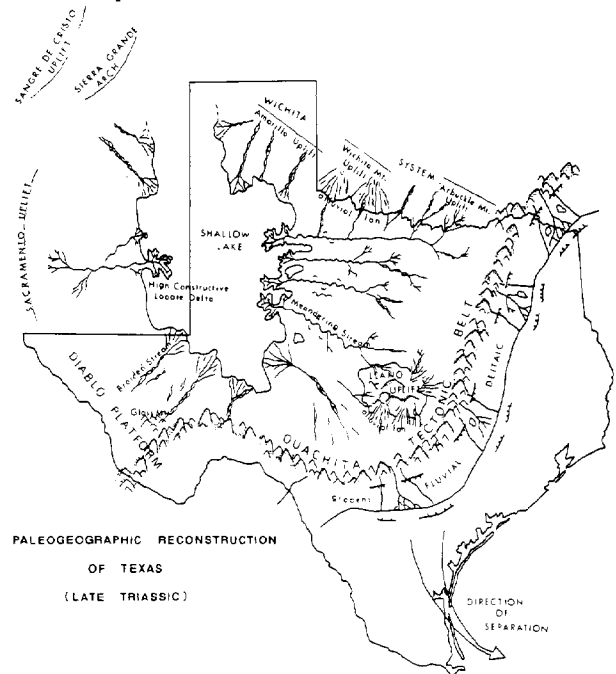


set consists of NW-trending, gulf-parallel faults which define major horst and basin systems. Breaking these are roughly NE-trending cross-faults. Paralleling the coast is a NW-SE trending horst segmented by cross-faults. Relative dissection and weathering of the relict gravel surfaces indicate the most recent uplift of the area occurred sequentially from northwest to southeast in three major segments. As uplift shifted along structure, motion on intervening cross-faults reversed.

Bed-rock facies changes indicate gulf-parallel faulting has continued from the Miocene along preexisting trends to the present day. Miocene and Pliocene reefal concentrations at the crest of the horst give way to thinly laminated limestone down structure and deeper water marls, evaporites, or clastics off structure. Local fault-associated arching also influenced deposition, resulting in thickening Pliocene clastic fill off the crest of the uplift. In the adjacent basins, ongoing sedimentation encouraged growth faulting. In general, the NE-SE cross-faults did not influence sedimentation to the same extent as the gulf-parallel fault system.

Detailed mapping of the neotectonic fault system indicates a continuation of past structural movement through the Quaternary. These fault patterns and their effects on local sedimentation provide a model for subsurface projection of Neogene facies variations. As oil concentrations are intimately related to local structures in the Gulf of Suez, detailed knowledge of Quaternary fault movements combined with seismic interpretation, can significantly aid in understanding the sedimentology and structural features of potential oil reservoirs.



GAWLOSKI, TED, Amoco Production Co., Houston, TX

Stratigraphy and Environmental Significance of Continental Triassic Rock of Texas

The continental Triassic rocks of Texas are represented by four distinct but similar rock groups that exist both in outcrop and in the subsurface and include the Eagle Mills Formation (south-central and northeast Texas), Sycamore Formation (central Texas), Dockum Group (west Texas), and Bissett Formation (southwest Texas). They are clearly terrigenous in nature derived principally from older Paleozoic sedimentary rocks. The rock groups are composed in part or entirely of mudstone, siltstone, medium to coarse-grained sandstone, and pebble to boulder con-

glomerate (intra-basinal and extra-basinal). The sediments were deposited in alluvial fans, braided and meandering streams, lobate deltas, fan deltas, and lakes. The coarse sandstone and conglomerate are the products of high-energy, short-duration depositional events. Sedimentation was greatly affected by alternating climatic conditions that produced changes in base level, water depth, and lake area as well as the type of streams that flowed into the depositional basins. The character of the rock groups strongly suggests semi-arid to arid deposition typical of the low latitude desert regions of today. Thus, the rocks comprising the Eagle Mills, Sycamore, Dockum, and Bissett Formations appear to be products of continental clastic deposition during a major semi-arid to arid climatic episode, such as that of late Triassic time.

GERNAND, JEFF, and RICHARDSON ALLEN, Univ. South Carolina, Columbia, SC, and ERNESTO GARCIA, Aminoil, Houston, TX

Structural Style of Foothills of Andean Overthrust Belt, Northern Neuquen Basin, Argentina

Basement plays an important role in Andean deformation in central western Argentina. Shortening is controlled by moderate-angle basement-rooted thrusts, primarily eastwardly directed. Four glide horizons in the sedimentary cover locally modify the style of deformation. A variety of structures result, including broad open folds, overturned folds, imbricate thrusting, and décollement-type faults.

Two fault zones, active chiefly during a Miocene compressional event, exert primary control on the structure. The westernmost is a zone of east-verging imbricate thrusts, closely paralleling the hinge line between thick Jurassic sediments to the west and thinner deposits to the east. This zone probably represents reactivation of basin-opening normal faults, which were active during back-arc extension in the late Triassic and early Jurassic. Balanced cross sections indicate marked basement shortening along this belt. The eastern fault zone lifts basement upward and eastward with a throw of 2 to 7 km (1.25 to 4.3 mi). Where these fault zones are widely separated, they divide the foothills into three structural belts: a realm west of both faults consisting of broad basement-cored folds with minor thrusting, a central zone with a variety of structures deriving from both fault zones, an eastern region with basically minor structures obscured by Quaternary alluvium. Where these two fault zones closely approach each other or merge, the marginal belts remain virtually unchanged. However, the central zone, which is updip from the thickest basinal sediments and encompasses a region of complex stratigraphy, is more intensely deformed and becomes a structurally elevated band, paralleling the faults.

GIBBS, A. D., Britoil Ltd., Glasgow, Scotland

Secondary Detachment Above Basement Faults in North Sea: Clyde Field Growth Fault

The Clyde field in the southern North Sea is a Jurassic (Fulmar Sand) reservoir developed on a fault-bounded terrace on the margin of the Central graben. The structural style of this region was formerly thought to comprise simple tilted fault terraces that were active through the Jurassic. Seismic mapping of the Clyde reservoir and deeper Zechstein, Rotliegendes, and Devonian events shows that Jurassic and Triassic rocks form a characteristic thick structural high, lensoid both in plan and cross section, (see figure) above deeper events dipping toward the basin.