

## **Block-IV**

### **Location and accessibility**

- Serial. No: 40 L /1,2,5 & L/5 (Toposheet No.)
- Name/Blocks: **Sonalba, Block-IV**
- Area (Sq-Km): 82sq-Km
- Coordinates

GCP	Latitude	Longitude
1	70.254	24.821
2	70.334	24.728
3	70.217	24.729
4	70.191	24.767

### **Relief, Topography and Climate**

The area of sonalba Block-IV is 25 km east of Islamkot and 2km from Mehari village. The terrain is sandy and rough with sand dunes forming high topography. The intervening valleys are narrow and sometimes broad. Sand dunes cover about 50% of the area of the block. The relief in the area varies between 61.00 and 157.66 m (473ft) AMSL west of sonalba in the northwest part of sandy area. The sand dunes are mostly longitudinal with a NE-SW trend and are stabilized by shrubs vegetation and grass. The drainage system is lacking in the area. The water from the occasional monsoon rains flows to a short distance into the lower interdunal valleys and is either immediately absorbed in or retained on the surface for a couple of weeks.

The area being part of desert is climatically similar to semi arid region with scorching hot summers and cold winters. The mean annual minimum and maximum temperatures are 19 and 35 Degree centigrade respectively. Maximum daily temperature commonly exceeds 45 degree centigrades in april through June.

### **Water Resources**

The sonalba Block-IV area is part of Thar desert and water resources are similar to that is in entire Thar. Surface water is scanty and found in few small "Terrais" inter channel and artificially dry depressions where rain water collects. The water so collected is mainly used for drinking purposes and for livestock. The nearest possible source of surface water for use in power plants is i) LBOD ii) Jamrao Canal iii) Rann of Kachh.

Ground water is similar to what is available in rest of thar. A number of slightly brackish to saline water wells are present in broader low lying inert dunal playa flats near the villages in the area. The sources of water are perched ephemeral aquifers at the contact of sub recent deposits with the overlying sand dunes. The drill hole geology shows presence of possible compact sand aquifer at varying depths i) above coal zone ii) within the coal zone iii) below the coal zone. The quality of water is saline having electric conductivity of water upto 4000-5000m.mho/cm

### **General Geology of Block IV**

The geology of the Thar Coal fields area is not easy to comprehend as the area is mostly covered by sand dunes. The nearest exposed outcrop is of granite basement rock found at a distance of 145 km at NagarParkar. The basement rocks also contain subordinate rhyolite and metamorphic rocks.

The Thar coal fields is all covered by sand dunes, which extends to an average depth of over 79m. the extensive drilling for coal in the area shows that the coal bearing strata of Paleocene- Eocene sediments overlies uncomformably over the Precambrian basement rocks of igneous composition which are exposed at Nagarparkar.

## Stratigraphic sequence on the Coalfield

Formation	Age	Lithology	Thickness
Dune Sand	Recent	Sand, silt and Clay	36 to 79 meters
.....Unconformity.....			
Alluvial deposits	Sub recent	Sandstone, siltstone, claystone molted.	55 to 127 meters (Variable)
.....Unconformity.....			
Bara Formation	Paleocene to Early Eocene	Claystone, Shale, Siltstone, Sandstone , Coal, and carboniferous claystone	+75 m (variable)
.....Unconformity.....			
Basement Complex	Pre-Cambrian	Gray and pink granite Quartz diorite	-----

## Coal

The sonalba Block IV contains coal beds of variable thickness range from less than 0.3 m to 20.20meters. the maximum number of coal seams encountered is 12, 16 and 31. The cumulative thickness of the coal bed ranges from 10.74 meters to 33.45 meters. Claystone is invariably forms the roof and floor rock.

The coal is brownish black to grayish black in color. It is poorly cleated to well cleated and compact. It contains scattered resin globules throughout. The quality of coal is better where percentage of clay is less.

### - Chemical Composition (As received)

Moisture%:	43.24%
Ash%:	6.56 %
Volatile Matter%:	29.04%
Fixed carbon%:	21.11%
Sulphur%:	1.34%
Heating value Btu/lb:	6391 Btu/lb
Rank of Coal is Lignite B	

## Reserves

Measured = 684.09 million tons

Indicated = 1711.28 million tons

Inferred= 176.14 million tons

**Total= 2571.51 million tons**