

## DYE TEST

### PURPOSE

A method to identify sewage discharges as positively coming from the structure tested.

Dye testing cannot confirm the absence of a malfunction.

Dye is a tracing agent; it will only identify a surface malfunction. Various liquid and powder dyes are available; the most widely used dye is powdered Flourescein. Some dyes may be toxic so only use dyes that have NSF certification (NSF.org).

### PROCEDURE

The septic tank or distribution box is the best place to introduce the dye into the system. But for ease of access, any indoor drain can be used, i.e., sinks, toilets, tubs. Before choosing a point of entry, verify that it is hooked into the system, especially if it is located in the basement of the residence.

The kitchen sink usually is preferable since the strainer basket can be removed and the dye can be placed in the drain without any of the dye splashing onto other fixtures.

Dye can stain toilet bowls, especially if the water is hard. To help prevent staining, flush the toilet to verify that it is working correctly before inserting the dye.

Once the dye is placed in the drain, begin to run water down the drain. While the water is running, go to the basement and check the wastewater plumbing lines to see if all the lines are hooked together and that they all exit through a main building sewer. If there is more than one building sewer exiting the structure, determine what other drains will need to be dye tested using the same process.

The amount of water that should be run through the system depends a great deal on whether the system is currently being used or if it has been idle. A system that is in use will require a minimal amount of water to be run through it, perhaps 25 to 50 gallons.

A system that has been idle for weeks or months will require a great deal more water to be run through it, as much as several hundred gallons.

If large volumes of water need to be used, it is advisable to run the water through the system in doses so that the septic tank is not overloaded causing solids or sludge to exit the tank. These doses may spread out over several days if necessary.

After the water has been run through the system, walk around the property and/or adjacent properties to look for any indications of the dye in the surface malfunction such as lush vegetation, "mushy" spots, ponded water/sewage. Be sure to also check any storm drains, culverts, and streams.

The dye may or may not appear immediately. This depends a great deal on the type of system on the site. If the system is currently in use, the malfunction may be spotted right away, even though the dye has not yet reached the surface malfunction. If the dye has not surfaced, it is best to wait 8 to 24 hours and recheck the site for dye. If sewage discharge is present, but no dye is visible to the naked eye, the Fluorescein dye can be identified through lab testing.

If no evidence of dye is present, either the test was not successful or the malfunction is from a different system. Consideration may be given to either retesting the same system using a different point of entry or testing a neighboring system. However, before testing another system be aware that you will have to differentiate the source of any future positive results.

**Common Causes of False Negative Results:**

- Insufficient amount of dye used
- Dye has a lot of soil to work through before surfacing
- Well is not actively pumping at the time the dye passes through
- Dissolved chemicals or biological contaminants restrain or alter the dye
- Fractured rock
- Large groundwater infiltrations
- System that partially or intermittently functions