Journal of Applied Geology

Autumn 2012, Vol. 8, No. 3: 282 (Abstract)

www.appliedgeology.ir

ISLAMIC AZAD UNIVERSITY ZAHEDAN BRANCH

Petrography and geochemistry of the Eocene turbidite sandstones of Zaboli unit, Southeastern Iran

K. Shabani Goraji

University Lecturer, Department of Geology, Zahedan Branch, Islamic Azad University, Zahedan, Iran,
ksg1354@yahoo.com

Received: 23 May 2012; revised: 5 Aug. 2012; accepted: 14 Aug. 2012; available online: 23 Feb. 2013

Abstract

Petrography and geochemistry of the Eocene turbidite sandstones of the Zaboli unit in southeastern Iran were studied. These sandstones are fine to coarse grain, poorly to moderately-sorted, sub-angular to sub-rounded feldspatic litharenite. They contain mono- and poly-crystalline quartz grains, feldspar, volcanic, sedimentary and metamorphic rock fragments and represent Q55F14.5L30.5 proportion. Diagenetic features include physical and chemical compaction, cementation (calcite, silica and clay mineral), replacement by calcite and chemical alterations (kaolinite and sericite formation). Major oxides and trace element concentrations and key trace element ratios (Th/Sc, La/Sc, Co/Th, La/Yb, La/Sm) indicate that the sources of these sediments were intermediate to felsic igneous rocks. Modal analysis revealed a recycled orogen tectonic provenance and major and trace element discrimination plots indicated a depositional basin in an active continental margin and continental arcs.

Key words: diagenetic features, Modal analysis, mono- and poly-crystalline quartz grains, metamorphic rock fragments.