

TURKMENISTAN OFFERS PRODUCING FIELDS ON CASPIAN COAST

The government of Turkmenistan is offering some thirty producing or shut-in fields in the Krasnovodsk province of western Turkmenistan for joint-development with international companies. The fields will become available in groups through several bid rounds over the next 12 to 18 months. The first round will include two onshore areas, Kotur-Tepe in the north, and Keimir-Akpatlaukh in the south. Kotur-Tepe will be offered for enhanced recovery and deeper-well development. Keimir-Akpatlaukh has many bypassed, untested, non-producing zones, as well as flank delineation, that offer potential for primary development.

The terms of the contract and bid deadline will be announced before the end of July. Following the announcement,

Two onshore areas for first round joint development

there will be an evaluation period of about two months. Visits to the fields for on-site tours and detailed discussions with local engineers and geologists will be arranged for interested parties late September. Requests for additional information can be made at that time. There will be a second time period for completing studies and submitting bids for joint-development.

Production is primarily from fluvial-deltaic sands of the middle Pliocene, but the entire Pliocene is productive in some areas and the Miocene may also be prospective. The Mesozoic is still unknown, except for apparent gas halos on the seismic records. It would be very deep and may be below the oil window. Near the coastline, it is buried beneath 11 km of Tertiary. Mesozoic shales may give rise to diapirs and mud volcanoes at the surface. The northern half of the South Caspian basin is full of diapiric structures, and many of the producing fields are assumed to be of diapiric origin.

Hydrocarbon generation probably took place in the deeper part of the South Caspian basin, south and west of the producing fields. Pliocene shales, rich in organic material, may be the major source.

Reservoir porosity is fairly consistent at 18-20% in all zones, all fields, over the entire area. Permeability is generally less than 100 md. Oil gravity averages 30° API. The crude is low in sulphur, $\pm 2\%$, and H_2S -free. Paraffin ranges from 8-25%, increasing to the south, and can be a real problem. Sand production is also a problem in some zones.

pressure is a problem. First production was established in 1982 at Keimir and 1988 at Akpatlaukh from the lower middle Pliocene, and is increasing with development, which is still in the early stages. The oil-water contact has not been completely defined, but is probably multiple, and development may prove the two fields to coalesce. The 45 million tons

of oil-equivalent geologic reserves assigned to this area may be increased after delineation of the structural flanks and oil-water contacts. Production from the area is delivered to the loading facility at Prichal.

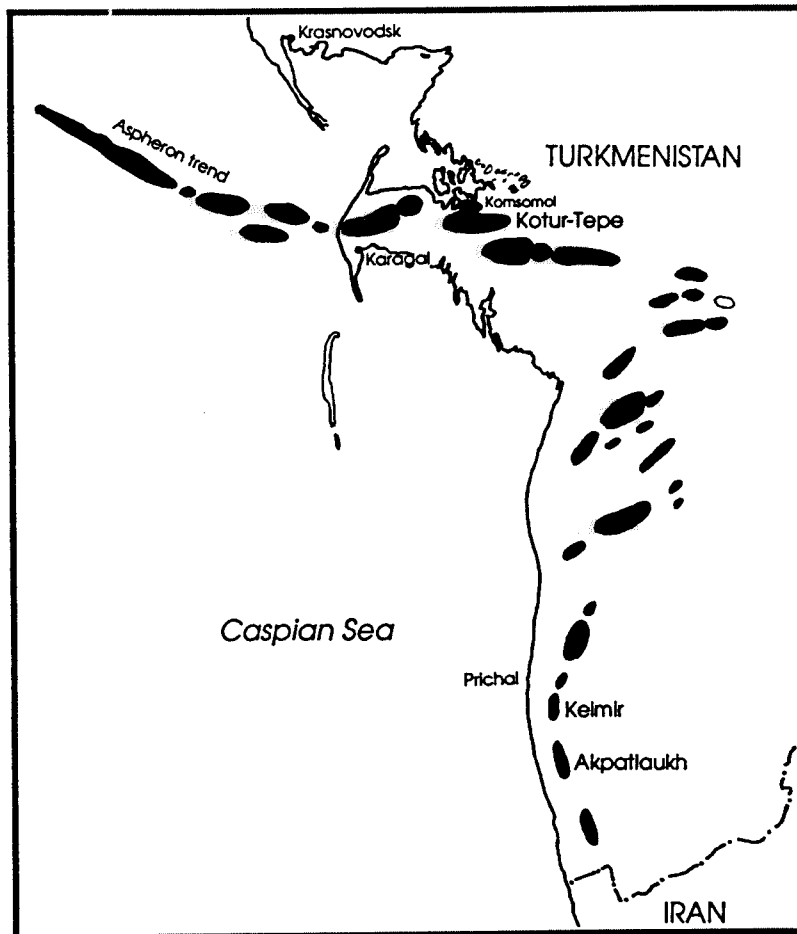
The Contract

The Kotur-Tepe joint-development partner will receive all the production increase over an agreed decline curve. Royalty will be based on a sliding scale to a maximum of 15%. Income tax is 30%, with a ± 2 -year tax holiday to be specified. There is no import tax on equipment, and no export tax on oil. Repatriation tax on profits is 15%. The contractor will have equal access to transportation facilities and tariffs equal to those charged to the Turkmen partner. In the case of Keimir-Akpatlaukh, the joint-development partner will assume all risks and share 50% of the production. The Turkmen partner will be carried

through payout, after which the contracting partner will be repaid from the Turkmen partner's share of production.

Data Available

Apart from the field data available for viewing in Denver, Geointertech Joint Venture has prepared a number of information packages, including a Geological Potential Study, a Geological Overview, a Producing Fields Overview, and four detailed packages on fields that will be offered for joint development: Kotur-Tepe, Akpatlaukh/Keimir, LAM/Zhdanov Offshore, and Gubkin/Livanov Offshore. The Overviews are currently available. The others will be available August 1, 1992. Interested parties should contact Wavetech Geophysical, Inc., 1600 Broadway, Suite 550, Denver, CO 80202, U.S.A. Phone: 303/839-9488, Fax: 303/839-9497.



Areas Offered

Kotur-Tepe, the largest field in West Turkmenistan, is responsible for over half the production from the area. It has been assigned geologic reserves on the order of 400 million tons of oil equivalent. It is a faulted anticline related to the Aspheron trend, a regional feature expressed as a sub-surface ridge that effectively separates the Central and South Caspian basins. It is divided structurally into four parts, of which the northern part, Komsomol, is still under development. An additional sector may extend offshore to the north. A pilot surfactant flood is underway in the upper Pliocene. Production is delivered to the port at Karagal on the Cheleken peninsula, or taken north by train to the port at Krasnovodsk

Keimir and Akpatlaukh are simple anticlines related to mud diapirism. Downhole