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More Data More Surprises

The recent sparse 3D Seismic data acquired over Fadhli Field has a potential to increase the oil reserves in the field by 25%. Although we have very tight grid of a high fold 2D seismic data over the Fadhli Field, this feature was not recognized. New sparse 3D seismic data was acquired over the field. This new acquisition concept was introduced in Saudi Aramco for chasing low relief structure and stratigraphic plays. During the mapping process of the Permian Khuff reservoir, an extension of the Jurassic Arab-D reservoir developed toward the north east. This extension was confirmed by several investigation processes:

1) Isochron maps generated between the Arab-D and the shallower horizons indicate the Fadhli Field has medium growth during Upper Cretaceous time.

2) A layer cake depthing approach used Shu'aiba Formation (Lower cretaceous) as a hanging horizon. Different velocity approaches were used in the Depthing procedure such as, constant, apparent and interval velocities. These different approaches showed very similar results.

3) A pre stack depth migration confirmed the extension.

This project shows the importance of sparse 3D seismic data in identifying the saddle structures and better delineating the existing fields.