Targeting Gold Deposits along a Regional Shear Zone: A Case Study from the Archean Golden Pride Deposit in Tanzania


The Nzega Greenstone Belt dominantly consists of rocks belonging to the Nyanzian sequence (as classified by Borg in 1990) and in particular the Golden Pride area consists of meta-sedimentary rocks of the Upper Nyanzian Sequence (Fig. 3). The Greenstone Belt is transected by a major, regional scale (~150km long) shear zone: the Bulangamirwa Shear Zone in the hanging wall of which the Golden Pride mineralisation has developed.

Either side of Golden Pride Mine the Bulangamirwa Shear Zone disappears under significant regolith cover and is very poorly defined in airborne magnetics (figure 5). This has strongly impeded the focus of regional exploration.

Resolute designed an innovative programme to characterize the ore deposit alteration and stratigraphy using lithogeochemistry and PIMA analysis. This ‘footprint’ signature was then used as an exploration model out along strike to delineate the Bulangamirwa Shear Zone under cover and to define ‘vectors to ore’ based on thermal and chemical indices. Samples were collected from ‘bottom of hole’ in wide spaced air core drilling (figure 6).

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The Exploration Problem

Figure 5: Nzega Belt airborne magnetic (RTP) image

Figure 6: AC holes along 1 km spaced lines east and west of the Golden Pride deposit covering 500m north and south of the expected position of the Bulangamirwa Shear Zone.