

Twenty major fields in the Anadarko basin contain the equivalent of over 22 billion barrels of oil in place.

Basin configuration, tectonic activity, and processes of sedimentation have been the primary influences affecting the generation and accumulation of these hydrocarbons. Understanding the important elements of these phenomena and how they interact should lead to successful exploration.

A look back over the past indicates that a general knowledge of these basic elements and the use of exploration techniques which would focus on them would have located most major accumulations.

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"Petroleum Geology of the Arabian-Persian Gulf Area"

The final products of negotiations for "areas of interest" in the Persian Gulf may have left little future value of lifted oil for successful bidders.

The Gulf, a regional low between the Arabian Shield and the Zagros Mountains of Iran, lies in the oil-tectonic province of Saudi Arabia.

Structures of the gulf belong to the generally north-south lineations of Saudi Arabia as opposed to the northwest-southeast anticlines and synclines of the youthful Zagros. Structural closure and complexity increases eastward of the Arabian Shield toward the Zagros folded belt of Iran. Emergent salt is present across the southern portion of the gulf.

A tectonic fracture zone of considerable magnitude occurs along the Iranian shoreline of the gulf. Thrust-faulting of as much as 10,000 feet magnitude may be present. Also, longitudinal rupture on the order of 60 miles has moved in a left lateral motion between the Oman neck and Bandar Abbas across the Hormuz Straits.

Stratigraphic correlation across the Arabian-Persian Gulf area is difficult; sediments are predominantly limestone, dolomites, anhydrites or shales, indicating general low relief of the area during deposition. The only sands of importance were deposited down-dip from the Arabian Shield during Bargan or Zubair time (Middle and Lower Cretaceous respectively). Neither sand is in the proper sequence or distribution pattern to react favorably to the tectonic growth of the salt domes

in the area to form traps similar to types of the Gulf of Mexico oil province. Porous limestone or limestone-derived reservoirs will probably contribute most of the production to be recovered in the area.

Stratigraphic, structural and tectonic studies indicate the NIOC District I of the Persian Gulf area has some potential for oil and can be separated into three general areas.

The middle third can be excluded from competitive exploration because there are no structures present and lies in an area of deficient reservoir capabilities created by the Qatar arch.

The southern third is next best because of better reservoir potentials shown by Umm Shaif, Idd El Shargi, Maydom Mazam and Sassan field (Lavan Pet. "S" structure) but with considerable potential problems posed by nearby emergent salt conditions. There are many other structures in this area but most may have been breached by salt.

The northern third is comparatively better than the above because of possible Burgan production and other potential oil reservoirs similar to those found in Arabia, Iraq and Iran.

Because the onshore Asmari-Bangestan production of Iran is unique to that particular tectonic and sedimentary province, this type of oil may not be found in the offshore gulf agreement areas. Production in the southern portion will most likely be Thamama, Arab or Uwainat (Arej). Production in the northern portion will probably be Asmari (Ghar), Burgan and Ratawi-Khami with some production possible below the Hith (Jurassic).

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PANEL OF EXPERTS

The Oil & Gas Journal, Tulsa
"The Next Ten Years in Oil"

In the ten years from 1965 through 1975, the oil industry in the free world will be on the move in a decade of unrivaled expansion, unsurpassed consumption, and unprecedented technology.

It will be an age of superlatives, not only on the international scene but also in the United States. Domestically, shock waves resulting from the reappraisal of the late 1950's have run their course and an industry that is leaner, wiser, and more sophisticated stands poised for the challenges of a new era.

For the U.S., there will be no turning