

Pressure Regime Evaluation, Role and Contribution in Well Planning and Formation Evaluation Process, Zeit Bay Fields - Gulf of Suez, Egypt
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An adequate calculation and prediction of the formation pore pressure and better understanding for the pressure regime model of an oil field are very important prior drilling any well. The pressure regime modeling is an important integral part of the well planning and formation evaluation process and can play an important role in:-

- 1) Deciding where the proposed wells can be drilled, especially in Gulf of Suez Oil Fields which are considered as multiple reservoirs.
- 2) Enable the well planner to anticipate the location and potential magnitude of possible abnormal pressure and consequently avoid lost valuable rig time and equipment problems.
- 3) Minimizing the drilling cost as the pressure regime model can be used as a guide to estimate the formation pore pressure and fracture pressure, so that the mud density can be optimized.
- 4) Enable the well planner to seat the casing seats in the proper depth.
- 5) Avoid environmental pollution, loss of reserves and loss of human life or injuries resulting from abnormal pressure problems.

Offset data sets of the drilled wells can be used to provide detailed profiles of expected formation pore pressures for well proposals. These data include formation tops, composite well logs, survey data, wireline logs, logging while drilling, seismic data, various pressure evaluation logs, production tests and direct pressure measurements. Also, the geological setting of the area, the environmental deposition and the problems encountered while drilling the wells should be taken into consideration while evaluation. These valuable information can be subjected to regional variations during the course of a new well. It is very important to recognize, detect and evaluate any changes in the formation pore pressure data. This "real - time" information can be used to implement new well proposal. Also, relationships between Petroleum Geology and Drilling Engineering can be interpreted to give accurate estimations of formation pore pressures at any point during the course of a well and led to drill the well safely.