

PRODUCT COPPER  
PRODUIT

PROVINCE OR TERRITORY PROVINCE OU TERRITOIRE British Columbia

N.T.S. AREA 92 B/13  
RÉGION DU S.N.R.C.

REF. CU 1  
RÉF.

NAME OF PROPERTY  
NOM DE LA PROPRIÉTÉ TYEE, LENORA, RICHARD III (TWIN "J")

OBJECT LOCATED - Tyee claim (Lot 36).  
OBJET LOCALISÉ

UNCERTAINTY 300 m FACTEUR D'INCERTITUDE	Lat. 48°52'00" Lat.	Long. 123°47'00" Long.
Mining Division Victoria Division minière	District District	Chemainus & Somenos
County Comté	Township or Parish Canton ou paroisse	
Lot Lot	Concession or Range Concession ou rang	
Sec Sect.	Tp. Ct.	R. R.

OWNER OR OPERATOR/PROPRIÉTAIRE OU EXPLOITANT

DESCRIPTION OF DEPOSIT/DESCRIPTION DU GISEMENT

The underlying rocks are Pennsylvanian-Permian Sicker Group sedimentary and volcanic rocks cut by "Tyee porphyries", which are tentatively considered as late Palaeozoic intrusions into the Sicker group. Sedimentary and volcanic rocks at the mine form a band 100-150' wide striking N70°W and dipping 50°SW. Rhyolite porphyry sills follow the folding of the sediments. Fine-grained diorite occurs as sills in the sediments; coarse-grained diorite occurs as dykes and irregular intrusive bodies. Orebodies have been localized structurally by a regional fracture zone and by drag folds in the narrow band of sediments. The two main orebodies, known as the North and South orebodies, are lenticular zones lying along two main dragfolds; the north measures about 1,700' along strike, 120' down dip, and from 1-10' thick; the south, which is 150' from the north, measures 2,100' along strike, 150' down dip, and is about 20' thick. Two steep dipping east-west faults displace the orebodies. The ore is a fine-grained replacement of folded tuffs.

see Card 2 ....

Associated minerals or products - Gold, silver, lead, zinc, cadmium, barite.  
Minéraux ou produits associés

HISTORY OF EXPLORATION AND DEVELOPMENT  
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

The property is located at approximately 1,800' elevation on the west side of Big Sicker Mountain, some 8 miles south of Ladysmith and 35 miles northwest of Victoria.

The mineralized zones are covered mainly by three claims, the Tyee, Lenora, and Richard III, which were initially developed as separate operations.

Development work on the Tyee claim (Lot 36) began in 1897 and the claim was Crown-granted to C. Livingstone in 1898. The claim was apparently acquired by The Tyee Development Company, Limited in 1899 and transferred the following year to The Tyee Copper Company, Limited, of London, England. At Ladysmith the company built a smelter which was put into operation in December 1902. By 1903 the underground workings exceeded 2 miles in length, and the main shaft was extended to a depth of 1,250' in 1906. The mine closed in 1907, the south zone, which was mainly copper, having been mined out; the north zone, containing mainly zinc values, was unprofitable with the treatment methods available.

Ladysmith Smelting Corporation, Limited was incorporated in February 1917, apparently to acquire the smelter, however no activity was reported. The assets of Tyee Copper Company were optioned by Messrs. Thompson and Carmichael & associates who incorporated Ladysmith Tidewater Smelters, Limited in April 1927; some rehabilitation and development work was carried out during the year.

The Lenora claim (Lot 35), owned and under development by H. Smith & associates in 1897, was Crown-granted to The Mount Sicker and British Columbia Development Company, Limited, of London, England, in 1899. Development work continued until the property became involved in litigation in 1902. A smelter, reportedly built by Northwest Smelting & Refining Company, was installed at Osborne Bay (Crofton smelter) to treat ore from the Lenora and other properties; the smelter was "blown in" in January 1906. Work on the Lenora resumed in 1907 when the property was bonded by Vancouver Copper Company, Limited, of London, England. A small amount of ore was shipped before work ceased, apparently later that same year. Further work was done in 1924 by R.G. Mellin, of Duncan, who acquired the property under lease and bond; some ore was shipped from an adit driven to explore a new showing. In 1926 Mellin held both the Lenora and Tyee properties and some rehabilitation work was reported.

Mineral Policy Sector, Department of Energy, Mines and Resources, Ottawa  
Secteur de la politique minière, ministère de l'Énergie, des Mines et des Ressources, Ottawa

502184

HISTORY OF PRODUCTION/HISTORIQUE DE LA PRODUCTION

Recorded production from the Tyee, Lenora, and Richard III for the period 1898-1964 totals 305,787 tons. From this ore 37,666 ounces of gold, 802,795 ounces of silver, 19,892,359 pounds of copper, 362,852 pounds of lead, 4,246,371 pounds of zinc, and 9,853 pounds of cadmium were recovered.

REFERENCES/BIBLIOGRAPHIE

+Stevenson, J.S.; Geology of the Twin "J" Mine; Structural Geology of Canadian Ore Deposits, Vol. 1, pp. 88-93, The Canadian Institute of Mining and Metallurgy, 1948.

Clapp, C.H.; Southern Vancouver Island; Memoir 13, pp. 180-187, Geol. Surv. of Canada, 1912.

Cooke, H.C.; Sooke and Duncan Map-Area; Memoir 96, p. 387, Geol. Surv. of Canada, 1917.

Muller, J.E.; Victoria Map-Area, British Columbia; Paper 75-1 A, p. 23, Geol. Surv. of Canada.

Reports of Minister of Mines, British Columbia: 1897, p. 567; 1898, pp. 1147, 1148; 1899, pp. 809, 852; 1900, pp. 928, 929, 944; 1901, pp. 1117, 1122; 1902, pp. 238-250; 1903, pp. 206-209; 1904, p. 252; 1905, p. 216; 1906, p. 207; 1907, p. 154; 1916, p. 311; 1924, pp. 252, 368; 1925, p. 303; 1926, p. 334; 1927, p. 339; 1928, p. 365; 1929, p. 371; 1930, p. 289; 1931, p. 164; 1935, p. G 46; 1936, p. F 63; 1939, p. 90; 1940, p. 74; 1942, p. 70; 1943, p. 69; 1944, p. 67; 1946, p. 191; 1947, p. 183; 1949, p. 224; 1950, p. 180; 1951, p. 199; 1952, p. 214; 1964, p. 168; 1967, p. 79; 1968, p. 107.

Mineral/ Sector; Corporation Files: "Tyee Copper Company, Limited"; "Ladysmith Smelting Corporation, Limited"; "Ladysmith Tidewater Smelters, Limited"; "Pacific Tidewater Mines Limited"; "Tyee Consolidated Mining Company, Limited"; "Tyee Mining and Milling Company, Limited"; "The Twin "J" Mines, Limited"; "Jason Mines Limited"; "Vancouver Island Base Metals, Limited"; "Base Metals Mining Corporation Limited"; "Mount Sicker Mines Ltd.".

Mineral/ Sector; Metal Controller File 167-Z1-2-17 C.

Geology, Exploration and Mining; British Columbia Dept. of Mines: 1969, p. 224; 1970, p. 291; 1972, p. 240; 1974, p. 163; 1978, p. E 119.

Exploration in British Columbia; British Columbia Dept. of Mines: 1980, p. 153.

Geological Fieldwork, British Columbia Dept. of Mines: 1982, p. 46.

George Cross News Letters: 1984, No. 64.

BCI 92 B/NW - 1, 2, 3, 112

MAP REFERENCES/RÉFÉRENCES CARTOGRAPHIQUES

Map 42 A, Duncan, (Geol.), Sc. 1":2 miles - accomp. Memoir 96.

Victoria Map-Area, (Geol.), Sc. 1":5 miles (approx.) - accomp. Rept. by Muller, p. 22.

Map 1069 A, Victoria-Vancouver, (Geol.), Sc. 1":8 miles.

#Map 92 B/13 W, Duncan, (Topo.), Sc. 1:50,000.

REMARKS/REMARQUES

Comp./Rev. By Comp./rév. par	DMacR	DMacR					
Date Date	07-80	02-86					

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PROVINCE OR PROVINCE OU British Columbia  
TERRITORY TERRITOIRE

N.T.S. AREA 92 B/13  
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REF. Cu 1  
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NAME OF PROPERTY TYEE, LENORA, RICHARD III (TWIN "J")  
NOM DE LA PROPRIÉTÉ

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)  
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

DESCRIPTION OF DEPOSIT/DESCRIPTION DE GISEMENT (continued)

Two types of ore are found: a 'barite-ore' consists of a fine-grained mixture of pyrite, chalcopryrite, sphalerite and a little galena in a gangue of barite, quartz, and calcite. A 'quartz-ore' consists mainly of quartz and chalcopryrite. These two types are found together, with the 'quartz ore' replacing the 'barite ore'.

Shaft sinking was reported on the Richard III claim in 1898. The claim was Crown-granted to Lenora Richards in 1900. Richard III Development Company, Limited was incorporated in November 1902 to acquire the property. By 1903 the shaft had been sunk to 500'. Intermittent development work continued until the mine closed in 1907. In 1924 the property was leased from the company by H. Maynard & associates, of Victoria, and underground work was carried out during 1924-25. The Richard III claim was re-Crown-granted to Mabel E. Martin in 1925.

Pacific Tidewater Mines Limited was incorporated in February 1928, as a subsidiary of British Metals Corporation, to acquire the Tyee property. Leases and options to purchase the Lenora and Richard III, which were held by R.G. Mullin, were acquired by the company; the leases were abandoned in 1929. The Tyee property apparently reverted to Ladysmith Tidewater Smelters, Limited in 1930.

Tyee Consolidated Mining Company, Limited was incorporated in March 1935 to acquire the Tyee and Lenora properties and a small amount of underground work was done during the year. Sheep Creek Gold Mines, Limited optioned the Tyee, Lenora, and Richard III properties in December 1939, and during 1940 carried out some drifting and diamond drilling. Tyee Mining and Milling Company, Limited was incorporated in June 1941 to acquire the property under lease from Tyee Consolidated. Plans to install a 100 ton-per-day mill at Chemainus were not carried out and the company charter was surrendered in November 1942.

Jason Mines Limited reached an agreement with Tyee Consolidated whereby a new operating company, The Twin "J" Mines, Limited, was incorporated in November 1942 to acquire and operate the Lenora, Tyee, and Richard III properties. Underground work began in April 1942 and a 150 ton-per-day mill was installed and put into operation in July 1943. The operation was under contract with Wartime Metals Corporation until May 19, 1944 when the contract was cancelled and the mine closed. Twin "J" re-opened the mine in 1946 and the mill operated from the spring of 1947 until September of that same year when the mine closed; most of the ore came from the north zone.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)  
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

Vancouver Island Base Metals, Limited, incorporated May 1948, acquired the property from Twin "J" for 400,000 shares; control of Vancouver Island Base Metals was acquired in 1949 by Base Metals Mining Corporation Limited. Part time rehabilitation and underground work was carried out during 1949-50. The mill operated from June 1951 until January 21, 1952 when the mine closed. Lessee Wm. Howden, of Vancouver, mined ore from a pillar in the Lenora workings in 1964.

Mount Sicker Mines Ltd. was incorporated in September 1966 to acquire 34 Crown-granted claims comprising the property. Work during the period 1967-70 included geological mapping, geochemical and geophysical surveys, trenching and diamond drilling. Reserves were reported in 1969 as 350,000 tons at grades comparable to those mined previously (0.12 oz/t Au, 4.1 ozs/t Ag, 1.6% Cu, 0.65% Pb, 6.6% Zn) (NM 25/09/69).

Ducanex Resources Limited held an option on the property in 1972. Work included an electromagnetic survey over approximately 30 line-miles, and 3,000' of surface diamond drilling in 5 holes. Mount Sicker carried out an induced potential survey in 1973 and Dresser Industries, Inc. carried out a geochemical survey and 5,500' of surface diamond drilling in 8 holes in 1974.

Mount Sicker in July 1978 gave an option to purchase the property to Serem Ltd. Work in 1979-80 included geological mapping, geochemical soil surveys (1,350 samples), EM, VLF EM, IP and MAG surveys and 3 137.6 m of diamond drilling in 17 holes. The company name (Mount Sicker) was changed in May 1980 to Peppa Resources Ltd.

In August 1983 Corporation Falconbridge Copper optioned an 85% interest in the property, excluding the Lenora workings. Work in 1984-85 included geophysical and geochemical surveys and diamond drilling.