

PADRE ANTONIO, A GEOCHEMICAL DISCOVERY OF AN ULTRA-RICH COPPER TARGET HOSTED WITHIN VOLCANO-SEDIMENTARY ROCKS IN CENTRAL GUATEMALA

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The Padre Antonio ultra-rich copper mineralization discovered among the volcano-sedimentary rocks of the Santa Rosa Group north of the Santa Eulalia village can be considered as a direct geochemical discovery. The initial 500 m spaced stream sediment sampling revealed a 1 km copper anomaly with values exceeding 8000 ppm at its centre. Lithochemical samples taken from the last three metres of a seven metre pit located at the epicentre of the geochemical anomaly revealed values of 19, 25 and 31% copper content associated both to massive chalcopyrite and a massive disseminated tetrahedrite in the matrix of the hosting sedimentary unit.

A Self-Potential geophysical survey completed over the area of 1 sq. km. around this main pit identified the existence of four very strong vertical conductors independent of the lithology of the volcano-sedimentary unit which extend more than 50 metres deep.

Parallel to the SP survey we conducted a soil sampling program using a 200 x 50 metre grid. Due to the steepness of the local relief, most of the obtained anomalies were displaced downstream, but there is still a good correlation between the SP targets and the geochemical anomalies. A recently completed SGH survey indicates that we maybe dealing with a new porphyritic system.

We acquired the property in 2004 and expanded the original 24 sq. km to an area of 72 sq. km. based on the presence of alteration zones that we mapped in the field along the existing access roads. Last year we also acquired satellite images of the area. The interpretation of these images showed extensive zones of hydrothermal alteration (alunite, kaolinite, hydroxides, etc.) that we have later confirmed by direct field observation. On the basis of these studies we have increased the size of our original license to over 700 sq. km. of potential ore zones.

During the work we have conducted in the area over the pass year, our understanding of the genesis of this target has evolved from a simple skarn model into a possible combination of skarn, porphyritic, and SEDEX model of mineralization. Currently, the Padre Antonio copper target is the richest one in Guatemala.