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Observations on the Occurrence of Gold at the Bolivar Prospect, Texada Island, British Columbia

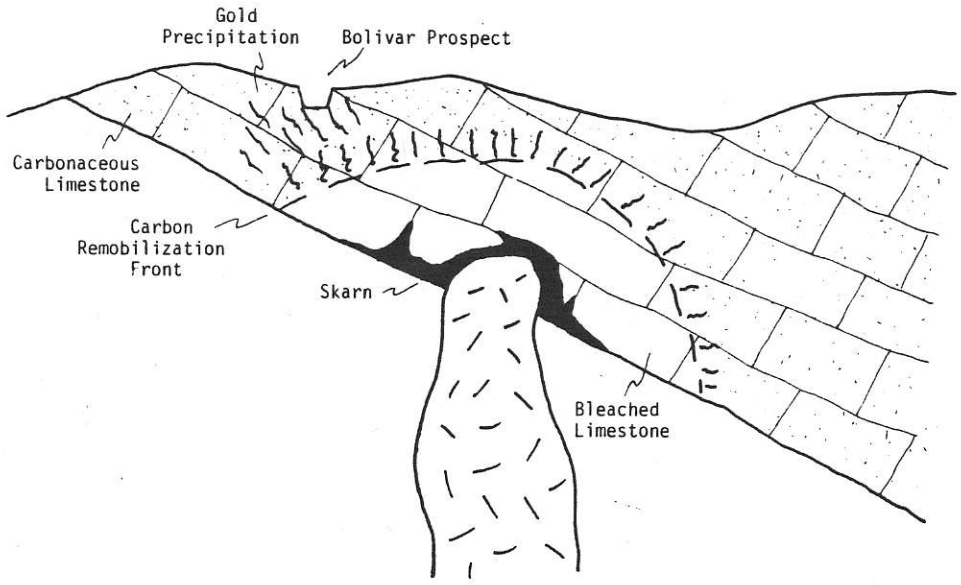
Gold occurs in many deposits on Texada Island and 12 deposits have a recorded production totalling 1,460,975 tons averaging 1.68% Cu, 0.054 oz/ton Au, and 0.40 oz/ton Ag. Excluding the Texada iron skarns, which were mined largely for iron, the average grade for Texada production is 2.32% Cu, 0.179 oz/ton Au, and 1.20 oz/ton Ag. Most of the deposits on Texada Island are skarns or shear zones which cut both skarn and volcanic rocks.

Au/Ag = .15

Gold at the Bolivar prospect occurs as very coarse grained filaments and grains in carbonaceous Marble Bay Formation (Quatsino Limestone equivalent). Grades up to 9.53 oz/ton are reported by Northcote (1974). Based on reconnaisance mapping by Northcote (1974), the gold occurs in carbonaceous limestone less than 100 meters from skarn formed adjacent to a small leucocratic (possibly altered granodiorite) intrusive. Projection of surface and drill core geology suggests that the area is underlain (at a depth of 20 meters) by Karmutsen basaltic rocks which dip about 30' to the NE.

Inspection of the Bolivar pit and scattered nearby outcrops suggests that the gold mineralization is related to mobilization of carbon from the Quatsino limestone by distal hydrothermal fluids of the skarn-forming event. The most spectacular gold occurrences appear to occur in unleached carbonaceous Quatsino limestone just beyond the zone of massive carbon deposition. Some small flecks of gold also occur in the veins and lenses of carbonaceous material. An analysis of the carbonaceous material reported in Northcote (1974) gave in addition to carbon the following: Zn > 2%, Ca 0.1%, Pb 0.1%, Cu 0.03%, Fe 0.02%, Cd 0.02%, Ni 0.01% and trace amounts of Si, Al, Mg, Mn, and Ag. Most of the carbonaceous material is soft and sooty black. A few 1 cm patches of radiating shiny graphite crystals were also observed. An interpretive model for carbon remobilization and gold precipitation is given below.

Exploration Model for Gold/Carbon Remobilization



The Bolivar deposit contains some very high grade, but sporadic gold mineralization. It probably is of more interest as a guide to exploration and ore genesis than as an ore deposit in itself. The significant features are that carbon is remobilized from the carbonate rocks by hydrothermal fluids which probably emanated from and are distal to the small amount of skarn exposed on the property. Gold appears to have been precipitated along with and adjacent to the "carbon mobilization front", presumably by an oxidation/reduction type reaction. Possibly similar carbon precipitation mechanisms have been hypothesized for some of the gold in Carlin-type deposits in carbonate rocks, however the carbon-gold association at the Bolivar property is much coarser grained and thus easier to see. The gold at Bolivar could represent the distal fringe of a gold-bearing skarn system (ie it is an indicator for hidden mineralization) or it may represent all the gold in the hydrothermal system (ie any associated skarns would not be expected to contain significant gold values). In either case, the occurrence of remobilized carbon in the quantities observed at the Bolivar prospect should be recognized as an indication of hydrothermal circulation and possible associated gold mineralization.

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October 8, 1985

Dr. Ken Dawson
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CANADA

Dear Ken,

Sorry we didn't connect up with you on the field trip. We did make it out to Texada Island as scheduled and the Bolivar deposit was quite interesting. Enclosed is a brief summary for your information.

Best regards,

Larry

Dr. Larry D. Meinert
Assistant Professor

DLM/dal

Enclosures