

AN ALKALINE INTRUSIVE RELATED GOLD-COPPER DEPOSIT

The Mt. Milligan MBX porphyry gold-copper deposit, 90 miles northwest of Prince George, B.C., has a drill inferred geological inventory of 100 million tons. Grades range from 0.01 oz. to 0.15 oz. gold per ton and 0.2% to 1.0% copper.

The project is a joint venture between Continental Gold Corp., with a 70% interest, and BP Resources Canada Limited, with a 30% interest. The joint venture holds a large contiguous block of claims covering 42 square miles of the mineral belt, accessible by an all weather, heavy-duty gravel logging road from Mackenzie, 40 miles to the east.

In 1983 and 1984 BP acquired the property by staking and acquisition and identified a gold-copper soil geochemical anomaly approximately three square miles in extent. In 1985 after IP and magnetic surveys over the geochemical anomaly, BP exposed gold mineralization in trenches on the Creek and Esker Zones.

United Lincoln Resources Inc., (a Continental Gold Corp., subsidiary) optioned the property from BP in 1986. Lincoln, having undertaken extensive trenching within the soil geochemical anomaly and additional magnetic surveys, commenced diamond drilling on the Creek and Esker Zones and discovered the MBX deposit in 1987.

Regionally the property lies within the central volcanic core of the Upper Triassic - Lower Jurassic Takla Group. Takla volcanics are dominated by subaqueous alkalic pyroxene porphyritic andesite and basalt flows and pyroclastics with subordinate intercalated tuffs and argillites. Intruding the volcanic stratigraphy are comagmatic alkaline syenite, monzonite-diorite stocks.

The MBX porphyry gold deposit is situated on the eastern side of a 3,000 foot diameter porphyritic monzonite stock. Mineralization is hosted by easterly dipping pyroxene porphyritic andesite to latite flows, pyroclastics, interbedded trachytic tuffs and a 30 foot to 150 foot thick porphyritic monzonite dyke. Mineralization persists into the eastern margin of the monzonite stock but with decreasing grades.

The multi-phase monzonite stock is fine to medium grained with 20% plagioclase laths in an aphanitic potassium feldspar matrix. This is one of three alkaline plutons on the property that form a north-northeast alignment, suggesting a structurally controlled emplacement. The porphyritic character of the intrusive units and the number of dykes is indicative of a hypabyssal subvolcanic environment.

Potassium silicate and propylitic alteration assemblages have formed outwardly from the stock for 1,000 feet and 8,000 feet respectively. An early, fine-grained felted hydrothermal biotite superimposed on the volcanics is overprinted by pervasive grey potassium feldspar. Biotite comprises 10% to 35% of the volcanic units and potassium feldspar up to 50%, while pyroxene is typically replaced by actinolite within the potassic zone. In fine-grained laminated tuffs massive potassium feldspar replacement is common. The potassium silicates overprint the enclosing propylitic assemblage which is principally comprised of epidote, carbonate and pyrite. Veinlets of magnetite with minor chalcopyrite post-date the main period of sulphide precipitation and are restricted to the potassic zone. Weak but pervasive sericite partially replaces plagioclase phenocrysts in the monzonite stock and in the porphyritic monzonite dyke within the zone of potassic alteration. Throughout the MBX deposit, alteration is typically pervasive and veining is infrequent.

Disseminated grains and coalescing grain aggregates of chalcopyrite and pyrite comprise approximately 60% of the total sulphide content. Fracture controlled pyrite-chalcopyrite mixed veinlets are less abundant. Chalcopyrite and pyrite-bearing K-feldspar-carbonate veinlets are relatively rare. Quartz veining is noticeably absent. The distribution of sulphides is zoned but not uniformly. At the north end of the MBX deposit pyrite and chalcopyrite occur in equal concentrations. Bornite, though present, is a minor constituent. Within the west central portion of the deposit the pyrite:chalcopyrite ratio is approximately 3:1. Along the east and southeastern margin of the deposit the pyrite content increases to 5% - 10%, and the pyrite:chalcopyrite ratio is approximately 20:1.

Metal zoning closely parallels that of the sulphides with gold concentrations increasing with the pyrite: chalcopyrite ratio. This relative gold enrichment, coincides with the transition from potassium silicate to the propylitic alteration assemblage.

Both chalcopyrite and pyrite are auriferous and occur as separate grains. Intergrown sulphides are rare, an important positive metallurgical feature. Gold associated with pyrite occurs as small particles on grain margins.

At the West Breccia zone, situated on the western flank of the monzonite stock, an intrusive breccia, comprised mostly of monzonite and a few scattered volcanic clastics, is enclosed by a broad zone of brecciated and fractured monzonite. Within the intrusive breccia pink secondary potassium feldspar is pervasive, however, moving outward from the breccia, the potassium feldspar is fracture controlled. Both chalcopyrite and pyrite occur as fracture fillings and as discrete fine grains partially replacing altered mafic minerals. Chalcopyrite predominates over pyrite and gold concentrations are low.

The Creek, Esker and 79 Zones are located within propylitized hornblende-pyroxene porphyritic andesites approximately 1,000 feet southwest and 1,500 feet west, respectively of the MBX porphyry deposit. These zones are northeast-striking, steeply northwest-dipping, tabular bodies of auriferous semimassive to massive sulphides occupying fracture systems radial to the monzonite stock. Each of the deposits comprises three to five subparallel, sulphide-rich bodies, spaced across 200 feet to 300 feet. Individual structures range from 1 foot to 10 feet in thickness and grade from 0.10 oz. to 2.89 oz. gold per ton and 0.2% to 10% copper. Each zone is open along strike and down dip. The propylitic altered andesites between the individual sulphide bodies carry 30 to 350 ppb gold and 200 to 2,500 ppm copper. Silver, arsenic and antimony are present at background concentrations.

Pronounced metal zonation is related to the proximity to the monzonite stock. The MBX porphyry deposit adjacent to the stock, contains less than 10 ppm combined arsenic and antimony. At the Creek Esker and 79 Zones, combined concentrations increase to 300 ppm and to 2,000 ppm respectively. Silver shows a similar relationship with concentrations ranging from 1.5 ppm in the MBX zone, to 10 ppm - 40 ppm in the Creek Zone and 60 ppm - 200 ppm in the Esker Zone.

Mark Rebagliati P. Eng., who conceived the original exploration program and Dave Copeland P. Eng., are Vancouver-based consulting geological engineers who have directed and managed this project to its current stage.

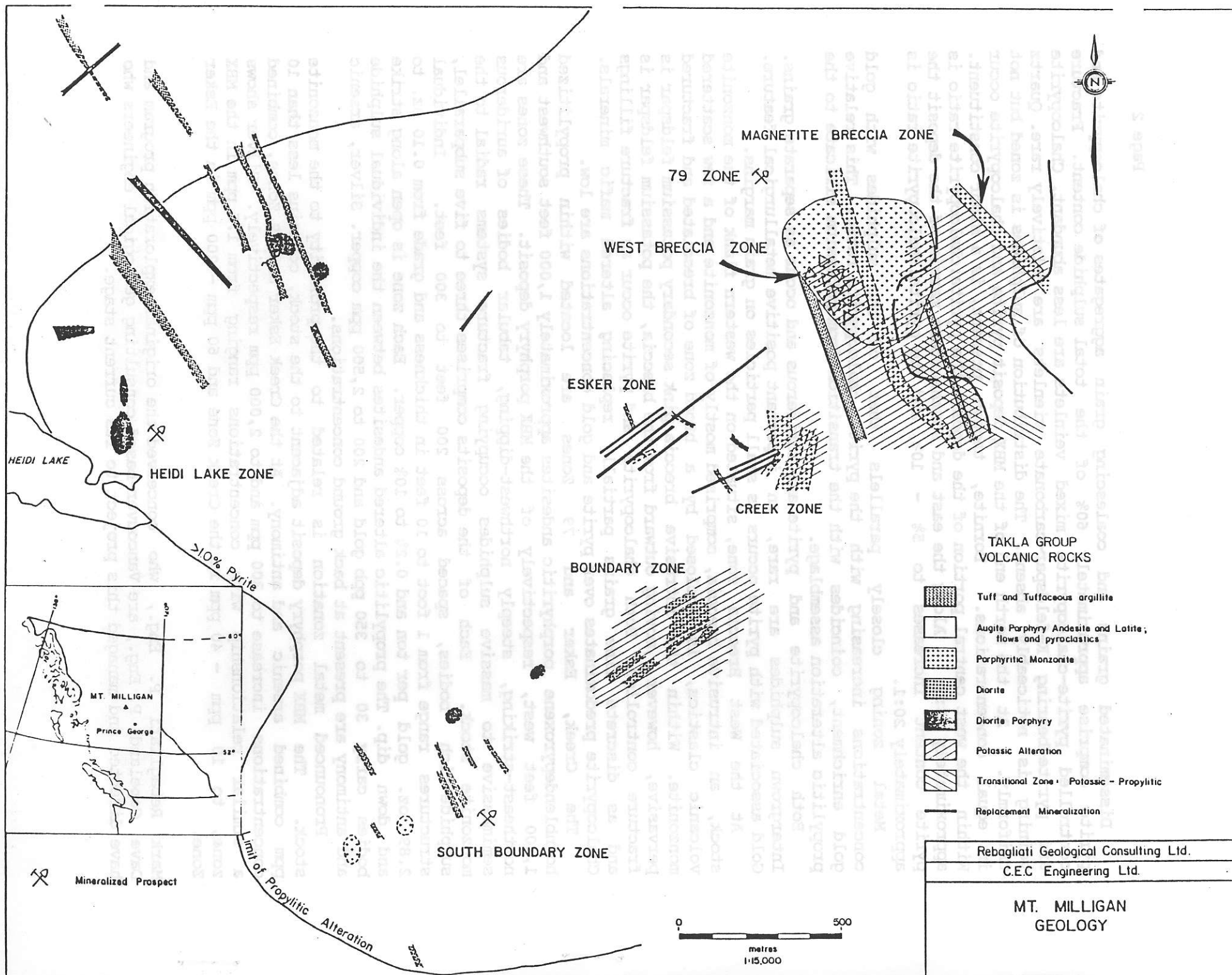


Table 3

HEIDI LAKE

HEIDI LAKE ZONE

>10% Pyrite



MT. MILLIGAN  
Prince George

Limit of Propylitic Alteration

Mineralized Prospect

MAGNETITE BRECCIA ZONE

79 ZONE

WEST BRECCIA ZONE

ESKER ZONE

CREEK ZONE

BOUNDARY ZONE

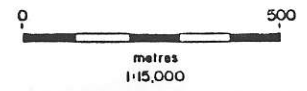
SOUTH BOUNDARY ZONE

TAKLA GROUP  
VOLCANIC ROCKS

- Tuff and Tuffaceous argillite
- Augite Porphyry Andesite and Latite, flows and pyroclastics
- Porphyritic Monzonite
- Diorite
- Diorite Porphyry
- Potassic Alteration
- Transitional Zone - Potassic - Propylitic
- Replacement Mineralization

Rebagliati Geological Consulting Ltd.  
C.E.C Engineering Ltd.

MT. MILLIGAN  
GEOLOGY



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## AGENDA

### COPPER-GOLD PORPHYRY WORKSHOP

Mineral Deposits Division, GAC

Georgia Hotel, Vancouver - April 5, 1989

Session Chairman - Tom Schroeter,  
B.C. Ministry of Mines and Chairman, MDD

- 8:00 - 8:30 Registration
- 8:30 - 9:00 Get acquainted, coffee and danish
- 9:00 - 10:00 Contrasting Characteristics of Circum-Pacific Cu-Au Porphyries,  
by Spence Titley, Professor, University of Arizona and  
international consultant.
- 10:00 - 10:15 Alkaline Copper-Gold Porphyries: Schizophrenic Cousins of Real  
Porphyry Coppers  
by Peter Fox, Fox Geological Consultants.
- 10:15 - 10:45 Discussion, Coffee
- 10:45 - 11:15 Copper-Gold Porphyries in the Canadian Cordillera: Distribution,  
Geology and Models  
by Bill McMillan, B.C. Geological Survey Branch
- 11:15 - 11:45 Iron Mask Batholith and Associated Fe-Cu-Au Deposits  
by Vic Preto, B.C. Geological Survey Branch
- 11:45 - 12:00 Discussion
- 12:00 - 1:30 **LUNCH** - Windsor/Queen Anne Rooms
- 1:30 - 2:00 Porphyry Cu-Mo-Au Mineralization at Island Copper, Vancouver  
Island, B.C.  
by Jose Perello, BHP-Utah International.
- 2:00 - 2:30 The Mt. Milligan Alkaline Au-Cu Porphyry Deposit  
by Mark Rebagliati, Rebagliati Geological  
Consulting/Continental Gold Corp.
- 2:30 - 3:00 Discussion, Coffee/Juice

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