

## **-People living in areas not served by municipal sewer facilities must make provisions for household and human waste.**

The answer for the homeowner is the on-site wastewater system, or septic system. An on-site wastewater system typically consists of three basic components:

- 1) The septic tank is a plastic or pre-cast concrete structure that is four to five feet tall, four to five feet wide, and nine to twelve feet long. All water that travels through the plumbing of the house must enter the tank per North Carolina law. Solids will settle out to the bottom of the tank, turn to sludge, and slowly decompose. Liquids leave the tank through a Tee pipe that is equipped with a filter.
- 2) When liquids leave the tank, they sometimes flow through a distribution device known as a "D-box". The purpose of the D-box is to split the flow of wastewater equally to separate parts of the nitrification field.
- 3) The nitrification field, or drainfield, is a series of trenches that disperse wastewater into the soil for the purposes of treatment and disposal. Each trench may be from 12" to 36" wide and 12" to 36" deep, depending upon the type of drainfield selected by the Environmental Health Specialist (EHS). The size of the drainfield is determined by the projected water use (i.e., number of bedrooms, etc.), the ability of the soil to absorb and treat wastewater, and type of drainfield.

### **Alternative, Innovative, and Engineered Systems**

Other types of systems may be necessary depending upon the purpose of the facility served by the on-site wastewater system or limitations of the soil or site. If you require one of these systems, an EHS will inform you of all the requirements and responsibilities of that system. In some cases, an engineer may be required to design the system.

### **Permits**

Before installing an on-site wastewater system or obtaining any building permits, both an *Improvement Permit* (IP) and an *Authorization for Wastewater System Construction* (AC) must be obtained.

### **Evaluation**

An IP/AC must be applied for at the county environmental health office. When an application has been made, and the site has been made ready for evaluation, an EHS will visit the site. They will evaluate the following:

Topography – slope, landscape and drainage features all affect system design.

Soil characteristics – the texture, structure, and other features of the soil affect its ability to absorb and treat wastewater.

Depth of Soil – different drainfield types have different soil depth requirements.

Space available – There must be adequate room on the property for the system to be installed. Most properties also require enough room to accommodate a repair area, which is equal in size to the system area and protected from building or other disturbances. See the back page of this brochure for required legal setbacks, which affect available space.

### **Installation**

Once an evaluation is completed and the appropriate permits have been issued, the system may be installed. Either the homeowner or a certified septic installer must install the system.

### **Inspection**

Once the system has been installed, an EHS must conduct an inspection to insure compliance with the permit and state law. Upon approval, the EHS will issue an *Operations Permit* (OP). An OP is required before any new house on a septic system can get power.

**Set backs**

There are several setbacks listed in North Carolina law. These setbacks are to protect our water supplies and to prevent premature failure of the septic system.

Any public water supply source.....	100'
Any private water supply source.....	100'
<i>(some exceptions may apply)</i>	
WS-I Streams (those that feed public water supply .....	100'
Any other surface water .....	50'
<i>(from bank or high-water line)</i>	
Building foundation.....	5'
Underground basement .....	15'
Property line.....	10'
Two foot embankment or cut .....	15'
Water line .....	10'
Ground water lowering ditch.....	25'
Swimming pool (edge of water).....	15'
Any other nitrification field (other than repair area).....	20'
Down-slope from drainage (man-made or natural).....	10'
Side-slope from drainage (man-made or natural) .....	15'
Up-slope from drainage (man-made or natural).....	25'

For septic system maintenance tips, please visit:

[http://www.deh.enr.state.nc.us/osww\\_new/new1//tips.htm](http://www.deh.enr.state.nc.us/osww_new/new1//tips.htm)

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## On-Site Wastewater Systems