

利用電測資料估算地層壓力與其在鑽井 工程應用之研究

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摘 要

本文係利用本公司現有之各種電測資料，應用密度、中子交叉統計圖及科里棒 (CORIBAND) 電測解釋法，分析地層岩性，與計算頁岩含量、孔隙率、頁岩容積密度、聲波走時及含水飽和率等參數。所得之一系列數據，以岩石力學及地層壓力公式，透過電腦程式之運算，求出地層孔隙壓力與破裂壓力梯度線，以供鑽井工程編訂次一口井鑽井計劃使用，俾增進鑽井工程安全及降低鑽井成本。

本文列有電測資料估算地層壓力與破裂壓力梯度之電腦程式，與出磺坑構造東翼地塊四口井的地層壓力電腦計算結果，俾供鑽井工程之應用參考。

(本文刊載於石油鑽採工程第二十六期。)

Estimation of the Formation Pressure From Well Logs and Its Application in Drilling Engineering

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ABSTRACT

This paper covers the application of well logs to estimate the formation pore pressure and the formation fracture gradients. The Density-Neutron crossplot and the CORIBAND computer program are applied to analyze the formation lithology and determine the shale parameters: these include shale content, porosity, shale resistivity, shale bulk density, sonic interval transit time, water saturation, etc.

These parameters were fed into a computer program to plot formation pore pressure and formation fracture gradient curves, which are indispensable for drilling program design, and helpful for drilling efficiency improvement and drilling cost reduction.

The computer programs of the formation pressure and the fracture gradient, and their examples from the CHK-119 w, 121 w, 126 w and 127 w wells are presented in this paper.