

INTISARI

ANALISIS PETROFISIKA UNTUK MENENTUKAN TITIK PERFORASI PADA SUMUR SOUTH BARROW, ALASKA UTARA

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Analisis petrofisika telah dilakukan di sumur *South Barrow* 18 dan sumur *South Barrow* 19, Alaska Utara. Data yang digunakan dalam penelitian merupakan data *open source* milik USGS (*United States Geological Survey*). Formasi yang dapat diidentifikasi pada sumur *South Barrow* 18 adalah Formasi Pebble dan Formasi Kingak. Pada sumur *South Barrow* 19 dapat diidentifikasi Formasi Pebble, Formasi Kingak dan Formasi *Sag River*. Formasi Kingak pada kedua sumur dibagi menjadi dua bagian yaitu *Upper Barrow Sandstone* dan *Lower Barrow Sandstone*.

Dengan menggunakan nilai penggal kandungan serpih, porositas efektif dan saturasi air didapatkan zona reservoir dan zona *net pay*. Zona reservoir dan zona *net pay* masing-masing formasi pada kedua sumur dianalisis nilai parameter fisika berupa kandungan serpih, porositas total, porositas efektif, saturasi air dan permeabilitas. Berdasarkan analisis zona *net pay* didapatkan zona prospek pada masing-masing formasi kedua sumur dan dari zona prospek didapatkan kedalaman titik perforasi. Titik perforasi sumur *South Barrow* 18 yaitu pada Formasi Kingak *Lower Barrow Sandstone* di kedalaman 2063 ft. Titik perforasi sumur *South Barrow* 19 terdapat dua yaitu pada Formasi Kingak *Lower Barrow Sandstone* di kedalaman 2029.5 ft dan Formasi *Sag River* di kedalaman 2221.5 ft.

Kata Kunci: Petrofisika, *South Barrow*, Zona Reservoir, Zona *Net Pay*, Zona Prospek, Perforasi

ABSTRACT

PETROPHYSICAL ANALYSIS TO DETERMINE PERFORATION POINT AT SOUTH BARROW WELL, NORTH ALASKA

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Petrophysical analysis at South Barrow well No 18 and South Barrow well No 19, North Alaska has been done. The data used in research is open-source data from USGS (United States Geological Survey). Formations can be identified at South Barrow well No 18 are Pebble Formation and Kingak Formation. Meanwhile at South Barrow well No 19 can be identified the Pebble Formation, Kingak Formation and Sag River Formation. Kingak Formation at two wells is divided into two parts, Upper Barrow Sandstone and Lower Barrow Sandstone.

Using cut-off values of volume shale, effective porosity and water saturation were obtained reservoir and net pay zones. Reservoir and net pay zones of each formation in the two wells were analyzed physical parameter value such as volume shale, total porosity, effective porosity, water saturation and permeability. Based on net pay zone analysis, the prospect zone was obtained in each well and from the prospect zone, the depth of perforation point was obtained. The perforation point of the South Barrow 18 well is in the Kingak Lower Barrow Sandstone Formation at depth 2063 ft. There are two perforation points of the South Barrow 19 well, the Kingak Lower Barrow Sandstone Formation at a depth of 2029.5 ft and the Sag River Formation at a depth of 2221.5 ft.

Keyword: *Petrophysics, South Barrow, Reservoir Zone, Net Pay Zone, Prospect Zone, Perforation*