



## DAFTAR ISI

SKRIPSI.....	i
HALAMAN PENGESAHAN.....	ii
HALAMAN PERNYATAAN .....	iii
HALAMAN PERSEMBAHAN .....	iv
KATA PENGANTAR.....	v
DAFTAR ISI .....	vii
DAFTAR GAMBAR .....	xii
DAFTAR TABEL.....	xviii
INTISARI.....	xix
ABSTRACT.....	xix
BAB I PENDAHULUAN .....	1
1.1 Latar Belakang .....	1
1.2 Rumusan Masalah .....	3
1.3 Tujuan Penelitian.....	3
1.4 Batasan Masalah.....	3
1.5 Manfaat Penelitian.....	4
1.6 Waktu dan Lokasi Penelitian .....	4
BAB II TINJAUAN PUSTAKA .....	5
2.1 Tinjauan Geologi .....	5
2.1.1 Geologi Regional Daerah Penelitian .....	5
2.1.2 Stratigrafi.....	9
2.1.3 <i>Petroleum System</i> .....	13
2.2 Tinjauan Geofisika .....	16
BAB III DASAR TEORI .....	31
3.1 Metode Seismik Refleksi .....	31
3.2 Komponen Seismik Refleksi .....	31
3.2.1 Impedansi Akustik (AI).....	31
3.2.2 Koefisien Refleksi .....	32
3.2.3 Tras Seismik .....	33



3.2.4 Resolusi Seismik .....	33
3.2.5 Polaritas & Fase .....	35
3.2.6 <i>Wavelet</i> .....	36
3.3 <i>Preconditioning Data</i> .....	37
3.3.1 <i>Muting</i> .....	38
3.3.2 <i>Bandpass Filter</i> .....	38
3.3.3 <i>Trim Static</i> .....	38
3.3.4 <i>Parabolic Radon Transform</i> .....	38
3.3.5 <i>Angle Gather</i> .....	39
3.4 Seismogram Sintetik .....	41
3.5 <i>Well to seismic tie</i> .....	41
3.6 Atribut Seismik.....	42
3.6.1 Amplitudo Sesaat ( <i>Envelope</i> ).....	43
3.6.2 Frekuensi Sesaat ( <i>Instantaneous Frequency</i> ).....	43
3.7 <i>Direct Hidrocarbon Indicator</i> (DHI) .....	44
3.8 <i>Well Log</i> .....	45
3.8.1 Log Gamma Ray (GR) .....	45
3.8.2 Log Spontaneous Potential (SP) .....	46
3.8.3 Log Sonik (DT) .....	48
3.8.4 Log Densitas (RHOB).....	48
3.8.5 Log Neutron (NPHI) .....	49
3.8.6 Log Resistivitas .....	50
3.9 Prediksi Log Kecepatan Gelombang S .....	52
3.10 Analisis Kualitatif.....	53
3.11 Elastisitas Batuan.....	54
3.11.1 Inkompresibilitas ( $\lambda\rho$ ) .....	54
3.11.2 Rigiditas ( $\mu\rho$ ) .....	55
3.11.3 Poisson's Ratio ( $\sigma$ ) .....	57
3.12 AVO (Amplitude Varuation with <i>Offset</i> ) .....	59
3.12.1 Aki-Richards <i>Approximation</i> .....	60
3.12.2 Shuey <i>Approximation</i> .....	63
3.13 Klasifikasi Respon AVO.....	64



3.13.1 Kelas I ( <i>High Impedance Sands</i> ).....	67
3.13.2 Kelas II ( <i>Near Zero Impedance Contrast Sands</i> ).....	67
3.13.3 Kelas III ( <i>Low Impedance Sands</i> ) .....	68
3.13.4 Kelas IV ( <i>Low Impedance Sands</i> ) .....	68
3.14 Atribut AVO.....	68
3.14.1 <i>Intercept</i> (A).....	68
3.14.2 <i>Gradient</i> (B) .....	69
3.14.3 <i>Product</i> (AxB) .....	69
3.14.4 <i>Scaled Poisson's Ratio Change</i> (A+B) .....	70
3.15 Inversi Simultan ( <i>Simultaneous Inversion</i> ) .....	71
BAB IV METODOLOGI PENELITIAN .....	77
4.1 Area dan Data Penelitian .....	77
4.2 Perangkat Penelitian .....	77
4.3 Diagram Penelitian .....	78
4.4 Data Penelitian .....	79
4.4.1 Data Log Sumur .....	79
4.4.2 Data <i>Well Marker</i> .....	79
4.4.3 Data <i>Checkshot</i> .....	81
4.4.4 Data Seismik .....	81
4.5 Pengolahan Data.....	82
4.5.1 Analisis Zona Target.....	82
4.5.2 Transformasi Data Log dan Analisis Sensitivitas .....	83
4.5.3 Analisis <i>Tuning thickness</i> .....	85
4.5.4 <i>Pre-conditioning</i> Data .....	86
4.5.5 <i>Angle Gather</i> .....	87
4.5.6 <i>Partial Stack</i> .....	87
4.5.7 Ekstraksi <i>Wavelet &amp; Well to seismic tie</i> .....	87
4.5.8 <i>Picking Horizon</i> .....	89
4.5.9 Atribut Seismik .....	89
4.5.10 Analisis AVO .....	90
4.5.11 Pembuatan <i>Initial Model</i> .....	90
4.5.12 Analisis Inversi Simultan .....	91



4.5.13 <i>Slicing Map</i> .....	93
BAB V HASIL DAN PEMBAHASAN .....	94
5.1 Analisis Sensitifitas .....	94
5.1.1 <i>Crossplot</i> $V_p/V_s$ vs Impedansi P .....	94
5.1.2 <i>Crossplot</i> Impedansi S vs Gamma Ray .....	95
5.1.3 <i>Crossplot</i> Impedansi S vs Impedansi P .....	96
5.1.1 <i>Crossplot</i> Densitas vs $V_p/V_s$ .....	98
5.1.2 <i>Crossplot</i> Mu-Rho vs Lambda-Rho .....	99
5.1.3 <i>Crossplot</i> Lambda/Mu vs Gamma Ray .....	100
5.2 Interpretasi Seismik.....	101
5.2.1 Data Conditioning .....	101
5.2.2 <i>Well to seismic tie</i> .....	105
5.2.3 <i>Picking</i> Horizon .....	106
5.3 Analisis AVO .....	108
5.3.1 Anomali AVO .....	108
5.3.2 Atribut AVO .....	110
5.4 Analisis Atribut Seismik.....	113
5.5 <i>Initial Model</i> .....	115
5.6 Analisis Hasil Inversi Simultan .....	116
5.6.1 Impedansi Akustik.....	118
5.6.2 Impedansi Geser.....	120
5.6.3 Densitas .....	122
5.6.4 $V_p/V_s$ .....	123
5.7 Analisis Lambda-Mu-Rho .....	125
5.7.1 Lambda-Rho.....	125
5.7.2 Mu-Rho .....	127
5.7.3 Lambda/Mu .....	129
5.8 Interpretasi Reservoir .....	130
BAB VI KESIMPULAN DAN SARAN .....	138
6.1 Kesimpulan.....	138
6.2 Saran.....	139
DAFTAR PUSTAKA .....	140



LAMPIRAN A .....	144
LAMPIRAN B .....	145
LAMPIRAN C .....	150
LAMPIRAN D .....	151
LAMPIRAN F.....	155