

GEOPHYSICAL INVESTIGATION OF THE NAKHCHIVAN BLOCK, SOUTH CASPIAN BASIN: RESULTS OF THE 1998 3D SEISMIC SURVEY

David M. Pitcher
Exxon Ventures (CIS) Inc., USA

The Nakhchivan structure is a large (20 km × 40 km) north-south trending anticline in the South Caspian Basin approximately 100 km south of Baku, Azerbaijan Republic. Affiliates of both SOCAR and Exxon have 50% interests in the block with an Exxon affiliate serving as operator. Exxon acquired a 527 km² 3D seismic survey in early 1998 following the ratification of the PSA. Caspian Geophysical accomplished acquisition of the program in less than 90 days. During acquisition a large near surface low velocity zone, assumed to be gas-charged mud, was defined over the crest of the structure. Acquisition and processing steps taken to mitigate the effects of this zone will be discussed.

Nakhchivan formed as a shale-cored detachment fold, largely by flexural slip. Several large thrust faults are secondary to the folding; that is, the folding created the faults by buckling during the deformation. Shortening is accommodated by detachment in the underlying Oligocene-Miocene shales, most likely in the Maikop shale. The latest 3D seismic interpretation will be incorporated into the discussion of the structural evolution of the prospect.