Notes by JCS Feb. 15/90

MANSON RIVER 93N

885733

MOUNT MILLIGAN (Phil-Heidi)

(Fig. B1, No. 23)

By E.L. Faulkner

LOCATION: Lat. 55°08′30″ Long. 124°03′ 93N/1E
OMINECA MINING DIVISION. The property is located on the southeast flank of Mount Milligan, approximately 95 kilometres north of Fort St. James.

CLAIMS: PHIL 1, 8-12, 21-27, 29, HEIDI 1-4 (286 units).

ACCESS: Approximately 145 kilometres northwest of Prince George via Highway 97, Windy, Phillips Mainline and Rainbow Creek logging roads.

OWNER/OPERATOR: CONTINENTAL GOLD CORPORATION (70%), BP RESOURCES CANADA (30%) joint venture.

COMMODITIES: Gold, copper.

INTRODUCTION

This is an update of a previous report by Faulkner (1986). The property was acquired in 1986 by United Lincoln Resources Inc., a subsidiary of Continental Gold Corporation. A major program of diamond drilling on coincident soil geochemical, induced polarization and magnetic anomalies has led to the discovery of a very large low-grade gold-copper-bearing alkali porphyry system in the contact aureole of ~~a small~~ several porphyritic monzonite stocks.

HISTORY

The Mount Milligan intrusive complex was prospected in the early 1970s for porphyry copper-molybdenum mineralization. Little work was done, and the possibility of gold mineralization was not examined. In 1982 and 1983, BP Selco Ltd. staked the Phil claims as an alkali-porphyry copper-gold prospect. In 1984, prospector Richard Haslinger staked the Heidi claims after discovering copper-gold mineralization in what is now the Creek zone. He later optioned these claims to BP Selco Ltd. Following soil geochemistry, induced polarization and magnetic surveys, BP Selco discovered and trenched a number of targets that appeared to be fracture related. Mixed to occasionally good results were obtained from the Creek, Esker, Boundary and South Boundary zones.

In 1986, United Lincoln Resources Inc., a subsidiary of Continental Gold Corporation, acquired a 70 per cent interest in the property. After some drilling on the Creek and Esker zones, extensive disseminated low-grade copper and gold mineralization was discovered in altered volcanic and volcaniclastic rocks on the south and east flanks of a small porphyritic monzonite stock. (MBX stock)

Significance of RGS survey!? (~K184)

GEOLOGICAL SETTING

Quesnel 'belt'

The property is located in the central part of the Quesnel trough, a thick sequence comprising northwest-trending augite porphyry and hornblende porphyry flows of andesitic to basaltic composition, related pyroclastic rocks and minor tuffaceous argillites belonging to the Takla Group of upper Triassic to lower Jurassic age. The volcanic sequence is intruded by largely coeval calcalkaline and alkali porphyries. The Mount Milligan stock, located approximately 8 kilometres northwest of the area of current drilling, is a multiphase alkalic intrusion. From the summit area southeast, the following phases have been recognized: biotite monzonite, leucogabbro, monzonite, diorite and quartz diorite. An isolated porphyritic complex, of monzonite to diorite composition, on the eastern flank of Mount Milligan, is believed by C.M. Rebagliati (personal communication, 1989) to be of later, possibly Cretaceous age.

incl gabbro

PROPERTY GEOLOGY

Not true! - Creek

There is little outcrop on the property, and none in the area of current drilling. The oldest rocks consist of a thick sequence of approximately equal volumes of volcanic flows and pyroclastics of andesite to basalt composition. The flows comprise massive augite porphyry with lesser amounts of trachyte and hornblende porphyry. The pyroclastics comprise augite and augite-plagioclase tuffs and lapilli tuffs, massive to bedded trachytic tuffs with minor interbedded tuffaceous argillite, and coarse heterolithic volcanic breccias and agglomerates.

A small porphyritic monzonite stock, no more than 400 metres in diameter, has intruded this volcanic

Check dimensions

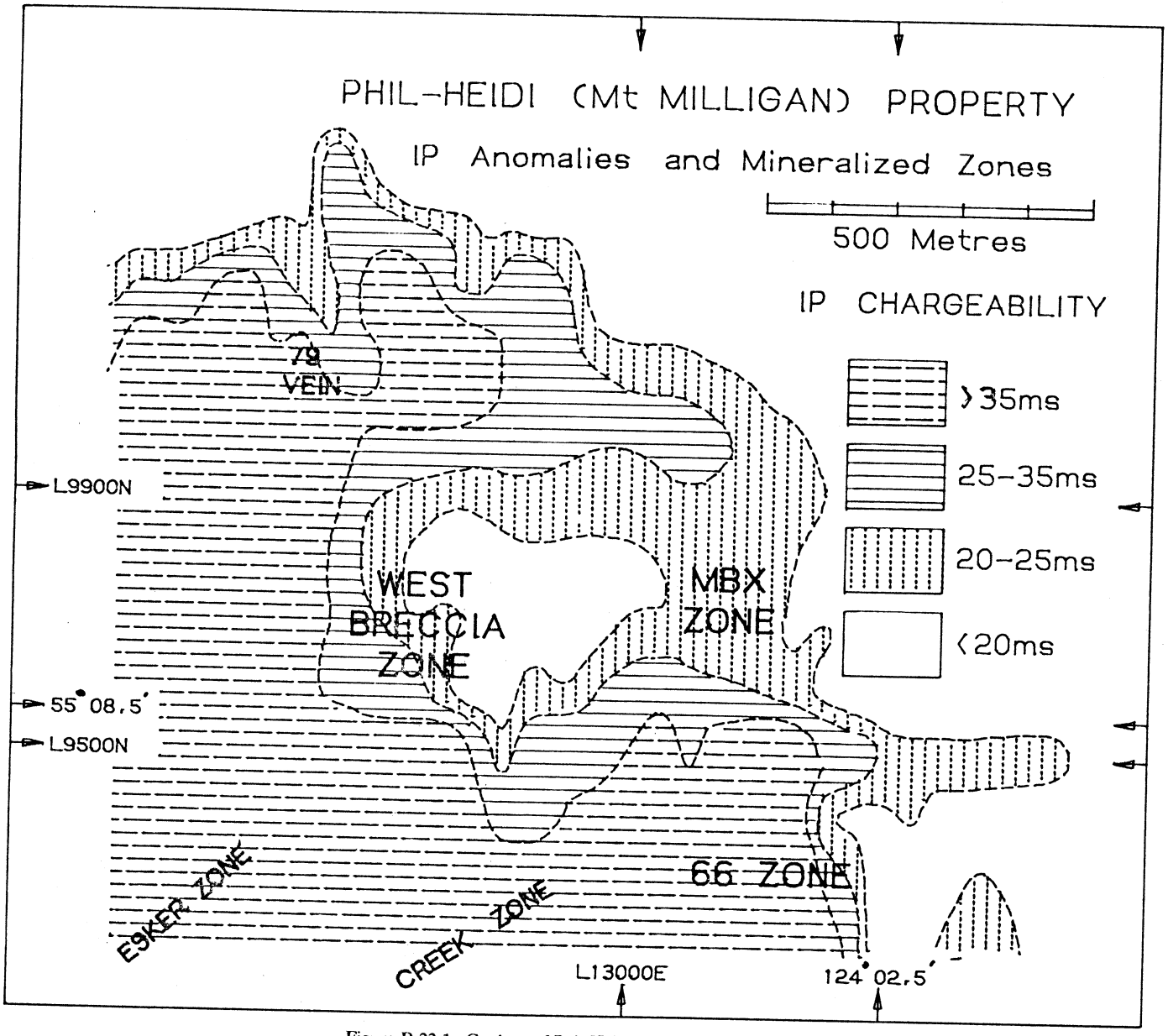

Figure B-23-1. Geology of Phil-Heidi (Mt. Milligan) Property.

sequence. The margin of the stock is strongly and, in places, extensively brecciated. The dips of the volcanic sequence are radial, away from the stock, and vary from 60 degrees near the contact, to between 20 and 30 degrees at distances of 500 metres. A prominant near-concordant dyke of porphyritic monzonite from 10 to 40 metres thick occurs in the middle of the volcanic sequence and is clearly related to the stock. A number of minor porphyry dykes also occur within and near the stock. Some fresh diorite porphyry dykes are of post-mineral age and may be related to the porphyritic complex mentioned earlier.

Widespread weak to moderate pervasive chloritic and propylitic alteration extends outward 2500 metres from the stock. This is over-printed by intense pervasive potassic alteration. Within the stock this takes the form of red potash feldspar in the brecciated margin of the stock, and fine-grained biotite and grey potash feldspar in the surrounding volcanic rocks. Biotite in places may exceed 35 per cent of the rock and potash feldspar may exceed 50 per cent. This zone of intense potassic alteration extends more than 300 metres from the stock. Another zone of potassic alteration occurs approximately 900 metres southeast of the stock and may indicate the presence of another intrusion at depth. Minor amounts of albitic alteration are also present.

Mineralization

Figure B-23-1 shows the induced polarization chargeability and the mineralized zones discovered to date. The central area of low chargeability covers the porphyritic monzonite stock. Three general types of mineralization occur on the property. They represent variations of a single mineralizing event and may grade into each other.

Disseminated to massive auriferous chalcopyrite and pyrite occur in thin subparallel tabular bodies in steeply dipping shear zones or fracture zones that may be radial to the stock. The host rocks are propylitized and contain anomalous gold and copper concentrations. Grades of 3 to 90 grams per tonne gold and 0.02 to 10 per cent copper have been reported over widths of a few centimetres to 2 metres. The Esker zone, Creek zone and 79 vein (Figure B-23-1) are examples of this type of mineralization. Two other zones, the Boundary and South Boundary, are low-grade examples not shown on Figure B-23-1. They are located 350 metres and 900 metres respectively southwest of the Creek zone.

Widespread disseminated and veinlet pyrite and chalcopyrite occurs in the potassic-altered volcanic rocks and to a lesser extent in the propylitically altered rocks surrounding the stock. Gold concentrations increase with increasing pyrite/chalcopyrite ratio, with the highest gold values being obtained at the outer edge of the potassic alteration zone. Minor magnetite and rare bornite are also present. Grades vary from 0.3 to 1.0 gram per tonne gold and 0.2 to 0.8 per cent copper over widths of 10 to 80 metres.

The MBX and 66 zones (Figure B-23-1) are higher grade ends of a mineralized zone that is more than 1000 metres long and 300 metres wide. The MBX zone is a copper-gold zone and the 66 zone is a gold-rich zone.

Veinlet and fracture-controlled chalcopyrite and pyrite mineralization occurs in the West Breccia zone, located in the brecciated margin of the porphyritic monzonite. Limited drilling indicates copper grades of 0.3 to 0.4 per cent and low gold values over widths exceeding 100 metres.

DISCUSSION

The Phil-Heidi property is a major low-grade alkali porphyry system. Two notable features of this system are the higher than usual gold values and the intense potassic alteration. Limited small-scale metallurgical tests have indicated that good recoveries of both copper and gold are possible using conventional flotation and cyanidation methods. There is very good potential for outlining one or two zones of 10 million tonnes or more of open-pittable gold mineralization, and good potential for outlining 100 million tonnes or more of low grade gold-copper mineralization.

WORK DONE

Since United Lincoln Resources acquired the property, more than 23 000 metres has been drilled in 115 holes of an ongoing drill program.

ACKNOWLEDGMENTS

The cooperation of Jeff Franzen and Mark Rebagliati in providing information and ready access to company plans and reports is greatly appreciated.

REFERENCES

Faulkner, E.L. (1986): Phil, Heidi, *B.C. Ministry of Energy, Mines and Petroleum Resources*, Exploration in B.C. 1985, pages B16-17.