BACTERIA

What are bacteria?

Bacteria are naturally found in our waterways. Though most are harmless, the presence of certain bacteria serve as indicators for other more harmful pathogens. *Escherichia coli* (*E. coli*) or enterococci are common bacteria that live in the intestines of humans and animals and are present in feces. High levels of *E. coli* or enterococci mean harmful bacteria could be present in the water. Bacteria in water can come from many sources, like wastewater, agricultural runoff, or pet waste. Bacteria levels are usually higher after rainfall, when bacteria on land are washed into waterways.

How do we measure it?

Bacteria levels are typically monitored weekly from May through September or monthly year-round, depending on the monitoring goals. Enterococcus is sampled in tidal waters and *E. coli* is sampled in non-tidal waters. Samples can be measured at home using R-Card or Coliscan, or through lab analysis. Bacteria samples are collected in the field then grown in an incubator. Colonies are then counted to determine the number of colony forming units (CFU) or most probable number (MPN) per 100 mL of water, depending on the method used.

Equipment	Cost	Monitoring Time
R-Card (*E. coli* or enterococcus)	$	10 mins per site 24 hour incubation
Coliscan Easygel (*E. coli*)	$	20 mins per site 24–48 hour incubation
Lab analysis (*E. coli* or enterococcus)	$$$	5 mins per site 18–24 hour incubation

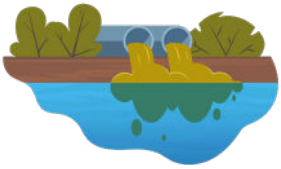
Why do we care?

Human Health

High bacteria levels in areas where people recreate could increase the risk of people getting sick from contact with the water.

Pollution

Sudden spikes in bacteria values, especially in dry weather, can indicate sources of pollution such as leaking septic systems, broken sewer lines, or livestock manure entering waterways.



How is my water?

Per the Mid-Atlantic Tributary Assessment Coalition (MTAC) protocol, 235 CFU/100mL is often used as a cutoff for *E. coli* using a single value, but standards vary by state. The use of averages is encouraged when looking at recreational health, please refer to your state's bacteria guidelines for more specific information.

Poor	Good
Enterococci: >104 MPN/100mL	**Enterococci: <104 MPN/100mL**
***E. Coli*: >235 CFU/100mL**	***E. Coli*: <235 CFU/100mL**

PLEASE NOTE:

This fact sheet provides general information about bacteria, but water monitoring in specific locations may require more detailed methods and considerations.