ABSTRACT

A study to characterize reservoir of 'WA' field that located near the Sorong fault has been successfully conducted. This study focuses on the carbonate reservoir characterization of miocene age in the Papua. Various seismic attributes analysis was applied on the pre-stack time migration 3D seismic and 5 wire line logs data that coverage the study area.

Structural conditions in the reservoir are given by similarity and curvature attributes analysis. These attributes are a powerful tool for the structural interpretation of seismic data. These attributes were applied to map faults and fracture below the resolution of seismic data by several stages of post-stack processing to enhance discontinuities. Acoustic impedance inversion (AI) was computed for porous zone identification that related to low impedance, and spectral decomposition attribute was used to detect hydrocarbon in the reservoir. Since every seismic attributes are related to each other, which some attributes have sensitivity to certain properties of the reservoir, the attributes will be used in an integrated way to get more detailed information about characteristics of the reservoir. Integrated analysis of the seismic various attributes resulted structural detail geometry of the trust fault system that dominated by NNE-SSW faults oriented, permitted a more robust interpretation of the
structures and shown that interest zone are bounded by a number of normal faults. Physical properties of reservoir and hydrocarbon potential zone could be interpreted more optimist according result of acoustic impedance inversion and spectral decomposition analysis that calibrated with well data.

**Keywords:** acoustic impedance inversion, curvature, reservoir characterization, similarity, spectral decomposition.