

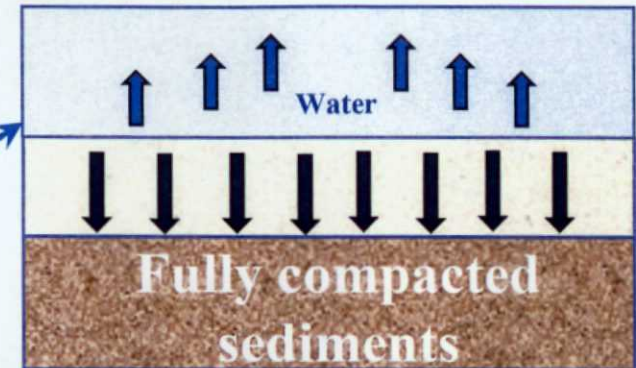
# Development of Overpressure

## Development of Normal Pressure

Weight of overlying strata pushes down on uncompact sediments.



- 1.) Sediments are surrounded by a **permeable** layer.
- 2.) Water is forced out of the sediments.
- 3.) Sediments compact until they are in grain-to-grain contact.



With deeper burial, the weight of overlying strata increases, but this weight is supported by the rock grains.

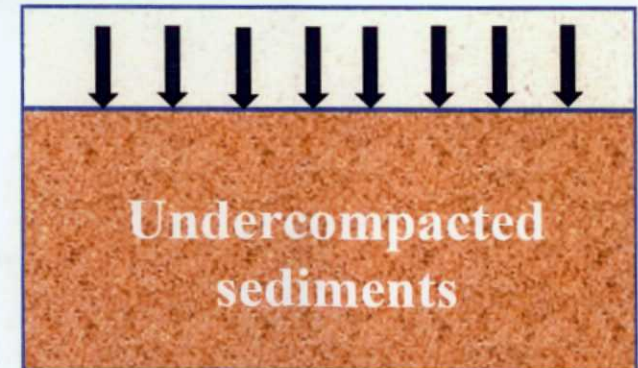
Pore pressure increases at hydrostatic gradient.

## Development of Overpressure

Weight of overlying strata pushes down on uncompact sediments.



- 1.) Sediments are surrounded by an **impermeable** layer (e.g., shale, salt).
- 2.) Water cannot escape, and compaction cannot occur.
- 3.) Weight of overlying strata is supported by formation fluids in the undercompacted layer and not by the rock grains.
- 4.) This is like standing on a water-filled balloon.



Weight of overlying strata is **supported** by formation fluids and not by the rock grains. Pore pressure increases at lithostatic gradient and this interval is **overpressured**.