

Analisis Persebaran Tekanan Pori Menggunakan Data Sumur dan Kecepatan Interval Seismik di Lapangan AZ, Cekungan Sumatera Selatan = Analysis of Pore Pressure Distribution Using Well Data and Seismic Interval Velocity in the AZ Field, South Sumatra Basin.

Az Zahra, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920531779&lokasi=lokal>

Abstrak

Penelitian mengenai tekanan pori dilakukan pada Formasi Talang Akar dan Baturaja, Sub-Cekungan Jambi, Cekungan Sumatera Selatan. Cakupan penelitian berfokus pada wilayah yang mengalami overpressure atau tekanan pori melebihi normal. Analisis mengenai tekanan pori dilakukan sebagai upaya mengoptimalkan proses pengeboran di wilayah yang akan dilakukan pengembangan sumur. Pengolahan data terbagi menjadi dua, yaitu pengolahan tekanan pori pada data sumur dan penyebarannya menggunakan data seismik. Dalam melakukan estimasi nilai tekanan pori pada sumur, digunakan metode dasar tekanan pori, yaitu metode Eaton. Selanjutnya, dilakukan penyebaran tekanan pori pada data seismik menggunakan neural network dengan data masukan berupa kecepatan gelombang P dan inversi impedansi elastik. Penggunaan data tersebut dipilih karena cukup efektif dalam melakukan estimasi persebaran tekanan pori yang dikontrol oleh keberadaan litologi dan fluida. Selain itu, dilakukan pemodelan substitusi fluida guna menguatkan analisis persebaran gas pasir.

Dari pengolahan data didapatkan bahwa terdapat zona overpressure di Formasi Talang Akar dengan kedalaman 6030.184 ft - 6368.5 ft. Sedangkan pada Formasi Batu Raja tidak terlihat anomali tekanan pori yang signifikan. Keberadaan fluida hidrokarbon berupa gas pasir di antara litologi shale dan keberadaan struktur patahan diduga menjadi penyebab terjadinya anomali berupa overpressure.

.....Research on pore pressure was carried out in the Talang Akar and the Batu raja Formation, Jambi Sub-Basin, South Sumatra Basin. The scope of research focuses on areas that experience overpressure or the pore pressure exceeds normal. Analysis of pore pressure is carried out as an effort to optimize the drilling process in areas where well development will be carried out. The data processing is divided into two, namely the processing of pore pressure in the well data and its distribution using seismic data. In estimating the value of pore pressure in drilling wells, the basic method for calculating pore pressure is used, namely the Eaton method. Next, the distribution of pore pressure estimates on seismic data is carried out using a neural network with input data in the form of P wave velocity and elastic impedance inversion. The use of input data was chosen because it is quite effective in estimating the pore pressure distribution which is controlled by the presence of lithology and fluids. In addition, fluid substitution modeling was carried out to strengthen the analysis of the distribution of sandy gas.

From the data processing carried out, it was found that there are zones overpressure in the Talang Akar Formation with a depth of 6030.184 ft to 6368.5 ft. Whereas in the Batu Raja Formation there is no significant pore pressure anomaly. The presence of hydrocarbon fluids in the form of sandy gas between lithology shale and the existence of a fault structure is thought to be the cause of the anomaly in the form of overpressure.