

## INTISARI

Lapangan Rocky merupakan lapangan eksplorasi yang berada di Back arc Basin, salah satu lapangan migas yang berada pada Sumatra Tengah. Penelitian ini bertujuan untuk mengetahui properti reservoir (*Vsh*, porositas, dan saturasi air) pada zona yang produktif serta penyebaran properti reservoirnya. Properti reservoir ditentukan dari analisis petrofisika dengan menggunakan metoda multimin (*Multi Mineral*). Penentuan zona produktif didasarkan dari hasil analisis petrofisika pada suatu reservoir. *Top bottom* zona reservoir merupakan *Gross sand*, yang kemudian dilakukan analisis *cut off* parameter *Vsh* dan porositas untuk memperoleh ketebalan *net sand*. Selanjutnya dilakukan analisis *cut off* parameter *Sw* untuk memperoleh ketebalan *net pay*. *Interval net pay* tersebut merupakan zona produktif. Analisis fasies pada Formasi Sawahtambang menggunakan konsep elektrofasis didukung dengan data core dengan hasil *sandstone*, *siltstone* dan *shale*. Interpretasi lingkungan pengendapan pada Formasi Sawahtambang menunjukkan *braided river* dan *meandering*. Analisis Geomodeling dilakukan untuk menentukan pemodelan reservoir dengan cara 2 (dua) tahapan yaitu *Structural Modeling* dan *Property Modeling*. *Structural Modeling* dilakukan untuk membuat kerangka reservoir secara 3D, sedangkan *Property Modeling* dimaksudkan untuk mengisi kerangka 3D dengan properti reservoir dari analisis petrofisika (*Vshale*, Porositas dan *Sw*). Hasil analisis petrofisika, dapat disimpulkan bahwa nilai porositas pada reservoir A sebesar 6.55% - 8.55%, pada reservoir B sebesar 6.15% - 8.15% dan pada reservoir C sebesar 6.3% - 8.3% . Nilai *Vshale* pada reservoir A sebesar 16.95% - 26.95%, pada reservoir B sebesar 11.9% - 21.9% dan pada reservoir C sebesar 7.6% - 17.6%. Nilai saturasi air pada reservoir A sebesar 10.9% - 16.9%, pada reservoir B sebesar 32.95% - 38.95% dan pada reservoir C sebesar 29.8% - 35.8%. Berdasarkan data hasil analisis petrofisika serta diintegrasikan dengan data DST, terdapat tiga zona reservoir A Formasi Sawahtambang, zona reservoir B Formasi Sawahtambang dan reservoir C Formasi Sawahtambang, dimana pada zona reservoir A memiliki ketebalan net pay sebesar 102.36ft - 142.69ft , zona reservoir B memiliki ketebalan net pay sebesar 51.59ft - 76.95ft dan zona reservoir C memiliki ketebalan net pay sebesar 114.76ft - 123.44ft. Berdasarkan peta *propety reservoir* (*Vsh*, *porosity* dan *water saturation modeling*) yang dibuat pada tiga interval reservoir produktif, dapat disimpulkan bahwa semakin ke arah *NorthWest* dan *NorthEast* kualitas *property reservoir* menjadi kurang baik.

**Kata Kunci:** Lapangan Eksplorasi, Analisis Petrofisika, Metoda Multimin, Zona Produktif, Analisis Geomodeling.

## ABSTRACT

*Rocky Field is an exploration field located in Back arc Basin, one of the oil and gas fields located in Central Sumatra. This study aims to determine the reservoir properties (Vsh, porosity, and water saturation) in the productive zone and the spread of reservoir properties. The reservoir property is determined from petrophysical analysis using the multimin (Multi Minerals) method. The determination of productive zones is based on the results of petrophysical analysis on a reservoir. The bottom bottom of the reservoir zone is Gross sand, which then analyzes the cut off parameters of Vsh and porosity to obtain net sand thickness. Furthermore, Swar off parameter analysis is done to obtain net pay thickness. The net pay interval is a productive zone. Facies analysis on Sawahtambang Formation using electrophasies concept is supported with core data with sandstone, siltstone and shale results. The interpretation of the deposition environment on the Sawahtambang Formation shows the braided river and meandering. Geomodeling analysis was conducted to determine reservoir modeling by 2 (two) stages: Structural Modeling and Property Modeling. Structural Modeling is performed to create 3D reservoir frames, while Property Modeling is intended to fill the 3D framework with reservoir properties from petrophysical analysis (Vshale, Porosity and Sw). The result of petrophysical analysis, it can be concluded that the porosity value in reservoir A is 6.55% - 8.55%, in reservoir B of 6.15% - 8.15% and in reservoir C of 6.3% - 8.3%. Vshale value at reservoir A amounted to 16.95% - 26.95%, at reservoir B of 11.9% - 21.9% and at reservoir C of 7.6% - 17.6%. The water saturation value in reservoir A is 10.9% - 16.9%, in reservoir B of 32.95% - 38.95% and in reservoir C of 29.8% - 35.8%. Based on the data of petrophysical analysis and the data integrated with DST, there are three zones A Formation Sawahtambang reservoir, reservoir zones B and reservoir C Sawahtambang Formation Formation Sawahtambang, wherein the reservoir zone A has a net pay thickness of 102.36ft - 142.69ft, reservoir zone B has Net pay thickness of 51.59ft - 76.95ft and reservoir zone C has a net pay thickness of 114.76ft - 123.44ft. Based on the map propety reservoir (Vsh, porosity and water saturation modeling) are made on three productive reservoir interval, it can be concluded that the direction of NorthWest and NorthEast quality reservoir property becomes less good.*

*Keywords: Field Exploration, Petrophysical Analysis, Multimin Method, Productive Zone, Geomodeling Analysis.*