

PRODUCT
PRODUIT

GOLD

PROVINCE OR
TERRITORY

PROVINCE OU
TERRITOIRE

British Columbia

N.T.S. AREA 104 B/1
RÉGION DU S.N.R.C.

REF. Au 2
RÉF.

NAME OF PROPERTY
NOM DE LA PROPRIÉTÉ

PROVINCE (BIG MISSOURI MINE)

OBJECT LOCATED -stoped area, Province claim (Lot 3208).
OBJET LOCALISÉ

UNCERTAINTY 300 m
FACTEUR D'INCERTITUDE

Lat. 56°06'45" Long. 130°01'20"
Lat. Long.

Mining Division Skeena
Division minière

District
District

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 property is underlain by a zone comprising cataclasites, mylonites and schists that have been derived from Lower Jurassic Hazelton volcanic conglomerates and other epiclastics at the east margin of the Texas Creek pluton. Early reports refer to these cataclastic remnants as "porphyry". The area of mineralization lies adjacent to and between a prong of the Texas Creek granodiorite and a series of mylonites on the east which are overlain unconformably by deformed rocks of the mid and upper Jurassic Bowser assemblage. In more detail the rocks in the mine area include various chlorite and sericite schists and semi-schists, lenticular remnants of cataclasites (kikirites) and mylonites as well as weakly deformed and altered country rocks. These are cut by a great many lamprophyre and hornblende granodiorite dykes, and the Portland Canal dyke swarm passes just to the north.

The overall structure shows a complex shear zone between the Texas Creek pluton on the west and competent Hazelton members on the east. The epiclastics trend northwesterly

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Associated minerals or products
Minéraux ou produits associés

Silver, lead, zinc

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

This property, located about 2 miles north of Mount Dilsworth and east of the Salmon glacier, extends northerly for about a mile along a ridge, between elevations of 3,000 and 3,500 feet. Towards the southerly end of the property the claims extend easterly down to Cascade Creek, and westerly down slope to near the Salmon glacier. The Hercules property adjoins to the northwest. To the east and adjoining lie the Unicorn and Mineral Hill properties.

A number of claims were located on the showings by prospectors Dan and Andrew Lindeborg in 1904. Included among these were the Rambler (Lot 3206) and Buena Vista (Lot 3207). Other claims subsequently located included the Province (Lot 3208), Golden Crown (Lot 3210), and Big Missouri (Lot 3217). Exploration work was begun in open cuts and short adits. In 1910 the Golden Crown group of 14 claims was under bond to the Pacific Coast Exploration Company, Limited. The Golden Crown Mining Company, which was apparently an American company may have held some of these claims under option during 1911-12. The owners, D. Lindeborg and Hiram Stevenson, resumed work on the Province and Big Missouri claims in 1913.

The Gastineau Mining Company, of Juneau, Alaska, held the property under bond in 1914 and 1915. The owners obtained Crown-grants to 15 full and 5 fractional claims in 1916. Later in the year, the property was bonded to H.W. Witt of Goldfield, Nevada, but no work was reported at that time. In 1918, the property was again bonded to The Pacific Coast Exploration Company, Limited, and operations continued into 1920. Work by the company was done on the E. Pluribus and Laura claims, adjacent to the Mineral Hill property and included open cutting, 360 feet of underground work in one adit, and 2,400 feet of diamond drilling in 9 holes. In 1922-24, the property was under bond to Messrs. Trite and Wilson and some work done in open cuts, old adits, and a vertical shaft.

The Standard Mining Corporation of Tacoma, Washington, bonded the property from D. Lindeborg in 1925 and formed Big Missouri Mining Company, to carry on development. Most of the work was done on the Golden Crown and E. Pluribus claims; activities ceased sometime in 1926.

Buena Vista Mining Company, Limited was formed by The Consolidated Mining and Smelting Company of Canada Limited

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ISTORY OF PRODUCTION/HISTORIQUE DE LA PRODUCTION

From 1927 to 1942 inclusive, 847,615 tons of ore were milled at this property. From this ore 58,384 ounces of gold, 52,677 ounces of silver, 2,712 pounds of lead, and 3,920 pounds of zinc were recovered.

REFERENCES/BIBLIOGRAPHIE

Reports of Minister of Mines, British Columbia: 1904, p.100; 1905, p. 79; 1910, p. 65; 1911, p. 73; 1913, p. 94; 1914, p. 154; 1915, p. 72; 1916, pp. 86, 520; 1917, p. 72; 1918, p. 82; 1919, p. 79; 1920, p. 60; 1922, p. 84; 1923, p. 84; 1925, p. 102; 1926, p. 98; 1927, p. 101, 1928, p. 114; 1929, p. 108; 1930, p. 112; 1931, p. 46; 1934, p. B25+; 1935, pp. B 27, G 48, 1936, p. B 57; 1937, p. B 41; 1938, p. B 24; 1939, p. 65; 1940, p. 51; 1941, p. 54; 1942, p. 53; 1966, p. 40.

++Hanson, George; Portland Canal Area, British Columbia; Mem. 175, pp. 50, 154-156, Geol. Surv. of Canada, 1935.

+++Grove, Edward W.; Geology and Mineral Deposits of the Stewart Area; Bulletin No. 58, pp. 124-126, British Columbia Dept. of Mines, 1971.

Schofield, S.J. & Hanson G.; Geology and Ore Deposits of Salmon River District, British Columbia; Memoir 132, pp. 2, 45, 61, Geol. Surv. of Canada, 1922.

O'Neill, J.J.; Salmon River District, Portland Canal Mining Div., B.C.; Summary Report 1919, Pt. B, p. 10, G.S.C.

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Geology, Exploration and Mining, British Columbia Dept. of Mines: 1969, p. 57; 1970, p. 73; 1973, p. 497; 1974, p. 331; 1975, p. E 180; 1976, p. E 179; 1978, p. E 257; 1979, p. 280; 1980, p. 461; 1986, pp. A19, A43.

Mineral Policy Sector; Corporation Files: "Big Missouri Mining Company"; "Buena Vista Mining Company, Limited"; "Big Missouri Mines Corporation": "Cominco Ltd." (AR's 1929 and 1930); "Consolidated Silver Butte Mines Ltd."; "Giant Mascot Mines Limited"; "Northern Homestake Mines Ltd.": "Tournigan Mining Expl. Ltd.": "Western ML": "Canacord Resources Inc."

Mitchell, M.A.; Big Missouri Group, in Northern Homestake Mines Ltd. Statement of Material Facts, July 1975.

Geological Fieldwork, B.C. Dept. of Mines: 1978, p. 105; 1980, p. 201.

Western Miner, May 1983, pp. 26-29.

George Cross News Letters; 1982, No. 73; 1983, No. 94, 1986, No. 184, 202, 228; 1987, No. 45, 169, 207, 245; 1988, No. 19, 32, 102.

BCI 104 B-46, 83

MAP REFERENCES/RÉFÉRENCES CARTOGRAPHIQUES

Geological Map fo the Stewart Area, Sc. 1": ½ mile, Fig. 3, Sheet B, Bulletin No. 58, B.C. Dept. of Mines, 1971. (see also figures 26 and 27).

Stewart Area, Crown-Grant claim maps, Figures 15 B and 15 C - accomp. Bulletin No. 58.

#Big Missouri Group (claim boundaries, workings, and mineralized zones) Sc. 1": 1,000 feet, Fig. 25 - accomp. Bulletin No. 58.

Map 307 A, Portland Canal Area, B.C., (Geol.), Sc. 1": 4 miles - accomp. Memoir 175.

Map 104 B, Iskut River, B.C., (Topo.), Sc. 1: 250 000.

#Westmin Resources Big Missouri-Silbak Premier properties, Western Miner, May 1983, p. 27.

*Map 104 B/1, Leduc Glacier, (Topo.), Sc. 1: 50 000.

REMARKS/REMARQUES

New showings discovered in 1981 on the Big Missouri claim are recorded separately (see 104 B/1, Au 12).

Comp./Rev. By Comp./rév. par	DMacR	JL	DMacR	DMacR	DMacR	DMacR	
Date	03-79	09-82	05-83	08-83	08-86	07-88	

PRODUCT PRODUIT	GOLD	PROVINCE OR TERRITORY	PROVINCE OU TERRITOIRE	British Columbia	N.T.S. AREA RÉGION DU S.N.R.C.	104 B/1.	REF. RÉF.	Au 2.
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NAME OF PROPERTY NOM DE LA PROPRIÉTÉ	PROVINCE (BIG MISSOURI MINE)
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DESCRIPTION OF DEPOSIT/DESCRIPTION DU GISEMENT (con't)

with a steep west dip and the shears trend northwesterly with dips from 35 degrees west through vertical to 50 degrees east, giving a picture of west-dipping country rocks and complexly intersecting shear zones. The main mineralized or silicified zones trend north-northwest parallel to the original rock stratification, but these are intersected by several lesser west-southwesterly trending zones.

The greatest part of the Big Missouri production in the period 1938-42 came from a small part of the main "A" silicified zone. This segment of the zone consists of an area about 200 feet wide trending north-northwest, made up of fractured country rock intricately laced with unevenly spaced quartz-calcite veinlets and stringers with or without sulphides. Gold was associated with the areas of most intense veining and silicification which in turn appear to be best developed in areas where abundant kakirite lenses occur within the schists. Alteration minerals present in the ore zone include epidote, chlorite, and ubiquitous quartz and calcite.

Four main mineralized zones have been identified, with showings located on the Province, Buena Vista, Rambler, Tip Top, Jain, Golden Crown, Terminus, E-Pluribus, Laura, and Day claims. Other showings occur on the adjacent Unicorn (104 B/1, Au 6) and Hercules (104 B/1, Au 7) properties.

HISTORY OF EXPLORATION AND DEVELOPMENT (con't)
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

(53%) and Big Missouri Mining Company (47%) in September 1927. A long crosscut (Province Tunnel) was begun on the east side of the ridge and some 4,800 feet of drifts and crosscuts were run to explore the Province orebody. Intensive diamond drilling was done and in December 1930 a 100 ton per day concentrator was put into operation to test the ore. Operations were discontinued in September 1931.

Big Missouri Mines Corporation was formed in August 1933 to acquire the assets of Big Missouri Mining Company. Buena Vista Mining Company was now owned by The Consolidated Mining and Smelting Company of Canada Limited (60%) and Big Missouri Mines Corporation (40%). Work resumed in 1934. The Day Fr. (Lot 4132), on the west side of the ridge, was acquired as a site for low-level access to the Province mineralized zone. Two crosscut adits were driven northeasterly into the Province claim and a 750-ton mill was built underground between the 2,100- and 2,300-foot levels, with surface access on the Salmon Glacier side of the ridge. In 1935 the Hercules property was optioned. During 1937, the 306 drift from the Province adit was extended north a further 217 feet with the objective of developing the Hercules property from this level (2,800), however, this plan was apparently not followed through.

Development work continued on the Province claim and in March 1938 a 750 ton per day underground mill was put into operation. The mill operated until the early months of 1942 when the mine was closed and abandoned. Underground development work during the period 1935-1942 totalled over 23,000 feet of drifts, crosscuts, and raises, and over 16,000 feet of diamond drilling. Total underground development work on the property is over 31,000 feet in 4 or more adits and several shallow shafts.

A tonnage and grade estimate made in 1936 as a result of several years of detailed studies suggested a probable reserve of 1,842,650 tons at 0.117 oz gold per ton. The main or 326 orebody, located on the Province claim and included in these estimates, had a dip length of 500 feet, with mining widths from 7.5 feet at 0.26 ounce gold to 55

HISTORY OF EXPLORATION AND DEVELOPMENT (con't)

feet at 0.20 ounce gold per ton (BCDM Bull 58, p. 126). Subsequent production during the period March 1938 to early 1942 totalled slightly less than 847,600 tons. Numerous other small quartz-calcite-sulphide zones occur on the Big Missouri property and on the adjacent Unicorn and Hercules properties. "In 1966, D.B. Brown's assessment of these claims and their mineral potential indicated that there was probably less than 200,000 tons of ore grade mineralization currently available and that the over-all grade was less than 0.10 ounce gold per ton and less than 1.0 ounce silver per ton" (BCDM Bull 58, p. 127).

In 1952 a syndicate, name unknown, in which Gwillim Lake Gold Mines Limited held a 30% interest, is reported to have held 3 of the claims but no work was reported at that time.

The property, as subsequently held by the Stewart-Wilkstrom interests, consisted of the M 51, M 52, and M 118 mineral leases comprising 10 Crown-granted claims, the Province Crown grant, and the Day group of 5 Crown-granted claims. Falconbridge Nickel Mines Limited held the property under option and during 1966-67 carried out geological mapping and a geochemical survey. Twayco Explorations, of Hyder, Alaska, optioned the property in 1969 and carried out trenching and sampling of quartz sulphide masses exposed along the ridge. El Paso Mining and Milling Company optioned the property in 1970 and carried out a geochemical soil survey over Mineral Lease Nos. 51 and 52.

Consolidated Silver Butte Mines Ltd. in June 1972 acquired 5 claims including the Province and Big Missouri, and the Hercules group, from Thomas S. MacKay. Giant Mascot Mines Limited optioned the property late in 1973. Surface diamond drilling on the Province claim during 1974 totalled 822 feet in 11 holes. The option was subsequently given up. Northern Homestake Mines Ltd. held an option on the property for a brief period in 1975 but no work was reported. Canex Placer Limited optioned the property later in 1975. Work included a geochemical soil survey (96 samples). The option was subsequently given up.

Tournigan Mining Explorations Ltd. acquired the property from Consolidated Silver Butte by an agreement of April 21, con't....

....con't

1976. In May 1976, Tournigan optioned the property to Tapin Copper Mines Limited. Work by Tapin included an induced potential survey over 14.4 line K on the Big Missouri and Unicorn properties, 177 metres of diamond drilling in 8 holes on the Creek and S-1 zones, test pitting, and underground sampling. The option was subsequently abandoned. Additional ground was acquired in 1977 to a total of 74 claims.

Tournigan during 1978 carried out adit and shaft rehabilitation, surface and underground sampling, and 2,200 feet of diamond drilling, including 8 holes in the vicinity of the Dago shaft. Surface mineralization on the Province claim 650 metres west of the shaft was sampled in 50 surface trenches.

In December 1978, Tournigan optioned a 77.5% interest in 7 claims, centered on the underground workings of the Province claim, to Western Mines Limited. Work by Western during 1979-80 included geochemical and geophysical surveys and diamond drilling in 40 holes. Western changed its name in March 1981 to Westmin Resources Limited. Work during 1981 included rehabilitation of underground workings, diamond drilling in 61 holes (2622 metres) and percussion drilling in 173 holes (2932 metres). Diamond drilling in 1982 totalled 11,188 feet in 86 holes. Based on this work open pit material in the Province, Dago, Martha Ellen and S-1 zones was estimated at 1,900,000 tons grading a gold/silver equivalent of 0.10 oz/t gold; individual estimates are:

<u>Zone</u>	<u>Tons</u>	<u>oz/t Au equivalent</u>
Province	340,000	.073
Dago	740,000	.103
S-1	200,000	.093
Martha Ellen	620,000	.111

(Northern Miner 12/05/83)

(For Martha Ellen zone see 104 B/1, Au 7). Further diamond drilling included 999 m in 17 holes in 1983, mainly on the Martha Ellen zone, and 305 m in 6 holes on the Dago zone in 1984. Drill indicated geological reserves were reported as 2,167,000 tons at 0.098 oz/t Au equivalent (Westmin Resources 1983 Annual Report).

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PRODUCT
PRODUIT Gold

PROVINCE OR
TERRITORY PROVINCE OU
TERRITOIRE

British Columbia

N.T.S. AREA 104 B/1
RÉGION DU S.N.R.C.

REF. Au 2
RÉF.

NAME OF PROPERTY
NOM DE LA PROPRIÉTÉ PROVINCE (BIG MISSOURI MINE)

HISTORY OF EXPLORATION AND DEVELOPMENT (con't)
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

Exploratory drilling in 1986-87 totalled some 31,177 feet in 153 holes. The 1986 and part of 1987 work was funded by Canacord Resources Inc., the company thereby earning an 18.75% interest in the interest held by Westmin. In order to combine the Big Missouri and Silbak Premier (104 B/1, Au 1) properties into one operation (named the Premier Gold Project), Westmin obtained an agreement whereby Tournigan Mining Explorations Ltd. exchanged its 30% net profits interest in the Big Missouri for a 5% net profits interest in the combined operation. Interest in the project was then Westmin Resources 50.1%, Pioneer Metals Corporation 40.0%, Canacord Resources 9.9%. A feasibility study was carried out in 1987. Reserves at the Big Missouri in four zones were reported as open pit mineable 1,800,000 tons at 0.105 oz/t Au, 0.86 oz/t Ag (Westmin Resources Limited, 1987 Annual Report).

Construction of a 2,000 ton per day mill at the Silbak property began in April 1988.