Limestone- a sedimentary rock composed mainly of calcite. Looks similar to sandstone but will bubble when exposed to a weak acid.

Sandstone- is a sedimentary rock composed mainly of sand-sized minerals or rock grains.

Siltstone- is a sedimentary rock which has a grain size in the silt range, finer than sandstone and coarser than clay stones.

Shale- any of a group of fine-grained, laminated sedimentary rocks consisting of silt and clay-sized particles.

Clay Stone- is a fine-grained sedimentary rock composed predominantly of hardened clay particles. Basically lithified muds and oozes. Ex. Slate

Ochre- refers to several forms of iron oxide and is a type of clay or sandy clay mineral.
Hardness Definitions

- **Cemented** - Once drilled the hole will stand open without collapse; refers to sandstone or other consolidated formations
- **Consolidation** - Hard enough the bit needs to turn cutting into the formation as opposed to raising and dropping the bit. Similar to cemented-not as tight
- **Dense/Stiff** - Refers to clays/shale; can be broken with fingers
- **Hard** - Difficulty drilling but cuttings can be broken with hammer
- **Loose** - Bit can be washed through the formation without rotation, cuttings have no consolidation
- **Soft** - Bit penetrates into the formation by raising and dropping, will not wash through without rotation
- **Very Hard** - Bit won’t penetrate without pull down