

INTISARI

INTEGRASI ATRIBUT SEISMIK, LAPORAN PENGEBORAN, DAN DATA SUMUR UNTUK MENGHINDARI BAHAYA PENGEBORAN PADA BATUAN KARBONAT DI LAPANGAN “MARDILAH”, CEKUNGAN KUTAI, KALIMANTAN TIMUR

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Analisis dan integrasi atribut seismik, *drilling report*, dan *well data* telah dilakukan pada studi ini untuk menghasilkan *hazard map* dari Lapangan Mardilah. Studi ini dilakukan karena telah ditemukan beberapa kejadian *lost circulation* (*partial* dan *total loss*) di Lapangan Mardilah, bahkan salah satunya telah mengakibatkan *blow out* pada Sumur ABO di tahun 1984.

Data yang digunakan pada studi ini adalah data seismik (3D PP PSDM), *drilling report*, dan data sumur. Data seismik digunakan untuk mengkarakterisasi dan mengetahui persebaran karbonat dengan melakukan ekstraksi atribut amplitudo. *Drilling report* digunakan untuk memperoleh informasi mengenai zona *loss*, sedangkan data log digunakan untuk menganalisis ketebalan karbonat pada zona *loss*. Ketiga data tersebut diintegrasikan sehingga diperoleh *hazard map*.

Hazard map yang dihasilkan merupakan hasil atribut amplitudo yang dikelompokkan nilainya sehingga diperoleh area *high risk*, *medium risk*, *low risk*, dan *very low risk*. *Hazard map* yang dihasilkan sebanyak 8 layer (interval 1100 – 1600 m di bawah permukaan laut). *Hazard map* dapat digunakan dalam menentukan lokasi *trajectory* baru sebagai petunjuk agar tidak menembus zona *loss* (*risky area*). Berdasarkan informasi dari *hazard map*, *seismic section*, dan data log dari sumur sekitar, 3 dari 5 sumur usulan (*New-1*, *New-2*, *New-3*) berada di area *medium risk*.

Kata kunci: atribut amplitudo, atribut maksimum, *hazard map*

ABSTRACT

INTEGRATION OF SEISMIC ATTRIBUTE, DRILLING REPORT, AND WELL DATA TO AVOID THE CARBONATE DRILLING HAZARD IN “MARDILAH” FIELD, KUTAI BASIN, EAST KALIMANTAN

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The analysis and integration of seismic attribute, drilling report, and well data have been done in this study to create the hazard maps of Mardilah Field. This study is necessary because there were some losses that have occurred in several wells of Mardilah field. One of them caused blow out in well ABO (1984).

The seismic data (3D PP PSDM), drilling report, and well data were used in this study. The seismic data was used to characterize the lateral distribution of the carbonate by extracting seismic attribute. The drilling reports were used to get the information of the loss zone area. Then the logs data were used to analyze the existence and the thickness of carbonate in the loss zone area. Those three data were integrated to create hazard maps.

The hazard maps were created from amplitude attribute by categorizing the range of amplitude value as high risk zone, medium risk zone, low risk zone, and very low risk zone. There were 8 hazard maps that have created from this study (layer 1 up to layer 8 in the interval of 1100 – 1600 m subsea). These hazard maps can be used as a guidance in determining the position of new trajectories to avoid from penetrating the loss zone (risky area). Based on the information of hazard map, seismic section, and log data, there are 3 wells out of 5 proposed-wells (New-1, New-2, and New-3) which are located in the medium risk zone.

Keywords: amplitude attribute, maximum attribute, hazard map