

LIST OF FIGURES

	After Page No.
Fig. 1.1 Location map of the study area.	3
Fig. 1.2 Communication map of Mainland Gujarat.	3
Fig. 1.3 Physiographic and drainage map of the study area.	4
Fig. 1.4 Rainfall map of Mainland Gujarat.	4
Fig. 3.1 Geological map of Mainland Gujarat.	12
Fig. 3.2 A. Major tectonic trends in western India B. Regional tectonic framework of western continental margin (after Biswas, 1987)	22
Fig. 3.3 Stages in evolution of rift basins in western India (after Biswas, 1982)	22
Fig. 3.4 Gravity anomaly map of the area (after Tewari et al., 1991)	23
Fig. 3.5 Heat flow zones in Western India (after Arora and Reddy, 1991)	24
Fig. 3.6 Location of hot springs in Western India (after Chadha, 1992)	25
Fig. 3.7 Radial pattern of (a) tectonic trends (after Biswas, 1987) (c) heat flow and hot spring (after Gupta et al., 1989) (d) seismicity (after Khattri et al., (1984) after the out burst of (b) Reunion plume head near the Cambay node (Figure cf. Raval, 1995)	26
Fig. 4.1 Tectonic map of Cambay basin (after ONGC)	29
Fig. 4.2 Borehole geology of three deep wells in the Cambay basin (after Roy,1991)	29
Fig. 4.3 Figure showing comparative gravity anomalies in Cambay basin and Aravallis (after Tewari et al., 1991)	30
Fig. 4.4 Basement configuration based on DSS studies in north Cambay basin (after Kaila et al., 1990)	31

Fig. 4.5 DSS profile across Mehmabad-Billimora showing basement configuration (after Kaila et al., 1981)	31
Fig. 5.1 Lineament map of Gujarat alluvial plains (Inset - Rosettes showing dominant trends in (A)-northern, (B)-central and (C)- southern alluvial plains.	36
Fig. 6.1 Geomorphic map of Gujarat alluvial plains	41
Fig. 6.2 Subsurface structural features superimposed over the drainage map of the study area	51
Fig. 6.3 Schematic diagram showing the general geomorphology around the rivers of Gujarat alluvial plains.	53
Fig. 7.1 N-S cross-section across Gujarat alluvial plains showing uneven Quaternary basement (based on thickness data from ONGC)	58
Fig. 7.2 Composite lithostratigraphy of exposed Quaternary sediments in Sabarmati and other rivers in north Gujarat (after Merh and Chamyal, 1997).	59
Fig. 7.3 Composite lithostratigraphy of exposed Quaternary sediments in Mahi river basin (after Merh and Chamyal, 1997).	59
Fig. 7.4 Composite lithostratigraphy of exposed Quaternary sediments in Narmada valley (after Merh and Chamyal, 1997).	59
Fig. 7.5 Lithologs of exposed sediment successions of Lower Narmada alluvial fan (after Chamyal et al., 1997).	64
Fig. 7.6 Lithologs of marine Holocene valley fill terraces from lower Mahi valley.	66
Fig. 7.7 Composite litholog of Holocene terraces from lower Mahi valley with radiocarbon dates (after Kusumgar et al., 1998).	67
Fig. 7.8 Cross-section showing subsurface geological and structural features (after MRBC report).	74
Fig. 7.9 Cross-section showing subsurface geological and structural features (after MRBC report).	74
Fig. 7.10 Cross-section showing subsurface geological and structural features (after MRBC report).	74

Fig. 7.11 Cross-section showing subsurface geological and structural features (after MRBC report).	74
Fig. 8.1 Schematic map of Gujarat showing major tectonic movements during Quaternary.	80
Fig. 8.2 Idealised E-W cross-sections across Gujarat alluvial plains showing stages in Quaternary basin evolution.	82
Fig. 8.3 Quaternary subsurface folds and faults in southern Cambay basin (after Sudhakar et al., 1970).	85
Fig. 8.4 Block diagram showing the nature of Narmada fault (after Roy, 1991).	86
Fig. 8.5 A - Seismic section of southern Cambay basin and B- Cross section across Narmada geofracture showing nature of Narmada fault (after Roy, 1991).	86
Fig. 8.6 Idealised cross-sections showing Terminal Pleistocene-Recent evolution of landscape around the rivers of Gujarat alluvial plains.	89