

NAME OF PROPERTY

A.M. (CANAM)

LOCATION-north end of breccia zone, A.M. claim (Lot 1586).

Radius of uncertainty - 50 metres.
Lot. 49°09'50" Long. 121°01'25"

Mining Division New Westminster District Yale

County Township or Parish

Lot Concession or Range

Sec. Tp. R.

OWNER OR OPERATOR AND ADDRESS

DESCRIPTION OF DEPOSIT

The claims are underlain mainly by "fine-grained, tuffaceous pelite of the Ladner Group" (Monger, J.W.H., 1970). The sediments, of Lower and Mid Jurassic age, have been intruded by a great many small sills and dykes of mafic and ultramafic rocks, by scattered dykes and sills of quartz diorite, and, to the northwest, by the Invermay quartz diorite stock. The sediments are steeply folded about a northwest trending, northwest plunging axis. Faults are numerous but no large displacements have been recognized. The mineralization occurs in a pipe-like zone of brecciated sediments having a maximum length of about 1,200 feet and a width of about 400 feet. Judging from the rusty outcrops, all of the breccia pipe is more mineralized than the surrounding sediments, but weakly so except near the southeast end and the northwest tip.

The A.M. orebody is in the northwest tip of the pipe. It is crescentic in plan, approximately following the breccia wall around the tip, with both horns pinching out to the southeast. It plunges with the breccia; that is, steeply southwest down to No. 6 level then steeply northeast down to No. 15. Pyrrhotite, chalcopyrite, and less pyrite occur as pockets in the matrix adjacent to fragments, and subordinately as veinlets cutting both matrix and frag-

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Associated minerals or products of value - Molybdenum, silver.

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located on the western boundary of Manning Provincial Park, 24 miles southeast of Hope. The claims lie at elevations of 5,000 to 6,500 feet at the head of a northeasterly flowing tributary of the Skagit River.

The showings were discovered and staked in 1930 by Mr. G. Allison, of Hope, as the A.M. group of 17 claims. The Consolidated Mining & Smelting Company of Canada Limited optioned the property that same year and began underground exploration work. By 1938 the workings consisted of 6 adits totalling 2,478 feet of crosscuts and drifts. Eight claims, the A.M., A.M. 1-5, Augustus No. 5 Fraction, and Rex No. 1 Fraction (Lots 1577, 1579, 1581, 1584-1587) were Crown-granted to the company in 1939.

The property was subsequently acquired by J.W. Heffernan and associates, of Vancouver, who incorporated Canam Amalgamated Mines Ltd. in 1944. Diamond drilling was reported in 1947 in 2 surface holes totalling 970 feet. The company name was changed in 1949 to Canam Mining Corporation Ltd. A wholly owned subsidiary, Canam Development Co. Ltd., was incorporated in November 1950 to carry on the exploration work; the name was changed in January 1951 to Canam Copper Company, Ltd. Work resumed on the property in 1951 with diamond drilling in 6 short holes on No. 6 level; a further 1,155 feet of drilling was done on this level in 1952. In March 1953 No. 10 adit was begun and before year end driven 2,765 feet to reach and partially explore the breccia zone; also, during the year, No. 7 adit was collared and driven 110 feet. Adits 1 and 7 were driven to test the southeast end of the breccia zone.

The American Metal Company, Limited, optioned the property in July 1954. Exploration work by the company in No. 10 adit included 120 feet of drifting, and diamond drilling in 11 flat holes totalling 2,500 feet. The option was abandoned in November 1954. Mogul Mining Corporation Limited optioned the property in July 1955. Initial work by the company included 3,234 feet of diamond drilling on surface and in No. 10 level. In order to locate a new low-level adit, the Parks Branch allowed use of a small area in Manning Park under Park Use Permit No. 10. The 4,300 level (No. 15 adit) had been driven westerly for 5,454 feet when work stopped in February 1957. Exploratory diamond drilling totalling 1,181 feet had been done on surface and in the 4,900 and 5,500 levels during this

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Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.

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HISTORY OF PRODUCTION

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

Drill indicated reserves were reported at 2,800,000 tons in the order of 1.35% copper with \$3 to \$4 per ton in precious metals, and an inferred geologic potential of some 10 to 20 million tons 0.8% copper, or 90 million tons of 0.3 to 0.4% copper (Giant Mascot Mines, 1973 Annual Report).

Reserves were reported in 1976 at 8 million tons averaging 0.61% copper (Characteristics of Some Canadian Cordillera Porphyry Prospects, CIM, Spec. Vol. 15, Table 1, Deposit No. 24).

The company name (Giant Mascot) was changed in 1977 to GM Resources Limited. Work in 1979-80 included 1 691 m of diamond drilling in 11 holes and 36 m of underground development. In June 1983 the company was amalgamated with Campbell Resources Inc under the latter name. Drilled reserves are reported as 2,600,000 tons at 1.28% Cu, 0.65 oz/t Ag (Campbell Resources 1986 Annual Report).

Bethlehem Resources Corporation (formerly Parkside Petroleum Corp.) in early 1988 purchased the property from Campbell Resources by the issue of shares to Campbell. In 1988, Bethlehem carried out diamond drilling and revised the tonnage in the AM Breccia to underground mineable reserves of 3,698,000 tons of 1.17% Cu, 0.015 oz/ton Au, 0.6 oz/ton Ag.

The open pit reserves for the Am Breccia were 22,800,000 tons of 0.75% Cu, 0.012 oz/ton Au and 0.35 oz/ton Ag. (George Cross News Letter No. 240, Dec. 14, 1989). Bethlehem called this property and Invermay (92 H/3, Ag 1) the Copper Giant.

MAP REFERENCES

REMARKS

BCI 92H/SW-1.

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DESCRIPTION OF DEPOSIT (continued)

ments. One gouge zone traversing the breccia contains lenses of massive arsenopyrite, pyrite, and chalcopyrite which appear to have undergone considerable movement. The breccia consists of angular to sub-rounded sedimentary fragments, most under 1 foot in length but including some much larger blocks. The breccia matrix is composed of the secondary minerals calcite, quartz, chlorite, carbonate, alkali feldspar, white mica, and kaolin. Tourmaline is found in fractures in both fragments and matrix. Chalcopyrite occurs with pyrrhotite and pyrite and accessory magnetite, molybdenite, uraninite, sphalerite, arsenopyrite, galena, and scheelite. Almost all mineralization occurs in the matrix.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)
period. The option was given up in 1957. Consolidated Mining & Smelting held the property by option during 1958 and 1959. Work included surface geological mapping and 4,241 feet of diamond drilling in 17 holes. The option was given up in November 1959.

Canam Copper resumed work on the property in 1960. Extension of No. 15 adit was begun and this reached the breccia zone in 1961 at a length of 6,400 feet from the portal. The adit was extended 220 feet into the breccia zone and at the eastern edge of the zone a raise was driven 136 feet. Diamond drilling totalling 2,200 feet was done from these new openings. Work was suspended in August 1961. The workings at that time consisted of 9 adit levels driven westerly between elevations of 4,300 and 5,850 feet. The company resumed work in 1963 with 1,052 feet of diamond drilling in No. 15 adit and 133 feet of drilling in 2 surface holes near No. 7 adit.

Giant Mascot Mines Limited optioned the 8 Crown-granted claims and 59 recorded claims from Canam in 1964. The recorded claims included the Invermay property located 1 mile N20°W of the A.M. at the head of Silver Daisy Creek (see 92 H/3, Ag 1). During 1964 a 280 foot raise was driven from No. 15 level and a 275 foot winze from No. 10 level. From these openings diamond drilling in 56 holes totalling 10,706 feet was done to explore the east and west limbs and nose of the main orebody. Further diamond drilling in 1965 totalled 8,724 feet in 53 underground holes and 1,249 feet in 5 surface holes. Reserves at that time were estimated at 2,130,000 tons averaging 1.32% copper, 0.033% molybdenum, 0.71 ounce silver and 0.015 ounce gold per ton after 15% dilution. (Western Miner, Sept. 1971).

Work during 1967-1970, inclusive, included 3,718 feet of drifting and raising and 5,800 feet of diamond drilling on No. 1 and No. 15 levels, geological mapping, geochemical and geophysical surveys. During 1972 work at the south end of the breccia zone included bulldozer trenching, sampling, and geological mapping. The road was extended about 1 mile into the Twentysix Mile Creek area to test a geochemically anomalous area known as the 26-mile zone. The 10 level and the 26-mile areas were further tested with induced polarization, electromagnetic, and magnetometer surveys and also with geochemical surveys. Diamond drilling totalling 651 feet on the AM breccia zone and the 10 level area.

continued reverse Card 1

HISTORY OF PRODUCTION

REFERENCES

Monger, J.W.H.; Hope Map-Area, West Half, British Columbia; Paper 69-47, p. 62, Geol. Surv. of Canada, 1970.

+Eastwood, G.E.P.; A.M. and Invermay; Report of Minister of Mines, British Columbia, 1965, pp. 206-213.

+++Eastwood, G.E.P., & Waterland, T.M.; A.M.; Report of Minister of Mines, 1968, pp. 78-82.

++McKechnie, N.D.; A.M.; Report of Minister of Mines, British Columbia, 1959, pp. 122-124.

Bacon, W.R.; A.M.; Report of Minister of Mines, British Columbia, 1954, pp. 152-159.

White, W.H.; A.M.; Report of Minister of Mines, British Columbia, 1949, pp. 210-213.

Reports of Minister of Mines, British Columbia; 1930, p. 205; 1931, p. 115; 1933, p. 175; 1938, pp. F-8, 9, 10; 1948, p. 155; 1950, p. 167; 1951, p. 194; 1952, p. 206; 1953, p. 157; 1955, p. 73; 1956, p. 144; 1957, p. 66; 1958, p. 54; 1960, p. 87; 1961, p. 85; 1963, p. 89; 1964, p. 136; 1967, p. 66.

Geology, Exploration and Mining; British Columbia Dept. of Mines; 1969, p. 199; 1970, p. 251; 1971, p. 257; 1972, p. 100.

Mineral Policy Sector; Corporation Files: "Cominco Ltd."; "Canam Mining Corporation Ltd."; "Canam Copper Company, Ltd."; "Mogul Mines Limited"; "Giant Mascot Mines Limited"; "Campbell Resources Inc."

Exploration in British Columbia; British Columbia Dept. of Mines: 1979, p. 141; 1980, p. 187.

George Cross News Letters: 1988, No. 36, 81.

MAP REFERENCES

Map 12-1969, Hope, (West Half), (Geol.), Sc. 1:250,000 - accomp. Paper 69-47.

Map 737 A, Hope, Yale & New Westminster Districts, (Geol.), Sc. 1":4 miles.

*Map 92 H/3, Skagit River, (Topo.), Sc. 1:50,000.

Map 8533 G, Skagit River, (Aeromag.), Sc. 1":1 mile.

#Surface geology of part of the AM group, Sc. 1":260 ft., Fig. 20, Report of Minister of Mines, British Columbia, 1959, p. 123.

AM Workings, Sc. 1":750 ft., Fig. 29, Report of Minister of Mines, British Columbia, 1965, p. 208.

Isometric diagram of Main Deposit, AM group, Sc. 1":200 ft., Fig. 13, Report of Minister of Mines, British Columbia, 1954, p. 153.

REMARKS

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FEB 1973
 SEPT 1978
 DMacR Mar. 1986
 DMacR June 1988
 JL Feb/1990