

# 2-D Seismic Data Interpretation of Sajawal Block, Southern Indus Basin, Pakistan



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## **ABSTRACT**

This dissertation involves study of 2D seismic reflection data of Sajawal block, Southern Indus basin, Pakistan for delineation of subsurface structure suitable for hydrocarbon accumulation. This oil exploration block lies in Thatta district of Sindh province and is currently licensed to Mari Gas Corporation Limited (MGCL). The seismic data for this dissertation was provided by the LMK Resources by the permission of Directorate General of Petroleum Concession (DGPC). A total of 12 seismic lines (AS87-120, ASP88-256, AS87-122, ASP88-241, ASP88-258, ASP88-260, AS87-124, ASP88-262, ASP88-264, ASP88-243, ASP88-266 and AS87-103) were used for the study of the area. Average and interval velocities were computed from the given Root Mean square velocity data in the seismic section for the purpose of depth conversion. Three reflectors (R1, R2 and R3) represented by Basal Sand (litho-unit of lower Goru Formation), Sember and Chiltan Formations respectively, were marked based on their reflection prominence. Two-way time from the seismic sections was used to create a time grid and average velocities were used to create Iso-velocity grids for Basal Sand (reservoir rock) and Sember Formation (source rock). These grids were used to create depth contour maps of the formations. Finally, by analyzing these maps, a structural trap suitable for hydrocarbon accumulation was indentified and a well site on this structure was proposed.