The occurrences of turquoise in advanced argillic alteration of Darreh-Zerresk and Ali-Abad porphyry copper deposits, Taft-Yazd Province, Central Iran

B. TAGHIPOUR AND I. NOORBEHESHT

Department of geology, Isfahan University, Isfahan, Iran (goharrr@yahoo.com)

The studied area is located in Cenozoic Magmatic Belt of Central Iran. In ali- abad area granitoid rocks which belong to tertiaty age are caused the phyllic, argillic and advanced argillic alterations.

In addition to intrusives the red arkosic sandstones and microconglo merates (host rocks) have been subjected to processes of hydrothermal activity too. The following mineral assemblages are distinguished in altered rocks.

Sericite, quartz, kaolinite, epidote, garnet, pyrite, alunite, jarosite, turquoise and iron oxides.

Alunite- jarosite and turquoise occured as veinlets, encrustations and disseminated nodules mainly in sericitized host rocks. Turquoise genesis are related to oxidation of sulfides and development of advanced agilic alteration in a supergene environment, according to following reactions:

alunite + H_3PO_4 + $CuSO_4$ + K = turquoise + K_2SO_4+H

$Al(OH)_3$ + H_3PO_4 + $CuSO_4$ = turquoise + H_2SO_4 + H_2O

Reference

Rezaian, K. Noghreian, M. Mackizadeh ,M. A. Sherafat, S. 2003. Geology of turquoise indice, Ali-Abad (Taft-Yazd), *Research Bulletin of Isfahan University* **18(2)**, 144-158.

Geological and mineralogical studies of hydrothermal alterations (alunitization and kaolinitization) in North of Isfahan (Kesheh Area)

BATOUL TAGHIPOUR[1], IRAJ NOORBEHESHT[2], MOHAMMAD ALI MACKIZADEH[3] AND OZRA TAGHIPOUR

[1]Department of Geology, Isfahan University, Jahad Daneshgahi of Technology University of Isfahan
[2]Department of Geology, Isfahan University
[3]Department of Geology, Isfahan University, Shahid Beheshty University

Northern parts of Isfahan province are included into well known Cenozoic Magmatic Belt of Central Iran. There is extensive Eocene volcanic events. Field observation indicated that, the late intrusion bodies which are belonged to Oligo – Miocene are caused some dispersed hydrothermal alteration in area. On the base of XRD, XRF and SEM data mineralogy and chemical composition of fresh and altered volcanics are determined. Volcanic rocks with chemical composition andesite to trachy- andesite have more extensive in this area. Kaolinite, alunite and jarosite are major minerals in altered pyroclastic rocks. Mineral assemblages of these alterations are characteristic of acid – sulfate or advanced argilic type alterations. With attention to the geochemistry of major and trace element the kaolinite - alunite association are likely from hypogene source in Kesheh area.

Keywords: Cenozoic Magmatism, Uroumieh – Dokhtar Zone, Hydrothermal Alteration, Kaolinite, Alunite