The Top EVCM depth map calculated using the interval velocity model, Figure 30, shows a larger closure area than the time map, but there remains a residual pull up affect beneath the centre of the extrusives. The results are indicating the basis of the model is correct, but that it needs further refinement. Recent work by an Adelaide University Honours student, shows that a much higher range of velocities do exist in modern day volcanic systems. Laboratory measurements of some volcanic samples from tertiary volcanoes in the southeast of the state, found velocities as high as 4500 metres/second. (Pers Comm C. Faustmann). Additional work currently being undertaken by the Joint Venture includes further pre-stack depth migration trials and a tomographic analysis, in an attempt to resolve the velocity distribution. The Velocity Model and subsequent depth conversion will be revised when further results are available.

5.4 Summary

The Interval Velocity Model solution is the preferred depth conversion technique. While it is undergoing constant revision, it remains the only model to account for the shallow volcanics, and any regional thickness variations of the mapped intervals. The depth results are similar to those determined from the Stacking Velocity Model in the southern part of the 3D area, where the stacking velocities aren't obviously distorted by the extrusives. This indicates that the well derived interval velocities probably don't change significantly away from Yolla 1, and that the velocity field is reasonably stable.

6.0 CONCLUSIONS

The Yolla oil-gas-condensate field is well defined structurally by the 3D seismic data. There exists considerable potential for big extensions to the known hydrocarbon potential, as illustrated in the schematic diagram of Figure 31. The preferred depth conversion model and amplitude studies are indicating that the top EVCM gas/oil accumulation may be much larger than previously thought. A Palaeocene derived component to the shallow oil pool has been identified, and raises the possibility of oil rims on the deeper gas/condensate reservoirs. An onlapping event, not intersected by the well, and showing a favourable amplitude response, may indicate thick hydrocarbon bearing sands present on the flanks of the structure.

The Yolla 1 well didn't penetrate the Cretaceous section. As a dominant Cretaceous ridge underpins the Yolla structure, there exists potential targets in reservoirs of Late Cretaceous age. Satellite closures on the up and down thrown sides of the major fault, also form a considerable upside to potential, particularly if the minor faults form independent seals, and the separate fault compartments are filled to spill.

These, and other questions related to reservoir quality and continuity hydrocarbon deliverability and fluid content, require the drilling of further appraisal wells to fully define the hydrocarbon potential of the Yolla Field.