

## **DARESTAN AU MINERALIZATION SOUTH OF IRAN (GEOCHEMICAL BEHAVIOR OF ELEMENTS IN RELATION WITH SILICIC VEIN AND ASSOCIATION ALTERATION ZONES)**

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Darestan gold occurrence is exposed at Torud-Chahshir in Northeast of Iran. The outcrops in the area are Eocene volcano-pyroclastics with andesite-dacite composition with are interbedded by a number of intrusives including granitic to granodioritic bodies. Mineralization consists of a copper-gold bearing silicic vein with 400m length occurring within an N-S trending normal fault in andesitic massive breccia tuff associated with silicic-argillic chloritic-propylitic alterations. Mineralisation in the vein includes quartz, hematite, chalcopyrite, pyrite, gold, malachite, iron hydroxide and rare content of other minerals. Examination of samples from three lithological profiles vertically cutting the Darestan vein indicates that high grade gold mineralization is restricted to the silicic vein and intense silicic alteration zone. The study of these profiles in host rock toward silicic vein exhibits enrichment of Au, Cu, As, Mo, Zn and Sb in sulfide-bearing silicic vein, silicic zone and silicic veinlets expanded to the argillic and chloritic-propylitic zones. Gold content in different parts of silicic vein and silicic alterations zone varies between 0.53 and 23.8 g/t and Au/Cu ratio ranges from 0.1 to 2.4. Geochemical behavior of rare earth elements (REE) in the silicic vein and the silicic zone is clearly distinguishable in comparison with that of the other alteration zones. REE contents show a noticeable decrease in the silicic vein and silicic alteration zone as well as a depletion in the argillic and chloritic-propylitic alteration zones.