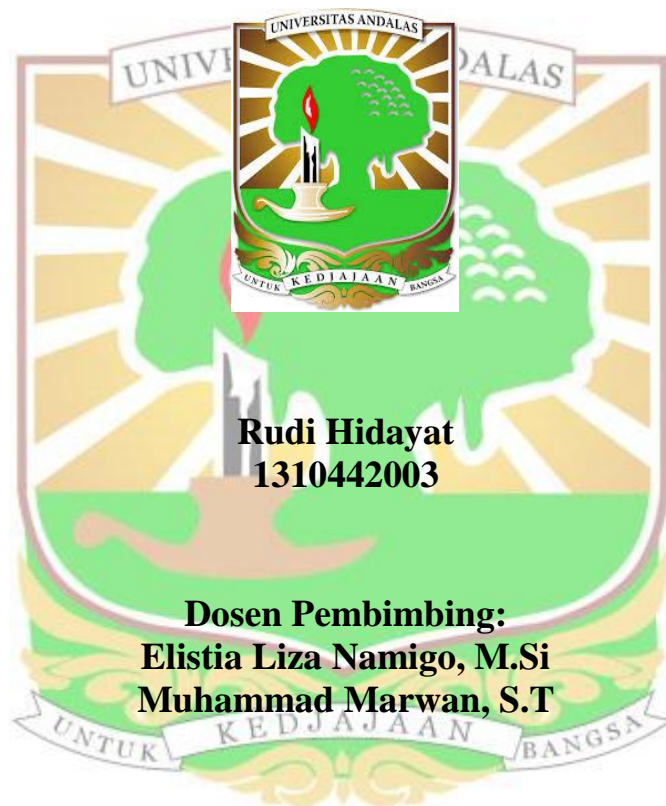


**PENENTUAN SEBARAN RESERVOAR BELUMAI SAND
MENGUNAKAN INTEGRASI INVERSI *MODEL BASED*
DAN ATRIBUT *RMS* PADA LAPANGAN “TERATAI”
CEKUNGAN SUMATERA BAGIAN UTARA**

SKRIPSI



**JURUSAN FISIKA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS ANDALAS
PADANG**

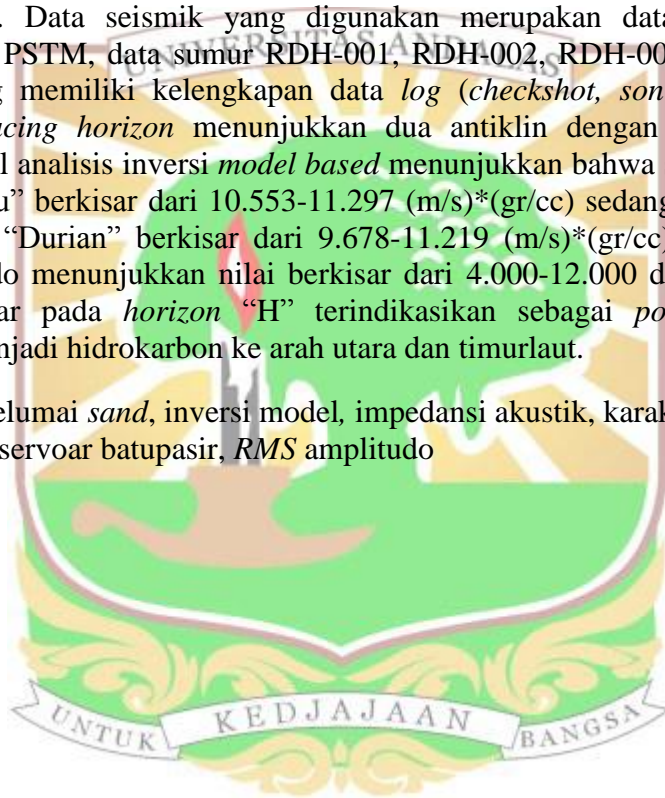
2019

PENENTUAN SEBARAN RESERVOAR BELUMAI SAND MENGUNAKAN INTEGRASI INVERSI *MODEL BASED* DAN ATRIBUT *RMS* PADA LAPANGAN “TERATAI” CEKUNGAN SUMATERA BAGIAN UTARA

ABSTRAK

Telah dilakukan karakterisasi reservoir Belumai *sand* menggunakan integrasi seismik inversi dan atribut seismik menggunakan *software* Hampson-Russel dan Petrel pada *horizon* “H” struktur “Duku” dan “Durian” Cekungan Sumatera Bagian Utara. Data seismik yang digunakan merupakan data seismik *non-preserved* 3D PSTM, data sumur RDH-001, RDH-002, RDH-003, RDH-04 dan RDH-06 yang memiliki kelengkapan data *log* (*checkshot*, *sonic*, *density*, dan *porosity*). *Tracing horizon* menunjukkan dua antiklin dengan arah baratlaut-tenggara. Hasil analisis inversi *model based* menunjukkan bahwa sebaran AI pada struktur “Duku” berkisar dari 10.553-11.297 (m/s)*(gr/cc) sedangkan sebaran AI pada struktur “Durian” berkisar dari 9.678-11.219 (m/s)*(gr/cc). Hasil analisis *RMS* amplitudo menunjukkan nilai berkisar dari 4.000-12.000 di sekitar sumur. Zona reservoir pada *horizon* “H” terindikasikan sebagai *porous sand* dan berpotensi menjadi hidrokarbon ke arah utara dan timurlaut.

Kata kunci: Belumai *sand*, inversi model, impedansi akustik, karakterisasi reservoir batupasir, *RMS* amplitudo



DISTRIBUTION DETERMINATION OF BELUMAI SAND RESERVOIR USING THE INTEGRATION OF MODEL BASED INVERSION AND *RMS* ATTRIBUTE ON THE “TERATAI” FIELD OF NORTH SUMATRA BASIN

ABSTRACT

Belumai Sand reservoir characterization has been conducted by using integration of model based inversion and seismic attribute analysis on horizon “H” of “Duku” and “Durian” structures in North Sumatra Basin. The data were processed by Hampson-Russel and Petrel software. The seismic data used were non-preserved 3D PSTM and well data of RDH-001, RDH-002, RDH-003, RDH-04 and RDH-06 that are completed with *log* (*checkshot, sonic, density, and porosity*). The tracing horizon result shows two parts of anticline with the orientation of Northwest-Southeast. The analysis result using model based inversion shows that AI determination on “Duku” structure approximate range of 10.553-11.297 (m/s)*(gr/cc) while the AI distribution on “Durian” structure of 9.678-11.219 (m/s)*(gr/cc) approximate height. The result of *RMS* amplitude analysis shows that approximate range of 4.000-12.000 around the well. The reservoir zone in horizon “H” was indicated as porous sand and potentially become hydrocarbons to the north and northeast.

Keywords: Belumai formation, model based inversion, acoustic impedance, sandstone reservoir characterization, *RMS* amplitude.

