

Aplikasi Inversi Berbasis Model Untuk Identifikasi Karakteristik Reservoir Karbonat di Lapangan "K" = Application of Model-Based Inversion to Identify Carbonate Reservoir Characteristics in the "K" Field

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Abstrak

Lapangan "K" adalah satu diantara banyaknya lapangan minyak yang terletak di Cekungan Sunda, terletak pada bagian lepas barat laut dari Pulau Jawa. Di lapangan ini telah teridentifikasi akan keterdapatan hidrokarbon. Tujuan utama didalam penelitian ini adalah untuk mengkarakterisasi reservoir karbonat pada lapangan "K". Reservoir karbonat pada Formasi Gumai menjadi objek utama yang difokuskan pada penelitian ini. Penelitian ini menggunakan data seismik dan data well K-01 dan K-02. Metode inversi berbasis model dipilih untuk penelitian ini. Penggunaan inversi berbasis model pada penelitian ini didasarkan atas pembuatan model awal berupa model sintetik seismik. Setelah dilakukan inversi seismik berbasis model (model-based inversion), didapat nilai Z_p (p-Impedance) sebesar 21104 hingga 22688 (ft/s*g/cc) pada target reservoir yang terletak diantara horizon UBR C5_NA hingga LBR_Litho_filled 6 September yang melewati kedua sumur. Hasil penampang inversi tersebut ditampilkan dengan adanya persebaran nilai Z_p yang relatif tinggi pada horizon UBR C5_NA hingga LBR_Litho_filled 6 September, dimana arah persebaran karbonat tersebut cenderung ke arah selatan dan tenggara.. Hasil dari inversi ini diharapkan kedepannya diteliti dan dikembangkan dengan baik, dengan cara menambahkan beberapa metode-metode lainnya seperti metode inversi simultan dan multiatribut untuk mendapatkan hasil karakterisasi reservoir yang lebih akurat serta mengetahui sebaran jenis litologi dan fluida di daerah reservoir.

.....The "K" field is one of the many oil fields located in the Sunda Basin, located in the northwestern part of the island of Java. In this field, hydrocarbons have been discovered. The main objective of this research is to characterize the carbonate reservoir in the "K" field. The carbonate reservoir in the Gumai Formation is the main object focused on in this research. This research uses seismic data and data from wells K-01 and K-02. A model-based inversion method was chosen for this study. The use of model-based inversion in this research is based on creating an initial model in the form of a synthetic seismic model. After carrying out a model-based seismic inversion, the Z_p (p-Impedance) value was obtained at 21104 to 22688 (ft/s*g/cc) at the target reservoir located between the UBR C5_NA and LBR_Litho_filled horizons on September 6, which passed the second well. The results of the inversion cross-section are shown by the relatively high distribution of Z_p values âin the UBR C5_NA to LBR_Litho_filled horizons on September 6, where the direction of carbonate distribution tends to be south and southeast. It is hoped that the results of this inversion will be well researched and developed in the future, by adding several other methods such as simultaneous and multi-attribute inversion methods to obtain more accurate reservoir characterization results and determine the distribution of lithology and fluid types in the reservoir area.