



## *Planning for an Onsite System Keeping your Property System-Safe*

**I am going to build a house on a piece of property I just purchased, and I want to include a septic system. Is there anything I should know about that before I build the house?**

Demographics are shifting. Many people are moving from the cities to the country, away from the hustle and bustle, and most often, away from centralized wastewater treatment, city water, and basic cable and electrical utilities. With current market values and lower interest rates, the housing industry is booming. Unfortunately, what often happens is that when the perfect piece of property is found, basic utilities are not readily available. The question is, how many people really think about their wastewater treatment options when purchasing a lot and building their dream home?

For example, a beautiful piece of land is available, large enough to fit your dream home perfectly. But, is there enough land to fit an onsite wastewater system, too? What about the drinking water source or well? Unfortunately, in many cases, this is somewhat of an afterthought. Many states require not only enough area for your onsite system, but also a reserve area in case the system needs to be repaired or replaced. Though the land, when purchased, would have easily accommodated a conventional onsite wastewater system, construction and building practices may sometimes change this condition. Another complication that often occurs is that the original location for the onsite system is preserved during construction, but the reserve area is compromised during construction of the home.

When these situations occur, the homeowner and installer are faced with difficult and often expensive choices. There are generally onsite treatment solutions available for these conditions, but the price of these options is much greater than that of a conventional system. In many states, these systems are considered "engineered systems," meaning that there is some mechanical component to the system. Whether it's a home aerobic treatment unit, a filtration system, a pressurized distribution system, or a combination of all of the above, the fix will not be cheap. Their mechanical components can make these systems quite expensive, and a licensed professional is required to design and install most of the systems.

Many changes to the site's soil condition can occur during the building process. The natural soil is removed by excavation, compacted by heavy equipment, or covered over with rocks, brush, and extra soil from the area where the home's foundation is to be, and it then becomes inaccessible. The undisturbed soil profile is essential, because the soil structure and naturally occurring bacteria remove nutrients and other constituents in the wastewater effluent. When the natural soil structure is disturbed or damaged, these naturally occurring bacteria are either unable to do their job, or simply not present.

Let's look at this through an actual scenario of what should happen when purchasing property in a rural setting. Property buyer Kaleigh finds the parcel of land she has been looking for to build her dream home. She knows there are no utilities, such as electricity, drinking water, or wastewater services. What does she need to do? Electricity is usually the first thing buyers think about. Available electricity is usually determined by the power company, and they will be able to let her know the extent of running the line, setting up utility poles,



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### **Editor's Note:**

*This column is based on calls received over the National Environmental Services Center (NESC) technical assistance hotline. If you have further questions concerning onsite system planning, call (800) 624-8301 or (304) 293-4191 and ask to speak with a technical assistant.*





**A section of property that is covered over with rocks and extra soil during home construction becomes inaccessible for use as a drainfield.**

treatment system. Each state has a minimum separation distance for the wastewater treatment system from the drinking water source. This information can be obtained from the local health department or from the state regulatory authority. In most cases, when it comes to wastewater treatment, the installer or health official will perform a percolation test or a soil evaluation to determine which area of the property is best suited for the system.

and the costs for these tasks. But, before she begins the task of getting basic services, she must first contact the local health department or regulatory agency to see if the site is indeed fit for use. The health department will either perform a site evaluation or recommend a builder, installer, or contractor to perform the evaluation in order to determine the site's ability to provide these basic services.

Usually, this site evaluation will look at other properties in the area for drinking water well information, such as depth and location for the drilling to be performed. Notably, the location of the drinking water well will have an impact on the location of the wastewater

Now that Kaleigh knows where her well will be located and the area for her wastewater system and reserve area is sited, it is important for her to make sure the builder is made aware of their location, too. The area designated for her onsite system should be identified and marked so that heavy equipment or excavation practices do not have a chance to create a costly situation.

The builder is now ready to begin construction of Kaleigh's dream home. With these areas marked and identified, no one should have to worry about those potentially costly mistakes that are preventable with planning.

## **Related Products**

### **Site Evaluation for Onsite Treatment and Disposal Systems (Item # WWBLDM12)**

*Otis, R.J.; Rural Systems Engineering*

This semi-technical design manual discusses site evaluations. Critical site and soil characteristics, the use of soil surveys, and necessary equipment are discussed. The manual also explains factors affecting the percolation test. The price of this 39-page booklet is \$11.70.

### **Site Evaluation Technology Package (Item # WWPKN83)**

*National Small Flows Clearinghouse*

An estimated 25 percent of Americans use some form of onsite wastewater treatment, and thousands of new onsite permits are issued each year. The most important part of choosing an onsite system is the site evaluation. A detailed site evaluation, including soil testing, is one that provides sufficient information to determine if a conventional septic tank soil absorption system can be used, or what type of alternative treatment and dispersal system is possible. Not only are soils investigated, but landform components must also be evaluated for one to fully understand the site and its ability to effectively treat

and disperse wastewater. Also, an accurate site evaluation is key to sizing the drainfield, or other soil absorption system, to ensure its prolonged use. This information package contains several papers that discuss soil testing and siting of onsite systems. Soil classification systems and various soil tests such as percolation tests and soil permeability tests are detailed along with siting of conventional drainfields, alternative systems, and systems in distributed soils. Former Item number WWPCGN83 and WWBKGN83. The price of this 90-page package is \$14.25.

### **Site Evaluations (Item # SFPLNL21)**

*National Small Flows Clearinghouse*

The Spring 2000 Pipeline explains the importance of a site evaluation prior to installing an onsite wastewater system. The 8-page newsletter discusses planning for an onsite system and how testing determines which type of system is appropriate for a particular site. Topics include the preliminary site evaluation, soil properties and surveys, field testing, landscape contour and subsurface drainage, and water movement. The newsletter offers suggested site evaluation procedures and tips. Price: \$0.40.