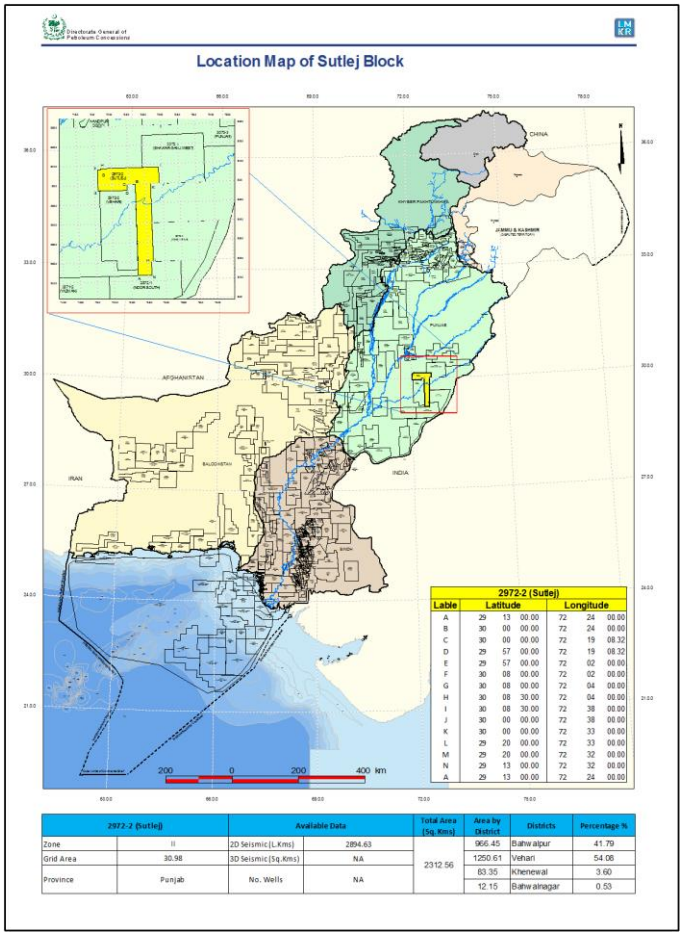
SUTLEJ BLOCK (2972-2)

Introduction

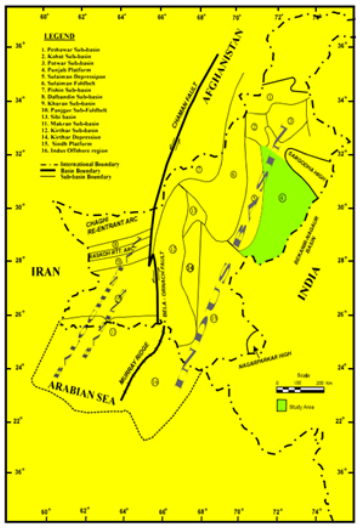
Sutlej Block covers an area of 2312.56 sq km and is located in Bahawalpur, Vehari, Khenewal, and Bahwalnagar districts of Punjab Pakistan. Geologically, it lies in the Central Indus Basin of Pakistan. The block falls in Prospectivity Zone II.



Geology and Tectonics

Tectonically the block lies in the Central Indus Platform Basin which is a broad monocline, dipping gently towards west direction. The plate rifting (Precambrian, late Jurassic, and Cretaceous), salt diapirism, Himalayan transpression, and reactivation of basement structures control the structures in CIPB. The subsurface structural features mainly relate to phases of Precambrian to Cambrian and Mesozoic extension but also to the effect of the peripheral collisional orogenies and consequent fore land basin deposition, according to seismic data.

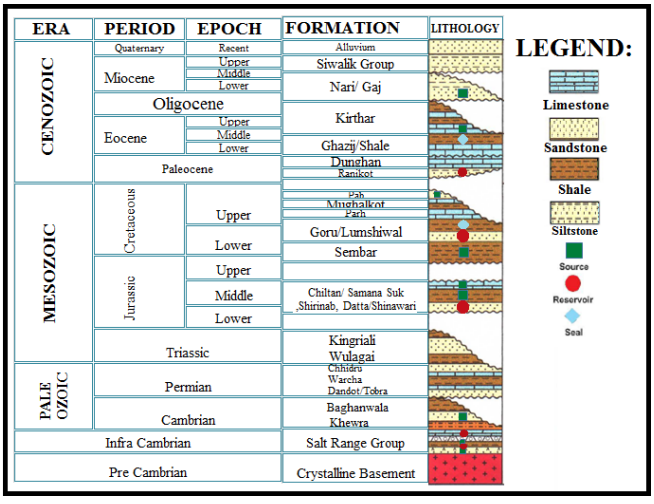
Geological Map (Modified after Ahmed et al, 1994)



Stratigraphic Sequence

The Precambrian basement rocks are composed of granites, unfossiliferous metasediments, and metavolcanics according to the subsurface geological data. In Punjab Platform, the oldest rocks encountered through drilling are Salt Range Formation (Infra-Cambrian). The prolonged uplifts/sea regression causing unconformities are the result of Pre-Himalayan orogenic movements. Because of this, in the southern portion of the monocline several salt cored anticline structures are expected (Kadri, 1995 and Humayun et al., 1991). The scattered outcrops of Precambrian shield rocks are only present in Sargodha, Kirana, Shahkot, and Sangla Hill area (Shabih et al., 2005)

Generalized Stratigraphic Chart



PPIS Pakistan Petroleum Information Service

Petroleum Play

The proven palys in this area are clastics and carbonates of Shinwari and Samana Suk (Jurassic) and clastics of Cretaceous age. The gas discoveries in the surrounding area are characterized by very high concentrations of nitrogen (50-80%). Intra-foramtional shales of Shinwari Formation and tight limestone of Samana Suk Formation are considered as the seals for these reservoirs in the area.

Source

Algal mudstones and rich dolomite horizons of Salt Range Formation and Bilara Formation (Infra-Cambrian) are the potential source rocks. Dolomites in Salt Range Formation (Precambrian), drilled in surrounding area shows the existence of heavy oil.

Reservoir

Infra-Cambrian to Jurassic sequence have potential reservoirs. Sparry dolomite with calcareous sandstone (with good vuggy porosity) of Salt Range Formation (Infra-Cambrian) is the main target. The potential reservoir rocks in the Central Indus Basin can also be Bilara and Jodhpur Formation (Infra-Cambrian) as these formations contain good potential in the Punjab Platform area and are producing in the adjacent fields in India. The potential reservoirs are also present in clastics of Permian sequence. Clastics and Carbonates of Shinwari and Samana Suk (Jurassic), and Clastics of Lumshiwal Formation (Cretaceous) are proven reservoirs in the gas fields of this area.

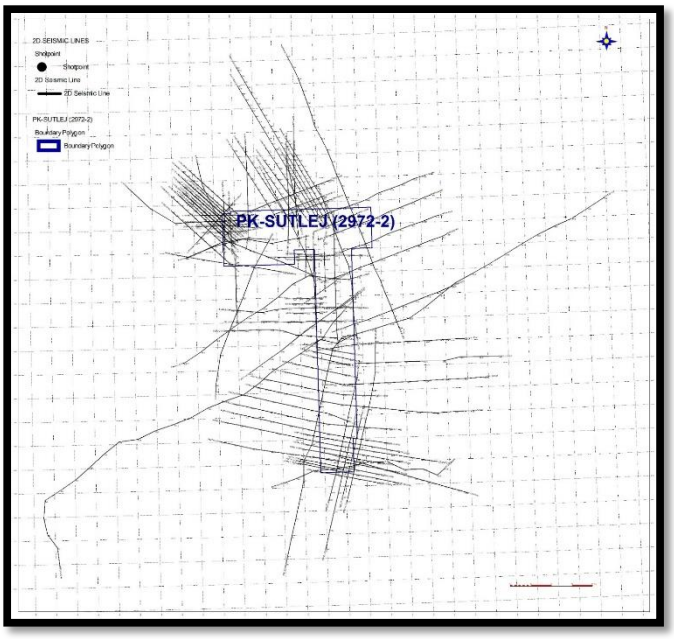
Seal

The cap rock of this area include the interbedded shales occurring within the reservoir horizons of Salt Range Formation, Khewra and Permian Formations. For Samana Suk and Lumshiwal reservoirs, the shales of Chichali and Ranikot can act as effective seal respectively.

Trap

In this area extensional faults related anticlines and drape anticlines are possible to exist which will provide effective trapping mechanism for the accumulation of hydrocarbons.

Sutlej Block Base Map



Well Data

Well is not drilled in this block.

Seismic Data

2D SEISMIC DATA	3D SEISMIC DATA
Line km = 2894.63	3D data is not available