



JIWAJI UNIVERSITY SCHOOL OF STUDIES IN EARTH SCIENCE

FOR M.SC GEOLOGY(GT401)

401- UNIT II(2.5)

CLASSIFICATION OF ROCKS ACCORDING TO WATER BEARING PROPERTIES

BY VARNICA MISHRA(GUEST FACULTY)

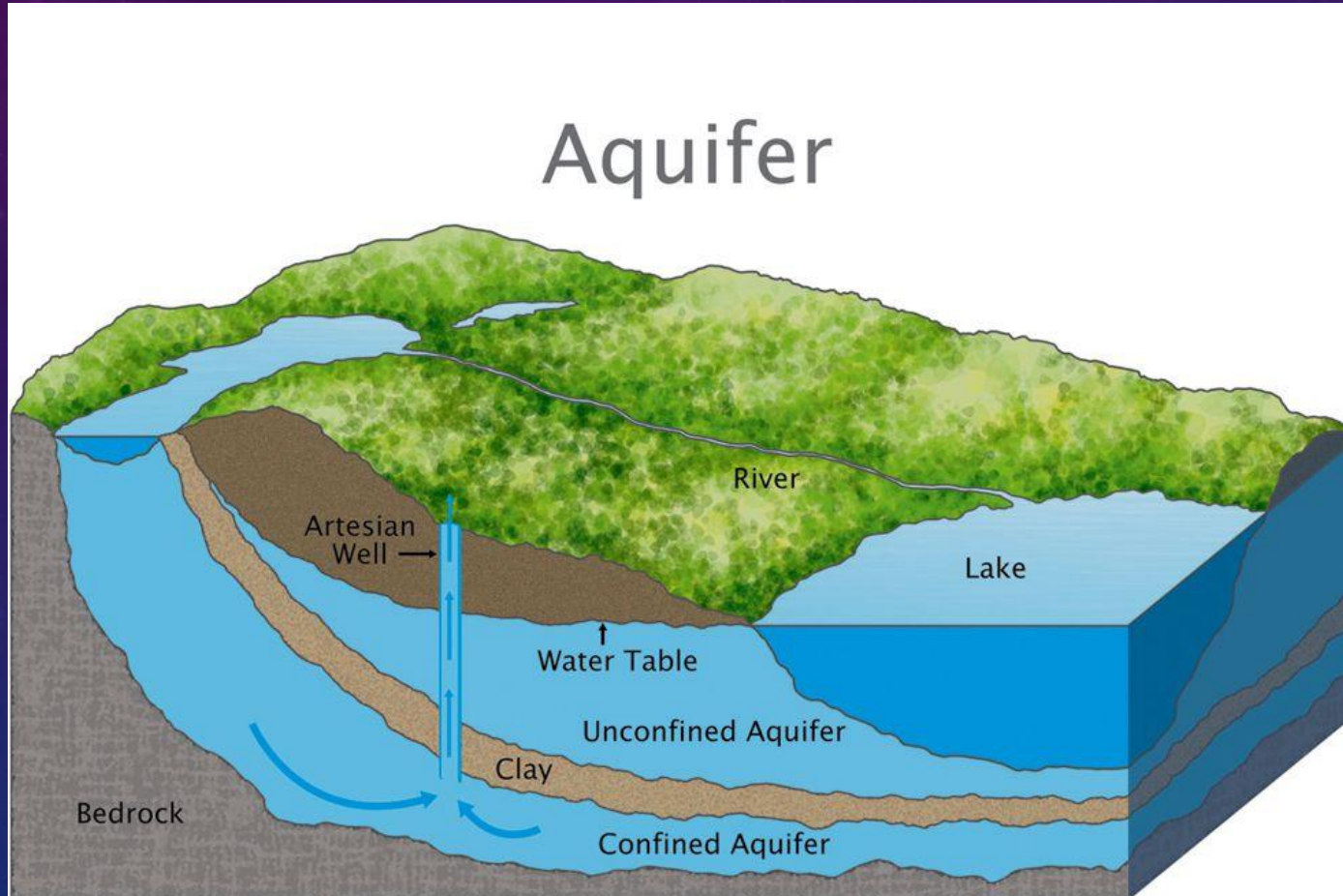
1. AQUIFERS.

- An aquifers is defined as the body of rock or soil which is capable enough to hold the water and can be tapped for economic purposes
- More precisely, a body of permeable rock which can contain or transmit groundwater
- It is of two types , unconfined and confined.
- An unconfined aquifers are those in which water seeps from the ground surface directly above the aquifers.
- A confined aquifers are those in which an impermeable rock layer exists that prevents water from seeping into the aquifers

DIFFERENCE BETWEEN UNCONFINED AND CONFINED AQUIFERS

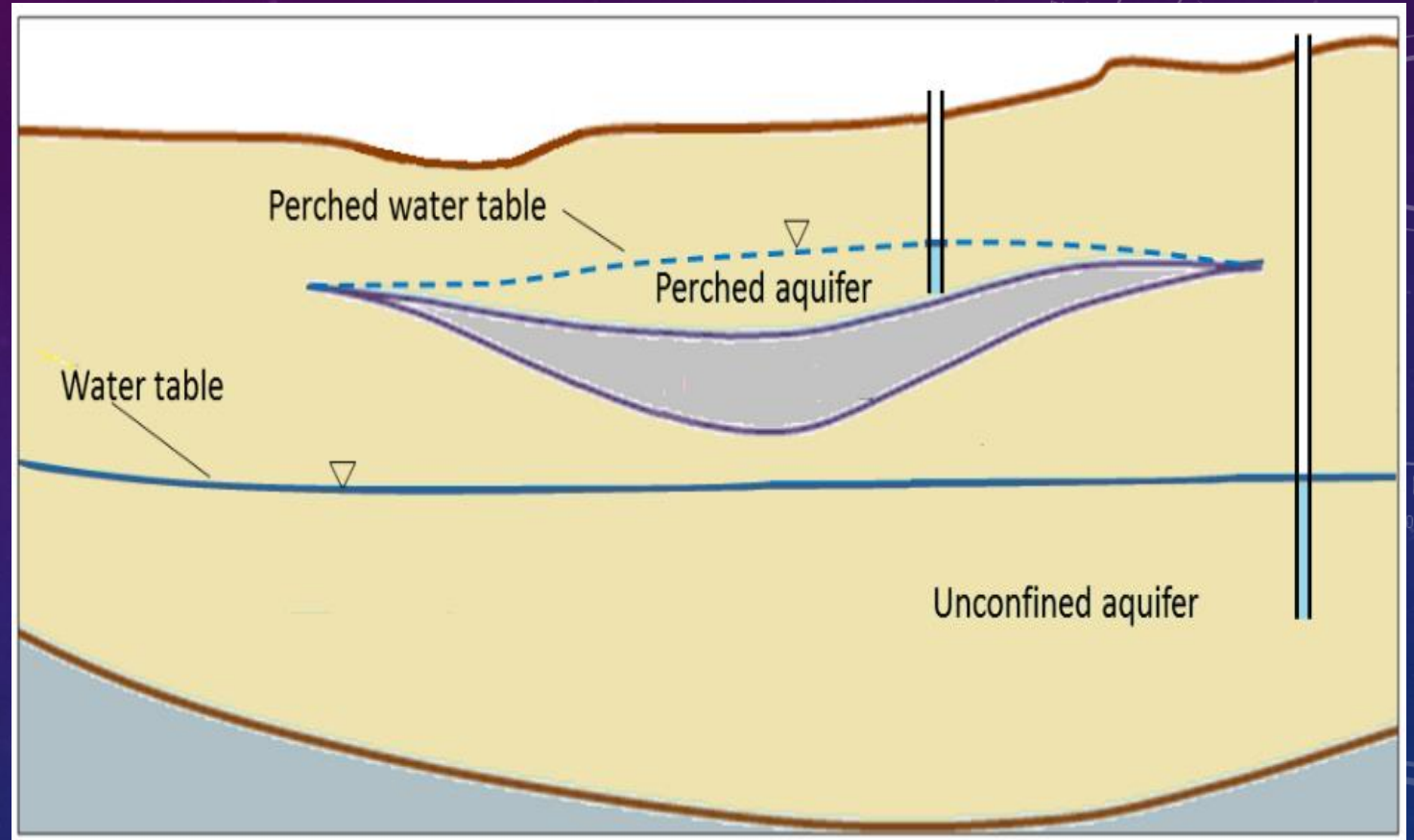
- In most simpler way, in an unconfined aquifer the impermeable layer is at the bottom of the aquifer .

- In a confined aquifer , waterbody is sandwiched between two impermeable layer



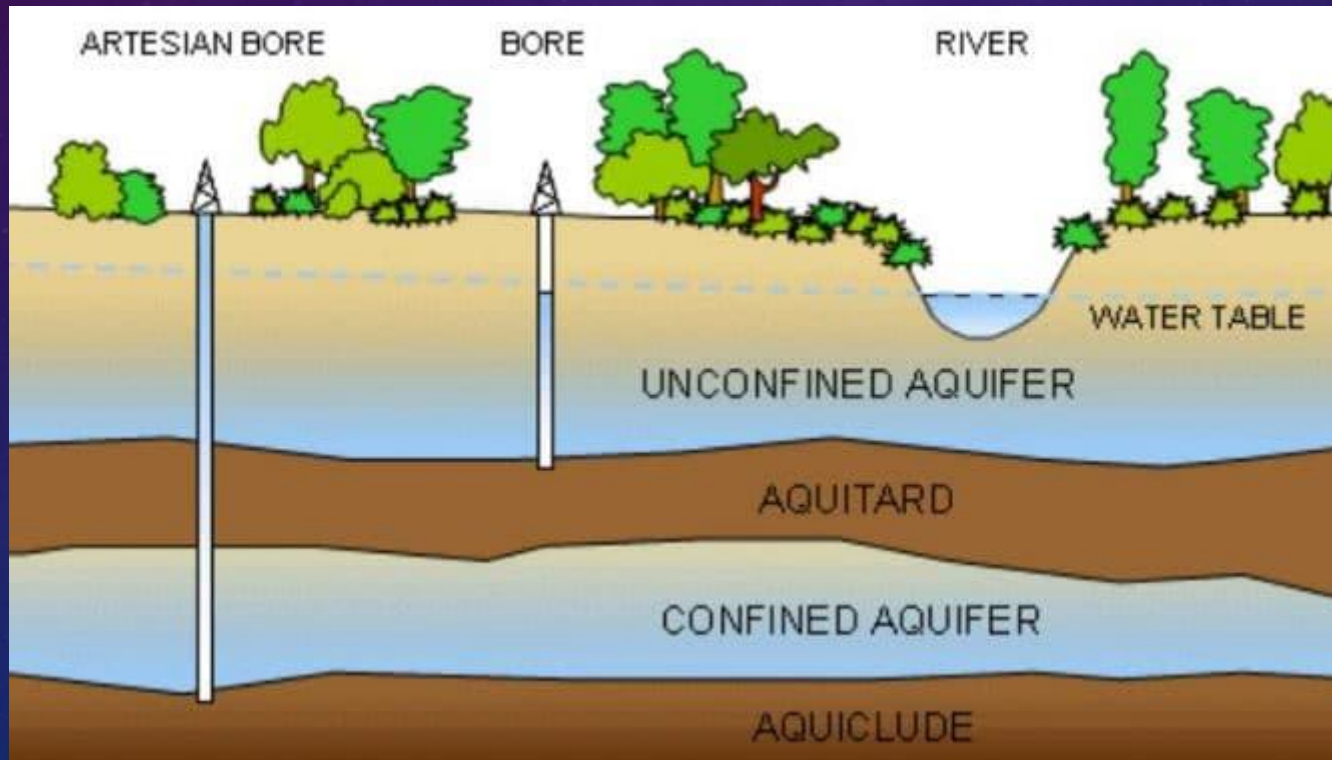
A TYPE OF AN UNCONFINED AQUIFER

A perched aquifer: a special case of an unconfined aquifer, in this groundwater occurs above the main water body. This occurs when there is impermeable layer is above the main water table but below the land surface.



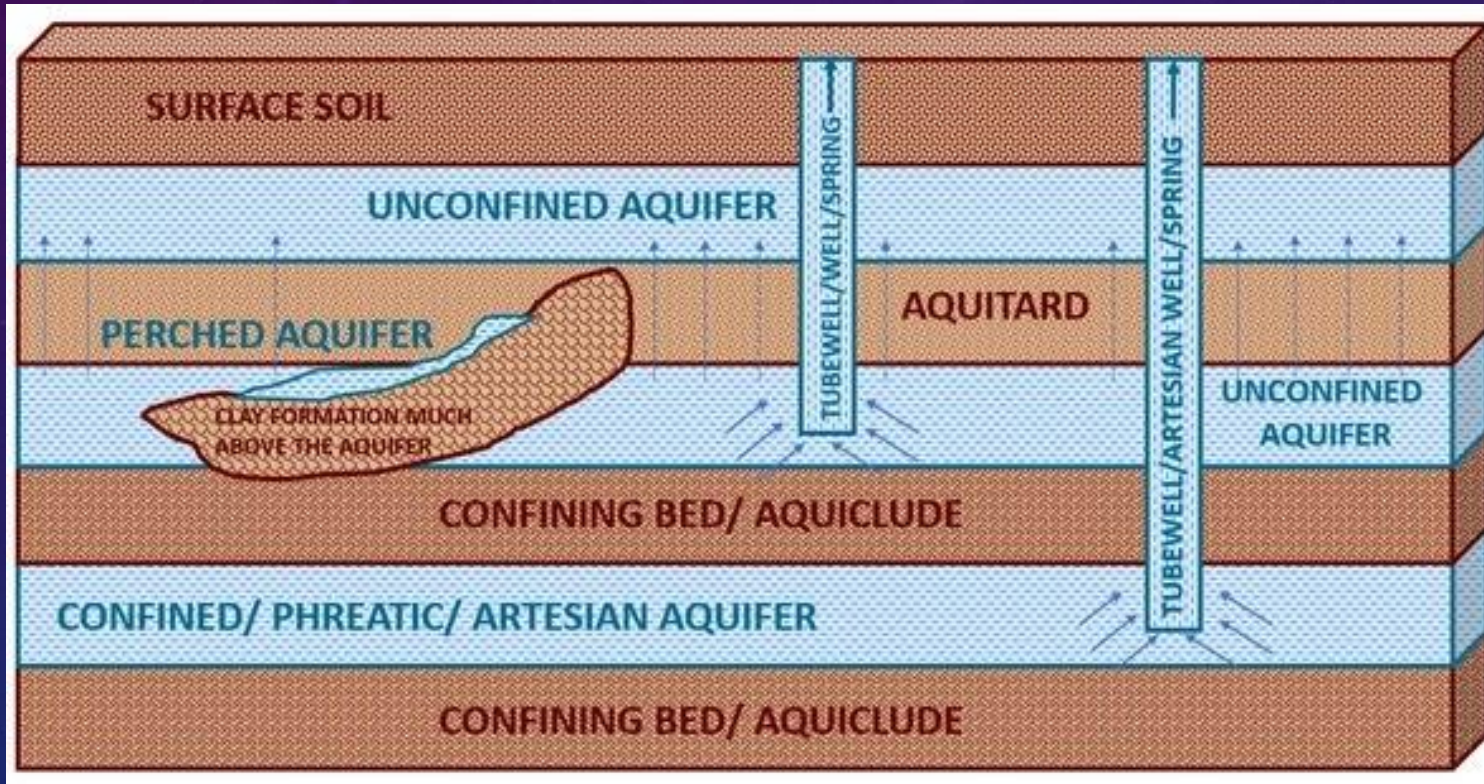
2. AQUICLUDE

- An impermeable body of rock which is porous enough to hold enough quantity of water but not permeable enough to allow easy flow through it. Clay is an example of aquiclude



3. AQUIFUGE

- A body of rock that is neither porous nor permeable enough to hold quantity of water. Compact rock is an example of aquifuge



4. AQUITARD

- An aquitard is also a saturated formation. It permits the water through it but does not yield water in sufficient quantity as much as aquifer does. It is because of their partly permeable nature. But however, if there is an aquifer under the aquitard then the water from aquitard may seep into the aquifer. **Sandy clay** is a perfect example of an aquitard.

