Temana field is located approximately 30km offshore Bintulu which is in the Balingian PSC, sub-blocks 4Q-29 and 4Q-30 with the water depth of 96 ft. The field is divided into 3 hydrocarbon accumulation namely the Temana West, Temana Central and Temana East; each area has different deformation style and fault patterns (Figure 1.0). In 2004, an appraisal well namely, Temana-72 was drilled in Temana Saddle area which is located in the southwestern part Temana Central. The outcome from the campaign indicates that the I-65 reservoir is the most promising reservoir compare to the other reservoir. A FDP ((Field Development Plan) study was initiated in 2005 and the 1st oil from was in Q1 2006. The Phase 2 FDP study was started in 2007 after the completion of Phase 1 drilling focusing on the pressure maintenance. A revised static model building incorporating three more appraisal wells information is the major objectives.

Seismic data has proved to be a critical tool in predicting the reservoirs properties beyond the limitation of the well control. The changes in seismic response could be related to changes of lithology, fluid contents or variation in reservoir properties. The used of seismic driven properties integrated with the well data are common in reservoir modeling building either as a trend input along with geometry constrained by structural interpretation. This paper will discuss on the inversion of the post-stack seismic reflection data into impedance data. Seismic and well integration workflow for reservoir model building as shown on the next page has been established (Figure 2.0).

The inverted AI was transform to reservoir properties particularly porosity in Temana Saddle area. This seismic predicted porosity has been use as a trend input in reservoir model building together with the well log input to produce the 3D porosity model. Well log data QC analysis of Temana-72 indicates that porosity can be predicted from Acoustic impedance (Figure 3.0 and Figure 4.0). Predicted porosity can be used as trend input for reservoir model building in and around Temana-72 area. Correlation coefficient is 0.86.

This study is done to provide a predicted porosity value for I60 and I65 derived by seismic data in order to proper propagate the porosity value between the wells in the reservoir model (Figure 5.0). The porosity prediction using the acoustic impedance give good result at the well location that have sonic and...
checkshot and fair to good correlation in the other wells.

REFERENCE
Mirza Arshad Beg, 1997. Reservoir Geological Model of The I-60 to I-67/I-68 Reservoirs, Temana Central. SSB. Unpbl

Figure 2.0: Seismically constrained reservoir model building workflow
Figure 3.0: Well log data QC analysis of Temana-72

Well log porosity and AI cross plot. Red line is the regression relation used for porosity prediction. Correlation is 87%.

Well log total porosity versus inverted AI at well location Temana-72.
Inverted Absolute Al for line passing through

Inverted Relative Al for line passing through

Predicted Total porosity for line passing through

Figure 4.0: Inverted Al vs Predicted porosity at well TE-72

Figure 5.0: Porosity model based on Al