

Abstract

Even though ground geophysical surveys (especially Induced polarization and resistivity) are applied in mineral exploration, their effectiveness in identification of mineralised zones is often enhanced by integrating other mineral exploration techniques such as remote sensing and geological investigations. Integrating different techniques helps in reducing uncertainty that is often associated with mineral exploration. The methods being integrated also depend on characteristics of mineralisation and those of host rock. In this study, geophysical survey methods (induced polarization and resistivity) were integrated with remote sensing and geological methods to delineate mineralised zones in Lolgorien beyond reasonable doubt. By integrating these methods, it was found that Lolgorien's gold and sulphide minerals (disseminated minerals) are hosted in massive quartz veins and auriferous quartz veins hosted in Banded Iron Formations. It was also found that this mineralisation was controlled by faults which mainly trend in two directions (NW-SE) and (NE-SW).