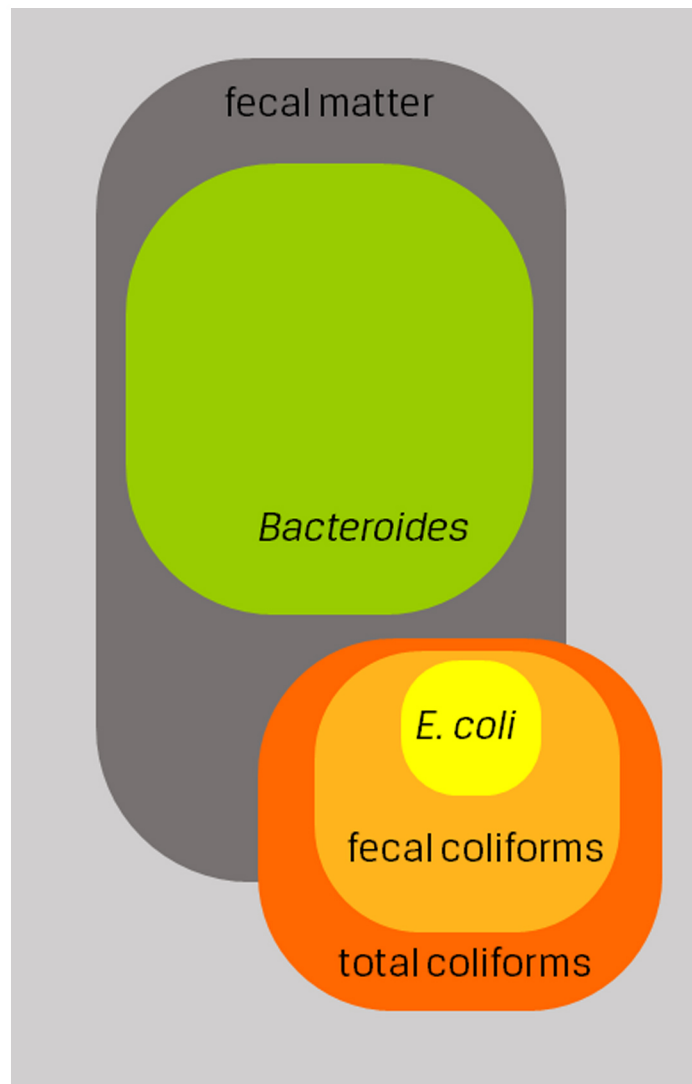
Coliforms are a broad category of rod-shaped, gram-negative bacteria; commonly found in the environment, for example in soil or vegetation, as well as the intestines of mammals, including humans. The Total Coliform group includes thermotolerant "fecal" Coliform bacteria, as well as other types of coliform bacteria. While most coliforms do not normally cause serious illness, they are easy to culture, therefore their presence has been used to indicate that other pathogenic organisms of fecal origin may be present.

Thermotolerant "Fecal" coliforms

A subset of the total coliform group, known as the thermotolerant coliforms -previously referred to as fecal coliforms- were routinely used as fecal indicators since they were considered more fecal specific than total coliforms. This group includes members of the genera *Escherichia*, which are fecal specific, as well as organisms that are found in both fecal and non-fecal environments. Since many bacteria not of fecal origin are thermotolerant, the term "fecal" coliforms is a misnomer and the presence of thermotolerant coliforms does not necessarily indicate the presence of feces nor of a health risk. Advances in *Escherichia coli* (*E. coli*) detection methods have, for the most part, made thermotolerant coliform testing on its own redundant.

E. coli

E. coli is the most fecal-specific of these three tests, since it is generally only identified in fecal matter, as the adjacent graphic illustrates. While being an excellent indicator of fecal contamination, *E. coli* is present in small quantities in fecal matter when compared to *Bacteroides* which increases the chances of a false-negative result due to sampling variation.



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