Tutorial 3

1. Necessary detail of an exploratory well are as follows:

|  |  |
| --- | --- |
| 47.5 ft | Derrick Floor |
| 48 ft | KB |
| -6689 ft | GL |
| 6641.5 ft | Thickness of water column |
| 0.0068 degF/ft | Temperature Gradient |
| 1.00 g/cc | Average sea water density |
| 2.300 g/cc | Average overburden density |
| 2.65 g/cc | Sandstone matrix density |
| 1.00 g/cc | RhoFl |
| 55.6 us/ft | DTma |
| 189 us/ft | DTfl |
|  |  |

Digital values of the curves (GR, DT, DTS, NPOR, RHOB, etc.) are provided in the excel sheet. Do the following:

1. Calculate Vsh using three different correlations (including the linear) and plot Vsh versus GR

2. Calculate porosity using Density and DT. Plot the two porosities versus Vsh

3. Iterate for porosity and fluid density in every sand and then Calculate saturation using Archie's equation. Use a = 1, m = 2, n = 2. Use the Tutorial Guidance provided and the Technical Paper by Batzle and Wang (1992)

For all your results, you are expected to present your own interpretation of the observation

- constants used in calculations

- equations used to obtain your results

- results should be in either table or log (curve) formats

**The submission is due the week next to Diwali holidays.**