

Coalbed Methane Exploration in A Tertiary Lignite Basin, North Gujarat, India

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CBM Exploration in the acreage falling in Barmer-Sanchor Basin, covering an area of about 790 sq. km in Banaskantha Dist. of North Gujarat was taken up by ONGC as operator. During Exploration Phase- 1, ten wells (8 core holes and two test wells) were drilled for generation of CBM specific data and to evaluate the CBM production potential of the block. The two relatively shallower prospective areas on eastern and western side of regional Sanchor Low were taken up for drilling. In this area coals are confined to the Middle Tharad Formation of Middle Eocene age. Eight core holes and two test wells were drilled to assess the CBM potential.

The Barmer-Sanchor Basin is an elongated N-S trending synclinal depression dipping towards south. The CBM exploration acreage area lies in the Sanchor tectonic Block which is delimited in the north by the Serau fault and the Tharad fault in the south. Geologically, this block lies at the junction. Of the Cambay basin to the south and Barmer Basin to the north. The area forms the southern part of Sanchor depression. Basalts of Deccan Trap form the Technical Basement in the area. The initial synrift basin fill sediment is of Paleocene age and is equivalent to Olpad Formation of Cambay rift basin. The Lower Tharad Formation overlies the mixed basin floor facies, which is equivalent to Older Cambay Shale. This shale grades upward into Middle Eocene Tharad Formation. The upper and middle members of Tharad Formation show widespread development of coal in and around the block under lower delta plain setting. The coals are overlain by shale sequence of Tharad Formation which is succeeded by Wav Formation of Oligocene sequence. The fluvial Mio Pliocene thickness is of the order of 1000m.