Exploring new polymetal massive sulfide deposit within Taknaru area using ground magnetic data at Bardaskan, Iran.

Abstract
Taknar polymetal massive sulfide ore deposits is located 28 Km to the northwest of Bardaskan (Khorasan Razavi) in a tectonic corridor between two important active faults of Doroune and Taknar and in special horizon of shihest series of probably Ordovician age. Intense tectonic activities caused displacement between different portions of this ore deposit. Four mineralization zones named Tak 1, 2, 3 and 4 were known. The aim of this project is identification of the position and extension of unexplored new reserve in Tak 1 and 4. Considering the presence of variable amount of magnetite (%5 to %65) among with sulfide mineralization in specimens taken from surface and old tunnels from Tak 1 and 2 and lack of magnetite in the host rock which is part of Taknar formation, magnetic method is suitable for the identification of new reserve. Total Magnetic Intensity (TMI) at 613 points in Tak 1 and 4 in a grid of 10*25 and 10*20 respectively were measured. Rotation to the pole maps of TMI color image, Contour, Upward Continued and were prepared using ER Mapper software. Inspection of the produced maps indicates the presence of disperse anomalies in Tak 1 with NNE-SSW direction and a nearly continued anomaly in Tak 4 with NW-SE direction. The causative sources of these anomalies in Take 1 and 4 are the presence of magnetite along with covered mineralization. The position of the anomalies with respect to the produced maps is proposed for drilling.