What are Coliforms?

Coliforms are bacteria that are always present in the digestive tracts of animals, including humans, and are found in their wastes. They are also found in plant and soil material.

Total Coliforms, Fecal Coliforms, and E. Coli

The most basic test for bacterial contamination of a water supply is the test for total coliform bacteria. Total coliform counts give a general indication of the sanitary condition of a water supply.

Total coliforms include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste.

Fecal coliforms are the group of the total coliforms that are considered to be present specifically in the gut and feces of warm-blooded animals. Because the origins of fecal coliforms are more specific than the origins of the more general total coliform group of bacteria, fecal coliforms are considered a more accurate indication of animal or human waste than the total coliforms.

Escherichia coli (E. coli) is the major species in the fecal coliform group. Of the five general groups of bacteria that comprise the total coliforms, only E. coli is generally not found growing and reproducing in the environment. Consequently, E. coli is considered to be the species of coliform bacteria that is the best indicator of fecal pollution and the possible presence of pathogens.

What Kinds of Defects can Allow Contamination?

a missing or defective well cap - seals around wires, pipes, and where the cap meets the casing may be cracked, letting in contaminants

contaminant seepage through the well casing - cracks or holes in the well casing allow water that has not been filtered through the soil to enter the well. This seepage is common in the wells made of concrete, clay tile, or brick

contaminant seeping along the outside of the well casing - many older wells were not sealed with grout when they were constructed

well flooding - a common problem for wellheads located below the ground in frost pits that frequently flood during wet weather.

Other pathogens that can be found in drinking water:

Where and how does Crypto get into drinking water?

1) Crypto is found in every part of the United States and throughout the world. Millions of Crypto can be released in a bowel movement from an infected human or animal. Crypto may be found in water sources such as private wells that have been contaminated with feces from infected humans or animals. Water can be contaminated through sewage overflows, sewage systems that are not working properly, polluted storm water runoff, and agricultural runoff. Wells may be more vulnerable to such contamination after flooding, particularly if the wells are shallow, have been dug or bored, or have been submerged by floodwater for long periods of time.

2) Giardia Lamblia

Giardia has become more prevalent in the past few years as a waterborne disease, and a few large outbreaks that have occurred in the U.S. (3). Giardia are flagellated protozoa that are parasitic in the intestines of humans and animals (4). They have two stages, one of which is a cyst form that can be ingested from contaminated water. Once the cyst enters the stomach, the organism is released into the gastrointestinal tract where it will adhere to the intestinal wall. Eventually the protozoa will move into the large intestine where they encyst again and are excreted in the feces and back into the environment

Once in the body, the giardia causes giardiasis, a disease characterized by symptoms such as diarrhea, abdominal cramps, nausea, weight loss, and general gastrointestinal distress. These symptoms last for about a week, however some people can undergo a more chronic infection with similar symptoms and an even greater degree of weight loss (3). Giardiasis is rarely fatal (6), and can be treated medicinally by Guinacrine, Metronidazole, and Furazolidone

It is estimated that 20-65 million Americans are at risk due to this lack of filtration of surface water (3,5). It has been suggested that 40-45% of giardia cases are associated with exposure to **unfiltered water**.