

TROL PROSPECT

**A Mesothermal Gold System & Source of the Madre de Dios Placer
Gold District**

9th Region, Southern Chile

by

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1.1 Introduction

The following is a proposed, district scale exploration program targeting mesothermal gold mineralization believed to be the source of placer gold in the Madre de Dios District of southern Chile's 9th Region. Known mineralization is hosted by a quartz-sericite-graphite schist unit with internal flat and steep structural controls within the lower Paleozoic, Western Metamorphic Complex. The district program proposal is centered around the existing 100-hectare exploitation concession and drill indicated resource Trol 1, 90% controlled by Canadian Shield Resources. Salient features of the geology, historic Spanish production as well as a brief description of more recent exploration work by 4 companies from 1984 to 1994 is discussed. Over that decade of intermittent work, the combined exploration expenditure was US\$2.5 million including nearly 7000 meters of mixed RC and core drilling. It is my belief that potential exist both on the Trol property and elsewhere in the district that may have genetic affinities to other economically important, low angle structural-stratigraphically controlled mesothermal gold mineralization such as Telfer in Western Australia (+30 million oz gold).

1.2 Location and Access

Access to the area is excellent, thanks to the well developed infrastructure in the region. Valdivia, the capital of the region is 50 km southwest and is a major port for the wood and pulp industry. The prospective area is circumvented by numerous paved roads including the Panamerican Highway and secondary gravel logging roads access many of the historic placer workings. Railway lines also serve much of the area between the coast and the Chilean Lake District.

1.3 History

The Madre de Dios Placer Gold District was discovered by the Spanish in 1566. Total gold production from the district is unknown but recorded production from 1898 to 1936 was 2.6 MT of gold from an average grade of 0.387 g/m³.

In 1984 Amax discovered lode mineralization with surface values up to 27 g/t Au by simply walking upstream of the districts most important placer workings on Estero Llipe. In the following years, Amax drilled approximately 830 meters as part of a JV program with Shell Minerals who also held ground in the district. This drilling returned intercepts of 8m of 2.5 g/t Au, 2m of 10.22 g/t Au, and 12m of 1.53 g/t Au.

The property was optioned to Cominco in 1991 who drilled 602m of RC, which returned intercepts of 82m of 1.1 g/t Au, 20m of 1.5 g/t Au and 1m of 1.25 g/t Au. From the drilling up to that date, Cominco calculated a geologic resource of 6.25 Mt of 0.72 g/t Au.

In 1993 Pegasus Gold optioned the property who over the following 2 years would spend US\$1.47 million in exploration. Pegasus drilled 46 holes totaling 5,509 meters. In addition they carried out a district scale program with airborne magnetics and collected over 4,000 rock chip samples, 1590 soil, and approximately 20 stream sediment samples. At that time Pegasus controlled over 20,000 hectares of exploration concessions.

At the end of 1994 or early 1995, Pegasus returned the property to the Amax-Shell JV and apparently little has been done on the ground to advance the project. Recently all claims in the area including the ENAMI exploitation licenses covering the placer deposits, were dropped, leaving the area open for staking.

In May 2002 I chose to stake over the drill indicated resource with the intention of advancing exploration efforts using a stratabound geologic model. In my opinion, the reconnaissance work done by Pegasus was not guided by a solid geologic concept. Sampling was indiscriminately carried out as continuous road-cut chip sampling and grid soil sampling which would have been ineffective if exploring for a relatively flat lying, stratabound target. During a recent visit to the property, we identified high angle structural controls that could be feeders to the more stratabound mineralization.

2.1 Geology & Mineralization

The Madre de Dios Placer Gold District is defined by over 20 known individual old workings in a dozen different drainages that cover an area 40x45 km. The vast majority of the gold bearing creeks and rivers drain an approximately 25x12 km, elongate, E-W trending, topographic dome, the Cordillera Troltrolhue and is clearly the lode gold source area of the placers (figure 1). Gravel from the most productive drainage, Estero Llipe is predominantly comprised of poorly rounded (3-6 cm) greenschists and quartz vein with boxwork textures after pyrite. Other lithologies include coarse arkosic conglomerates and ultramafics.

Regionally, the predominant geologic unit is the Paleozoic crystalline basement of the Western Metamorphic Series of the Central Coast Range. This is an assemblage of greenschist, iron-bearing schists, serpentinites, and metabasites. These rocks are bound to the east by upper Carboniferous Panguipulli Formation comprised of slate, meta-sandstones, arkosic conglomerates and minor calcareous beds. Three major igneous intrusive episodes have been recognized immediately to the east of the district comprising pre-Carboniferous granite, Triassic granodiorite and tonalite, and Cretaceous, medium grained diorite and tonalite. Smaller stocks and dikes of diorite accompanied the final intrusive phase.

2.2 Geologic Model and Exploration Approach

Drilling and resource estimations by previous workers shows a somewhat stratabound geometry to the mineralization. After a recent visit to the property, I am now of the

opinion that data has been, to some extent forced into this model. Economically important gold values are principally hosted in the quartz-sericite-graphite schist which directly overlies a mafic volcanic unit and underlies a graphite free quartz-sericite schist unit. Low angle structures were also identified as playing an important role in localizing mineralization. On the other hand most of the 10 drill holes completed by Amax then Cominco, were mostly vertical holes, which would not have tested mineralized, high angle structures effectively.

From drill road exposures it is evident that high angle NE & approximately E-W trending structures host important gold values and in some cases, trenches were cut parallel to the mineralized structures. This may explain part of the conflict between gold values in trenches and the lower gold values generally found in the drilling (Hole #DTL-1). Drill hole #CLL-01 was drilled at an angle to the NNW which more effectively cuts NE trending mineralized structures. This hole had the best intercept of any of the holes with 112m @ 0.99 g/t gold including 5m @ 2.96 g/t. Cominco drill hole # CLL-02 was drilled about 80m to the ESE and was also drilled at an angle to the NNE. From 70 to 90 meters the hole averaged 1.5 g/t gold including 7m @ 3.2 g/t gold.

Figure 3 shows a clear NE trend of anomalous pan sample clusters that parallel the Estero Llipe drainage. It seems that such a structural control may not have been identified which implies added exploration potential may exist along strike somewhat mapped out by the gold in soil map. Based on surface trenching and drill data, the NE trending high angle structurally controlled mineralization may be on the order of 100 meters wide or more. There may be sub-ore grade zones within the overall mineralized structural corridor though more drilling with a high angle, NE trending structural control in mind is need to evaluated this target.

It will be important to map on the district scale, both the prospective stratigraphic level and the continuance, as well as other parallel, mineralized feeder structures. Controlling structures may have also formed along the graphitic horizon due to a significant competency contrast between sequential stratigraphic units. Low angle structural movement and mineralization may have been related to plutonic emplacement and extension during that latest magmatic event in the Cretaceous. A mapped exposure of Cretaceous granite crops out along the southern flank of the Cordillera Troltrollhue and may suggest that the Paleozoic stratigraphy is roofing a Cretaceous pluton.

In addition it will be important to thoroughly prospect the area by panning and creek float/outcrop sampling to identify up stream limits of the gold source to the various placer gold bearing streams. Though some stream sediment samples were taken, there is nothing mentioned in the available files suggesting such fundamental work was done. However, there is record of significant stream sediment anomalies up to 230 ppb Au that were not followed up. It could very well be that district wide, more than one stratigraphic horizon is mineralized and prospective with attendant sub-vertical feeder structures.

