

## Geology, Mineralization, Alteration and Geochemical Exploration in Kajeh area, Ferdows

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**Abstract:** The study area is situated within the Lut Block 50 Km northeast of Ferdows. The oldest exposed rocks are Cretaceous limestone. Kerman conglomerate cover the limestone. Dacite-rhyodacite lava and pyroclastic rocks erupted over Kerman conglomerate. Volcanic activities took place at different time in Tertiary. The composition ranges between trachyandesite, andesite, andesite-basalt and rhyolitic tuff. Sub-volcanic diorite, monzodiorite, monzonite, quartz monzonite and granite porphyry intruded the volcanic rocks during Oligo-Miocene time. Both volcanic and intrusive rocks are K-rich calc-alkaline to shoshonitic. Intrusive rocks (except granite porphyry) are I-type granite and belong to magnetite series. The pattern of spider diagrams both volcanic and intrusive rocks are similar. In comparison with mantle, They are enriched in Cs, K, Rb, La and Zr and depleted in Ba, P and Ti. Two groups of alteration zones are recognized: 1- silicified assemblages (silica-sericite-propylitic, silica-propylitic & silica-sericite). This group is related to granitic magma. 2- propylitic-sericitic-argillic group which are associated with monzonite, quartz monzonite-diorite intrusive rocks. Mineralization associated with granite porphyry show Mo, Ag, Pb and Zn anomalies. Mineralization associated with monzonite, quartz monzonite-diorite show signs of porphyry copper. They have Cu, Au, Pb and Zn geochemical anomalies.

**Keywords:** *Kajeh, Ferdows, Geochemical exploration, alteration, mineralization.*