

NAME OF PROPERTY **BERG**

OBJECT LOCATED - quartz monzonite plug.

UNCERTAINTY IN METRES 300. Lat. 53°48'10" Long. 127°25'50"

Mining Division **Omineca** District **Coast, Range 4**

County \_\_\_\_\_ Township or Parish \_\_\_\_\_

Lot \_\_\_\_\_ Concession or Range \_\_\_\_\_

Sec. \_\_\_\_\_ Tp. \_\_\_\_\_ R. \_\_\_\_\_

**OWNER OR OPERATOR**

**DESCRIPTION OF DEPOSIT**

The Berg deposit is associated with Middle Eocene porphyritic rocks that have intruded mainly volcanic rocks of the Middle Jurassic Hazelton Group. These are mainly coarse- to medium-grained andesitic tuffs as well as subordinate flows and breccias. The sedimentary component consists of reworked volcanic source sandstones (greywackes), minor marine shale and siltstone. The volcanic succession strikes approximately northward and is tilted eastward at about 30 degrees. Outside the mineralized area, volcanic rocks are dark grey, grey green, purple and red, with recognizable fragmental textures in well-defined beds. Closer to intrusions, the volcanic rocks are recrystallized to a biotite hornfels.

Intrusive rocks at the Berg include a composite porphyry stock and an older quartz diorite pluton. This quartz diorite is part of a large intrusive body, about 1 kilometer wide, which lies east of the mineralized zone and which extends about 9 kilometers to the south of the Berg deposit. Intruded Hazelton Group rocks are hornfelsed and there is no known inherent

Associated minerals or products - Molybdenum.

see Card 2 ....

**HISTORY OF EXPLORATION AND DEVELOPMENT**

The Berg property is located in the Tahtsa Range some 7 miles north of Tahtsa Lake and about 43 miles southwest of Houston.

Details of the history of early claim staking in the vicinity are not clear. The Lost 1-4 claims, in the early 1970's lying between the Kennco and Sierra Empire Mines Ltd. properties, were awarded to Kennco in 1973 through a court action. For early history see: Set, Lost, Ice, 93 E/14, Ref. Cu 2.

The Berg property was located in the autumn of 1961 by Kennco Explorations, (Western) Limited, as a result of geochemical reconnaissance surveys. The property, comprising 33 recorded claims in 1963, was expanded to 98 claims by 1971. Exploration work began in 1962 and to the end of 1967 included detailed geological, geochemical, and magnetometer surveys, trenching, and some 25,000 feet of diamond drilling in more than 40 holes. Further diamond drilling was reported in 1971 in 3 holes totalling 2,088 feet on Berg 17 and Berg 18 claims.

Canex Placer Limited, a subsidiary of Placer Development Limited, optioned the Berg and Taki groups (119 claims) in 1972. Work by Canex during the period 1972-1974, inclusive, included surface diamond drilling in 46 holes totalling 28,298 feet. Metallurgical testing and further diamond drilling (1,050 metres in 8 holes on Berg 17, 18, 20, 39) was carried out in 1975. "Geological reserves are in the order of 400 million tonnes at 0.4 per cent copper and 0.05 per cent molybdenite, using a 0.25 per cent copper cutoff grade" (CIM Spec Vol 15, p. 274).

Canex Placer Limited was placed in voluntary liquidation on Dec. 31, 1977 and its assets were transferred to the parent company Placer Development Limited. Work by Placer in 1980 included an induced potential survey over 35 k, a magnetometer survey over 50 k, a geochemical soil survey (724 samples), and 1 120 m of diamond drilling in 8 holes. Computed geological reserves range from 90 000 000 mt at 0.51 Cu, 0.050 MoS<sub>2</sub> at 0.40% Cu cutoff to approximately 485 000 000 mt at 0.30% Cu, 0.048% MoS<sub>2</sub> at a 0.15% Cu-equivalent cutoff (Bulletin 66, p. 89).

HISTORY OF PRODUCTION

REFERENCES

Reports of Minister of Mines, British Columbia:  
 1963, p. 28; 1964, p. 56; 1965, p. 87;  
 1966, pp. 105-111<sup>+</sup>; 1967, p. 113.

<sup>++</sup>Panteleyev, A., Drummond, A.D., Beaudoin, Peter G.;  
 Berg; Porphyry Deposits of the Canadian Cordillera,  
 The Canadian Institute of Mining and Metallurgy,  
 Special Volume 15, pp. 274-283, 1976.

Mines Branch, Ottawa; Investigations in Ore Dressing and  
 Metallurgy; Investigation Report 69-14.

White, W.H., Harakal, J.E., Carter, N.C.; Potassium-  
 Argon Ages of Some Ore Deposits in British Columbia;  
 Canadian Institute of Mining and Metallurgy, Bulletin,  
 Vol. 61, No. 679, p. 1332, November 1968.

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 Development Limited".

Geology, Exploration, and Mining; British Columbia Dept.  
 of Mines: 1971, p. 157; 1972, p. 343; 1973, p. 323;  
 1974, p. 245; 1975, p. E 128.

Exploration in British Columbia, BCDM: 1980, p. 318.

Panteleyev, Andrejs; Berg Porphyry Copper-Molybdenum  
 Deposit; Bulletin 66, British Columbia Dept. of Mines,  
 1981.

Carter, N.C.; Porphyry Copper and Molybdenum Deposits  
 West-Central British Columbia; Bulletin 64, p. 129,  
 British Columbia Dept. of Mines, 1981.

Heberlein, D.R. and Godwin, C.I.; Hypogene Alteration at  
 the Berg Porphyry Copper-Molybdenum Property; Economic  
 Geology Vol. 79, 1984, pp. 902-918.

MAP REFERENCES

Map 1064 A, Whitesail Lake, (Geol.), Sc. 1":4 miles -  
 accomp. Memoir 299, Geol. Surv. of Canada, 1959.

#Geology of the Berg, Sc. 1":400 ft., Fig. 15, Report of  
 Minister of Mines, British Columbia, 1966.

Berg Deposit Geology, Sc. 1":830' (approx.), Fig. 3, Spec  
 Vol 15, p. 276.

\*Map 93 E/14, Newcombe Lake, (Topo.), Sc. 1:50,000.

Geology of the Berg Map-Area, Sc. 1":2,000', Fig. 3,  
 Bulletin 66.

REMARKS

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| Comp./Rev. By | DMacR | DMacR |  |  |  |  |  |
| Date          | 12-78 | 08-86 |  |  |  |  |  |

## NAME OF PROPERTY

## BERG

## DESCRIPTION OF DEPOSIT (continued)

mineralization in the quartz diorite stock. It is only adjacent to the composite Berg stock that the quartz diorite is mineralized.

The composite porphyry stock is composed of four intrusive phases, from oldest to youngest: porphyritic quartz monzonite, quartz-plagioclase porphyry, plagioclase-biotite-quartz porphyry and quartz-feldspar porphyry. Late basalt dykes intrude both the stock and surrounding host rocks.

The pinkish to tan-coloured porphyritic quartz monzonite occurs centrally in the composite stock and is exposed on surface and in drill holes as a circular mass about 600 meters in diameter. Around the northern periphery of the porphyritic quartz monzonite lies a 200-meter-wide band of plagioclase-biotite-quartz porphyry which intrudes and contains fragments of both the porphyritic quartz monzonite and the quartz-plagioclase porphyry.

The fine-grained quartz-plagioclase porphyry outcrops to the west, but in contact with the porphyritic quartz monzonite. Although it extends 800 meters east-west and 300 meters north-south on surface, diamond drilling has indicated that it has a funnel shape or volcanic-neck configuration. A distinctive quartz-feldspar porphyry that cuts all previously described phases occurs as several dykes of irregular width that trend N50°E and appear to dip steeply to the west. The largest dyke trends across the composite Berg stock and continues to the northeast into older quartz diorite.

A quartz-sulphide stockwork occurs in an annular ring within and around the composite stock and is imposed on both the Hazelton Group rocks and partly on the quartz diorite stock. Surface exposures are limonite stained and deeply weathered. Beneath the limonite-stained area, chalcocite (digenite?) and covellite are the most important secondary copper minerals. The blanket of supergene enrichment has increased the copper grade of the primary mineralization by a factor in the order of 1.25.

Disseminated chalcopyrite and molybdenite are rare over-all. Locally, the three main intrusive phases and quartz diorite are mineralized with disseminated chalcopyrite and very rare disseminated molybdenite, but truly disseminated ore minerals are greatly subordinate to those in fractures, veins and quartz stockworks.