GEOLOGY AND ESTIMATED GAS RESERVE CALCULATION LAYER "X", BERAI FORMATION IN THE HR FIELD, SOUTH MAKASSAR BASIN BASED ON WELL LOG DATA AND SEISMIC

ABSTRACT

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Retrieval and data processing carried out in Mubadala Petroleum Indonesia. South Jakarta. Field data processing focus on "HR", Makassar Basin which managed by Mubadala Petroleum Oil Company Indonesia. which physiographic included in Makassar Basin stratigraphy.

The methodology used in this research consists of three stages: preparation, research, and preparation of reports. Preparation consists of literature review and drafting proposals. The study consisted of literature studies, regional studies, data collection, processing and interpretation phase.

Based on analysis of the log data in Tanjung Formation as a source rock in the area is an Eocene sediment composed of typical syn-rift that is dominated by the complex of alluvial facies. alluvial fan facies complex can be found with a pattern that is parallel to a major rift structure pattern with the composition of sedimentary material that is fluvio-deltaic coal and shale Lacustrine / lacustrine

This research focused on the well located at "HR" field using *Gamma Ray*, Spontaneous Potential, Resistivity, Neutron, Density and Sonic Log. Used wells are SS-2, SS-3, SS-4. Analyzed layer in this research are Layer "X" which is part of Formasi Berai as reservoir. Layer "X" lithology consist of wackestone to packstone, with variety of depth between 4222 – 4540 feet and thickness of 318 feet, Layer "X" carbonate have an average grade for Net Pay Porosity (ϕ) (%) = 14,87 , Vsh *Net Pay* (%) = 2,42, water saturation, *Net Pay* (Sw) (%) = 26,87*, N/G= 0.9 Fluid Type* = GAS. .

According to the result of reserve calculation analysis determined by Gross Rock Volume at layer "X" total reserve are 375.926.508.486,74m^3 = 13280 BCF.