Pemodelan geostatik reservoar berdasarkan seismik PSDM 3D; studi kasus reservoar CD karbonat, formasi ngimbang di lapangan "Bravo Tango", Cekungan Jawa Timur = Geostatic reservoir modeling with 3D PSDM : case study cd carbonates reservoir of ngimbang formation at "Bravo Tango" field East Java Basin

Marpaung, Rasdianto, author

Abstrak

[ABSTRAK
Lapangan “Bravo Tango” merupakan salah satu lapangan eksplorasi yang telah terbukti keberadaan hidrokarbonnya melalui pengeboran sumur eksplorasi yaitu Siera-1 dan sumur delineasinya yaitu Siera-2. Adapun target reservoarnya adalah reservoar CD Carbonates yang tersusun atas batugamping dengan sisipan shale dari formasi Ngimbang yang berumur Eo-Oligosen. Pada daerah penelitian, CD Carbonates dapat dibagi atas 6 zona yaitu zona-A sampai dengan zona-F dengan ketebalan reservoar berkisar hanya 5-20 meter.
Dalam pemodelan geometri reservoar, fasies diklasifikasikan berdasarkan rock typing (RT) dan secara lateral dilakukan pemodelan fasies pengendapan (depo-fasies). Dari pengamatan core dan log diketahui bahwa pengendapan dari arah Utara yaitu lingkungan swampy inner platform interior dicirikan oleh kehadiran batubara dan semakin ke arah Tenggara menunjukkan lingkungan laut yang lebih dalam dan semakin jauh lagi ke depannya diinterpretasikan sebagai lingkungan basinal.
Properti reservoar yaitu porositas (PHIT) dipopulasikan di dalam geomodel dengan menggunakan hasil analisis seismik multiatribut. Dari penyebaran porositas diketahui bahwa di Utara penelitian memiliki porositas yang lebih baik dibandingkan dengan sebelah Tenggara.
Kontribusi volum hidrokarbon berasal dari zona-A, zona-C dan zona-F dan diperlukan analisis lebih lanjut yaitu analisis uncertainty untuk mengurangi resiko dalam proses pengembangan lapangan nantinya.
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ABSTRACT
“Bravo Tango” field is one of proven exploration field by drilling one exploration well, Siera-1 and its delineation Siera-2. Reservoir target is CD Carbonates that consist of limestone intercalated with shale from Ngimbang formation aged Eo-Oligocene. On this field, CD Carbonates can be divided into 6 zones: zone-A down to zone-F within 5-20m range of thickness.
In geometry reservoir modeling, facies can be classified based on rock typing (RT) and laterally depositional facies modeling (depo facies) has been created. From core and log analysis can be interpretated that sedimentation from North which is swampy inner platform interior environment characterized by coal present and further to the NE part indicate deeper marine environment and far away in front of this area interpretated as basin.
One of reservoir property which is porosity (PHIT) populated within geomodel use seismic multiattribute analysis. From spread of porosity population identified that Nothern part of this field has better porosity compare to SE part.
Hidrocarbon volume contribution is come from zone-A, zone-C and zone-F and it is needed futher analysis

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