



## **Chrome mine exploration by microgravity method in Fenk plateau, Osmaniye, Turkey**

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Microgravity measurements have gained importance in the shallow investigations as a result of technological developments in recent years. Microgravity is often used in archeogeophysics, environmental problems and void detection in old mines. Microgravity measurements are very sensibly at the measurement point. For this reason this method can be used successfully in the shallow mineral exploration and mineral outcrops can be observed successfully. In this study a chrome field researched by microgravity measurements.

The study area is located at the Fenk plateau in Osmaniye, Turkey. The existing chrome deposits, which show conformity with the internal structural order of harzburgites, strikes NW – SE and the faults are dipping to east with 35 - 40 degrees. Chromite outcrops show apparent continuity and form ore deposits. The chromites are lens shaped and show continuity along the zone with the compressional and extensional forces that are parallel to the strike of the faults. Over the ore zone, a band cromite which has a thickness of 3-5 cm, can be tracked for 1-2 m or more, than suddenly it becomes an ore lens with a thickness of a few meters, and after that it shrinks and after a few meters it becomes an ore lens again. This situation occurs frequently on overground and underground. This study is planned to understand the presence of the chromites under the surface, depending on the absence of the chromite outcrops above the surface.

Scintrex CG-5 device is used for microgravity measurements. The study area is divided to 7 regions and 2438 points are measured in the whole area. The distance between measurement points is 3 meters in x and y directions. The measured data has corrected and have been mapped. Mine site is interpreted according to cross sections. According to drilling results, low-grade (15-20%) chrome is found where the amplitudes are from 8.5 to 10 mgal at the anomaly. Also, other drillings are done where the amplitude is from 2 to 5 at the anomalies. But chrome is not found at these drilling points. Afterwards it is understood that the source of the anomaly at these points are because of the harzburgites and dunites.