

# Home & Environment

## Septic System Distribution Boxes: Importance of Equal Distribution in Trenches

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### Introduction

Septic systems in Indiana rely on soil to absorb, treat, and disperse wastewater effluent. If effluent flows by gravity from the septic tank to the absorption area, the septic system typically relies on a distribution box located between the septic tank and the soil absorption area. The distribution box uniformly delivers wastewater to a series of trenches cut in the soil (Figure 1). Without this even distribution, the soil absorption field will be unevenly loaded. When uneven loading occurs, portions of the trenches can become overloaded which can eventually cause the entire septic system to fail, resulting in untreated wastewater ponding on the soil surface. The purpose of this publication is to explain how distribution boxes work and how they should be maintained to avoid costly problems.

### Distribution Box

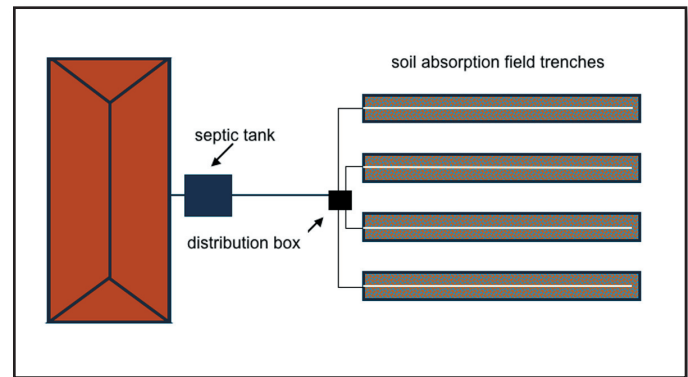
For many years, septic systems in Indiana that rely on gravity to move wastewater from the tank to the absorption field have been required to use a distribution box that evenly distributes wastewater. Distribution boxes are typically made of plastic or concrete and contain an inlet pipe from the septic tank and outlet pipes that lead to soil absorption field trenches (Figure 2).

### Causes of Uneven Wastewater Effluent Distribution

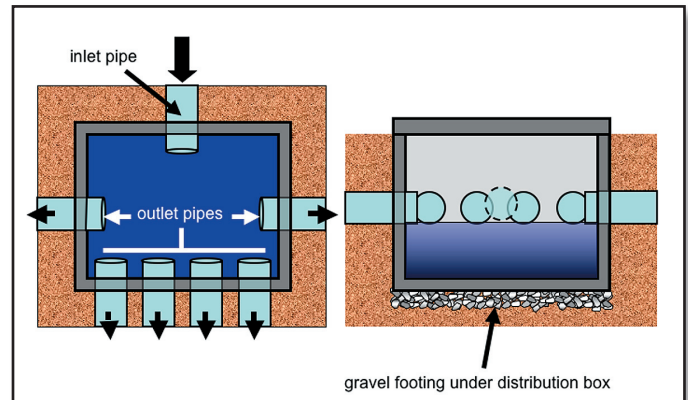
Distribution boxes must be level when they are installed, however, after a few years of winter freezing and summer thawing of the soil, the distribution box can tilt to one side or the other. This tilting overloads the distribution pipes to some soil absorption field trenches while others receive little to no wastewater effluent (Figure 3).

### Symptoms of Uneven Distribution

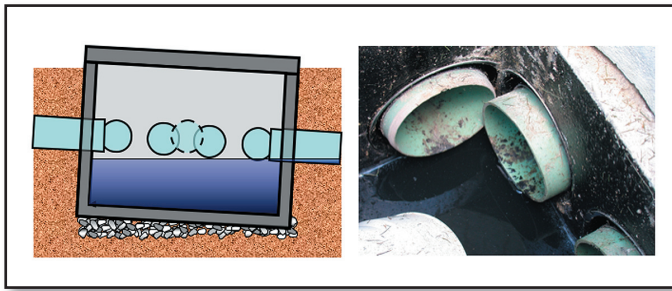
By the time you have wastewater appearing on your lawn, at least a portion of the absorption field has failed and the situation is critical. If you notice ponding, check



**Figure 1.** Exposed top view of conventional trench septic system components: septic tank, distribution box, and soil absorption field trenches.



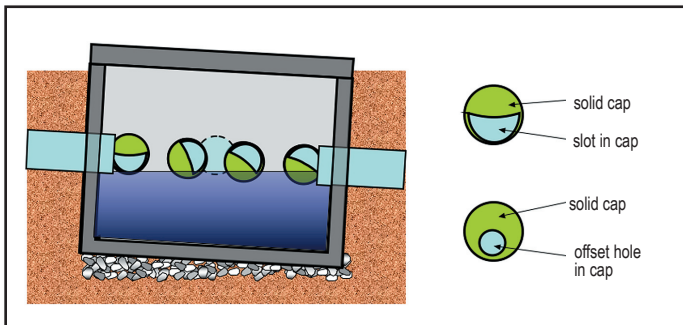
**Figure 2.** Top view (left) and side view (right) of a septic system distribution box with one inlet pipe from septic tank and six outlet pipes to soil absorption field trenches.



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**Figure 3.** Cross section of a distribution box that is not level (left) and a photograph of distribution pipes no longer receiving wastewater due to distribution box tilting (right).

your distribution box immediately. Wastewater should be at the same level on all outlet pipes. If the wastewater in the distribution box is so high that all trench outlet pipes are submerged, the entire field may be in failure. It is wise for homeowners to inspect distribution boxes every spring to ensure that the box is level and that all the distribution pipes are receiving the same amount of effluent. There are numerous possible solutions for an uneven distribution box.



**Figure 4.** (Left) Adjustable flow equalizers installed in a tilted distribution box. (Right) Examples of caps with slots or offset holes that are a simple and inexpensive method to equalize flow leaving the distribution box.

## Solutions to Unequal Distribution

If you observe wastewater surfacing on the lawn, contact your local health department. They may be able to diagnose the problem or recommend a professional who can help. If you do not observe wastewater on the lawn’s surface but the distribution box is obviously not level when you inspect it, one solution is to contact a septic system professional. Professionals may adjust the gravel below the box and relevel the distribution box. Alternatively, they may place flow equalizer caps on the inlets to the distribution pipes in the distribution box. These caps use an adjustable insert with a hole or slot offset in the cap (Figure 4). Each cap can then be rotated to equalize the flow into each pipe so all trenches receive the same amount of wastewater.

Remember: All soil absorption trenches should be loaded equally with wastewater to maximize the life of your septic system. Regular monitoring of the distribution box as well as regularly scheduled inspections of your septic tank can prevent costly repairs and improve your septic system’s longevity.

For other tips on how to maintain a septic system see Purdue Extension Bulletin HENV-2, *Increasing the Longevity of Your Septic System*: <http://www.ces.purdue.edu/extmedia/HENV/HENV-2-W.pdf>.

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