

Aplikasi metode passey dan akustik impedans dalam mendeterminasi potensi organic shale pada formasi talang akar di Cekungan X Jawa Barat Utara = Application passey methode and accoustic impedance to determine shale organic in talang akar formation at X basin North West Java

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Abstrak

[Saat ini, jumlah kandungan minyak dan gas konvensional yang tersedia semakin terbatas sedangkan cadangan semakin rendah. Oleh karena itu diperlukan eksplorasi akan sumber daya baru, salah satu solusinya adalah dengan memperluas eksplorasi hidrokarbon dengan cara konvensional maupun unconventional, dan untuk mengurangi tingginya kegagalan dalam tahapan eksplorasi ini maka diperlukan pembelajaran petroleum system terutama source rock. Source rock yang memiliki potensi tinggi harus mempunyai kandungan kerogen yang cukup untuk dapat mengenerateminyak maupun gas ke perangkap-perangkap hidrokarbon disekitarnya. Dalam penelitian ini memaparkan aplikasi metode Passey dan untuk memetakan source rock dengan kandungan TOC yang berbeda-beda di setiap kedalaman dan responnya pada seismik inversi, kemudian dihitung potensinya sehingga didapat peta penyebaran source rock dan total hidrokarbon yang sudah tergenerate ke perangkap-perangkap struktur maupun yang masih tersisa di dalam source rock itu sendiri. Penelitian ini pun mengintegrasikan data geokimia, analisa petrofisika, dan teknik seismik inversi dalam mengkarakterisasi zona yang berpotensi. Tahapan awal eksplorasi dalam penentuan sweetspot adalah dengan menggunakan metode passey untuk menghasilkan data log pseudo TOC. Kedua, melakukan analisa petrofisika untuk mendapatkan parameter fisis yang sensitif pada formasi target. Ketiga adalah dengan mengaplikasikan seismik inversi Impedansi akustik (AI) untuk mengetahui persebaran batuserpih yang mengandung potensi gas berdasarkan nilai TOC dan parameter fisis yang sensitif pada formasi target. Keempat melakukan penghitungan sumber daya yang sudah tergenerate dan yang masih tersisa dalam tubuh shale sebagai source rock; Currently, the amount of available conventional gas and oil content are more limited while the amount of reserves has been decreased. Therefore we need an exploration of new resources, one solution is to expand the exploration of hydrocarbons by means of conventional or unconventional, and to reduce the high failure in the exploration phase of the learning required for this petroleum system primarily source rock. Source rock that has high potential must have a sufficient content of kerogen to oil or gas can be generate to the hydrocarbon traps nearby. In this research exposes Passey Method and application method to map the source rock TOC content varies with each depth and seismic inversion, the response was then calculated its potential so obtained a map of the spread of source rock and hydrocarbon that already total generated to structures trap as well as those still remaining in the source rock itself. In this study integrates geochemical data, analysis of petrophysic, and seismic inversion technique to characterize potential zones. Early stages of exploration in the determination of sweetspot is using Passey Method to generate pseudo TOC. Second, petrophysical analysis to obtain physical parameters that are sensitive to the target formation. Third is by applying accoustic impedance seismic inversion to determine the distribution of shale rock that contain gas potential based on the value of TOC and physical parameters that are sensitive to the target formation. Fourth do calculating resources have generated and remaining in a shale

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