

INTISARI

ANALISIS PETROFISIKA DAN PERHITUNGAN VOLUMETRIK HIROKARBON FORMASI 2ND WALL CREEK DI LAPANGAN TEAPOT DOME CEKUNGAN POWDER RIVER, NATRONA COUNTRY, WYOMING, AMERIKA SERIKAT

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Perhitungan *stock tank gas initial in place* (STGIIP) berdasarkan hasil analisis petrofisika telah dilakukan di lapangan “*Teapot Dome*” pada formasi 2nd Wall Creek, cekungan Powder River. Analisis petrofisika dilakukan pada 8 sumur yang tersedia untuk menentukan properti – properti fisis batuan (seperti volume *shale*, porositas efektif, saturasi air, dan permeabilitas).

Metode yang digunakan dalam penelitian ini adalah metode deterministik menggunakan perangkat lunak *Geolog 7*. Kandungan serpih (*shale*) dihitung menggunakan log gamma ray. Saturasi air dihitung menggunakan persamaan Simandoux dengan parameter a , m , dan n sebesar 1,2, dan 2.

Dari hasil penelitian ini diketahui bahwa zona reservoir yang ada pada lapangan “*Teapot Dome*” tergolong sebagai reservoir berkualitas baik. Klasifikasi kualitas reservoir ini berdasarkan nilai rata-rata kandungan serpih (*shale*), porositas efektif, dan permeabilitasnya. Besar cadangan hidrokarbon di lapangan Teapot Dome adalah 45.46 BCF.

Kata kunci : Analisis petrofisika, properti reservoir, *net pay*, STGIIP.

ABSTRACT

PETROPHYSICAL ANALYSIS AND HYDROCARBON VOLUMETRIC CALCULATION 2ND WALL CREEK FORMATION IN TEAPOT DOME FIELD, POWDER RIVER BASIN, NATRONA COUNTRY, WYOMING, UNITED STATES

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Stock tank gas initial in place (STGIIP) calculation based on petrophysical analysis results had been done for Teapot Dome field, 2nd Wall Creek formation, Powder River Basin. Petrophysical analysis of 8 wells was conducted to determine rock's physical properties (such as shale volume, effective porosity, water saturation and permeability).

The method used in this research was the deterministic using software Geolog 7. Shale volume was calculated using Gamma Ray log. Water saturation was calculated using Simandoux equation with parameters value of $a : 1$, $m : 2$ and $n : 2$.

The result of this study shows that reservoir zones at "Teapot Dome" field can be classified as good quality reservoir. This classification was based on the average values of volume shale, porosity, and permeability. The total volume of Gas in Place which calculated in Teapot Dome is 45.46 BCF.

Keywords : petrophysical analysis, reservoir properties, netpay, STGIIP