

AESB3341 Course



LOG EVALUATION
HOW TO.....

What to do:

1. Define the petrology: sand, shale, carbonates, coal, etc. Try also to find lateral sedimentary relations between the wells.
2. Define the zones of interest and the related layers:
Where can you expect oil, gas and water.
3. Define the economical zones of each well (gas/water columns).
4. Correct for P,T-environment, fluids, shale, etc. Try to define effective porosity, S_w , etc.
5. Define your cut-offs on ϕ , V_{sh} , S_w , etc. and calculate your volumes.



Sources

1. Blackboard:
 - Information on core data (ϕ/K -relations)
 - Original well data as xls-files
 - Petrophysics data: field information as a .pdf file
2. Help TA3500 college & praktikum
3. Density, resistivity, sonic and FDC/CNL tabel/cross plots
4. Graphs: Praktikum-handleiding, Schlumberger handbooks

What to do in a evaluation: 1.

Ex. 1.

1. Depth correction: see xls files.
2. Environment definition bottom hole and put everything in the general parameter file.

- depth zone of interest.

- temperatures, fluid resistivities,

- mud densities, pressures,

Gather all information in the general parameter file. See Blackboard and improve data where possible.

3. Look at logs and modify/correct them for the in-situ environment, i.e. borehole caliper (CAL), diameter drill bit, temperature, salinity, etc.

What to do in a evaluation: 2.

3. Shale volume with GR and/or SP
4. Densities used to define porosities, shale volumes.
FDC, NECNL → POR.FA..., FDC/CNL-plot lithology and/or sonics (Whiley), porosity.
5. Porosity-permeability relations
Perm.txt, Por.F... → por/perm relation. See excel-files
6. Water saturation: (logs+corrections).
Por.F., Resistivity deep and Vsh → SW.H... (Indonesia, Simandoux, Archie, etc.). Try also with RSMSFL.LED
7. Try to find free water level.
8. Use previous information to summarize your net values in por, perm, Sw, N/G