

Ozark uplift was flat on top and landscape not hills but dissected valleys and summits show concordance.

Valleys result from fracturing of joints where are due to regional uplift.

Developmental landscapes are related to rock, weather and vegetation.

Sink hole a depression in land surface that has internal drainage.

A 5' wide sinkhole disposes 50 gal per minute to stream 80' underground.

Discrete zone recharge occurs in localized areas that can be pinpointed and mapped and contains a lot of water in a little area. Enters in places like sinkholes, stream beds and forms water falls in caves.

Diffuse zone recharge is diffuse water moving down uniformly everywhere. It seeps thru the rocks and forms stalactites.

Underground water can be either water in storage as ground water or water in transit as a cave stream.

Well and spring water are different because of the two kinds of water listed above. They are chemically different.

Sink hole is discrete recharge and is a tributary of the cave stream system. It carries elevated dirt.

People dump trash in sink holes.

Club moss spores are  $33\mu$  and 10-15 times larger than bacteria. They are colored and placed in surface waters where they enter cave system and can be recovered at effluent part of cave exit. They are not filtered out and show rate of water movement. These spores are trapped in nylon nets and have been traced as far as 40 miles away.

Ground filters are not effective.

What is perceived wrongly causes wrong decisions and wrong effects.

Septic tanks if improperly placed can have discrete recharge without surface expressions.

The only thing that kills bacteria underground is time and oxidation.

Cave holes can become smaller rather than larger.

Colluvial soils are from hillside deposits and form in valley below. They are fine textured and hold more water. Supports more tree growth.