ABSTRACT

IDENTIFICATION ZONE GAS POCKET (Geohazard) BASED ON ANALYSIS OF SEISMIC AVO SECTION AND POST-STACK TIME DATA MIGRATION 2D MARINE HIGH RESOLUTION

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Geohazard identification of research has been conducted based on data from high resolution seismic measurements and amplified amplitude variation with offset analysis (avo). Geohazard identification in the form of a gas pocket which aims to avoid accidents prospects of oil and gas. The existence of the gas pocket at geohazard zones identified by conducting a series of data processing and analysis of the amplitude of the offset to the data of 2D marine seismic high resolution. The stages of data processing are Raw Data, Geometry, Filtering, True Amplitude Recovery (TAR), Deconvolusi, Velocity Analysis, Stacking, and Migration. In addition to ensuring the existence of the geohazard zones AVO analysis with process steps like super gather, bandpass filter, and trim static. Determination Brightspot seen from the results of 2D marine seismic data processing with data output resolution high post-stack time migration. Data processing and analysis conducted avo No 9 line of 2D marine seismic data high resolution. And then classified for risk based gas pocket Execitive Health and Safety (HSE). There are three stages of risk based on the classification that is high risk, low, and no gas. Based on both the developed method is obtained geohazard zones of 9 line of seismic data that has been analyzed and found that 3 line at line ADM-09, line ADM-38 and ADM-53 line at high risk. While the 3 line at line ADM-22, line ADM-46 and ADM-65 line at low risk. Further 3 line at line ADM-44, line ADM-54 and ADM-57 line no risk to gas-pocket.

Keywords: Geohazard, gas pocket, high resolution seismic

ABSTRAK

IDENTIFIKASI ZONA *GAS POCKET (GEOHAZARD)* BERDASARKAN ANALISIS *AVO SEISMIC SECTION* DAN *POST-STACK TIME MIGRATION* DATA 2D *MARINE HIGH RESOLUTION*

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Penelitian identifikasi *geohazard* telah dilakukan berdasarkan data pengukuran seismik *high resolution* dan diperkuat dengan analisis *amplitudo variation offset (avo).* Identifikasi geohazard berupa gas *pocket* yang bertujuan untuk menghindari kecelakaan prospek minyak dan gas. Keberadaan gas *pocket* pada zona *geohazard* teridentifikasi dengan melakukan serangkaian proses pengolahan data dan analisis amplitudo terhadap offsetnya pada data 2D seismik *marine high resolution.* Adapun tahapan pengolahan data tersebut adalah *Raw data, Geometry, Filtering, True Amplitudo Recovery (TAR), Deconvolusi, Velocity Analysis, Stacking,* dan *Migration*. Selain itu untuk memastikan keberadaan zona *geohazard* tersebut dilakukan analisis AVO dengan tahapan proses seperti *super gather, bandpass filter, dan trim static*. Penentuan *brightspot* dilihat dari hasil pengolahan data seismik 2D *marine higr resolution* dengan *output* data *post-stack time migration*. Data yang dilakukan prosesing dan analisis avo ada 9 line data seismik 2D *marine high resolution*. Dan kemudian diklasifikasikan untuk resiko gas *pocket* berdasarkan *Health and Safety Execitive* (HSE). Tedapat 3 tahapan resiko berdasarkan klasifikasi tersebut yaitu resiko tinggi, rendah, dan tidak ada gas. Berdasarkan kedua metode yang dikembangkan tersebut diperoleh zona *geohazard* dari 9 line data seismik yang telah dianalisis dan dinyatakan bahwa 3 line pada line ADM-09, line ADM-38, dan line ADM-53 beresiko tinggi. Sedangkan pada 3 line pada line ADM-22, line ADM-46, dan line ADM-65 beresiko rendah. Selanjutnya 3 line pada line ADM-44, line ADM-54, dan line ADM-57 tidak ada resiko untuk keterdapatannya gas-pocket.

Kata Kunci : *Geohazard, gas pocket,* seismik *high resolution*