

LITHOFACIES ASSOCIATION AND DEPOSITIONAL ENVIRONMENT OF BOSTAN FORMATION, PISHIN BELT, BALOCHISTAN, PAKISTAN

Fazal Ur Rehman¹, Aimal Khan Kasi¹, and Mohibullah²

¹*Centre of Excellence in Mineralogy, University of Balochistan, Quetta, Pakistan*

²*Department of Geology, University of Balochistan, Quetta, Pakistan*

aimal_kasi@yahoo.co.uk

Abstract

Pleistocene Bostan Formation is widely exposed in the Pishin Belt in western Pakistan. This northeast-southwest aligned belt is bounded by Chaman Fault, and Afghan Block in the west and by Zhob Thrust, and Zhob Valley Ophiolite in the east. Thirteen distinct lithofacies have been recognized and grouped into eight facies associations. Lithofacies include clast-supported massive boulder conglomerate (Gcm(a)), clast-supported massive cobble conglomerate (Gcm(b)), clast-supported pebble to cobble conglomerate (Gcm(c)), clast-supported pebble conglomerate (Gcm(d)), Matrix-supported pebble conglomerate (Gmm), trough cross-stratified pebbly sandstone (St), horizontally stratified sandstone (Sh), trough cross-stratified sandstone (St), ripple cross laminated sandstone (Sr), massive sandstone (Sm), siltstone (F), massive mudstone (Fm), massive variegated mudstone (Fmv). The Lithofacies associations include channel facies association (CHA), floodplain facies associations (FPA), Debris flow facies associations (DBFA) delta plain facies associations (DPA), delta front facies associations (DFA), pro-delta facies associations (PDA), lacustrine facies associations (LAA), turbidites facies associations (TUA). The lithofacies associations suggest that Bostan Formation was deposited by gravelly braided channels which formed a large delta on the shore line of Pleistocene Bostan Lake. The fine sediments from delta front and from suspension further descended to make extensive layered lacustrine and deeper turbidite deposits.