OSS News
On-site Sewage Systems
July 2018

Interpreting Surface Water Test Results

E. coli is a member of the coliform bacterial family. Coliform bacteria are composed of both fecal and non-fecal species. Coliform bacteria are relatively easy, cheap and quick to test for and are therefore used as an indicator organism. Surface water samples are typically tested for fecal coliform bacteria, of which E. coli is one major genus. If a water sample tests positive for fecal coliforms, then the lab will test for E. coli bacteria. Fecal coliforms are found in the guts of all warm blooded animals (humans, wildlife, domesticated animals, etc.). Water with fecal coliform present indicates that the water has been contaminated, fairly recently, with waste from a warm blooded animal. The number of E. coli in a sample is an indication of the "strength" of the wastewater in the sample. In large part, most species of E. coli (there are many) are not harmful; however, there are a few strains that are very pathogenic. The presence of E. coli indicates that there is a probability that the water sample is also contaminated with other pathogenic organisms often found in wastewater (viruses, other pathogenic bacteria, helminths, etc.). This is a sort of "guilty by association" test. If there is E. coli in the sample, it is assumed that there could be other pathogenic wastewater organisms present too. Other pathogenic organisms are often time consuming and expensive to test for, so the easier indicator is used. If E. coli is found in large concentrations, it is also assumed that the other pathogens are present in similarly large, yet different, concentrations. "Large concentration" is relative and is defined here by the concentration required to cause disease. The higher the concentration of pathogens in the water, the more likely that the water can spread disease. High concentrations may also indicate that the sample was obtained closer to the source without the effect of dilution. There is really no set level for surface water to be "acceptable" vs "unacceptable". EPA has set a zero tolerance level for drinking water with coliform bacteria (fecal or non-fecal). However, with surface water samples, we typically compare them to what is considered "safe" or "low risk" for recreational waters. Bathing beaches are set at a level of 235 colony forming units (cfu)/100 mL sample. Anything beyond this and the bathing beach should be closed. EPA felt that beyond this level, the risk for infection was significant. Therefore, we typically feel comfortable with saying that anything beyond the 235 cfu/100 mL is a health threat and should be investigated to find a source. This is not to say that lower levels could not pose a problem or a health threat, but statistically, they are less likely to do so. A sample result which shows high levels of E. coli is cause for concern and is cause for the local health department to continue to investigate to find the source of contamination. If you need assistance in sampling technique, complaint investigation procedures and/or interpreting water sample results, please contact your ISDH field staff.

Why is this?

Q: Why are final inspections of on-site sewage systems required?

A: Good question! Does the rule specify that the local health department must complete a final inspection? The rule does not state, verbatim, that the local health department has to complete a final inspection of the installed on-site sewage system. However, Rule 410 IAC 6-8.3-53(m) states that the requirements of a permit issued by the local health department for a residential on-site sewage system "shall not be considered fulfilled until the installation is completed to the satisfaction of the health officer or his or her duly authorized representative." How will the local health department staff know or be able to tell that the installation was complete and satisfactory without making a final inspection during a visit to the site? The final inspection procedure should be described to the local health board and system installers to clarify the expectations and responsibilities of everyone involved in the installation before the local health board accepts the procedure as Standard Operating Procedure. A consistent, thorough and documented final inspection procedure protects all parties involved in the OSS installation and provides a valuable record of the OSS. The final inspection should be one of the easiest parts of permit issuance and installation. If the construction plan that was submitted to the

local health department and approved for permit issuance is adhered to, the final inspection should just be a confirmation that the system was installed as the approved plan indicates.

The Indiana State Department of Health has a Final Inspection Checklist available for documentation of the final inspection. It is very important to document the system installation both in written form as well as in pictures. This will confirm that the system was inspected by the local health department and is in compliance, or not in compliance, with the rule. If multiple inspections are made, the final inspection documentation should reflect what was inspected at each inspection. If your local health department would like a copy of the Final Inspection Checklist or you would like assistance or training on final inspections, please contact your ISDH field staff.

Updated List of ISDH Pre-Approved Manufactured Septic Tanks

The list of Pre-approved Manufactured Septic Tanks has been updated, effective July 2018. The listing includes all septic tank manufacturers that have submitted designs for their septic tanks. Tanks are listed by manufacturer and size. Any tanks that are approved with two compartments are included with that information on the list. Please check out the updated list on our website at www.onsite.isdh.in.gov.

ISDH Commercial Plan Review

If you are contacted by someone with a commercial facility that wishes to expand its operations that would increase the design daily flow or the wastewater strength of the facility, please direct them to the ISDH Commercial Plan Review Section. The ISDH staff will assist the applicant in the change of use approval process. After reviewing the paperwork and any inspection reports submitted, the staff will notify the applicant of approval of an existing system or the need for a new system to adequately serve the needs of the facility.

Caught in the Act

Brant Ricker, EHS at the Huntington County Health Department, was recently caught in the act of bringing on-site system education to his citizens. Brant put together a great on-site system display for the Huntington County 4-H Fair. Brant used building materials from the remodeling of his home and purchased items to make a display of a residential sewer, septic tank equipped with an outlet filter, effluent sewer, distribution box and a portion of a "stone" and pipe trench. The stone was made of insulation board. Brant has been with the Huntington County Health Department a little over 2 years and this is just one example of how he has promoted public health and awareness in his community. Great job, Brant!

Dates to Remember:

August 3-19 – Indiana State Fair – Please come and see the OSS display in the Pathways to Water Quality exhibit. A distribution box and a portion of a soil absorption field has been added to the exhibit this year.

September 17-21 - EPA SepticSmart Week

The EPA Septic Smart website can be accessed at www.epa.gov/septic.

September 24-26 – IEHA Fall Conference in Evansville, IN (Vanderburgh County) www.iehaind.org

This is shaping up to be another terrific conference! Please join us in beautiful Evansville, IN.

Fall 2018 – ISDH Regional Trainings – Effluent Pump and Dose Tank Sizing. Stay tuned for further info!!

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