

Petroliferous Basins of India with Special Reference to the Giant
Bombay High Oil Field

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There are 23 sedimentary basins in India, of varying priorities for petroleum exploration.

The pericratonic petroliferous basins are the resultant of mainly two global tectonic events: (1) the separation of India from Gondwanaland, and (2) the northerly movement of Indian block and collision with the Asian continental mainland. The intracratonic basins have a relatively low priority for oil exploration. The coastal basins which extend into the offshore, belong to the divergent margin category, with the exception of one i.e. the Andamans, which is of convergent margin type.

The giant Bombay High oil field is located on a wide continental shelf, to the west of Bombay city, which is believed to be the largest continental terrace in the world. This offshore basin was initiated during the break up of Gondwanaland during the Late Cretaceous. At the time of break up of Gondwanaland the sedimentary fill consists of Tertiary sediments which are at places more than 5000 meters thick. Three possible source rocks are suggested. The source shales contain more than 0.5% of organic matter. Four Miocene oil and gas bearing zones in the limestones and sandstones are identified - the main pay zone is the Middle Miocene L-III Limestone. Both the primary (intergranular) and secondary porosities are present. Post Miocene shales act as cap rocks. The Bombay High oil field is surrounded by a large number of satellite oil/gas fields. The structures are mostly in the form of drapes of sediments over paleohighs (of basalt) and also by faults. The Bombay High basin contains more than half of India's oil/gas reserves.
