

STRATIGRAPHY

Stratigraphic sequence in the Kirthar Foldbelt Basin is expected to range from Permian to Recent, with major unconformities at the level of Permian, Jurassic, and Upper Cretaceous. Deep erosion at places has exposed Jurassic sequence at surface. Pre-Permian successions have not been recorded at outcrop or penetrated by exploration wells. Based upon regional

palaeogeographic reconstructions it is possible that these strata that form a proven petroleum system to the north in Kohat-Potwar, may be present in the northern part of the Kirthar Fold basin. Jurassic sequence is dominantly composed of limestone with some shale while Cretaceous sequence represent sandstone, shale and limestone/marl. Cretaceous is unconformably overlain by Paleocene sequence of Khadro, Ranikot and Dunghan formations. Eocene consists of Laki, Ghazij and Kirthar Group having limestone and shale lithology. Oligocene to Pliocene sequence, Nari, Gaj and Siwaliks, is composed of sandstone and shale.

PERIOD	EPOCH	T-R CYCLES	GEOLOGICAL PROCESSES	UNIT
NEO-GENE	MIOCENE	[Yellow triangle]	HIMALIAYAN COLLISION LOADING FROM NORTH. DEVELOPMENT OF FORELAND BASIN WITH PIGGYBACK BASINS IN THE WEST.	SIWALIKS
	OLIGOCENE			GAJ NARI
PALEOGENE	EOCENE	[Yellow triangle]	THERMAL SUBSIDENCE ALONG THE NORTHWESTERN MARGIN OF INDIA	KIRTHAR GHAZIJ LAKI
	PALEOCENE			DUNGHAN RANIKOT PARH
CRETACEOUS	LATE	[Yellow triangle]	THERMAL SUBSIDENCE ALONG NORTHWESTERN MARGIN OF INDIA	MORO FORT MUNRO MUGHAL KOT GORU
	EARLY			SAMBER
JURASSIC	LATE	[Yellow triangle]	THERMAL SUBSIDENCE ALONG NORTHWESTERN MARGIN OF INDIA	MAZARDRIK CHILTAN
	MIDDLE			SHRINAB
	EARLY			WALGAI ALOZAI
TRIASSIC	LATE	[Yellow triangle]	THERMAL SUBSIDENCE ALONG SOUTHERN MARGIN OF MESO-TETHYS	ZALUCH
	MIDDLE			
	EARLY			
PERMIAN				
NEOPROTEROZOIC	CAMBRIAN			
	VENDIAN			BASEMENT
	STURTIAN			

PETROLEUM GEOLOGY

Kirthar Foldbelt is prolific gas and gas condensate producer with major fields like Bhit, Mazarani and Sari-Hundi which confirm the presence of a dynamic petroleum system in this tectono-stratigraphic province.

SOURCE ROCKS

The Paleocene (mainly Ranikot Formation) is considered as source horizon with TOC contents up to 1 %. Sembar & Goru formations of Lower Cretaceous age are proven source rocks in the Lower Indus Platform Basin. These are considered as potential source rocks in the Kirthar Foldbelt. Excellent oil prone source rocks are recorded in the Lower Cretaceous section in the east (Sann-1) which spans the top half of the main oil window.

RESERVOIR ROCKS

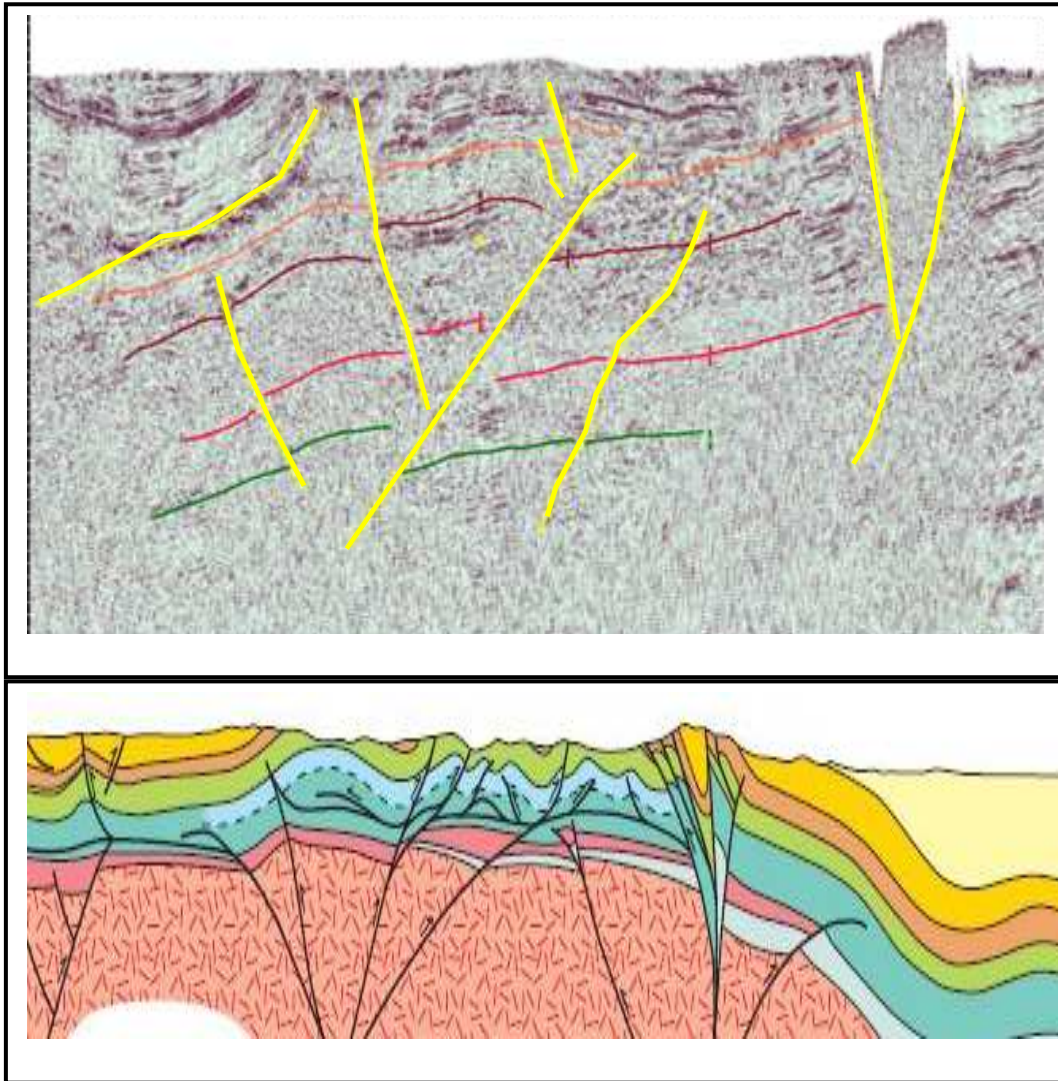
Reservoirs in Kirthar Foldbelt range in age from Jurassic to Eocene. Carbonates of Middle Jurassic, sandstone of Lower and Upper Cretaceous, sandstone and carbonates of Paleocene and carbonates of Eocene are the main targets in the foldbelt.

SEAL ROCKS

Shale of Sembar and Goru (Cretaceous) are the regional seals for Jurassic and Cretaceous reservoirs. Paleocene shale is potential seal for Upper Cretaceous and Paleocene reservoirs. Eocene shale of Ghazij Formation provides seal to Lower Eocene Carbonate reservoirs.

TRAPPING MECHANISM

A number of trap types are present in the Kirthar Foldbelt. The mechanism of entrapment is mainly provided by thrusting and shearing along pre-existing normal faults, resulting into the formation of thrust anticlines, pop-ups and tight/complex flower structures in the area. The normal faults developed in the Mesozoic rifting phase, whereas thrusting and development of flower structures are related to the Tertiary orogenic episodes.



Structural Style in Kirthar Foldbelt

KIRTHAR FOLDBELT BASIN				
CO-ORDINATES FOR NEW BLOCKS				
VERTICES	LONG_DMS	LAT_DMS	BLOCK NAME	AREA COVERED
A	66° 33' 46.8"	29° 2' 6.78"	2866-4 MARGAND	2484.17 Sq. Kms.
B	66° 33' 46.8"	29° 10' 8.4"		
C	66° 36' 7.2"	29° 10' 8.4"		
D	66° 36' 7.2"	29° 19' 4.8"		
E	67° 02' 42"	29° 19' 4.8"		
F	67° 02' 42"	29° 15' 0"		
G	67° 08' 00"	29° 15' 0"		
H	67° 08' 00"	28° 48' 0"		
I	67° 1' 4.8"	28° 48' 0"		
J	67° 1' 4.8"	28° 37' 19.2"		
K	66° 53' 23.61"	28° 37' 19.2"		
L	66° 53' 23.61"	29° 2' 6.78"		
A	66° 33' 46.8"	29° 2' 6.78"		



