

INTISARI

ANALISIS POTENSI HIDROKARBON BATUPASIR DENGAN MENERAPKAN INVERSI SEISMIK DAN MULTI-ATRIBUT SEISMIK FORMASI *LOWER* TALANG AKAR, LAPANGAN “SAMA”, CEKUNGAN SUMATERA SELATAN

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Cekungan Sumatera Selatan merupakan cekungan penghasil minyak dan gas bumi yang utama di Indonesia. Reservoir hidrokarbon Formasi Talang Akar merupakan reservoir utama penghasil minyak dan gas bumi di Cekungan Sumatera Selatan. Sedangkan, Lapangan “SAMA” merupakan lapangan minyak dan gas bumi yang akan dikembangkan, sehingga diperlukan penelitian dan analisis untuk pengembangan lapangan tersebut. Analisis dan prediksi persebaran reservoir hidrokarbon salah satu hal yang utama dalam penentuan letak titik sumur pengembangan baru. Penelitian tentunya harus dilakukan dengan metode geofisika yang tepat untuk mendapatkan hasil yang optimal.

Analisis potensi hidrokarbon dilakukan dengan menerapkan inversi seismik berupa inversi *model based* dan multi atribut seismik (*neural network*) dengan parameter porositas. Proses inversi seismik (*modelbased*) bertujuan untuk mendapatkan persebaran batupasir. Sedangkan, proses multi atribut (*neural network*) bertujuan untuk mendapatkan persebaran porositasnya. Hasil analisis keduanya, diharapkan dapat diketahui persebaran hidrokarbon batupasirnya.

Pada Lapangan “SAMA” Formasi *Lower* Talang Akar, persebaran hidrokarbon batupasir pada arah baratlaut - tenggara, yang menunjukkan karakter “*Low Impedance Sand*” dengan nilai Impedansi antara 27000 - 30000 ((ft/s)*(g/cc)) dan menunjukkan karakter “*High Porosity*” dengan nilai porositas rata-rata sebesar 20%. Sehingga, dapat ditentukan rekomendasi sumur pengembangan baru yang cukup akurat yaitu berada di arah tenggara pada peta dengan nilai koordinat $x = 320800$, $y = 9883500$, dan kedalaman berkisar 5300 ft.

Kata kunci: Inversi *Modelbased*, Multiatribut *Neural Network*, Hidrokarbon Batupasir

ABSTRACT

ANALYSIS POTENTIAL OF SANDSTONES HYDROCARBONS BY APPLYING SEISMIC INVERSION AND SEISMIC MULTI-ATTRIBUTE LOWER TALANG AKAR FORMATION, "SAMA" FIELD, SOUTH SUMATERA BASIN

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The South Sumatra Basin is the main oil and gas producing in Indonesia. Hydrocarbon reservoirs Talang Akar Formation is the main oil and gas reservoir producing in South Sumatra Basin. Whereas, the "SAMA" Field is an oil and gas field that will be developed, so research and charity is needed for the development of the field. Analysis and prediction of hydrocarbon reservoir distribution is one of the main things in determining the location of new development well points. Research certainly must be done with the right geophysical method to get optimal results.

Hydrocarbon potential analysis is carried out by applying seismic inversion in the form of model-based inversion and multi-seismic attribute (neural network) with porosity parameters. The seismic inversion process (model based) intend to obtain the distribution of sandstones. Whereas, the multi-attribute process (neural network) intend to obtain the distribution of porosity. The results of the second analysis are expected to be able to know the distribution of the sandstone hydrocarbons.

*In "SAMA" field Lower Talang Akar Formation, distributed of sandstone hydrocarbons in the northwest to southeast direction, which shows the character of "Low Impedance Sand" with Impedance values between 27000 - 30000 ((ft / s) * (g / cc)) and shows the character "High Porosity" with an average porosity value of 20%. So, it can be determined development of new well recommendations were close to accurate, specifically in the southeast on the map with coordinates value $x = 320800$, $y = 9883500$, and depths around 5300 ft.*

Keywords: *Modelbased inversion, Multiatribut Neural Network, Sandstones Hydrocarbon*