

**MICROFACIES ANALYSIS AND DEPOSITIONAL SETTING OF LOCKHART  
LIMESTONE MANHIALA AREA, EASTERN SALT RANGE, PAKISTAN**

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**Abstract**

The current research deals with microfacies analysis of Lockhart Limestone exposed in the Manhiala area, eastern Salt Range. The Lockhart Limestone is primarily comprised medium to thick bedded, fractured, nodular and also extremely fossiliferous limestone with subsidiary shales. Inclusive petrographic observation of 30 samples reveals presence of 94% calcite, 2% clay, 1% strained quartz and 3% hematite. Calcite occurs as micrite, sparite and signifies rhombohedral cleavage occasionally. Calcite veins are ubiquitous and overlap each other forming en-echelon vein pattern. Petrography also demonstrates presence of cementation, stylolites, micritization and neomorphism settled in particular diagenetic environments comprising meteoric, marine and burial. Comprehensive microscopic study depicts three microfacies containing mudstone, wackestone and packstone. On the basis of age indicative foraminifera including Lockhartia conica, Lockhartia conditi, Miscellanea miscella, Lockhartia tipperi, Ranikothalia sindensis and Discocyclina ranikotensis, the Paleocene age has been specified to the Lockhart Limestone. Microfacies analysis suggests depositional settings of Lockhart limestone in outer, mid ramp as well as fore-shoal mid-ramp.