

## Abstract

The main objective of this research is to evaluate core petrophysical and geological properties of Fang Oil Field. Other purposes of the study are to interpret well logs and compare them with laboratory data, then try to correlate and present the correct data interpretation.

The study and evaluation of core samples from Well no. IF32-04-GS, Ban Nong Yao, Chiang Mai Province are as follows:

- To determine the porosity
- To determine the permeability
- To determine the grain density
- To determine the cementation factor
- To determine the formation volume factor
- To determine the exponential factor
- To determine the resistivity and the conductivity
- To determine the fluid saturations

Twenty-eight plugs are used to determine the above parameters. The permeability are moderated with average values values of 34.79 md. The average porosity is approximately 17.27 percent with the average grain density of 2689 kg/m<sup>3</sup>. And by plotting the formation volume factor v.s. the porosity, the Archie's equation is as follows:

$$F = 0.54 \phi^{-2.17}$$

for shaly sandstone,

$$\text{and } F = 0.27 \phi^{-1.91}$$

for clean sandstone.

From the above equations, the cementation factor and the exponential factor ( $n=1.85$ ) show relatively good permeable sands.

From the retort fluid saturations evaluation of rock samples, water, crude oil, and copper were obtained from the experiment. The copper recovered probably effected resistivity and electric logs readings. Therefore, with unobtainable well logs from DED, the log interpretations were incomplete and nearly impossible to evaluate.