

**D-32 Re-interpretation of existing magnetic data of the Seruwila copper-magnetite deposit using new data processing techniques**

C H E R Siriwardana, A G S R Perera  
*Geological Survey & Mines Bureau, Dehiwela*

The Seruwila Cu-magnetite deposit is located within the Precambrian basement of North-East Sri Lanka. The mineralization is mainly hosted in narrow (up to 20 m width) Pyroxenite-amphibolite rocks as massive lenses, strings and pods extending for about 5 km along the regional strike.

Ground magnetic surveys were carried out in the Seruwila deposit during 1971 to 1980 and the data was originally used to identify the existence of these magnetic bodies and to locate drill holes for resources estimation. In the present study an attempt was made to re-interpret the available magnetic data using new computer based data processing and visualization techniques such as total magnetic field images (colour-raster; gray scale) 3D analytic signal and 3D Euler deconvolution methods.

The study identified 2 magnetic alignments (WSW-ENE) in the Arippu area of the Seruwila deposit, representing mineralized lenses strings and pods. Although at low magnetic inclination (e.g. in Sri Lanka) anomalies over N-S striking bodies are suppressed, a well-defined conjugated positive and negative anomaly is shown in the area. This feature corresponds to 2 largest lenses of the southern Arippu area.

The 3D-Euler deconvolution solution map shows 2 linearly clustered populations with calculated depths to the tops of causative magnetic bodies in the area between 15 m to 45 m. The depth pattern corresponds to the depth of fresh mineralization-barren rock interface.

The rapid change of clustered depths shown toward north indicates that the mineralized bodies show steep northerly dipping.

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