

Karakterisasi zona reservoir berdasarkan hasil inversi lambda mu rho dan sebaran porositas hasil multiatribut: studi kasus Lapangan Bintang cekungan Jawa Timur = Reservoir zone characterization based on lambda mu rho inversion result and porosity distribution result using multiattribute: case study Bintang Field East Java basin

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Abstrak

[Lapangan "BINTANG" berada di Cekungan Jawa Timur. Formasi target adalah Formasi Ngimbang yang memiliki beberapa zona target dengan ketebalan antara 20-40 meter yang berada dibawah ketebalan tuning seismik. Zona-A dan Zona-C merupakan zona target penelitian. Formasi Ngimbang pada daerah penelitian, memiliki lithologi karbonat dan shale, sehingga perlu untuk memisahkan kedua lithologi kedua melalui data seismik. Data sumur test produksi daerah penelitian menunjukkan keberadaan hidrokarbon. Berdasarkan analisa sensitifitas, parameter P-Impedance dan Mu-Rho digunakan untuk memisahkan lithologi daerah penelitian. Daerah reservoir yang merupakan batuan karbonat berada pada nilai P-Impedance dan Mu-Rho kecil diatas cutoff. Parameter Lambda-Rho*Poisson Ratio digunakan untuk mengidentifikasi sebaran hidrokarbon dimana zona bernilai kecil merupakan daerah yang mengindikasikan sebaran hidrokarbon. Inversi dilakukan dengan metode Extended Elastic Impedance (EEI) dimana metode ini menghasilkan volum reflektifitas langsung dari parameter yang dipilih. Inversi dengan metode EEI yang diaplikasikan dengan parameter Mu-Rho paling baik menggunakan sudut korelasi -45 dan untuk parameter Lambda-Rho*Poisson Ratio menggunakan sudut 33,5. Proses multiatribut digunakan untuk memprediksi sebaran porositas. Hasil multiatribut menunjukkan bagian utara daerah penelitian merupakan daerah yang lebih dangkal sehingga porositas lebih tinggi dibanding daerah selatan arah tenggara. Daerah utara masih berada pada bagian lagoonal sedangkan arah selatan-tenggara merupakan outer margin yang semuanya berada pada lingkungan pengendapan platform carbonate.

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