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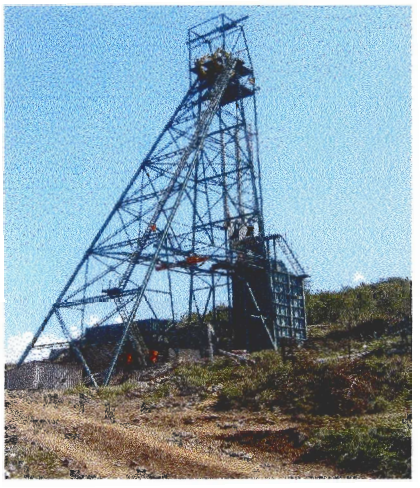

APPLIED GEOPHYSICS IN GOLD EXPLORATION IN THE BLANKET – LIMA FOOTWALL TREND, GWANDA GREENSTONE BELT, ZIMBABWE

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ABSTRACT

Geophysical surveys can provide a rapid and cost-effective means of deriving information on subsurface geology and structure. An alternative method of investigating subsurface geology is by drilling boreholes, but these are expensive and provide information only at discrete locations. If properly applied, and used in conjunction with other exploration techniques, geophysical methods can optimize gold exploration programs by maximizing ground coverage and optimizing drilling requirements through improved targeting.

This study reviews past exploration data for an area immediately to the east of the producing ore zones at Blanket Mine, in the Gwanda greenstone belt, provide new ground magnetometer data for a selected area containing two dormant mines (Redwick and K Pits) and integrates and analyses all data to produce a new interpretation.

The improved resolution provided by the new magnetometer survey allowed definition not only for fine detail within the volcanic stratigraphy of the Redwick - K Pits area, but also of important offsetting structures that affect possible mineralized zones.

This study confirms the importance of magnetics as an exploration tool for sub-surface geology and structure. However, not withstanding its usefulness, magnetics is just one of many geophysical exploration tools. To maximize the chances of exploration success it is best used in conjunction with other methods such as geological mapping and geochemistry.