
Oil Discovery in New Zealand Overthrusts

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New Zealand's present hydrocarbon production is from two gas-condensate fields located onshore and offshore southern Taranaki, on the western side of the North Island, in a generally gas-prone area. In 1980, Petrocorp (Exploration) discovered the McKee oil field onshore in North Taranaki. The reservoir sequence of the McKee field comprises Kapuni Group

lower coastal plain Eocene and early Oligocene sandstones, essentially similar to producing zones of the existing fields. McKee field is, however, structurally different in that it consists of a block of the Kapuni Group sequence thrust over lower Miocene marine mudstone and siltstone. The thrust, which is middle Miocene in age, is one of several similar structures in a zone immediately west of the eastern boundary fault of the Taranaki graben. Kapuni Group sandstones have been drilled in four of these structures and, in addition to the McKee production, significant gas shows were noted in two thrusts to the north of McKee. The potential for further oil and gas in these structures prompted revision of seismic techniques which

resulted in delineation of further segments of the thrust system in the McKee area. Recent detailed seismic over the field shows the reservoir to consist of a complex series of small scale,

fault-bound slices. The reserves of the field are estimated to be around 20 million bbl. The oil is wax based, with a pour point of 32°C, and a gas to oil ratio of around 150:1.
