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Metallogeny of Toroud_Chahshirin Mountains and various mineralization types

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Introduction

Toroud – Chah Shirin metallogenic area is located in northern part of Central Iran zone, south of Damghan. Toroud – Chah Shirin volcanic-intrusive belt is in form of an elongated ellipse whose major axis extends in northeast-southwest direction, and features a volcano-plutonic arc. This area is bounded between two faults; Toroud Fault in south and Anjilou Fault in north.

Facts and findings

Toroud – Chah Shirin metallogenic area generally consists of Eocene volcanic to volcano-sedimentary rocks. These rocks are cut through by intermediate to acid intrusive bodies, which include diorite, monzonite, syenite, tonalite and grano-diorite. The volcanic rocks include basal andesite and andesite-basalt lavas, volcanic breccia with composition of andesite and trachyte, and acid tuffs. The magmatic rocks in the area generally fall in alkaline series bucket, and feature an intra-continental rift.

There are many mineral deposits and indications with metallic variety in this area, which are distributed along this axis with a specific order. Mineralization in some of these deposits follows exactly east-west direction, and in some others north-south direction. Generally, mineralization is bounded and controlled by major faults in the area. So far more than 20 metallic deposits such as Cu, Au, Pb, Zn, Fe and turquoise have been identified in this area, and although they are small in size but all of them have significant grade that are economically valuable under current situation.

This paper is the product of field and lab studies on all mineral deposits and indications in Toroud – Chah Shirin area, which engages in discussion about the mineralization specification and origin of these deposits, and comparison of their similarities and differences.

Keywords: Toroud, copper and gold mineralization, turquoise

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