## Why Soil Evaluations Are Needed When Installing Septic Systems

By Lisa Zeiner, Septic Consultant / From the IOWPA News . Summer 2021

Septic systems only work if the soil absorption field area is sufficiently permeable. The absorption field must be able to absorb the effluent flowing into it. The soil is the most important part of the septic system. The soil is the critical last step in treating effluent. Treatment of effluent depends on the time it spends in the soil and the available microbial population of the soil. But what is a soil evaluation?

A soil evaluation is an assessment of the soil performed by a soil scientist. Soil has texture, structure, and order. The soil evaluation tells the story about the area it describes. As with any good story, you plan the plot before you construct the book. Before you construct the septic system, you plan the system. You cannot plan the system without understanding the soil story.

Soils are classified by texture and color. The texture comes from three major components – sand, silt, and clay. Soil color gives an indication of its geological origins and mineral make-up. The color also indicates the location of the seasonal high water table within the horizons.

Texture measures how quickly effluent moves through the soil. For example, sandy soil has large grains stacked far apart, which allows effluent to flow quickly. Clay soils are fine grains stacked closely together, allowing effluent to flow slower. Sandy soil also has a lower microbial population to break down solids or pathogens in the effluent. Richly organic soil has a higher microbial population to break down solids and pathogens. Effluent needs to spend time in soil with a sufficient microbial population to treat it. Based on the texture and color of the soil, the soil scientist determines the suitability of the site for an absorption field. Soil evaluations can be borings (small holes) or a pit.

The soil evaluation determines:

- 1. Site suitability
- 2. Type of system
- 3. Depth of system
- 4. Seasonal high water table

Without a proper soil evaluation, a septic system could fail.

