

NAME OF PROPERTY ROCHER DEBOULE (JUNIPER)

OBJECT LOCATED - No. 2 vein.

UNCERTAINTY IN METRES 300. Lat. 55°09'35" Long. 127°38'20"

Mining Division Omineca District Cassiar

County Township or Parish

Lot Concession or Range

Sec Tp. R.

OWNER OR OPERATOR

DESCRIPTION OF DEPOSIT

The mine is on the western periphery of the northern dome of the Upper Cretaceous Rocher Deboule stock. The contact between the porphyritic granodiorite of the stock and the Upper Jurassic argillaceous and tuffaceous sediments of the Hazelton group strikes N50°W through the Log Cabin, Juniper, and Jack Pine claims and dips about 65°SW. The mine workings lie almost wholly within the granodiorite, the contact being crossed near the western ends of the drifts on the 1000 and 1200 levels. Dykes are not abundant but occur in four main rock types: fine-grained quartz monzonite, fine-grained diorite, porphyritic andesite, and a greenish-grey aphanitic dyke.

The granodiorite is traversed by 4 well defined veins ranging in width from 1 to 8 feet, which strike about N75°E and dip from 35 to 65° north.

The veins occur in fairly uniformly spaced parallel shears of small total movement. These shears appear to represent enlargements and extensions of joints related to the cooling of
see Card 2

Associated minerals or products - Gold, silver, lead, zinc, uranium, cobalt,

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located between elevations of 4,100 and 5,300 feet at the head of Juniper Creek, in the Roche Déboulé Range, 5 miles south of South Hazelton. The Hazelton View property adjoins to the west.

The showings were discovered and staked in 1910 by Messrs. Munroe and Sargent, of Hazelton. The claims comprising the Juniper group were bonded to Messrs. Trimble and Pemberton who began development work early in 1911. In the fall of 1911 the property was bonded to the Rocher De Boule Copper Co., of Phoenix, Arizona. Development work to early in 1913 when operations were suspended totalled about 1,300 feet on 4 veins. Nine claims, the Juniper, Balsam, Jack Pine, Timber Line, Iowa, Log Cabin, Balsam Fr., Pie Fr., and Third Fr. (Lots 2400-2408 respectively) were Crown-granted to the company in 1913.

A 2 year lease on the property was given in 1914 to Montana Continental Development Company, of Butte, which was largely made up of the majority stockholders of the Rocher De Boule company. Preparations for production included the installation of a surface tram and a 4½ mile aerial tram in two separate sections. Ore from the upper part of No. 4 vein was shipped to the Granby smelter at Anyox during the period from April 1915 until the lease expired in February 1916.

Development work, which had been neglected, was resumed by the Rocher De Boule Company on Nos. 2 and 4 veins and by 1917 a 3,100 foot crosscut (1200 level) had been driven to intersect all the known veins. Production during 1917-18 was largely from No. 2 vein. The mine closed in October 1918 due to a lack of developed ore and a drop in the price of copper. Development work to that date on the 4 veins had been carried out on 5 levels, the 100, 300, 500, 1,000, and 1,200, from 3 main crosscut adits on the 300, 1,000, and 1,200 levels. The main workings were on Nos. 2 and 4 veins and included more than 2 miles of main crosscuts and drifts, 2,200 feet of raises, and 330 feet of winze. The surface plant and machinery were removed from the property during 1925-26.

Aurimont Mines, Limited optioned the property in November 1928. Hand sorted ore was mined from No. 2 vein on the 1000 level. Operations were suspended in April 1929.
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HISTORY OF PRODUCTION

From 1915 to November 1952, 52,719 tons of ore were milled or shipped from this property. From this ore 4,492 ounces of gold, 84,477 ounces of silver, 6,203,584 pounds of copper, 751 pounds of lead, and 7,219 pounds of zinc were recovered.

MAP REFERENCES

Geological Map of the Rocher Deboule Range, Sc. 1":1 mile - accomp. Bulletin No. 43, British Columbia Dept. of Mines, 1960.

Geology of part of Rocher Déboulé Mountains, Sc. 1":1 mile, Report of Minister of Mines, B.C., 1954, p. 89.

#Map No. 1732, Principal Veins, Head of Juniper Creek, Rocher Deboule Range, Sc. 1":800' - accomp. Memoir 110, Geol. Surv. of Canada.

Map 5245 G, Skeena Crossing, (Aeromag.), Sc. 1":1 mile.

*Map 93 M/4, Skeena Crossing, (Topo.), Sc. 1:50,000.
General Geology West-Central BC, Sc. 1":5 miles, Fig. 8, accomp. Bulletin 64.

REMARKS

REFERENCES

Reports of Minister of Mines, British Columbia:

1910, pp. 86, 88; 1911, pp. 80, 96; 1912, p. 113; 1913, pp. 107, 422; 1914, pp. 172, 185-187; 1915, pp. 77, 369; 1916, pp. 89, 106-108, 436; 1917, p. 101; 1918, p. 111; 1928, p. 158; 1929, pp. 155, 429; 1930, p. 138; 1950, p. 100; 1951, p. 110; 1952, pp. 86-92⁺; 1954, p. 86.

O'Neill, J.J.; Preliminary Report on the Economic Geology of the Hazelton District, British Columbia: Memoir 110, pp. 7-14, Geol. Surv. of Canada, 1919.

++Kindle, E.D.; Mineral Resources, Hazelton and Smithers Areas, Cassiar & Coast Districts, B.C.; Memoir 223 (Revised Edition), pp. 57-63, Geol. Surv. of Canada, 1954.

+++Brown, A. Sutherland; Geology of the Rocher Deboule Range; Bulletin No. 43, pp. 59-67, British Columbia Dept. of Mines, 1960.

Mines Branch, Ottawa; Investigations in Ore Dressing and Metallurgy; Investigation No. MD 2871, January 1952; Investigation No. MD 2946, December 1952.

Mineral Policy Sector; Corporation Files: "Aurimont Mines, Limited"; "Hazelton Copper Mines, Limited"; "Western Tungsten Copper Mines Limited"; "War Eagle Resources Ltd.".

Lang, A.H.; Canadian Deposits of Uranium and Thorium; Economic Geology Series No. 16, p. 42, Geol. Surv. of Canada, 1952.

Carter, N.C.; Porphyry Copper and Molybdenum deposits of West-Central British Columbia; Bulletin 64, p. 117, BCDM, 1981.

Exploration in British Columbia; BCDM: 1982, p. 314.

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Date	11-79	05-87					

NAME OF PROPERTY

ROCHER DEBOULE (JUNIPER)

DESCRIPTION OF DEPOSIT (continued)

the stock. The occurrence of pegmatite in the veins and sub-parallel joints points to an early origin of the vein system. The mineralogy shows a passage from high temperature during the deposition of magnetite through moderately high temperature during the deposition of chalcopyrite and cobalt-iron sulpharsenides to the obviously later and cooler sphalerite-tetrahedrite mineralization. Kindle (1954, pp. 62-63) points out that the known orebodies occur within the outer 1,500-foot shell of the stock and that the temperature gradient may have been an important control in the deposition.

The No. 1 vein where exposed on surface at about 4,200 feet elevation is mineralized with chalcopyrite in hornblende and quartz. On the 1200 level the vein comprises a 2 foot width of breccia cemented by calcite with traces of chalcopyrite. The No. 2 vein, on the 1200 level east of the Juniper fault, consists of lenses of crushed rock about 2 feet wide, cemented with quartz and with some arsenopyrite, pyrite, chalcopyrite, and malachite, that alternate with tight fractures. West of the fault to about 150 feet beyond the Rocher dyke the shear is relatively tight and contains some crushed lenses 1 to 3 feet wide, but rarely more than 1 foot of vein matter. Sulphide minerals are mostly sphalerite, tetrahedrite, chalcopyrite, galena, and pyrite with comb fillings of siderite. From this point which is 120 feet short of the winze to 250 feet beyond the winze, the vein is relatively wide (1 to 6 feet) and is well mineralized with chalcopyrite, cobalt sulpharsenides, pyrrhotite, tetrahedrite, and occasional nests of scheelite. On the 1000 level more of the hornblendic ores occur. The eastern 300 feet of the vein is 2 to 5 feet wide with much hornblende-chalcopyrite ore. For 900 feet from this zone to the hornfels contact it is mostly mineralized, except for the Rocher dyke. In this distance the vein is 1 to rarely as much as 3 feet wide and generally the mineralization is of the chalcopyrite-hornblende type. Throughout No. 2 vein, in areas of hornblende-chalcopyrite ore, the walls contain small but consistent amounts of copper, possibly as chalcocite. The No. 3 vein as exposed by 600 feet of drift on 1200 level is chiefly a fault with a 12 foot wide andesite dyke on the hangingwall and containing very little quartz and calcite

see reverse Card 2

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

Hazelton Copper Mines, Limited optioned the property early in 1930 and began rehabilitation of the workings but declining metal prices forced closure shortly thereafter.

Western Uranium Cobalt Mines, Limited purchased and reopened the property in 1950. Some development work was done on 300 and 1200 levels. A 100 ton per day mill was installed and put into operation in May 1952. Ore was mined on No. 2 level, where some 720 feet of drift and crosscuts and 636 feet of raises were driven before the mine closed in November 1952. That same month the company name was changed to Western Tungsten Copper Mines Limited. In August 1955 Farwest Tungsten Copper Mines Limited was incorporated to acquire all the assets of Western Tungsten; the company name was changed in 1959 to Farwest Mining Limited.

"In November 1951, Hill and Legg, consulting engineers of Vancouver, were retained by the company to report on the ore reserves. About 100 samples taken during the course of their examination indicated two orebodies on 1200 level lying east and west of the winze. The orebody east of the winze was considered to be 130 feet long and that west of the winze 147.5 feet. A mining width of 4 feet was assumed and that the ore has a dip length equal to its strike length. The reserve in these two shoots was calculated by them to be 11,050 tons." (MMAR 1952, p. 91). A small part of the 12,814 tons mined in 1952 came from stopes west of the winze on 1200 level. (Bull. 43, p. 67).

War Eagle Resources Ltd. apparently held the property in 1965 but there is no report of work done. In 1978 J. Hutter leased the property to Arbor Resources Inc. Unspecified work was done in 1979 and further work planned for 1980 (Arbor Resources Application for listing 10/80). In 1982 D. Groot Logging, as operator, carried out geological mapping and sampling. Reserves are reported as 180 000 tonnes at 11.34 g/mt Au, 141.75 g/mt Ag, 4% Cu, 4% Co (Preliminary Map 65, BCDM, 1986).

DESCRIPTION OF DEPOSIT (continued)

vein matter. The No. 4 vein, in the upper levels, contained four distinct ore shoots comprising chalcopyrite in hornblende but these terminated abruptly with little disseminated mineralization between them. On 1200 level the vein consists either of barren shear or of pegmatitic hornblende-quartz-feldspar with almost no metallic minerals. The upper section of the vein contained, in addition to chalcopyrite, variable amounts of magnetite, pyrrhotite, pyrite, scheelite, cobaltite, arsenopyrite, molybdenite, tetrahedrite, smaltite-chloanthite, some complex cobalt-nickel sulpharsenides, and a little uraninite. Banded milky quartz veins containing small amounts of galena, sphalerite, tetrahedrite, pyrite, and chalcopyrite traverse the chalcopyrite-hornblende ore, or lie along the hanging- or footwall sides of the main veins in some places, particularly along the easterly sections of No. 2 vein.