

SARI

KARAKTERISASI RESERVOIR DAN PENENTUAN ZONA *NET PAY* HIDROKARBON MENGGUNAKAN ANALISIS PETROFISIKA DAN METODE *FLOW ZONE INDICATOR* (FZI) PADA FORMASI PLOVER, CEKUNGAN BONAPARTE UTARA

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Cekungan Bonaparte utara merupakan salah satu penghasil gas di Indonesia. Formasi reservoir pada cekungan ini yaitu Formasi Plover diidentifikasi sebagai reservoir gas. Secara regional formasi ini memiliki litologi penyusun berupa dominasi batupasir dengan batulempung. Analisis petrofisika di daerah penelitian menggunakan empat sumur. Adapun karakterisasi reservoir yang telah dilakukan dengan menerapkan metode *Rock Typing* berupa *Flow Zone Indicator* (FZI) dengan menggunakan data log untuk memperoleh properti reservoir yaitu *volume clay*, porositas, saturasi air, dan permeabilitas. Adapun hasil perhitungan petrofisika yaitu *volume clay* rata-rata berkisar 34–37%, Porositas rata-rata berkisar antara 6–12%, saturasi air rata-rata berkisar antara 26–49%, dan permeabilitas rata-rata berkisar antara 1–18 mD. Selanjutnya metode FZI dilakukan dengan menghubungkan data permeabilitas dan porositas. Tipe batuan tertinggi merupakan tipe batuan yang memiliki nilai celah pori paling besar sehingga mampu melewati fluida paling baik. Diketahui bahwa FZI terbaik berada pada elektrofasis *cylindrical* dan *funnel* dengan fasies *upper shoreface* dan lingkungan pengendapan pada *Intertidal*.

Kata kunci: Cekungan Bonaparte Utara, Formasi Plover, *Rock Typing*, *Flow Zone Indicator*.

ABSTRACT

*RESERVOIR CHARACTERIZATION AND DETERMINATION OF NET PAY
HYDROCARBON ZONE USING PETROPHYSICAL ANALYSIS AND FLOW ZONE
INDICATOR (FZI) METHOD IN PLOVER FORMATION, NORTHERN BONAPARTE
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The northern Bonaparte Basin is one of the gas producers in Indonesia. The reservoir formation in this basin, the Plover Formation, is identified as a gas reservoir. Regionally, this formation has a constituent lithology in the form of dominance of Sandstone with claystone. Petrophysical analysis in the study area used four wells. The reservoir characterization has been carried out by applying the Rock Typing method in the form of Flow Zone Indicator (FZI) using log data to obtain reservoir properties, namely clay volume, porosity, water saturation, and permeability. The results of petrophysical calculations are the average clay volume ranging from 34–37%, average porosity ranging from 6–12%, average water saturation ranging from 26–49%, and average permeability ranging from 1–18 mD. Furthermore, the FZI method is carried out by correlating permeability and porosity data. The highest rock type is the rock type that has the largest pore gap value so that it can pass the fluid best. It is known that the best FZI is in cylindrical and funnel electrofacies with upper shoreface facies and depositional environment in Intertidal.

Keywords: North Bonaparte Basin, Plover Formation, Rock Typing, Flow Zone Indicator.