Sewage Contamination Inspections

Sewage Contamination

Testing for sewage contamination after a leak or flood typically involves testing for a suite of organisms known as sewage indicator organisms. There are a host of organisms that can be associated with sewage, but there are specific organisms that can be found in high levels that are fairly unique to sewage produced by warm blooded animals.

Several of the most commonly tested **sewage indicator organisms** include *E.coli* and *Enterococci*. Both of these are types of bacteria that are typically found in high numbers in the lower intestinal tracks of mammals, including humans.

The risks associated with sewage spills include exposure to infectious microorganism and endotoxins contained in some of the bacteria. Some of these biological contaminants can cause gastrointestinal illness.

Sewage contamination can often be difficult to distinguish between flooding from non-contaminated water sources. Affordable testing procedures are available by qualified professionals and accredited laboratories to determine if sewage contamination is present.

Sewage Contamination Inspections

After a flooding event a sewage contamination inspection in residential and commercial properties has become a common occurrence to safeguard the health and well-being of occupants. These inspections are a small price to pay for protecting people from the health effects that can come from being exposed to dangerous microorganisms and other contaminants.

Gastrointestinal illnesses and other adverse health effects can result from flooding in buildings when the water is contaminated with sewage. This can occur from flooding caused by sewage pipe backups, leaking sewer lines and from exterior flooding when contaminated waters enter a building.

The lists of microorganisms and contaminants that can be found in sewage and pollute a building are numerous. They range from fungi, bacteria, protozoa, to dangerous viruses. Sewage, or black water, may also be contaminated with pollutants that contain residuals from medicines, household cleaners and industrial waste.

One of the main dangers from sewage contamination comes from the ingestion or inhalation of infectious materials. As certain microorganisms grow they may release contaminates into the air, this is also the case when a flooded area is disturbed during post flood cleaning. Also, anyone that touches any contaminated surfaces has the risk of ingesting contaminates by touching their mouths or rubbing their eyes.

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Hiring a Sewage Contamination Inspector

A qualified sewage contamination inspector will be able to provide references and qualifications to the building owner or occupants.

- During a sewage contamination inspection a surface-by-surface investigation should be performed to determine if sewage indicator organisms or endotoxins are present. Air sampling may be conducted for the presence of endotoxins. Bulk sampling of effected materials and testing of any standing water should also be included.
- If sewage contamination is discovered a written evaluation describing the locations, extent of contamination and recommendations for corrective actions should be given.

Depending on what the investigator discovers they may recommend the building owner hire a remediation contractor to remove and clean any contaminated materials that pose a risk to occupant health.

It is important when hiring a professional to conduct the inspection that only experienced and qualified professionals perform this important task. Be sure to also verify that any samples that are taken are to be analyzed by an accredited independent laboratory such as EMSL Analytical, Inc.

EMSL Analytical, Inc. Tests

M114: Total Coliform & *E. coli* Enumeration (Colilert MPN Method SM 9223)
M115: Sewage Screen- Presence/Absence (Total Coliform, *E. coli*, *Enterococci*)
M116: Sewage Screen- MPN (Total coliform, *E. coli*, *Enterococci*)
M117: Sewage Contamination in Buildings (Presence/Absence) (Total Coliform, *E. coli*, *Enterococci*)
M017: Total Coliform w/*E. coli* screen (SM 9223B Chromogenic Substrate Coliform Test, Presence or Absence)
M129: *Enterococci* (Enterolert, Presence or Absence)
M240: Sewage Contamination in Buildings (MPN) (Total Coliform, *E. coli*, *Enterococci*)
M251: *Enterococci* (Enterolert, Enumeration by MPN)
M095: *Bacteroides* sp. (100 mL sample required)
M199: Human *Bacteroides* spp., qPCR (100 mL sample required)

Resources

American Indoor Air Quality Council
www.iaqcouncil.org

California Indoor Air Quality Program
www.cal-iaq.org

Centers for Disease Control & Prevention
www.cdc.gov/mold/

EMSL Analytical, Inc.
www.emsl.com

Indoor Air Quality Association
www.iaqa.org

LA Testing
www.LATesting.com

National Safety Council
www.nsc.org/library/facts/airflood.htm

U.S. Environmental Protection Agency
www.epa.gov/mold/flood/index.html