82FNE52

001886

RESERVE STUDY OF SIGNIFICANT DEPOSITS OF LEAD, SILVER, GOLD, ZINC, IRON, MERCURY, ANTIMONY, ASBESTOS, AND CADMIUM IN BRITISH COLUMBIA

P. A. Christopher,
Geologist, Geological Division,
Mineral Resources Branch,
Department of Mines and Petroleum Resources.

March 10th, 1975.

RESERVES
British Columbia
LEAD
SILVER
GOLD
ZN
SB
FE
ASBESTOS
HG
CD

TABLE OF CONTENTS

TABLES

ANTIMONY RESERVES

Antimony is produced as a by-product of Cominco's lead smelting operations at Trail, in the form of antimonical lead. A total of 55.2 million pounds of antimony was produced from B.C. mines to the end of 1973 with production in 1973 of about 1.7 million pounds, valued at $1,192,118.

From past production records, the total antimony reserve is considered to be about 0.9 per cent of the lead reserve (7,938 million pounds) or about 71.4 million pounds.

Gold

- Bralorne Mine - stibnite a significant mineral in the "27" vein, as well as lesser amounts in the main veins.

Lead Mts - Sb with hi grade gold ore

ASBESTOS RESERVES

Table IV shows reserves for economically significant asbestos properties in British Columbia.

Cassiar Mine (Cassiar Asbestos Corporation Limited)

The Cassiar mine contains the only known economic concentration of asbestos in British Columbia. Since 1952 this mine has produced approximately 1,331,000 tons (gross value of $260,308,476) of fibre with a high percentage of long fibre of low iron content. Reserves at the Cassiar mine as of December 31, 1972 were: probable reserves to 340 feet below lower adit, estimated at 25,000,000 tons (Canadian Mines Handbook, 1973-74, p. 72). On April 25, 1974, Cassiar reported, "... drilling over the past three years assured another 20 years of open pit life." (Northern Miner, p. 24) Production from the open pit was curtailed during 1974 because of pit stability problems and the effect of this problem on the reserves and life of the mine has not been determined.

Kutcho Creek Property (Cassiar Asbestos Corporation Limited)

The Letain group near Kutcho Creek, approximately 60 miles southeast of Cassiar, contains significant reserves of marginal or sub-marginal grade asbestos. Estimates of reserves are 11,000,000 tons at $19 per ton or 15,000,000 tons at $15 to $18 per ton (present mine costs at Cassiar are about $19 to $20 per ton).

RESERVES AND PRODUCTION FOR SIGNIFICANT ASBESTOS PROPERTIES IN BRITISH COLUMBIA

PROPERTY NAME	OWNER OR AGENT	LOCATION	PRODUCTION (1973/TOTAL) TONS TREATED $\times 10^6$	TONS FIBRE $\times 10^6$	VALUE $\times 10^6$	RESERVES TOTAL TONS $\times 10^6$	GRADE % FIBRE	TONS FIBRE	GROSS VALUE/ TON	GROSS VALUE $\times 10^6$	COMMENTS	REFERENCE(S)
			1.09	0.109	$ 21.1							
Cassiar Mine 1952-74	Cassiar Asbestos Corp.	104P/5W	13.7	1.336	260.3	25	10 recoverable	2.5	$200	$500	Mill capacity 110,000 tons fibre/ year. Estimate 91,000 T Fibre (1974). Large low-grade reserves (shorts) not include in reserves.	Northern Miner 25/5/74
Letain Kucho Creek	Cassiar Asbestos Corp.	104I/7E				15			15-18	195	Value less than cost @ current prices and transportation costs.	
Ace	Canadian Johns-Manville Co. Ltd.	104K/16E				13	2				Fibre length 1/8 - 3/16 (average)	Assessment Report 1030

TABLE IV

Ace Property (Canadian Johns-Manville Company Limited)

The Ace property, situated in the Menatatuline Range, 77 miles southeast of Atlin, British Columbia, is reported to contain 13 million tons of 2 per cent grade fibre with fibre lengths between 1/8 to 3/16 of an inch (Assessment Report 1030).

The location of the Cassiar mine, the Kutcho Creek prospect, and the Ace prospect are shown on Figure 3. An information circular entitled "Asbestos Occurrences in British Columbia," prepared by J. W. McCammon, April, 1974, is included as appendix A.

CADMIUM RESERVES

Cadmium is obtained mainly as a by-product of zinc smelting and refining. It occurs as an impurity in zinc-bearing minerals (for example, sphalerite). World zinc concentrates are estimated to contain an average of about 0.25 per cent cadmium of which 75 per cent is recoverable during zinc smelting and refining (United States Geological Survey, Professional Paper 820, p. 105).

In 1973 British Columbia cadmium production totalled 1,192,365 pounds from 301,255 tons of zinc concentrate that contained 151,437 tons of zinc metal, yielding an average of 0.20 per cent cadmium in zinc concentrate or 7.9 pounds per ton of zinc metal. These figures suggest that British Columbia cadmium reserves should be about 0.4 per cent of the recoverable zinc reserves. The zinc reserves are estimated at 12,000 million pounds (Table V, VI) containing about 48 million pounds of cadmium. Cadmium production in 1973 and estimated reserves are summarized in Table Va.

RESERVES AND PRODUCTION OF SIGNIFICANT LEAD-ZINC-SILVER PRODUCERS
IN BRITISH COLUMBIA

TABLE V

RESERVES AND PRODUCTION OF SIGNIFICANT LEAD-ZINC-SILVER PRODUCERS IN BRITISH COLUMBIA

PROPERTY	OWNER OR AGENT	NTS AND LOCATION	METALS	PRODUCTION (1973/TOTAL) TONS x 10^6	RECOVERED GRADE - % Pb; % Zn; oz./T. Ag	PRODUCED METAL # Pb; # Zn; oz. Ag x 10^6	RESERVES TOTAL TONS x 10^6	GRADE % Pb; % Zn oz./T. Ag	TOTAL METAL # Pb; # Zn; oz. Ag x 10^6	RESERVE* TYPE	COMMENTS	REFERENCE(S)
Sullivan mine - 1900-73	Cominco Ltd.	82F/9E - 82G/12W Kimberley	Pb, Zn, Ag, Cu, Fe, Sn, Cd	2.214 110.058	4.2; 4.7; 1.4 6.5; 5.6; 2.2	188; 207; 3.1 14,366; 12,500; 242.2	60.0	4.9; 6; 1.4	5,880; 7,200; 84	Ind.	Production, 1973 - Cd, 551,462#; Cu, 618,200#, Sn, 180,783#; Fe, 14,397 T.; Au, 152 oz. TOTAL: Cd, 4.83 million #; Sn, 19.6 million #.	Cominco Annual Report, 1973.
H B mine - 1912-73	Cominco Ltd.	82F/3E Salmo	Pb, Zn, Ag, Cd, Au	0.352 5.601	0.9; 3.8; 0.12 0.8; 4.3; 0.15	6.2; 26.5; 0.042 92 ; 483 ; 0.84	1.36	0.8; 4.5; 0.12	22; 123, 0.16	M, Ind.	Production, 1973 - Cd, 209,000#; also large reserve of oxide material.	Cominco Annual Report, 1973.
Lynx and Myra mines - 1967-73	Western Mines Ltd.	92F/12E Buttle Lake	Zn, Pb, Ag, Cu, Cd, Au	0.345 2.531	1.2; 8.1; 3.7 0.8; 6.5; 1.7	8.4; 56; 1.33 38.6; 329; 4.175	1.746	1.3; 8.1; 4.6 (also, 1.2% Cu; 0.08 oz. Au)	45.4; 494; 8.03	Ind.	Production, 1973 - Cu, 7.5 million #; Cd, 229,576#; Au, 22,326 oz. TOTAL: Au, 97,900 oz.; Cu, 83.6 million #; Cd, 1.4 million #.	
Annex, Reeves - 1949-73	Reeves MacDonald Mines Ltd.	82F/3W Nelway	Pb, Zn, Ag, Cd	0.191 7.02	1.5; 4.1; 0.9 1 ; 3.8; 0.2	5.6; 15.7; 0.16 138 ; 527 ; 1.567	0.5-1.0 (K Zone) 0.5-1.0 (Redbird)	1.5; 4; 0.5 (approx.) 1.5; 4; 0.5	30; 80; 0.5 30; 80; 0.5	Ind., Inf. Ind., Inf.	Production, 1973 - Cd, 161,477#; also, estimated 10 million T. oxide material awaiting method for treating.	
Highland Bell mine - 1901-73	Teck Corp.	82E/6E Beaverdell	Ag, Pb, Zn Au, Cd, Cu	0.037 0.636	0.6; 0.6; 12.4 1.8; 2.1; 49	0.46; 0.45; 0.46 23 ;27 ;31	NIL					
Silver Queen - 1972-73	Bradina Joint Venture	93L/2E Houston	Pb, Zn, Ag, Cu, Cd, Au	0.098 0.210	0.6; 4.4; 3.1 0.4; 2.6; 2.1	1.2; 8.6; 0.302 1.5; 11 ; 0.440	0.552 (also, 0.502 possible)	2.1; 6.9; 10 (0.76% Cu; 0.1 oz. Au)	23; 76; 5.5	M, Ind. (1971)	Production, 1973 - Cu, 543,780#; Cd, 20,120#; Au, 1,913 oz. Operation suspended 31/8/73.	Company Annual Report, 1971. Canadian Mines Handbook, 1972-73, p. 233.
Cronin mine - 1917, 29; 1951-73	Hallmark Resources Ltd.	93L/15W Smithers	Pb, Zn, Ag, Cu, Cd, Au	0.002 0.025	2.3; 2.7; 4 5.7; 6.3; 10	0.093; 0.109; 0.008 2.87 ; 3.15 ; 0.251	0.177	7.1; 8.12; 12.5	25.2; 28.7; 2.2	Ind.	Production, 1973 - Cu, 2,967#; Cd, 1,122#; Au, 11 oz.	George Cross Newsletter, #45, 1974.
Ruth Vermont - 1892-1930; 1970-71, 73	Consolidated Columbia River Mines Ltd.	82K/15W Parson	Pb, Zn, Ag, Cu, Cd, Au	0.030 0.106	2.3; 2 ; 3.2 1.8; 4.4; 2.8	1.4; 1.2; 0.096 3.9; 9.3; 0.299	0.291	4.8; 5.7; 6.6	28; 33; 1.9	M (1973)	Production, 1973 - Cu, 21,850#; Cd, 8,059#; Au, 49 oz.	Canadian Mines Handbook, 1972-73, p. 84. George Cross Newsletter, 30/9/74.
Silmonac - 1970-73	Kam-Kotia and Burkam Joint Venture	82F/14W Sandon	Pb, Zn, Ag, Cd	0.014 0.093	5 ; 5 ; 13.6 5.9; 6.1 ; 16.5	1.4; 1.4; 0.190 11.0; 11.3; 1.531	NIL					
Britannia mine -	Anaconda Canada Ltd.	92G/11E Britannia Beach	Cu, Ag, Zn	0.549 51.8	---; --- ; 0.19 ---; 0.25; 0.11	---; ---; 0.103 ---; 276; 5.727	3.5	---; ? ; ---			Operation suspended November, 1974. Total Cu to 1974 = 1,129 million #.	
PAST PRODUCERS Bluebell - 1898-1971	Cominco Ltd.	82F/15W Riondel, Kootenay Lake	Pb, Zn, Ag, Cu	5.313	5; 5.2; 1.3	515; 549; 7.13	NIL					
Mineral King - 1928, 1954-58	Purcell Development (Sheep Creek Camp)	82K/8W Toby Creek	Zn, Pb, Ag, Cu, Cd, barite	2.313	1.8; 4.3; 0.4	82.2; 198.8; 0.844	0.080	2.5; 4.5; 1.0	4; 7.2;0.08	M	Total Cu = 1.46 million #.	Financial Journal, 1/5/74
St. Eugene (Moyie)	Cominco Ltd.	82G/5W Cranbrook	Pb, Zn, Ag	1.626	7.68; 2.8; 3.62	249; 32; 5.874	NIL					
Estella	Giant Soo Mines Ltd.	82G/13E Cranbrook	Zn, Pb, Ag, Au, Cu, Cd	0.120	5.4; 9.2; 2.5	11.4; 21.7; 0.205	0.049	7.0; 14.2; 2.9	6.96; 13.9; 0.14	M, Ind.	Production includes: Cd, 22,581#; Au, 66 oz.	George Cross Newsletter, 9/1/67.
Silver Giant - 1956-57	Giant Mascot Mines Ltd.	82K/16W Spillimacheen	Pb, Ag, Zn, Cu, Cd, Sb	0.9[illegible]	3.5; 0.4; 0.7	64.9; 7.1; 0.622	?					
Jersey - 1949-70	Canex	82F/3W Salmo	Pb, Zn, Ag, Cd	7.976	1.7; 3.65; 0.1	268; 582; 0.7 (Cd, 3.73 million #)	?					
Toric - 1919-59	Dolly Varden Mines Ltd.	103P/12E Portland Canal	Ag, Pb, Zn	1.416	10.7; 0.6; 14	0.4; 0.02; 20	1.711	0.53; 0.82; 9.5	17; 27; 16.3	M, Ind. Inf.	Also, barite and radium.	George Cross Newsletter, #187, 1973.
Anyox, Hidden Cr. - 1914-36	Granby Mining Co.	Portland Canal	Cu, Ag, Au	23.948	---; --- ; 0.28	---; --- ; 6.6 (Cu, 709 million #)						
Tulsequah - 1951-57	Tulsequah Mines Ltd.	104K/12E Taku River	Cu, Pb, Zn, Ag, Au, Cd	1.029	1.3; 6.6; 3.3	26; 125; 3.4 (Au, 94,000 oz.; Cu, 27 million #)						
Silver Standard - 1913-73	Silver Standard Mines Ltd.	93M/5E Hazelton	Pb, Zn, Ag, Au	0.223	3.9; 6.0; 33.6	17.2; 26.7; 7.5	?					
Horn Silver mine (Utica) - 1915-70	Dankoe Mines Ltd.	82E/4E Keremeos	Ag, Au, Pb, Zn	0.266	0.1; 0.1; 9.0	0.42; 0.45; 2.4	0.230 0.383	---; --- ; 7.8 ---; ? ; ---	---; --- ; 1.79	Ind. Inf.		George Cross Newsletter #111, 1973.
Monarch, Kicking Horse - 1888-1953	Base Metals Mining Co. Ltd.	82N/7E Field	Pb, Zn, Ag	0.813	6.3; 10; 1.0	102; 157; 0.8	?					
Lucky Jim - 1893-1959		82F/13W New Denver	Zn, Pb, Ag	1.175	0.3; 7.5; 0.5	8; 176; 0.6						
Standard, Buffalo Mammoth, Monarch Enterprise	Arjan Pacific (Western Exploration Ltd.)	82F/13W Slocan (Silverton)	Pb, Zn, Ag	0.806	5; 6.7; 10.8	83; 108; 8.7	0.300	0.9; 0.5; 35	5.4; 3.0; 10.5			George Cross Newsletter #228, 1973.
Hewitt, Van Roi	Arjan Pacific (Western Exploration Ltd.)	82F/13W Slocan (Silverton)	Pb, Zn, Ag	0.431	2.6; 2.6; 10.7	22; 22; 4.6						
					RECOVERED	RECOVERED		GROSS	GROSS			
TOTAL 1973 TOTAL				3.3 226.2	3.3; 4.8; 1.8 3.6; 3.6; 1.6	219; 317; 5.8 16,126; 16,183; 357.9	72	4.2; 5.7; 1.8	6,117; 8,166; 132			

*Reserve type, M = measured; Ind. = indicated; Inf. = inferred.

RESERVES AND PRODUCTION (1973) OF ECONOMICALLY SIGNIFICANT CADMIUM PROPERTIES IN BRITISH COLUMBIA

PROPERTY NAME	PRODUCTION # Zn x 10^6	# Cd x 10^6	RATIO Cd/Zn	ESTIMATED RESERVES Zn x 10^6	Cd x 10^6	
Sullivan mine	207	.551	0.0027	7,200	19.4	
H B mine	26.5	.209	0.0079	123	0.97	
Lynx and Myra mines	56.0	.230	0.0041	494	2.03	
Reeves Annex	15.7	.161	0.0102	160	1.6	
Highland Bell mine	0.45	.002	0.0044	---	---	
Silver Queen	8.6	.020	0.0023	76	0.17	
Cronin mine	0.109	.001	0.0092	28.7	0.26	
Silmonac	1.4	.010	0.0071	---	---	
Ruth Vermont	1.2	.008	0.0067	33	0.22	
	316.959	1.192	0.0038		24.65	
Estella				13.9	0.06	**Assume Cd = 0.4% Zn**
Toric				27	0.11	**Assume Cd = 0.4% Zn**
Arjan Pacific				3.0	0.01	**Assume Cd = 0.4% Zn**
Duncan Lake				171	0.68	**Assume Cd = 0.4% Zn**
Robb Lake				671	2.68	**Assume Cd = 0.4% Zn**
Bannockburn				192	0.77	Assume Cd = 0.4% Zn
Jordan River				320	1.28	Assume Cd = 0.4% Zn
Big Ledge				520	2.08	Assume Cd = 0.4% Zn
Ruddock Creek				750	3.0	Assume Cd = 0.4% Zn
Teddy Glacier				7.3	0.03	Assume Cd = 0.4% Zn
Beverley				8	0.03	Assume Cd = 0.4% Zn
Marble Creek				30.3	0.12	Assume Cd = 0.4% Zn
Cotton Belt				80	0.32	Assume Cd = 0.4% Zn
Mount Sicker				46.2	0.18	Assume Cd = 0.4% Zn
Parmac				649	2.6	Assume Cd = 0.4% Zn
Stannex				16.7	0.07	Assume Cd = 0.4% Zn
Mineral King				7.2	0.03	Assume Cd = 0.4% Zn
					14.05	Reserves of prospects **using 0.004 Cd/Zn ratio.**
					+ 24.65	Reserves of producers **using 1973 Cd/Zn ratio.**
					36.36	Estimate based on 1973 **production plus assumed 0.004 Cd/Zn for** significant prospects.

TABLE Va

RESERVES OF SIGNIFICANT LEAD-ZINC-SILVER PROPERTIES
IN BRITISH COLUMBIA

TABLE VI

RESERVES OF SIGNIFICANT LEAD-ZINC-SILVER PROPERTIES IN BRITISH COLUMBIA

PROPERTY NAME	OWNER OR AGENT	NTS AND LOCATION	RESERVES TONS x 10^6	GRADE % Pb; % Zn; oz./T. Ag	TOTAL METAL # Pb; # Zn; oz. Ag x 10^6	RESERVE* TYPE	COMMENTS	REFERENCE(S)
Duncan Lake	Cominco Ltd.	82K/7W	2.759	3.3 ; 3.1; ---	182 ; 171 ; ---	M, Ind.		
			10.4	0.7 ; 2.1; ---	146 ; 439 ; ---	Inf.		
Robb Lake	Barrier Reef Resources Ltd.	94B/13W Robb Lake	6.1 (total 3 areas)	1.8 ; 5.5; --- 7.3 combined Pb and Zn	220 ; 671 ; ---	Inf.		George Cross Newsletter, #18, 1975.
Bannockburn	Ross, J.A.C.	82K/11E	3.0	4 combined;---	48 ; 192 ; ---	Inf., Ind.		
Jordon River	Bralorne American Standard	82M/1	2.873	5.1 ; 5.6; 1.1	300 ; 320 ; 3.15	Inf., Ind.		
Big Ledge	Cominco Ltd.	82L/8E	6.5	--- ; 4 ; ---	--- ; 520 ; ---	Inf. ind.		
Ruddock Creek	Falconbridge Nickel Mines Ltd.	82M/14E	5.0	2.5 ; 7.5; ---	250 ; 750 ; ---	Inf., Ind.		
Teddy Glacier	Teddy Glacier Mines Ltd.	82K/13	0.049	15 combined; 5 (0.13 oz. Au)	0.25; 7.3; 7.4	Ind.		Canadian Mines Handbook, 1972-73.
Kingfisher, Bright Star	Colby Mines Ltd.	82L/10E Mabel Lake	2.0	2.5 combined Pb, Zn CONFIDENTIAL		estimate by co. president	Based on 2,000-foot diamond drill over 2,000-foot strike.	
Beverley	Hall, R.	94C/3E Osilinka River	(10,000 t.v.f.)	3.2 ; 0.4; 1.2	64 ; 8 ; 2.4 (estimate)	potential		A. Sutherland Brown, Ph.D., P.Eng.
Sam Goosly	Kennco (Equity Mining Capital Ltd.)	93L/1W	40.3	--- ; ---; 4 (0.35 Cu; 0.026 Au)	--- ; --- ; 161	Ind.	Two zones - main = 33 million T. at 4.46 oz./T. Ag eq. S. Trail = 7.3 million T. at 6.09 oz./T. Ag eq.	George Cross Newsletter, #87, 1974.
Marble Creek (Silver Queen)	Consolidated Coast Silver Mines Ltd.	104P/5W Cassiar	West 0.047 0.054 East 0.164 0.107	9.2 ; 4.9; 7.9 14.4 ; 3.7; 11.5 5.7 ; 2.5; 5.6 3.3 ; 6.3; 3.2	8.7; 4.6; 0.37 15.6; 4.0; 0.62 18.7; 8.2; 0.92 7.1; 13.5; 0.34 Total - 80.4; 30.3; 2.25	Ind. Inf. Ind., Inf.		George Cross Newsletter, #24, 1972.
Cotton Belt (Shuswap, GN)	Great Northern Petroleums & Mines Ltd.	82M/7W Seymour Arm	0.800	6.0 ; 5.0; 2.0	96 ; 80 ; 1.6	estimate by Seymour Mining Ltd.		
Mount Sicker	Mt. Sicker Mines Ltd.	92B/13W Mount Sicker	0.35	0.65; 6.6; 4.1 (also, 1.6 Cu; 0.12 Au)	4.6; 46.2; 1.44	estimate	Past producer, Tyee = 221,232 T.; 0.5 million oz. Ag; 4.2 million # Zn; 14 million # Cu. Lenora = 79,150 T.; 280,313 oz. Au.	Canadian Mines Handbook, 1972-73.
Parmac (Wigwam)	Parmac Mines Ltd.	82K/13W Revelstoke	0.698 8.481	2.14; 3.54; similar grade	30 ; 49 ; --- 363 ; 600 ; ---	Ind., Inf.		George Cross Newsletter, #145, 1972.
Homestake	Kamad Silver Co. Ltd.	82M/4W Adams Lake	0.878	--- ; ? ; ---		M	Also contained barite (30% @ 98% purity). Total prov.+possible+prob. = 1 million T.	Northern Miner, 6/9/71, p. 23.
Stannex (Regal Silver, Snowflake)	Ryker Resources Ltd.	82N/4 Revelstoke	0.726	2.55; 1.15; 2.64	37 ; 16.7; 1.92		Also, 40,000 T. at 1.3% WO_3.	George Cross Newsletter, #236, 1970.
TOTAL			91.3 T.		1,821 ; 3,900 ; 181.2			

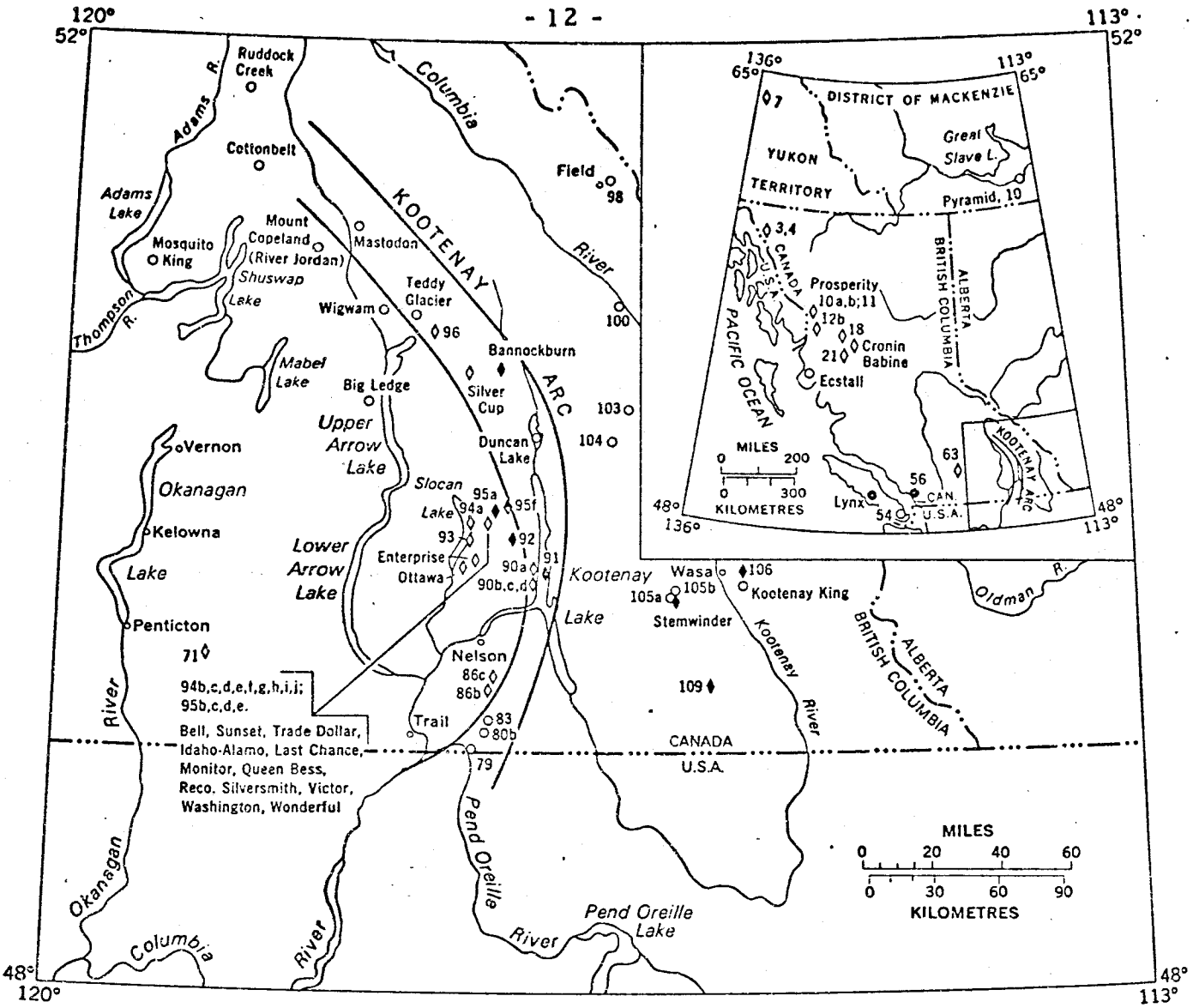
* Reserve type, M = measured; Ind. = indicated; Inf. = inferred.

LEAD-ZINC-SILVER RESERVES

Figures 6 and 7 show the location of economically significant lead-zinc-silver properties in British Columbia and Figure 14-1 (C.I.M. Special Vol. No. 8, 1966) shows diagramatically the size of the deposit, the grade in combined assay content of lead and zinc, the lead-zinc ratio, and the grade of silver. Table V shows the production and reserves of producers and past producers, and Table VI shows reserves for economically significant prospects.

Total production to the end of 1973 is 16,458 million pounds of lead, 15,298 million pounds of zinc, and 508 million ounces of silver. Total reserves are estimated at 7,938 million pounds of lead, 12,066 million pounds of zinc, and 432 million ounces of silver which includes 233 million ounces of by-product silver from copper and gold properties.

The Sullivan deposit dominates both the production and reserve figures for lead and zinc, accounting for about 87 per cent of the lead production and 75 per cent of the lead reserves and about 80 per cent of the zinc production, and 60 per cent of the zinc reserves. The Sullivan deposit also accounts for 47 per cent of the silver production and 20 per cent of the silver reserves. The silver reserve at Sullivan is exceeded only by the Sam Goosly deposit which contains 114 million ounces of silver (26 per cent of total reserve).



INDEX TO NUMBERED DEPOSITS

10. Pine Point
7. United Keno
3. Tulsequah Chief
4. Big Bull
10a. Premier Border
10b. Silbak Premier
11. Dunwell
12b. Toric
18. Silver Standard
21. Duthie
54. Tyee
56. Britannia
63. Nicola (Planet)
71. Highland-Bell
79. Reeves-MacDonald
80b. Jersey
83. H.B.
86b. Yankee Girl
86c. Ymir
90a. Florence (Ainsmore)
90b. Highland
90c. Number One
90d. Yale (Highlander)
91. Bluebell
92. Cork-Province
93. Galena Farm
94a. Bosun
94b. Hewitt
94c. Ivanhoe
94d. Mammoth
94e. Richmond-Eureka
94f. Ruth-Hope
94g. Silversmith and Slocan Star
94h. Standard
94i. Van Roi
94j. Violamac (Victor)
95a. Lucky Jim
95b. Noble Five
95c. Payne
95d. Rambler-Cariboo
95e. Surprise
95f. Whitewater
96. Spider
98. Monarch and Kicking Horse
100. Silver Giant
103. Paradise
104. Mineral King
105a. North Star
105b. Sullivan
106. Estella
109. St. Eugene

Concordant dissemination . . . . . o *Non-concordant dissemination* . . . . . ● *Transgressive (veins)* . . . . . ◊
Transgressive (veins with considerable replacement) . . . . . ♦

Notes: Numbers are those assigned to deposits shown on Map 1252A; others are named on figure.
Properties from which lead and zinc are the principal product are underlined. GSC

FIGURE 7. Lead-zinc deposits of Western Canada, classified according to type (by H. W. Little).
(From Econ. Geol. Rept. No. 1, G.S.C. 1970)

Large additional reserves of oxide mineralization occurs at the H B, Jackpot, Reeves, Bluebell, etc. properties but to date, no method exists for economically recovering metal from this oxide material.

GOLD RESERVES

Figures 4 and 4a show the location and Tables VII and VIII show the production and reserves of the main gold producers and potential producers. The recent increase in the price of gold to the $150 to $200 range has stimulated activity in most of the old camps with exploration being carried out at the Bralorne mine* (Bridge River area), Wells Camp, Rossland Camp, Boundary Camp (Greenwood area), and Portland Canal area. The Northair property near Brandywine Falls is presently being considered for production. Production of 50 tons per day by Colt Resources Ltd. at the Dentonia mine near Greenwood, British Columbia started in March, 1974 and currently ranks as the largest lode gold-silver operation in the Province (Church and Winsby, Geological Fieldwork, 1974).

Exploration for large tonnage, low grade gold-silver deposits in the Toodoggone volcanics of north-central British Columbia (for example, Chapelle and Lawyers by Kennco Explorations, (Western) Limited, and Moosehorn Creek by Sumac Mines Ltd.), in the Ladner Slate near Hope (Carolin Mines Ltd.) and in the Masset volcanics on the Queen Charlotte Islands (Babe property, Quintana Minerals Corporation and Silver Standard Mines) is currently in progress. The Premier property is considered by E. W. Grove to have low grade open-pit potential.

Most of the present gold production and known reserves is by-product gold obtained from porphyry copper, skarn, and massive sulphide deposits. By-product gold reserves and production are

* Bralorne reserves: currently accessible reserves above the 3,900-foot level at 233,000 tons grading 0.33 ounces per ton (The Province, March 5, 1975, p. 16).

TABLE VII

RESERVES AND PRODUCTION FOR SIGNIFICANT GOLD DEPOSITS IN BRITISH COLUMBIA

PROPERTY OR MINE	OWNER OR AGENT	NTS AND LOCATION	STATUS**	TYPE***	METALS	PRODUCTION TOTAL x 10^6 TONS	PRODUCTION GRADE Au; Ag oz./T.	PRODUCTION Au; Ag x 10^6 OUNCES	RESERVES x 10^6 TONS	RESERVES GRADE Au; Ag	RESERVES TOTAL Au; Ag x 10^3 OUNCES	RESERVE**** CLASS	COMMENTS	REFERENCE(S)
Polaris Taku - 1938-51	New Taku Mines Ltd.	104K/12 Taku River	PP	V	Au, Cu, Ag	0.753	0.31; 0.02	0.232; 12	0.146	0.4 oz. Au	58.4; 2.9	estimate		Canadian Mines Handbook, 1972-73, p. 241.
Surf Inlet, Pugsley - 1917-26, 1935-42		103H/2 Princess Royal Island	PP	V	Au, Cu, Ag	1.01	0.39; 0.02		0.047	0.35-0.45 Au	18.8; 9.4	?	Re-opening of Pugsley being considered. Production = 6,248,943 pounds Cu.	Northern Miner, 24/1/74, p. 16.
Silbak-Premier - 1936-68 Premier - 1918-37	Silbak Premier Mines	104B/1E Portland Canal	PP	V, R	Au, Ag, Cu, Pb, Zn	4.7		1.8; 41.1					Low-grade potential. Also produced 4.3 million pounds Cu; 62.5 million pounds Pb; 10.6 million pounds Zn; 0.2 million pounds Cd.	
Premier Border - 1950-53									0.074	0.7; 1.94	51; 1.40	Ind.	Reserves for Premier Border also include 4.2% Pb and 6.36% Zn.	
Bralorne, Pioneer - 1928-71	Bralorne Resources Ltd.	92J/14W Bridge River	PP	V	Au, Ag	7.889	0.53; 0.12	4.16; 0.94	*				Evaluation of SI vein presently in progress. Gross value of production = $145 million.	
Aurum (Island Mtn.) - 1934-67	Mosquito Cr. Gold Mining Co.	93H/4W Wells	PP	V	Au, Ag	1.063	0.48; 0.7	0.492; 0.7	0.138	0.33;---	45.5;---	estimated	Extension held by Mosquito Cr. Gold Mining Co. Home Oil Co. spending $1.4 million to earn 50%. Also estimated 40,000 tons @ 0.70 oz. Au/ton below 3,250 ft. level.	Northern Miner, 16/8/73; 10/5/73.
Cariboo Gold Quartz - 1933-58	Wharf Resources Ltd.	93H/4W Wells	PP	V	Au, Ag	1.855	0.38; 0.32	0.705; 0.6	0.117	?		estimated No. 1 mine		Northern Miner, 16/8/73.
Rossland Camp - 1893-1942		82F/4E Rossland	PP	V, R	Au, Ag, Cu	5.915	0.46; 0.56	2.706; 3.3	*				Also production of 118 million pounds Cu. Property includes Centre Star, War Eagle, Le Roi, Josie.	Geological Survey of Canada, Geological Report #1, p. 501.
Hedley Mascot - 1936-49		92H/8E Hedley	PP	SK	Au	0.682	0.33;---	0.223; <0.1	*					
Nickel Plate - 1904-58		92H/8E Hedley	PP	SK	Au	3.315	0.41; 0.03	1.359; 0.1	*					
French - 1954-61		92H/8E Hedley	PP	SK	Au	0.062	0.53;---	0.033; <0.1	*					
Zeballos		92L/2W Zeballos	PP	V	Au	0.664	0.5;---	0.325;---	*				Property includes Mt. Zeballos, Privateer, Central Zeballos, Spud Valley. New Privateer (formerly Privateer) estimated 31,000 tons @ 1 oz. Au/T.	George Cross Newsletter, 25/6/74.
Ymir Camp - 1899-1951		82F/6E Ymir	PP	V	Au, Ag	0.895	0.27; 1.68	0.246; 1.5	*				Property includes Hunter V, Double Standard, Centre Star (Wesko), Yankee Girl, Ymir.	
Sheep Creek Camp - 1904-55		82F/3E Salmo	PP	V	Au, Ag	1.739	0.42; 0.17	0.726; 0.3	*				Property includes Sheep Creek, Reno, Kootenay Belle, Gold Belt.	
SIGNIFICANT PROSPECTS														
Brandywine	Northair Mines Ltd.	92J/3 Brandywine Falls	SP	V	Au, Ag, Cu, Pb, Zn				0.29 0.12	0.55; 4.43 0.10; 1.18	159; 1.285 12; 142	M. Ind.		
Hi Do	Lord River Gold Mines	92O/4E Lord River	SP	V	Au, Ag				0.4	0.6 ; ?	240;---	Inf.		
Aurum, Idaho (western)	Carolin Mines Ltd. (Summit Mining Co. Ltd.)	92H/11W Hope	SP	V, R	Au, Ag				2.6	>0.10; ?	260;---	Ind.		George Cross Newsletter, #38 (1975).
Chappelle, Lawyers	Kennco	94E/6E Toodoggone	SP	V, P(?)	Au, Ag								In early stages of exploration.	
Moosehorn Cr.	Sumac Mines	94E/6E Toodoggone	SP	V, P(?)	Au								In early stages of exploration.	
Babe (Specogna)	Quintana	103E/9E Queen Charl. Is.	SP	P(?)	Au, Hg									
Dusty Mac	Dusty Mac Mines Ltd.	82E/5E Okanagan Falls	SP	V, R	Au, Ag				0.133 0.024 0.004	0.21; 3.6 0.134; 1.68 0.18; 2.71	27.9; 479 3.2; 40.3 0.7; 10.8	M. Ind. Inf.		
Dentonia Mine	Colt Resources Ltd.	82E/2E Greenwood	Pr	V	Au, Ag, Si	0.135	0.3; 2.0	0.041; 0.230	0.05 0.2	0.3; 2.0 0.3; 2.0	15.0; 100.0 60.0; 400.0	Ind. potential	Also silica credit. Production started March, 1974.	Church and Winsby, BCDM, Geological Fieldwork, 1974.
Lexington	Lexington Mines Ltd.	82E/2E Greenwood	SP	V, R	Cu, Au				0.113(OP)+ 0.504(UG)++	0.064;--- (0.92% Cu) 0.195;--- (1.25% Cu)	7.2;--- 98.3;---	Ind. Ind.		George Cross Newsletter, #38 (1975).
Hanna Gold	Dorchester Resources Ltd.	104P/5E Cassiar		V	Au				0.038	0.72;	27.4;---	Inf.		
Table Mtn.	Silver Standard Mines Ltd.	104P/4E Cassiar		V	Au				0.001	0.7;	7.0;---	Ind.		
Marshal Lake (adjoins Phoenix)	San Jacinto Explorations Ltd.	82E/2E Greenwood		V	Au, Ag, Cu				0.050	1.2;---	60 ;---		277-ton shipment returned 1.389 oz. Au/T.	Northern Miner, 13/2/75, p. 24.
Musketeer - 1942; 1961-63		92F/5W near Tofino		V	Au, Ag, Pb, Cu			0.003; 0.002 (1,000# Cu; 20,000# Pb)	0.011	0.33;---	3.9;---	Ind.	Reserve estimate does not count. Rob vein or below 700 level.	

* = open pit
** = underground

* - Reliable data not available.
** - Type. V = vein; R = replacement; SK = skarn; P = porphyry.
*** - Status, SP = significant prospect; Pr = producer; PP = past producer.
**** - Reserve class, M = measured, Ind. = indicated; Inf. = inferred.

TABLE VIII

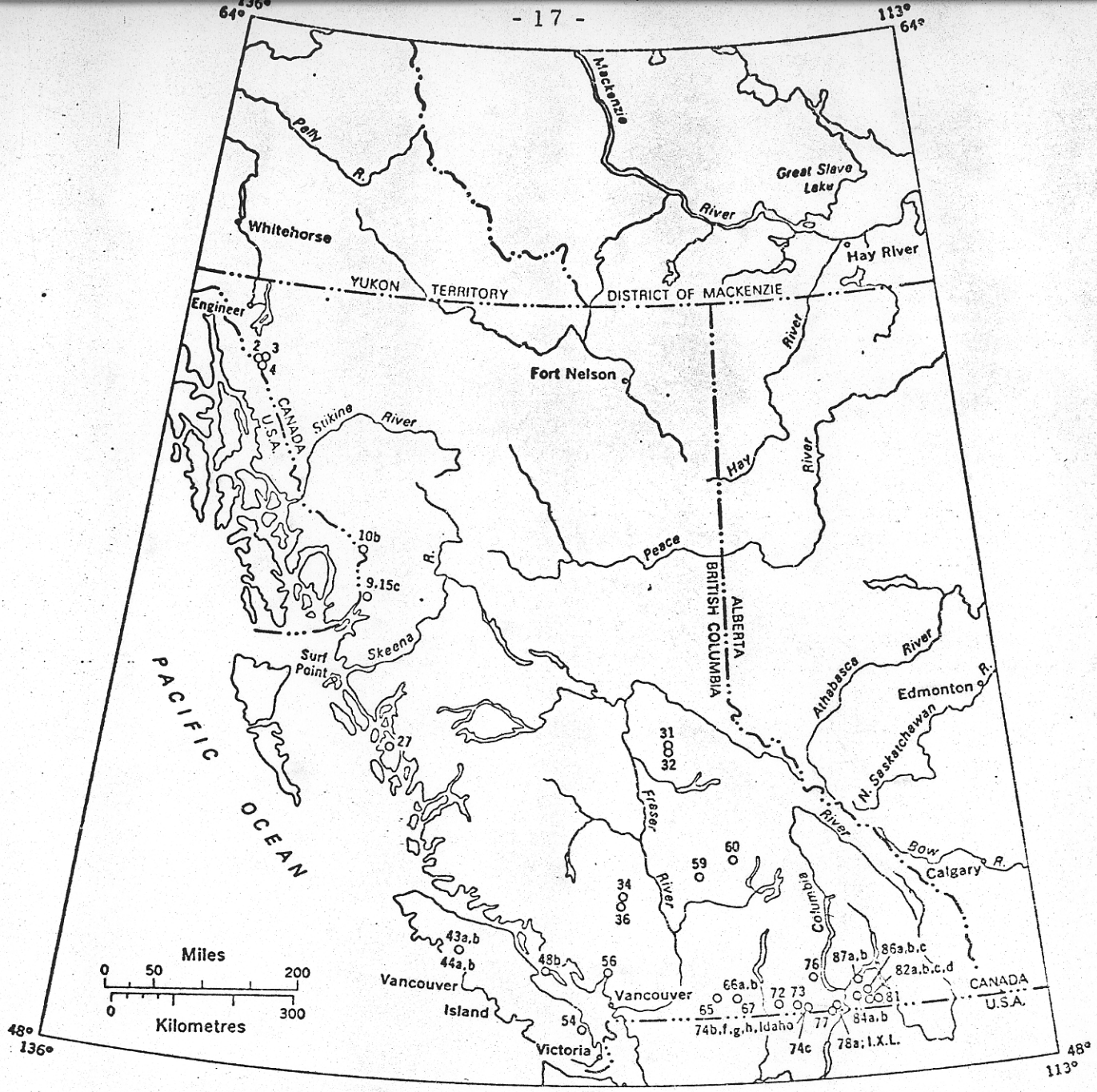
RESERVES AND PRODUCTION OF BY-PRODUCT* GOLD AND SILVER IN BRITISH COLUMBIA

				PRODUCTION (1973/TOTAL)			RESERVES					
PROPERTY	OWNER	LOCATION	TYPE**	TONS x 10^6	GRADE Au; Ag RECOVERED oz./T.	Au; Ag x 10^3 OUNCES	TOTAL TONS x 10^6	GRADE Au; Ag oz./T.	TOTAL Au; Ag x 10^3 OUNCES	RESERVE**** CLASS	COMMENTS	REFERENCE
Island Copper – 1971-73	Utah Mines Ltd.	Port Hardy	P	12.071 21.092	0.004 ; 0.022 0.004 ; 0.022	49.7; 269 90.2; 468	280	—	1,120; 6,160	Ind.		
Old Sport mine – 1962-72	Coast Copper Co. Ltd.	Benson Lake	SK	from stock-pile 2.857	0.049 ; 0.12	1.0; 7.7 140.8; 342.1		***			Mine ceased production in 1972.	
Texada mine –	Texada Mines	Texada Island	SK	1.029 20.719	0.002 ; 0.057 0.001 ; 0.027	1.9; 58.6 24.9; 557	2.96	***	10; 170	Ind.		

RESERVES AND PRODUCTION OF BY-PRODUCT* GOLD AND SILVER IN BRITISH COLUMBIA

				PRODUCTION (1973/TOTAL)			RESERVES					
PROPERTY	OWNER	LOCATION	TYPE**	TONS x 10^6	GRADE Au; Ag RECOVERED oz./T.	Au; Ag x 10^3 OUNCES	TOTAL TONS x 10^6	GRADE Au; Ag oz./T.	TOTAL Au; Ag x 10^3 OUNCES	RESERVE**** CLASS	COMMENTS	REFERENCE(S)
Island Copper – 1971-73	Utah Mines Ltd.	Port Hardy	P	12.071 21.092	0.004 ; 0.022 0.004 ; 0.022	49.7; 269 90.2; 468	280	***	1,120; 6,160	Ind.		
Old Sport mine – 1962-72	Coast Copper Co. Ltd.	Benson Lake	SK	from stock-pile 2.857	0.049 ; 0.12	1.0; 7.7 140.8; 342.1		***			Mine ceased production in 1972.	
Texada mine – 1885-1972	Texada Mines Ltd.	Texada Island	SK	1.029 20.719	0.002 ; 0.057 0.001 ; 0.027	1.9; 58.6 24.9; 557	2.96	***	10; 170	Ind.		
Lornex mine – 1972-73	Lornex Mining Corp. Ltd.	Highland Valley	SK	13.99 16.84	--- ; .031 --- ; .034	0.8; 431 1.0; 569.5	500	***	--- ; 15,500	Ind., Inf.		
Bethlehem mine – 1963-73	Bethlehem Copper Corp. Ltd.	Highland Valley	P	6.339 45.054	--- ; 0.028 0.0004; 0.035	--- ; 176 19.2; 1,571	75	***	--- ; 2,630	Ind.		
Phoenix mine	Granby Mining Co. Ltd.	Phoenix	SK	1.004 25.7	0.018 ; 0.1 0.036 ; 0.49	17.8; 100.5 932 ; 12,599	1.4	***	30; 140	Ind.		
Bull River mine – 1972-73	Placid Oil Co.	Wardner		0.208 0.413	0.009 ; 0.43 0.006 ; 0.34	1.8; 88.7 2.8; 140.6		***			Mine ceased production in 1974. No reserves.	
Bell mine – 1972-73	Noranda Mines Ltd.	Babine Lake	P	4.114 4.881	0.006 ; --- 0.006 ; ---	24.9; --- 28.5; ---	51	***	310; ---	Ind.		
Granisle mine – 1966-73	Granisle Copper Ltd.	Babine Lake	P	4.545 18.435	0.004 ; 0.04 0.005 ; 0.05	16.7; 176 94.0; 917.4	78	***	312; 3,120	Ind.		
Brenda mine – 1970-73	Brenda Mines Ltd.	Brenda Lake	P	8.868 34.685	0.0004; 0.029 0.0005; 0.03	3.5; 260 15.7; 1,083	145	***	60; 4,210			
Similkameen mine (Ingerbelle) – 1917-57; 1972-74	Similkameen Mining Co.	Princeton	P	5.357 48.2	0.005 ; 0.025 0.005 ; 0.098	28.9; 133 260 ; 4,702	61.5	***	620; 2,480	Ind.	Total production includes 1974.	
Granduc mine – 1970-73	Granduc Operating Co.	Stewart	MS	2.798 6.483	0.004 ; 0.233 0.004 ; 0.232	11.0; 651 24.4; 1,505	32.9	***	130; 7,670	Ind.		
Tasu mine – 1968-73	Wesfrob Mines Ltd.	Tasu Harbour	SK	1.781 11.144	0.002 ; 0.062 0.002 ; 0.08	3.0; 110 26.1; 908	4.8	***	10; 300	Ind., Inf.		
Britannia mine – 1905-73	Anaconda Canada Ltd.	Howe Sound	MS	0.549 52.4	--- ; 0.19 0.01 ; 0.11	--- ; 103 492 ; 5,664	3.7	***	--- ; 700	Inf.	Mine ceased production in November, 1974.	
Copper Giant (Poison Mtn.)							85	0.007; ---	595; ---	Ind.		
Cariboo Bell							28	0.025; 0.04	700; 1,120	Ind.		
Galore Cr. (Stikine)							125	0.014; 0.28	1,794; 34,500	Ind., Inf.		
Gnat Lake							25	0.011; ---	280; ---	Ind.		
Afton							68 Op, Ug	0.015; 0.10	1,020; 6,800	Ind.		
Lorraine							10	0.006; ---	60; ---	Ind.		
Berg							325	--- ; 0.1	---; 32,500	Ind., Inf.		
Sam Goosly							40.3	0.026; 2.82	1,050;113,650	Ind., Inf.		
TOTAL				371.556			1,942.56		8,101;231,650			

* - By-product from Skarn, Porphyry, and Massive Sulphide deposits.
** - Type, P = porphyry; SK = skarn; MS = massive sulphide.
*** - Same grade as previous recovery assumed (50 to 70 per cent is recovered).
**** - Reserve class, Ind. = indicated; Inf. = inferred.



INDEX TO NUMBERED DEPOSITS

2. Polaris-Taku
3. Tulsequah Chief
4. Big Bull
9. Big Missouri
10b. Silbak Premier
15c. Hidden Creek
27. Surf Inlet
31. Aurum (Island Mountain)
32. Cariboo Gold Quartz
34. Minto
36. Bralorne-Pioneer
43a. Mount Zeballos
43b. Privateer
44a. Central Zeballos
44b. Spud Valley
48b. Marble Bay
54. Tyee
56. Britannia
59. Vidette
60. Windpass
65. Copper Mountain
66a. Hedley Mascot
66b. Nickel Plate
67. French
72. Cariboo Amelia (McKinney)
73. Mother Lode

PHOENIX COPPER

74b. Brooklyn-Stemwinder
74f. Knob Hill-Ironsides
74g. Rawhide
74h. Snowshoe
— Idaho

74c. Dentonia
76. Union
77. Velvet
78a. CENTRE STAR GROUP
Centre Star
Le Roi
War Eagle
Josie
— I.X.L.
81. Bayonne
82a. Gold Belt
82b. Kootenay Belle
82c. Reno
82d. Sheep Creek
84a. Arlington
84b. Second Relief
86a. Centre Star (Wesko)
86b. Yankee Girl
86c. Ymir
87a. Athabasca
87b. Granite Poorman

Deposit . . . o

Notes: Numbers are those assigned to deposits shown on Map 1252A, other deposits are named on figure. Properties from which gold is the principal product are underlined.

GSC

FIGURE 40. Lode gold deposits of the Cordilleran Region (by H. W. Little).

(From Econ. Geol. Rept. No. 1, G.S.C. 1970)

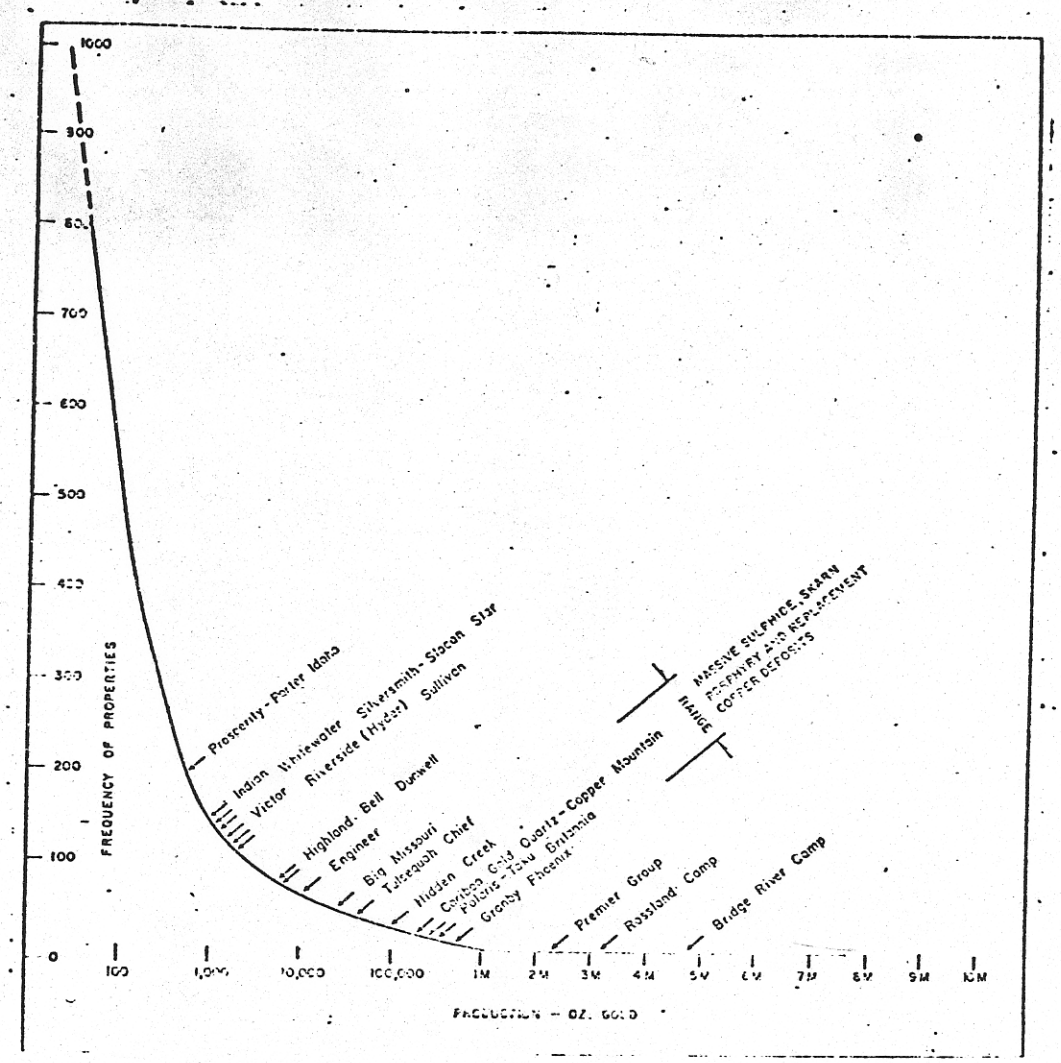


Fig. 5. [illegible], British Columbia gold producers.

(From Grove, 1971, Bull. No. 58, p. 94)

summarized in Table VIII. Figure 5 (Grove, 1971, p. 94) shows the relative scarcity of the big primary gold producers, the importance of copper mines as gold producers, and the relatively small amount of gold produced by the majority of lode gold or multi-metal mines. Reserves and past production for lode deposits is summarized in Table VII.

IRON RESERVES

The reserves and production for iron mines are shown in Table IX and the reserves of significant properties are shown in Table X. Figure 22-1 (Eastwood, G.E.P., 1966, C.I.M. Special Vol. No. 8) lists the significant iron deposits and shows their distribution, classified as to size and type of deposit.

Most of the known iron deposits are magnetite skarn deposits of the coastal area. Most of the deposits are small, but the Tasu and Texada mines are moderate sized as are the Max and Jib properties. Gold, silver, and copper are significant by-products at the Texada and Tasu mines and iron is a by-product of copper production at the Craigmont and Old Sport mines. Large reserves of sulphide iron is contained in the Sullivan, Ecstall, and Big Ledge properties. The Sullivan mine has accumulated a stockpile of about 20 million tons of iron ore. The iron smelter at Kimberley closed in August, 1972 after producing about 1.36 million tons of iron sinter.

British Columbia presently has indicated reserves of about 40 million tons of magnetite ore grading 35 to 40 per cent iron, with potential for developing similar tonnages at the Max deposit and Lodestone Mountain.

RESERVES AND PRODUCTION OF IRON PRODUCERS IN BRITISH COLUMBIA

PROPERTY NAME	OWNER OR AGENT	NTS AND LOCATION	METALS	PRODUCTION (1973/TOTAL) YEARS	TONS x 10^6	GRADE % Fe, Cu	Fe CONCENTRATE TONS; % Cu x 10^6	RESERVES TONS x 10^6	GRADE % Fe, Cu	Fe TONS % Cu x 10^6	RESERVE* CLASS	COMMENTS	REFERENCE(S)
Tasu mine	Westfrob Mines Ltd.	103C/16E Moresby Island	Fe, Cu, Ag, Au	1973 1967-73	1.781 12.129	42 ; 0.21 42 ; 0.3	0.996; 7.5 6.117; 7.2	4.82 (confidential)	; 0.2	; 19.28	Ind.	Also produced, 26,168 oz. Au; 925,000 oz. Ag. At start of production ore reserves estimated at 25 million T. @ 41.33% Fe proven; 15 million T. @ 44.7% Fe probable.	Financial Post Survey of Mines, 1974, p. 197.
Texada mine	Texada Mines Ltd.	92F/10E Texada Island	Fe, Cu, Ag, Au	1973 1952-73	1.781 20.235	---; 0.13 ---; 0.13	0.520; 4.5 8.464; 51.2	2.96	; 0.40	; 26.7	Ind.		
Nimpkish Iron	Nimpkish Iron Mines Ltd.	92L Nimpkish Lake	Fe	1959-63	2.398		0.982; ---	NIL					
Argonaut (Iron Hill)	The Argonaut Co. Ltd.	92F/13E Campbell River	Fe	1951-57	4.03		2.2 ;	NIL					
Brynnor	Brynnor Mines Ltd. (Noranda)	92F/3E Kennedy Lake	Fe	1962-68	4.939		3.328; ---					Mining ceased in 1968 when the open-pit orebody was exhausted. Subeconomic underground reserves still present. Initial estimate was 10 million T. @ 51% Fe (Total).	
FL (Ford) or Zeballos Iron	Zeballos Iron Mines Ltd.	92L/2W Zeballos	Fe	1962-69	1.933		1.421; ---	NIL					
Iron Mike		92K/5W Sayward	Fe	1966	0.150		0.123; ---	1.3 0.7	43.3; --- 43.3; ---		Ind. Inf.		Mineral Deposit-Land Use map 92K.
Merry Widow, Kingfisher	Empire Development Co. Ltd.	92L Benson River	Fe	1957-67	3.786		1.79 ; ---	NIL					
Jessie, Adonis, Rose	Jedway Iron Ore Ltd.	103B Moresby Island	Fe	1962-68	4.341		2.33 ; ---	0.137	35 ;		Geologic. Res.		BCDM Bulletin 54.
Craigmont mine	Craigmont Mines Ltd.	92I/2W Merritt	Cu, Fe	1973 1970-73 (prod. iron conc.)	1.430 6.934	---; 1.35 ---; 1.15	.039; 38.6 0.12 ;159.7	9.277	; 1.73		Ind.		George Cross Newsletter, 31/1/74.
Old Sport mine	Coast Copper Co. Ltd. (Cominco)	92L/6E Benson Lake	Fe, Cu, Au	1962-72 1964-70 (prod. iron conc.)	2.900	33.3; 1.6	0.492; 90.6	0.501	33.3; 1.3 (0.02 Au)	---; 13	Ind.		George Cross Newsletter, #64, 1972.
Sullivan mine	Cominco Ltd.	82F/9E Kimberley	Pb, Zn, Ag, Sn, Au, Fe Cd									Large reserve of pyrrhotite (FeS) in tails and in cap over orebody.	
TOTAL					63.775		27.4 ; 400.9	19.695		---; 380			

*Reserve class, Ind. = indicated; Inf. = inferred.

TABLE IX

TABLE X

RESERVES OF SIGNIFICANT IRON PROPERTIES IN BRITISH COLUMBIA

PROPERTY NAME	OWNER OR AGENT	NTS AND LOCATION	METALS	RESERVES TONS x 10^6	RESERVES % Fe; Cu	RESERVES TONS Fe; ¢Cu x 10^6	RESERVE* TYPE	COMMENTS	REFERENCE(S)
Ecstall	Texasgulf, Inc.	103H/13E	Fe, Cu, Zn, (Au)	5	43 ; 0.8	2.1; 80	estimated		Mineral Deposit-Land Use map 104H.
Max	Granduc Mines Ltd.	104B/7E	Fe (Cu)	11	45 ; 0.85	5.0; 187	Ind.	Potential of 40 million T. of sim. grade.	
Jib	Burnaby Iron Mines Ltd.	Burnaby Island	Fe	8.0	49,5; ---		Ind.		Canadian Mines Handbook, 1972-73.
Indian Chief	Tidewater Copper Co.	92E/8W Clayoquot Sound	Cu (Fe)	1.5	---; 1.5	---; 45	estimated	Production, 1904-38, 81,139 T.; 2.4 million ¢ Cu.	Mineral Deposit-Land Use map 92E.
Brown Jug		92E/8W Nootka Sound	Fe	0.5 to 1	30-40; ---		estimated (1962)		Mineral Deposit-Land Use map 92E.
Glengarry		92E/15E Nootka Sound	Fe	0.360	42.7; ---			Production, 1959, 62,500 T. containing 25,000 T. Fe concentrate.	Mineral Deposit-Land Use map 92E.
Star	Utah Co. of the Americas	103J/1W Porcher Island	Fe	0.100	35- ; ---		Ind.		Minister of Mines Annual Report, 1956, pp. 128, 129.
Iron Mountain (Wedeene)	Quebec Metallurgical Industries Ltd.	103I/1W Kitimat	Fe	6.0	22 ;				Minister of Mines Annual Report, 1959, p. 15. Minister of Mines Annual Report, 1961, p. 17.
Hiller		92L/2 Alert Bay	Fe	0.970	40-45;				Mineral Deposit-Land Use map 92L.
Artlish		92L/2	Fe	1.20	44.5;				Mineral Deposit-Land Use map 92L.
Churchill		92L/2	Fe, Cu	0.700	55.7; 0.25	---; 3.5			Mineral Deposit-Land Use map 92L.
Lodestone Mtn.	Imperial Metals, and Power Ltd. (Dofasco)	Tulameen	Fe, V	98.654	15.5; ---		Inf.	High titanium. Also, 3 ¢/T. vanadium pentoxide.	
Iron River		92F/14W	Fe, Cu	0.800	36 ; 0.35	---; 5.6			
Reako	Reako Explorations Ltd.	92C/9W Port Renfrew	Fe, Cu	2.3 (5 zones)	35 ; 0.25	---; 11.5	Ind.	Potential = 10,000,000.	Canadian Financial Journal. George Cross Newsletter, ¢212, 1973. Geological Fieldwork, 1974, p. 73.
TOTAL				137.6		---; 332.6			

* Reserve type, Ind. = indicated; Inf. = inferred.

MERCURY RESERVES

The location of mercury properties in British Columbia is shown on Figures 3 and 8 and reserves and production of economically significant mercury deposits are shown in Table XI.

Pinchi Lake Mine (Cominco Ltd.)

The Pinchi Lake mine is the main mercury producer in British Columbia. This mine is located 30 miles north of Fort St. James, and has produced approximately 13 million pounds (170,600 flasks) of mercury from 1940 to 1944 and 1968-1974. The Cominco Annual Report for 1973 indicated reserves of 1,600,000 tons containing 120,000 flasks (9,120,000 pounds) with 1974 production estimated at 12,000 flasks. In 1971 Cominco optioned the adjacent property of Highland Mercury Mines and conducted further exploration of the property. No information is available on reserves at the Highland Mercury Mines property.

Takla Mercury (Lalorne Mines Limited)

The Takla Mercury mine near Fort St. James produced 132,088 pounds of mercury (1,738 flasks) between 1940 and 1944.

Bridge River Area

Several mercury prospects including the Red Eagle prospect, Manitou mine (Empire Metals Corporation Ltd.), and the Silverquick mine occur in the Bridge River area.

RESERVES AND PRODUCTION OF SIGNIFICANT MERCURY PROPERTIES IN BRITISH COLUMBIA

TABLE XI

PROPERTY NAME	OWNER OR AGENT	LOCATION	PRODUCTION (1973/TOTAL) TONS x 10^6	% Hg	# Hg x 10^6	APPROXIMATE VALUE x 10^6	RESERVES TONS x 10^6	% Hg	# Hg x 10^6	APPROXIMATE VALUE x 10^6 @ $4.00/#	RESERVE* CLASS	COMMENTS	REFERENCE(S)
Pinchi Lake mine - 1940-44; 1952-74	Cominco Ltd.	93K/9W	2.3	0.28	0.95 13.0	$50	1.6	0.27	9.12	$36.5	estimated		Cominco Annual Report, 1973.
Silverquick mine	Silverquick Development Co. Ltd.	92O/2			<0.006	0.023	0.390 open pit	0.10	0.095	3.0	Ind., Inf.		Canadian Mine Handbook, 1972-73, p. 301.
Manitou mine	Empire Metal Corp.	92O/2			0.001			0.15					
Red Eagle or Eagle	Corvus Mines Ltd.	92J/16W			<0.001		1.8	0.24	8.561	34.2	Ind.	Ore reserves described as indicated ore reserves (reasonably assured).	Canadian Mine Handbook, 1973-74, p. 100.
Copper Creek Cinnibar		92I/15			0.011	0.044						No reported reserves.	
Hardie Mtn.		92I/15			<0.001	<0.001						No reported reserves.	

* Reserve class, Ind. = indicated; Inf. = inferred.

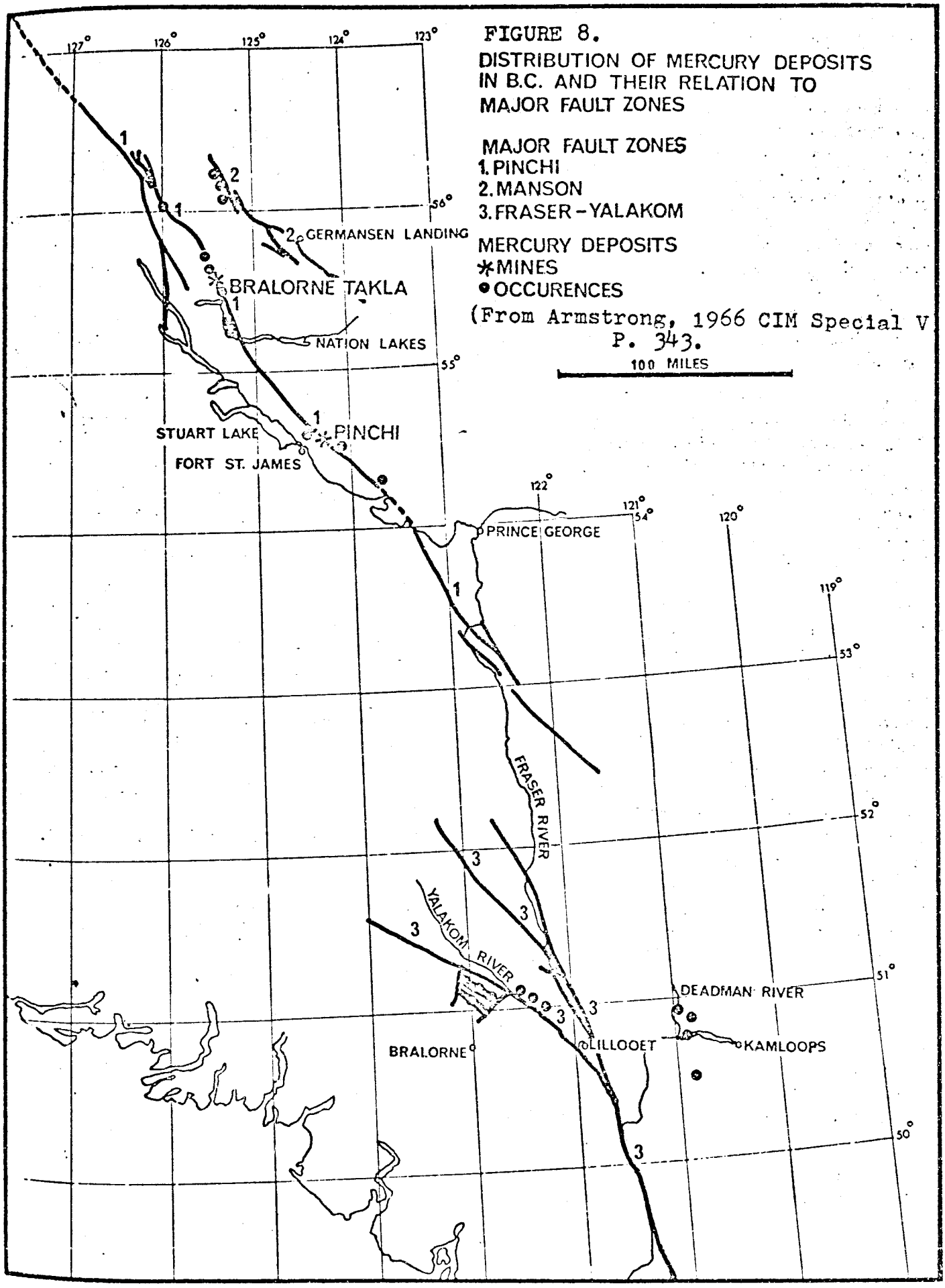


FIGURE 8.
DISTRIBUTION OF MERCURY DEPOSITS IN B.C. AND THEIR RELATION TO MAJOR FAULT ZONES

(From Armstrong, 1966 CIM Special V P. 343.

Silverquick Mine (Silverquick Development Co. Ltd.)

Reserves at the Silverquick mine are estimated at 390,000 tons of open-pit ore averaging 2 pounds of mercury per ton (10,263 flasks) (Canadian Mines Handbook, 1973-74, p. 310). Construction of a 500-ton-per-day mill was started in 1969 but the property was never placed into production. Previous production from this property is 5,623 pounds (74 flasks).

Manitou Mine (Empire Metals Corporation Ltd.)

This property contains a main zone with up to 3 pounds per ton mercury across a 25 to 30-foot width but no indication of the extent of the showing was given. Previous production from this property is 1,196 pounds (16 flasks).

Red Eagle Property (Corvus Mines Ltd.)

Surface exploration and diamond drilling carried out in 1969 and 1970 indicated ore reserves (reasonably assured) of 1,783,500 tons averaging 4.8 pounds per ton mercury (112,642 flasks) (Canadian Mines Handbook, 1973-74, p. 100). Production from the Red Eagle property has totalled 512 pounds (7 flasks).

Kamloops Lake Area

Several mercury prospects occur in an eight-mile wide belt at the west end of Kamloops Lake. Production of 11,168 pounds (147 flasks) from the Copper Creek Cinnabar property and 199 pounds

from the Hardie Mountain property represent the only reported production from this belt. No reserves have been indicated for the belt.

APPENDIX A

British Columbia Department of Mines and Petroleum Resources
April, 1974

ASBESTOS OCCURRENCES IN BRITISH COLUMBIA

Five fibrous or "asbestiform" minerals are used commercially. These are the serpentine mineral chrysotile and the four amphibole minerals crocidolite, amosite, anthophyllite, and tremolite-actinolite. More than 90 per cent of the fibre used is chrysotile and most of the rest is crocidolite or amosite. In British Columbia many occurrences of chrysolite, anthophyllite, and tremolite-actinolite are known, crocidolite has been reported, but no amosite has been found. To date only the chrysotile deposit at Cassiar has been developed into an operating mine.

The abbreviations below have been used in all references:

(1) BC -- British Columbia Department of Mines and Petroleum Resources
(2) GSC -- Geological Survey of Canada, Ottawa
(3) AR -- Annual Report
(4) AsR -- Assessment Report filed in Victoria
(5) M -- Memoir
(6) Bull -- Bulletin
(7) SR -- Summary Report
(8) GEM -- BC "Geology, Exploration and Mining in British Columbia"

Occurrences are listed according to NTS map designations. Numbers in brackets after properties refer to locations shown on the accompanying index map.

CHRYSOTILE ASBESTOS

All of the known chrysotile deposits are in serpentine that has apparently been formed from altered ultrabasic rock. Nearly every recorded serpentine deposit in the Province contains some chrysotile fibre. In most deposits the veins are scarce, widely separated, and contain fibre shorter than 3.2 mm. The following occurrences have been noted in published reports or have come to the notice of the Department of Mines and Petroleum Resources.

82E/3E ROCK CREEK (1) (49°04.3' - 119°0.4') Scattered narrow veinlets of fibre occur in serpentine just west of Kettle River north of town.

11E HALL CREEK (2) (49°34.5 - 119°05.7') About 9.6 km north of Carmi some thin scattered veinlets of fibre were seen. GSC M79, pp.17, 143.

82F/4W SHEEP CREEK VALLEY (3) (49°04.3' - 117°50.6') Scattered thin veinlets of fibre were noted 2.4 km south of Rossland. GSC M77, p.211; SR 1906, p.61.

82K/3E TOM, EK (4) (50°04.8' - 117°08.8') At 1800 m elevation on Whitewater Creek 3.2 km north of Retallack, chrysotile occurs in hairline fractures in serpentine. GEM 1971, p.421.

6E BROWN and POPLAR CREEKS (5) (50°22' - 117°12.5') Short brittle fibre was found. GSC M161, pp.111, 112; BC AR 1914, p.323.

82K/13W SPROAT MOUNTAIN (6) (50°45.1' - 117°56') At 1260 m elevation 3.2 km northeast of Sidmouth. Diamond drilling, stripping, trenching, and sampling has been done on scattered veinlets to 19.2 mm wide in an area 162 m by 90 m The rock contains 1 to 3 per cent of 4Z grade fibre. BC AR 1950, p.214; 1962, p.146; AsR 469, 470; GSC SR 1921A, pp.111, 112.

82L/4W CHROME-VANADIUM (7) (50°0.5' - 119°52') At the head of Nicola River 1.2 km west of Eileen Lake. Scattered narrow veinlets of fibre to 6.4 mm long were noted. GSC SR 1931A, pp.94; M296, pp.35, 154, 155.

CHAPPERON CREEK (8) (50°12' - 119°58.4') Some fibre reported. GSC Preliminary Map 46-7, 48-4.

82M/4E PAT (9) (51°0' - 119°44.1') About 60 m above Adams Lake on the west side 16 km northeast of Squilax. Sparse 3.2 to 6.4 mm fibre noted in serpentine. AsR 3510.

8W STANDARD (10) (51°23.6' - 118°16.2') In Standard basin. Some low-grade fibre reported. BC AR 1921, p.156, GSC SR 1928A, p.193.

92H/4E CHILLIWACK RIVER (11) (49°04.6' - 121°37.3') Brittle harsh-fibre to 4.8 mm long occurs in scattered veinlets 2 km southwest of the junction of Nesakwatch Creek and Chilliwack River.

6W COQUIHALLA AREA (12) (49°28.2' - 121°15.3') Some thin seams found. GSC SR 1929A, p.183.

10W TULAMEEN AREA (13) (49°01.5' - 120°54') Thin veinlets are common, especially on Britton Creek. GSC M26, pp.51, 60, 62, 171, 172; AsR 2274.

11W GORDON CREEK (14) (49°32.9' - 121°27.2') Some fibre found, mostly slip. GSC SR 1911, p.111.

92I/12W FRASER RIVER (15) (50°38' - 121°54') Scarce fibre reported in serpentine bodies between Bridge River and Texas Creek. GSC AR VII B, 1894, p.345.

92J/10E CADWALLADER RANGE (16) (50°42.5' - 122°42.5') At various places scattered veinlets of good quality fibre to 6.4 mm long was seen. GSC M30, p.77; M213, p.70.

15W MOUNT PENROSE (17) (50°53' - 122°57.6') On the north shoulder of the mountain short-fibre veinlets occur in parallel swarms in zones 0.15 m to 0.6 m wide. BC AR 1953, p.181.

16W SHULAPS MOUNTAINS (18) (50°57' - 122°30') Scattered short-fibre veinlets noted in various places. BC Bull 32, p.54.

16E MOON CREEK (19) (50°45' - 122°01.2') On the ridge on the southeast side of Moon Creek on the powerline right-of-way. Some trenching and drilling was done on a exposure of 0.8 mm to 9.6 mm long fibre in an area 360 m by 120 m GEM 1969, p.380.

92P/3W MOND RANCH (20) (51°07.5' - 121°28.6') Opposite the Mond ranch, 8.1 km northeast of Clinton. Harsh-fibre veinlets less than 1.6 mm wide are abundant in a small serpentine body. AsR 197, 1146.

4E MOUNT SOUES (21) (51°03.8' - 121°44.6') Fibre has been reported on the south side of the mountain. GSC AR VII B, 1894, p.345.

93A/4W OCHILTREE (22) (52°14.5' - 121°49.5') Scattered narrow veinlets of chrysotile have been found in small serpentine outcrops near Ochiltree. GSC Map 3-1961.

13W FONTAINE CREEK (23) (52°56.6' - 121°47.7') Scattered short-fibre veinlets occur in ultrabasic rock northwest of the junction of Fontaine and Reddish Creeks. GSC Map 3-1961.

93B/1E WILLIAMS LAKE (24) (52°05.6' - 122°08') Very short harsh-fibre veinlets were exposed by trenching. BC AR 1961, p.139; AsR 392.

93D/8W BELLA COOLA VALLEY (25) (52°24' - 126°20') Short narrow stringers of asbestos fibre in serpentine reported by a prospector near a logging road 9.6 km southwest of Firvale. BC AR 1964, p.A74.

93G/5E TELEGRAPH RANGE (26) (53°24.6' - 123°30.5') Fibre to 6.4 mm long is widely distributed in serpentine 10.5 km on a bearing south 70 degrees east from Tagai Lake. GSC Map 49-1960.

11E BALDY HUGHES (27) (53°37.4' - 123°05.2') Fibre up to 1.6 mm long occurs in serpentine 9.7 km on a bearing north 85 degrees west from Mount Baldy Hughes. GSC Map 49-1960.

11W BOBTAIL MOUNTAIN (28) (53°36.5' - 123°26.9') Widely spaced 6.4 mm to 12.8 mm wide cross-fibre veins were noted in serpentine between elevations of 1110 m to 1260 m on the extreme southwest ridge about 2.4 km from the south end of Naltesby Lake. BC AR 1961, p.139; GSC Map 49-1960.

13W SINKUT MOUNTAIN (29) (53°48.4' - 123°58') Chrysotile has been reported. GSC Map 49-196

93K/14W MOUNT SYDNEY WILLIAMS (30) (54°54' - 125°24') On the north slope of the mountain 16.1 km north of the west end of Trembleur Lake. A zone 7.5 m wide contains about 5 per cent harsh-fibre asbestos in stringers 3.2 mm to 38.2 mm wide at 3.2 mm to 300 mm spacings. GSC M252, p.197.

93N/10E SOUTH OF GERMANSEN LANDING (31) (55°44' - 124°39.9') Scarce and poor fibre noted. BC AR 1938, p.C7; GSC Paper 45-9, pp.8, 15.

104G/6E MOUNT HICKMAN (32) (57°15' - 131°07') Fibre noted in serpentine. GSC Map 9-1957.

104I/2W KEHLECHOA RIVER (33) (58°10.2' - 128°49.1') Fibre has been reported in serpentine west of the head of the river. GSC Map 9-1957.

104I/2W 7W J (34) (58°15' - 128°50') Between 1450 m and 1600 m elevation around a small lake 5.6 km southwest of Letain Lake. Chrysotile in fibres 0.8 mm to 12.8 mm long is reported in an area 610 m long by 45 m wide. GEM 1971, p.450.

6E ASB 4 (35) (58°29' - 129°14.6') On the south branch of Eagle River 5.6 km southwest of the foot of Eaglehead Lake. Veins up to 25.4 mm wide are exposed in outcrop along 5.6 km of a mineralized zone. AsR 3992.

7E KUTCHO CREEK (LETAIN) (36) (58°19.9' - 128°44') At 1675 m elevation on the ridge 4 km northeast of the centre of Letain Lake. Abundant fibre up to 31.8 mm long occurs in an area at least 360 m long by 120 m wide. Owned and under examination by Cassiar Asbestos Corporation Limited. BC AR 1960, p.128; AsR 825, 1075, 1076.

12W JAY (37) (58°42' - 129°52.5') About 3.2 km east of Halfmoon Lake. Cross-fibre chrysotile occurs sparingly in serpentine. GEM 1971, p.451; AsR 315, 1649, 3082, 3363.

15W GB (38) (58° 54.8' -128° 52.3') About 9.7 km north and east of the outlet of Cry Lake. Some chrysotile has been found in serpentine. AsR 2580, 2797.

104J/9E BAK, WP (39) (58° 34.4' - 130°0.1') Just east of the highway at Nine Mile Point, 16.1 km north of Dease Lake Village. Scarce short-fibre occurs in scattered veinlets in serpentine. GEM 1971, p.451.

10W TACHILTA LAKE (40) (58°37.1' - 130°52.2') About 4 km southeast of the lake. Veins wider than 3.2 mm with some fibre up to 32 mm long occur spaced at one per square metre and occasionally several per square metre. GSC Information Circular No. 2, 1958, p.7; AsR 293, 316.

13W DUDIDONTU RIVER (41) (58°45' - 131°55') Scattered veins 3.2 mm wide of fibre reported. GSC SR 1925A, p.28.

NW (42) (58°47.9' - 131°58.3') Chrysotile found in serpentine float. AsR 221.

16E DEASE LAKE (43) (58°48' - 130°04') Scattered minute veinlets of chrysotile are present in serpentine bodies at the head of the lake. GSC AR 1887-88, Part I, p.B78; SR 1925A, p.99; Map 9-1957.

104K/8W TATSAMENIE LAKE (44) (58°18.1' - 132°19.7') About 3.2 km southeast of the centre of the lake. GSC Map 1262A.

16E NOMAD (45) (58°54.5' - 132°12.0') At 1050 m elevation on the northwest flank of Nahlin Mountain, 300 m east of Teditua Creek. Veinlets, of fibre mostly less than 6.4 mm long, are exposed for 35 m along a creek in a canyon. AsR 1925.

ACE (46) (58°53.5' - 132°06') About 4 km northwest of Nahlin Mountain. A deposit is reported to contain 13 million tons of 2 per cent grade fibre. AsR 1030.

16W TEDITUA CREEK (47) (58°52.4' - 132°20.2') At 1350 m elevation near the head of

the west fork of the creek. GSC Map 1262A.

104N/3E FOCUS MOUNTAIN (48) (59°06' - 133°10°) About 3.2 km southwest of the peak some fibre has been reported. GSC M307,p.78.

CHICOIDA MOUNTAIN (49) (59°14' - 133°03') Fibre has been reported in serpentine on the mountain. GSC M307, p.78.

3W COP (50) (59°09.6' - 133°21.5') On the southwest slope of Mount O'Keefe there is some fibre in serpentine. AsR 1231.

11W JUAN (51) (59°43' - 133° 19.8') On the peak between Cracker and Ruby Creeks. Some fibre noted in serpentine. AsR 2541.

12E MONARCH MOUNTAIN (52) (59°32.5' - 133°36.5') On the mountain top 4.8 km southeast of Atlin. Harsh cross-fibre chrysotile occurs in 1.6 mm to 3.2 mm wide veinlets in a large mass of serpentine. No long fibre and no large concentration of short fibre seen. BC AR 1951, p.208; AsR 53; GSC M307, p.78.

104O/6W ATSUTLA RANGE (53) (59°19.1' - 131°26.7') About 3.2 km northeast of Kedahda Lake. Scarce narrow asbestos veins noted. BC Bull 19, p.21.

104P/5W CASSIAR (54) (59°19.6' - 129°49.1') On Mount McDame. Large high-grade deposit of chrysotile is worked by Cassiar Asbestos Corporation Limited. From beginning of production in 1952 until the end of 1973 the mine produced approximately 1.24 million tons of fibre valued at $241,285,000 from 12.8 million tons of ore. BC AR 1950 to date; GSC M319, p.123; The Geology of Canadian Industrial Mineral Deposits, 6th Commonwealth Mining and Metallurgical Congress, 1957, p.49; Western Miner, Aug.1964, p.48.

ZUS MOUNTAIN (55) (59°24.2' - 129°46.3') At the head of Blue River 9.66 km northeast of Cassiar mine. Scattered veinlets with fibre length up to 19.2 mm but most less than 3.2 mm occur in a large area. BC AR 1951, p.209; AsR 103, 702.

5E MOON (56) (59°23.8' - 129°41.2') On a mountain 11.7 km northeast of Cassiar Mine. A single ribbon vein of fibre reported. AsR 702.

RET (57) (59° 26.1' - 129°41.2') On a mountain 14.49 km northeast of Cassiar Mine. Mapping has shown a few scattered asbestos veinlets. AsR 702.

12W BLUE RIVER (58) (59°33.3' - 129° 59.4') Small widely spread veinlets less than 6.4 mm wide reported. GSC Paper 64-48, p.14; Map 1110A.

114P/10E NADHINI MOUNTAIN (59) (59°42' - 136°42') Scarce fibre up to 25.4 mm long recorded. BC Bull 25, p.25; AR 1962, p.A65

14E SQUAW VALLEY (60) (59°59' - 137°05') Narrow veinlets reported. BC AR 1962, p.A65.

AMPHIBOLE ASBESTOS

Amphibole asbestos, particularly anthophyllite, is relatively common. The presence of crocidolite at Galore Creek has been reported. Two amphibole deposits, at Shuttleworth and Jones Creeks, have had some exploration work done on them. There has been no commercial production of amphibole in British Columbia.

82E/6W SHUTTLEWORTH CREEK (A) (49°19.1' - 119°29.4) On the south side of the creek 6.4 km southeast of Okanagan Falls. Anthophyllite occurs in altered ultrabasic rock as 20.3 cm to 25.4 cm long woody fibres, as randomly oriented clumps, and as powdery aggregates of needles. The deposit was trenched and drilled in 1953. BC AR 1953, p.181.

82K/11W SILVER (CUP?) MOUNTAIN (B) (50°36.5' - 117°20.5') Brittle amphibole fibre noted. GSC SR 1903,p.80A.

82M/10E MONARCH (C) (51°40' - 118°37.4') West of the falls in Goldstream River some actinolite occurs in serpentine. GSC Paper 64-32, p.34.

82N/4W ILLECILLEWAET (D) (51°11.1' - 117°45.1') Amphibole asbestos has been reported near the station. BC AR 1921, p.153.

92H/5E WAHLEACH (JONES) CREEK (E) (49°18.3' - 121°37.2') On west bank of the creek 0.8 km south of the highway. Coarse brittle actinolite fibre exposed by trenching for 61 m. GSC Map 737A.

12E HARRISON LAKE (F) (49°32.5' - 121°34.4') On the north side of the south tributary of Fifteen Mile Creek (Cogburn? Creek), 2.4 km east of the lake. Light to dark green fibrous tremolite in 15 cm to 30 cm wide veins reported present in serpentine.

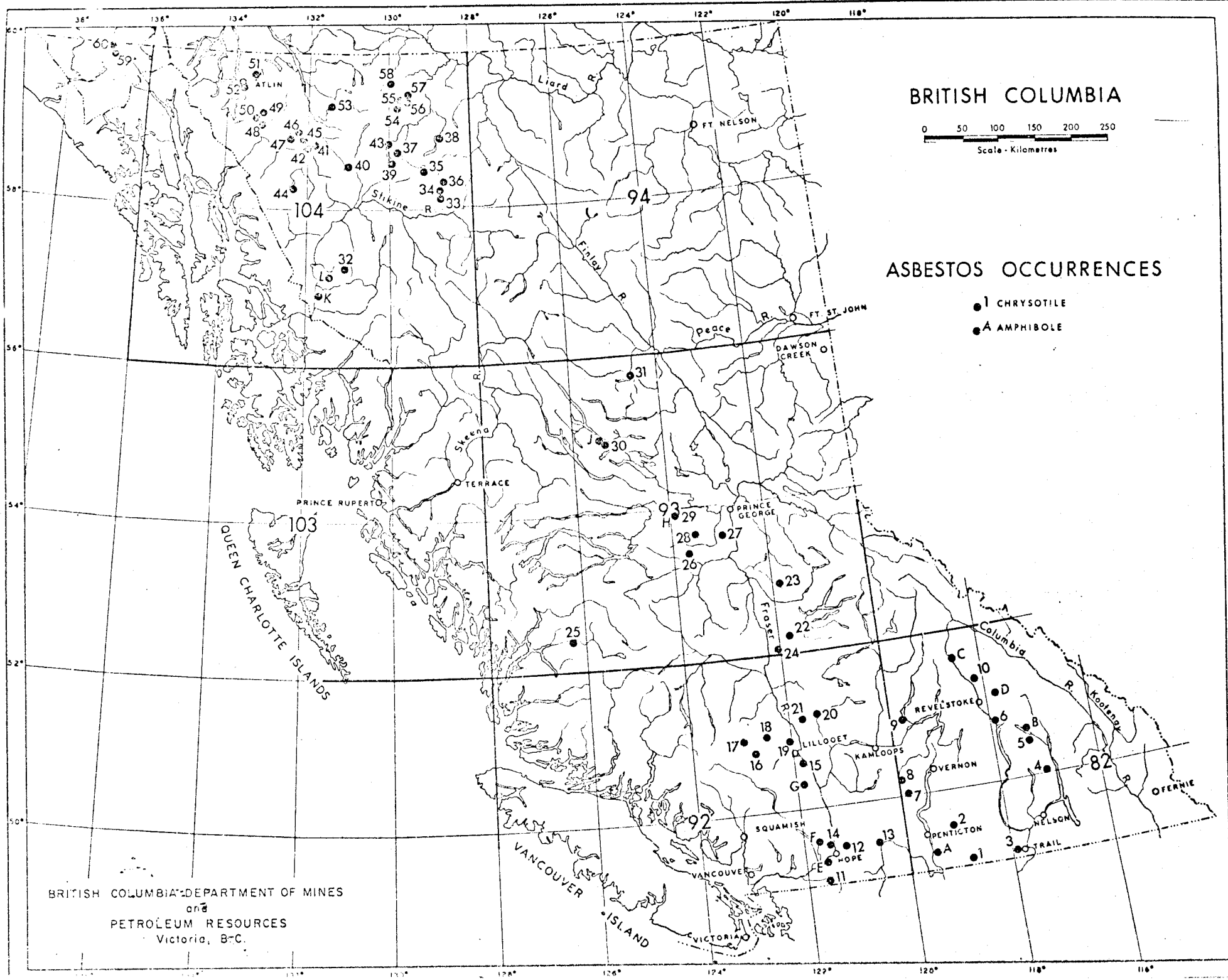
92I/4W SKIHIST MOUNTAIN (G) (50°09' - 121°50') White fairly strong tremolite fibres up to 10 cm long reported. BC AR 1929, p.237; GEM 1970, p.486, AsR 2536.

93G/13W SINKUT MOUNTAIN (H) (53°48.8' - 123°58.8') On the road 0.8 km west of the forestry lookout. Brittle anthophyllite fibres have been found. BC AR 1930, p.147; GSC M324, p.54.

93K/14W MOUNT SIDNEY WILLIAMS (J) (54°56' - 125°26') On the north slope of the mountain 3.2 km northwest of the chrysotile deposit. Veins 10 cm to 25 cm wide 61 m apart can be traced for 6.1 m. GSC M252, p.197.

104B/13E EAGLE CRAG MOUNTAIN (K) (56°54.2' - 131°41.2') Interesting deposits of amphibole asbestos are reported on the mountain and to the south. GSC M246, p.78.

104G/3W STIKINE COPPER (L) (57°08.1' - 131°27.8') Crocidolite has been reported in the copper deposit at Galore Creek. BC AR 1965, p.26.


BRITISH COLUMBIA
0 50 100 150 200 250
Scale - Kilometres
ASBESTOS OCCURRENCES
1 CHRYSOTILE
A AMPHIBOLE
104
94
103
93
92
82
ATLIN
FT. NELSON
Liard R.
Stikine R.
Finlay R.
Peace R.
FT. ST. JOHN
DAWSON CREEK
Skeena R.
TERRACE
PRINCE RUPERT
PRINCE GEORGE
QUEEN CHARLOTTE ISLANDS
Fraser R.
Columbia R.
Kootenay R.
REVELSTOKE
LILLOOET
KAMLOOPS
OVERNON
PENTICTON
NELSON
TRAIL
OFERNIE
SQUAMISH
HOPE
VANCOUVER
VANCOUVER ISLAND
VICTORIA
BRITISH COLUMBIA DEPARTMENT OF MINES
and
PETROLEUM RESOURCES
Victoria, B.C.

BRITISH COLUMBIA

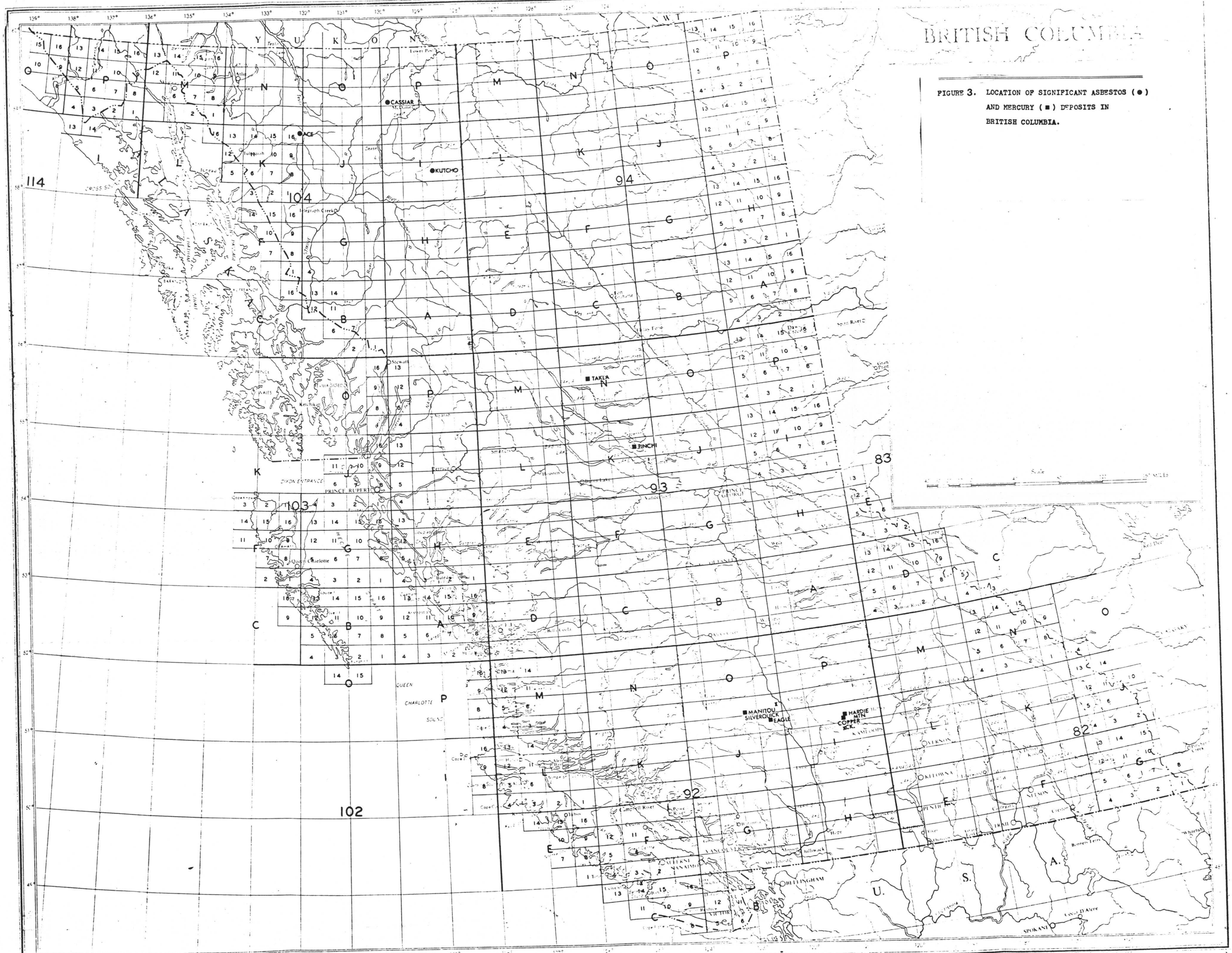
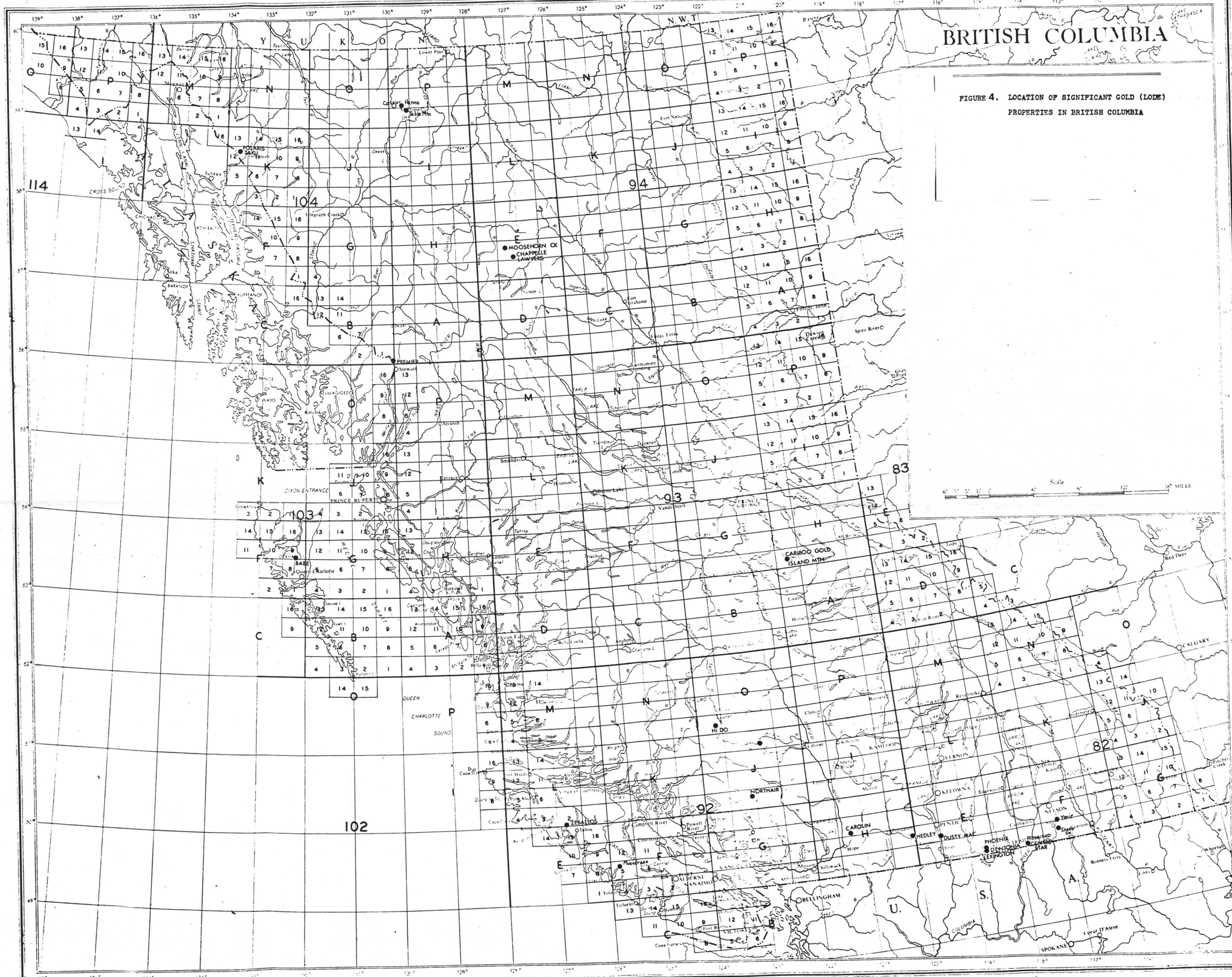


FIGURE 3. LOCATION OF SIGNIFICANT ASBESTOS (●) AND MERCURY (■) DEPOSITS IN BRITISH COLUMBIA.

BRITISH COLUMBIA

FIGURE 4. LOCATION OF SIGNIFICANT GOLD (LODE) PROPERTIES IN BRITISH COLUMBIA



RESOURCES MAP NO.

BRITISH COLUMBIA

FIGURE 6. LOCATION OF Pb-Zn-Ag PROPERTIES IN BRITISH COLUMBIA

Scale
40 30 20 10 0 40 80 120 160 MILES

LEGEND

SIZE

PRODUCTION AND RESERVES IN MILLIONS OF POUNDS OF LEAD PLUS ZINC

- MORE THAN 1000
- 500 - 1000
- 100 - 500
- 1 - 100
- LESS THAN 1

GRADE

- LESS THAN 6%
- 6 - 15%
- MORE THAN 15%

ZINC / LEAD — LEAD-ZINC RATIO

SILVER 1 - 5 OZ./TON

5 - 30 OZ./TON

30 - 100 OZ./TON

PROSPECT

NO PRODUCTION

PRODUCTION RECORDED

COMPILED BY JAMES T. FYLES, WITH ADDITIONS BY MARSHAL T. HUNTTING, THOR H. KIILSGRAAD, T. W. MURARO AND A. E. WEISSENBORN.

FIGURE 14-1

LEAD - ZINC DEPOSITS
BRITISH COLUMBIA AND NEIGHBOURING PARTS OF THE UNITED STATES

SCALE: ONE INCH TO FORTY MILES = 1 / 2,534,400

MILES 40 0 40 80 120 160 200 MILES

KILOMETERS 50 0 50 100 150 200 KILOMETERS

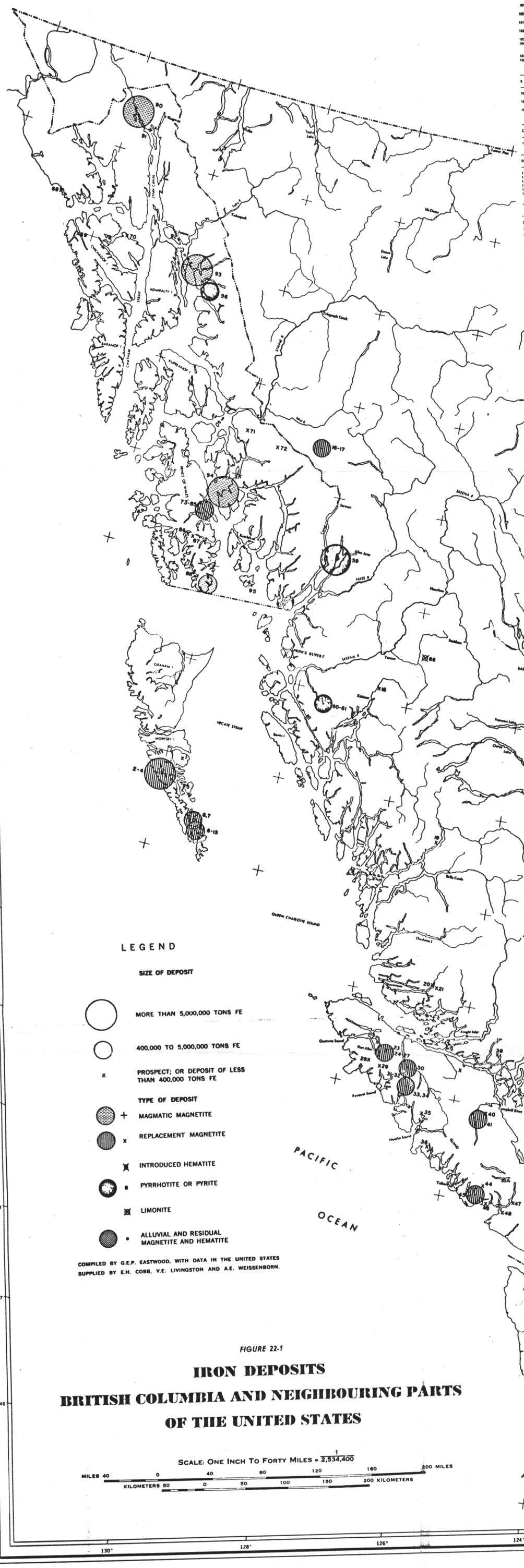


FIGURE 22-1

IRON DEPOSITS
BRITISH COLUMBIA AND NEIGHBOURING PARTS OF THE UNITED STATES

DATA ON IRON ORE DEPOSITS

DEP. NO.	PROPERTY	OPERATING COMPANY	AREA	RANK[1]	ASSOCIATED ALTERATION MINERALS	SULPHIDES	C.[2]	LIMESTONE[3]	RELATED INTRUSIONS	INDICATED STRUCTURAL CONTROL
			I. SOUTHEAST ALASKA							
A MAGNETITE	REFERENCES[4]									
68		Ivy Peine	Ivy Peine	P					In gabbro-diorite	
69		Snag Bay, Chichagof Is.	Snag Bay, Chichagof Is.	P	Epidote, quartz	Pyrite, chalcopyrite	**		Diorite	
70		Ivy Small	Ivy Small	P						
71		Glacier Basin, Wrangell	Glacier Basin, Wrangell	P	Pyroxene	Pyrite, chalcopyrite, sphalerite, galena			Quartz diorite, quartz porphyry	
						Pyrite, chalcopyrite	**	**	Quartz monzonite	Dagdabs
72		S 1108-D	North Bradfield River, Wrangell	P	Garnet, pyroxene	Pyrite, chalcopyrite				
73	Bush & Brown	S 1090, p. 112	Kasaan Penn.; P.W.I.	S		Pyrite, chalcopyrite	**	*	Gabbro-diorite	
74	Copper Cannon	S 1090, p. 120	Kasaan Penn.; P.W.I.	S	Garnet, epidote	Pyrite, chalcopyrite	**	*	Diorite	
75	Hardy	S 1090, p. 119	Kasaan Penn.; P.W.I.	S	Garnet, epidote	Pyrite, chalcopyrite	**	**	Diorite ?	Small faults
76	Poor Man	S 1090, p. 96	Kasaan Pn.; P.W.I.	M	Minor ?					Breccia zone
77	Iron Cap	S 1090, p. 106	Kasaan Penn.; P.W.I.	P	Pyroxene, garnet, hornblende, epidote, chlorite	Pyrite, chalcopyrite	**	*		Lenses of clastic rock
78	Rich Hill	S 1090, p. 126	Kasaan Penn.; P.W.I.	P	"Tactite"	Pyrite, chalcopyrite	**	**		Cross-faulting
79	Mount Andrew	S 1090, p. 84	Kasaan Penn.; P.W.I.	M	Epidote, hornblende, garnet, pyroxene	Pyrite, chalcopyrite	**	**		
					"Tactite"			**		
80	Quad Lumb	S 1090, p. 98	Kasaan Penn.; P.W.I.	S				*		
81	Glory	S 1090, p. 92	Kasaan Penn.; P.W.I.	P				*		
82	North Star	S 1090, p. 91	Kasaan Penn.; P.W.I.	P	Some "tactite"			**		
83	Nora	S 1090, p. 91	Kasaan Penn.; P.W.I.	P	Epidote, hornblende, chlorite	Pyrite, chalcopyrite	**	**		
84	Brownstown	S 1090, p. 93	Kasaan Penn.; P.W.I.	P				**		Dagdabs ?
85	Mamie	S 1090, p. 88	Kasaan Penn.; P.W.I.	S	Garnet, epidote, hornblende	Pyrite, chalcopyrite	**	**		
86	Jumbo No. 2 (Magnetite Cliffs)	P 251	Harris Inlet, P.W.I.	P	Pyroxene, garnet, epidote	Chalcopyrite		**	Granodiorite	
87	Green Monster	P 87, p. 61	Harris Inlet, P.W.I.	P	Garnet, epidote	Chalcopyrite		**	Diorite	
88		S 662, p. 95	Hunter Bay, P.W.I.	M					In pyroxenite	
89		S 1136, p. 100	Maitland Bay, P.W.I.	M					In hornblendite	
90		OF 120	Klakwan	L					In hornblendite	
91		S 662, p. 166	Heines						In hornblendite	
92		A-A 1963, p. 88	Davidson Is., Juneau	L					In pyroxenite	
93	Friday	S 887, p. 67, 81 3195	Smeltzhorn Penn.; Stephens Passage	L						
94		S 967-D, p. 88	Union Bay, Cleveland Penn.	L						
95		A-A 1963, p. 88	Duke Island							
B PYRRHOTITE AND PYRITE										
96	Sundum	S 1108-E	Sundum Glacier, Hotham Sd.	M	Quartz	Pyrite, pyrrhotite	**	*	Quartz diorite	Dagdabs, breccia zones
			II. BRITISH COLUMBIA							
A MAGNETITE										
1	Iron Duke	Bamboo Mining Co. Ltd.	Laurie Is., Q.C.I.	P	Garnet-epidote	Pyrite, d	*	**	Granodiorite	
2	Garnet		Moresby Is., Q.C.I.	P	Garnet-actinolite	Chalcopyrite, sphalerite	*	**	Diorite	
3	Tasu	Windfob Mines Limited	Moresby Is., Q.C.I.	L	Garnet-epidote	Pyrite, chalcopyrite	**	**	Diorite, hornblende porphyry	Kaisun-moresby contact zone, faults
4	Agate		Moresby Is., Q.C.I.	P	Garnet-epidote	Chalcopyrite	**	**	Diorite	Roof pendant
5	Valley	Morrison-Somerset Mines Ltd.	Lyell Is., Q.C.I.	P	Actinolite-epidote	Pyrite	*	**	?	
6	Mac		Burnaby Is., Q.C.I.	P	Minor	None			Quartz monzonite	Faults
7	Jib	Burnaby Iron Mines Limited	Burnaby Is., Q.C.I.	M	Garnet-epidote	Minor	**	**	Quartz monzonite	Faults
8	Jessie	Jedway Iron Ore Limited	Moresby Is., Q.C.I.	M	Garnet-chlorite	Pyrite, chalcopyrite	**	**	Diorite	Faults
9	Adams	Jedway Iron Ore Limited	Moresby Is., Q.C.I.	P	Minor	None		**	Diorite	
10	Magnet		Moresby Is., Q.C.I.	P	Minor	Pyrite, chalcopyrite	*	**	Diorite dykes	
11	Thunder		Moresby Is., Q.C.I.	P	Minor	None	*	**	Quartz monzonite ?	
12	Iona		Moresby Is., Q.C.I.	P	Garnet-epidote			**	Quartz monzonite ?	
13	Hercules		Moresby Is., Q.C.I.	P	Garnet-epidote	Pyrite, chalcopyrite	**	**	Quartz monzonite ?	
14	Hope		Moresby Is., Q.C.I.	P	Minor	Chalcopyrite	**	**	Diorite	
15	Plunger	Nonsuch Mining Corp.	Moresby Is., Q.C.I.	P	Garnet-epidote	Pyrrhotite, pyrite, chalcopyrite	**	**	Diorite	Banded anticline
16	Mac		Iskut River							
17	Grandux	Grandux Mines Limited	Unuk River	M ?	Tourmaline, epidote, epidote	Chalcopyrite, pyrrhotite	*	**	Granodiorite	Mylonite zone in diorite ?
18	Wedgwood Inlet		Kitimat	P	Garnet-epidote	None	*	*	Diorite	Fault ?
19	Dean Channel		Dean Channel	P	Garnet-epidote	None	*	*	Diorite	Shear zone ?
20	Kitchener (or Hertig)		Seymour Inlet	P	None	Minor pyrite		*	Diorite, granodiorite	
21	Alexander		Seymour Inlet	P	None	Pyrite	*	**	Diorite, granodiorite	
22	June		Africa Lake, V.I.	P	Garnet-tremolite-actinolite	Pyrite, chalcopyrite	**	**	Diorite	
23	Old Sport	Coast Copper Company Limited	Benson River, V.I.	S	Garnet-epidote	Pyrite, chalcopyrite	**	**	Gabbro-diorite	Shear Zone ?
24	Shamrock	Empire Development Company Limited	Benson River, V.I.	P	Garnet	Pyrite along lenses quartz-garnet	*	**	Gabbro-diorite	
25	Kingfisher	Empire Development Company Limited	Benson River, V.I.	S	Hedenbergite	None		**	Gabbro-diorite	Fault in agmatized
26	Raven	Empire Development Company Limited	Benson River, V.I.	S	Garnet-epidote	Present ?		**	Gabbro-diorite	Fault in agmatized
27	Merry Widow	Empire Development Company Limited	Benson River, V.I.	M	Garnet-epidote-pyroxene-calcite	Pyrrhotite, pyrite, chalcopyrite	**	**	Gabbro-diorite	Crumpling and faults in agmatized
28	Power	Sta Time Canadian Exploration Ltd.	Power River, V.I.	P	Minor pyroxene	Minor		*	Diorite and gabbro dykes ?	Faults
29	Waterloo		Kashutl River, V.I.	P	Garnet-epidote	Chalcopyrite	**	**	Diorite, granodiorite	
30	Hinaglah and Klamah	Hinaglah Iron Mines Ltd.	Hinaglah River, V.I.	M	Garnet-epidote around ore and as-lands	Minor pyrite and pyrrhotite	**	**	Diorite	
31	Antlah		Kasuk River, V.I.	P	Garnet-epidote-actinolite	Pyrrhotite, pyrite		**	Diorite	Faults ?
32	Churchill	Zeballos Iron Mines Ltd.	Zeballos, V.I.	P	Garnet	Pyrrhotite, pyrite	*	**	Diorite	
33	F.I.		Zeballos, V.I.	M	Garnet-epidote	None		**	Diorite, granodiorite	Banded anticline ?
34	Ridge	Hoadley Enterprises Ltd.	Zeballos, V.I.	P	None	None		*	Diorite, granodiorite	
35	Glengarry-Tormont		Head Bay, V.I.	P	Garnet	None		*		
36	Indian Chief	Tidewater Copper Company	Sydney Inlet	S	Garnet-epidote	Pyrite, chalcopyrite, pyrrhotite	**	**	Granodiorite ?	Shear zone ?
37	Iron Mike	Chemainus Mines Ltd.	Sayward, V.I.	P	Garnet	Pyrite, pyrrhotite, chalcopyrite	**	**	Gabbro	
38	Shoo Fly		Phillips Arm	P	Garnet	None		**	Diorite	
39	Iron		Iron River, V.I.	S	Garnet	None		**	Diorite	
40	Iron River	The Argonaut Co. Ltd.	Iron River, V.I.	P	Garnet	Pyrrhotite, pyrite	**	**	Diorite	Footwall anticline ?
41	Iron Hill	The Argonaut Co. Ltd.	Upper Quinsam Lake, V.I.	M	Garnet, amphibole	Minor chalcopyrite		**	Granodiorite	Intersection of two faults ?
42	Prescott	Tenada Mines Ltd.	Tenada Is.	L	Garnet-actinolite-pyroxene	Pyrite, chalcopyrite, pyrrhotite	**	**	Quartz diorite	Brecciated zone ?
43	Reuben, Lobe	Tenada Mines Ltd.	Tenada Is.	L	Garnet-actinolite-pyroxene	Pyrite, chalcopyrite, pyrrhotite	**	**	Quartz diorite	Bulkanad synclines
44	Iron Mountain, Chuliahin		Kennedy Lake, V.I.	P				**	"Granite"	
45	Brymar	Brymar Mines Ltd.	Kennedy Lake, V.I.	M	Garnet-pyroxene	Hedenbergite	*	**	Diorite	Banded anticline
46	Mountain		Taurus Is.	P	Garnet-epidote	Pyrite, chalcopyrite	*	*	Diorite	
47	Darby and Joan		Alberni Inlet	P	Garnet-epidote	Pyrite	*	**	Diorite	
48	Sarita River		Sarita River, V.I.	P	Garnet	Pyrite, pyrrhotite	*	**	Diorite	
49	Conqueror Group	Hanonda Exploration Company, Limited	Bugaboo Creek, V.I.	P	Garnet-epidote-actinolite			**	Quartz diorite	
50	Linda		Bugaboo Creek, V.I.	P	Minor	Pyrite		**	Quartz diorite	
51	Baden Powell		Bugaboo Creek, V.I.	P	Present	Pyrite	*	**	Diorite	
52	Glen		Kamloops Lake	P	Epidote-tremolite-quartz	None		**	Diorite	
53	Magnet	Consigner Mines Limited	Kamloops	P	Garnet	Chalcopyrite	**	**	Diorite ?	Deformation along batholith contact
54	Consigner	Imperial Metals & Power Co. Ltd.	Mamette	M	Garnet-pyroxene-epidote					Horns apparent
55	Ladysmith		Tulameen	L		None	*	*	Pyroxenite	
	Mountain stock		Greenwood	L	Actinolite-garnet-epidote	Chalcopyrite	**	**	Granodiorite ?	Synclines ?
56	Motherlode			L	Garnet	Chalcopyrite	**	**	Diorite	
57	Ore Donora		Phoenix	L	Epidote-garnet-actinolite	Chalcopyrite, pyrite	**	**	Diorite	
58	Knob Hill - Ironsides		Phoenix							
B PYRRHOTITE AND PYRITE										
59	Hidden Creek	Granby Mining, Smelting & Power Co. Ltd.	Anyox	L	Quartz-calcite-garnet-epidote	Pyrite, pyrrhotite, chalcopyrite	**	*	Granodiorite	Shear zone localized by folding
60	Exmell	Sulpac Properties Ltd.	Exmell River	M		Pyrite	*	*	Granodiorite	
61	Parkland	Texas Gulf Sulphur Company	Exmell River	M		Pyrite	*	*	Granodiorite	
62	Britannia	The Anaconda Company (Canada) Ltd.	Howe Sound	L	Chlorite-sericite	Pyrite, chalcopyrite	**	*	Granodiorite ?	Shearing and related folding ? Replaceable bed
63	Sullivan	The Consolidated Mining and Smelting Company of Canada, Limited	Kimberley	L	Tourmaline-albite-chlorite-quartz	Pyrrhotite, pyrite, sphalerite, galena	*	*		
C HEMATITE										
64	Britton, Monarch		Perkins Peak, Kingfisher River	P	Talc, sericite	Pyrite			Granodiorite ?	
65	C.P.R. Group		Iron Mountain, Kitchener	P	Quartz	Minor pyrite			Diabase	Shear zone
D LIMONITE										
66	Iron Mountain, Old Ironsides		Summit Creek, Zymoetz River	P						
67	Forrest, Chilliwin, Limonite		Tezaba River	P						

TO ACCOMPANY C.I.M. SPECIAL VOLUME No. 8; 1964

MOLYBDENUM DEPOSITS OF BRITISH COLUMBIA

RESERVES AND PRODUCTION

The reserves of molybdenum are shown in two tables, and the deposits are shown on a map. Production to the end of 1974 is shown on a map and a graph.

Molybdenum is found as pure deposits and as a subsidiary metal to copper, generally in a ratio similar to that of copper and molybdenum in the crust (about 30 to 1). Rarely molybdenum is enriched in comparison to copper as at Brenda Mine or Berg Prospect. Most deposits, and all significant ones, are porphyry deposits.

Mines and prospects are shown on the accompanying map with symbols related to the size of their molybdenum reserve. Mines are numbered from 1 to 9, prospects from 10 to 33, and plotted from southeast to northwest.

Table I shows producing and past producing mines divided into primary, co-product and by-product groups. In the Table, the heading, Size, is used to indicate the tonnage developed prior to production, or in a few cases such as Lornex, the maximum developed by later exploration. The reserve stated is estimated for 31st December, 1974, and the metal content is shown as molybdenum. The recoverable content is assessed to be 90% of contained metals. The nature of the reserve is indicated by a symbol and the estimated mine life in years. The total reserve in mines is 882.9 x 10^6 lbs.

RESERVES B.C. MOLYBDENUM

and recoverable molybdenum is 794.6 x 10^6 lbs.

Table II shows significant known prospects, most of which have established reserves that are either economic or nearly so. A few properties are shown that have no established reserves but appear to have the potential to contain such. The reserve of all types in prospects is 2,052.1 x 10^6 lbs. of molybdenum. The total reserve of mines and prospects is 2,935 x 10^6 lbs. of molybdenum.

Table III shows past production by mine and year, and Fig. 2 is a graph of annual production showing primary, co-product and by-product molybdenum. Production for four years has approached or exceeded 30 million lbs./year. At this rate the reserves, if they can all be mined, are sufficient for 68 years.

26/2/75

MOLYBDENUM DEPOSITS OF BRITISH COLUMBIA

TABLE I

PROPERTY	COMPANY	NTS	CLASS*	MINERALS	METALS	SIZE** TONS x 10^6	GRADE % MoS_2	METAL CONTENT # Mo x 10^6	RESERVE*** TONS x 10^6 31/12/74	METAL CONTENT # x 10^6 Mo	RECOVERABLE CONTENTS (90%)	TYPE OF RESERVE	REMARKS	INDICATED LIFE IN YEARS
PRIMARY PRODUCING MINES														
1. Boss Mountain	Noranda	93A/2W	P I	mo	Mo		0.4 %		1.3	7.22	6.5	M	Production, 1965-74 = 19,432,990# Mo. Additional potential low-grade tonnage.	3.8
2. Endako (+ Denak)	Placer	93K/3E	P III	mo	Mo	304	0.15	547.2	218	364.73	328.26	MI		21.8
CO-PRODUCT PRODUCING MINE														
3. Brenda	Brenda	92H/16E	P III	cp, mo	Cu, Mo	177	0.049	173	126.5	117.34	105.61	M		13.3
BY-PRODUCT PRODUCING MINES														
4. Island Copper	Utah	92L/11W	P II	cp, mo	Cu, Mo	280	0.029	97.44	246	85.61	77.05	M	Reserve to 1,000 feet.	20.5
5. Lornex	Rio Algom	92I/7W	P III	cp, bn, mo	Cu, Mo	500	0.020	140	486	136	122.4	MII	Reserve beyond original 293 M.T.	34
6. Gibraltar	Placer	93B/9W	P III	cc, cp, mo	Cu, Mo	361	0.016	69.31	317	60	54	M	Not closely drilled.	21
PRIMARY PAST PRODUCING MINE WITH SIGNIFICANT RESERVES														
7. B.C. Moly	Climax	103P/6W	P I	mo	Mo	50	0.23	140	40	112	100.8	M		16
PAST PRIMARY PRODUCING MINES WITHOUT SIGNIFICANT RESERVES														
8. Coxey	Red Mtn. Mines	82F/4W	SK	mo	Mo	1	0.51						Production, 1966-72 = 3,644,193# Mo.	
9. Mt. Copeland	King Resources	82M/1W	PEG	mo	Mo	<1	1.82						Production, 1970-73 = 2,625,088# Mo.	
									TOTALS =	882.9	794.61			

* - Geological class, P I, P II, and P III = porphyry deposits; SK = skam; PEG = pegmatite.

** - Maximum size indicated on initial or subsequent exploration.

*** - Reserve at 31/12/74, Type M = measured; MI = measured and indicated; MII = measured, indicated, and inferred; SM = submarginal.

MOLYBDENUM DEPOSITS OF BRITISH COLUMBIA

TABLE II

PROPERTY	COMPANY	NTS	CLASS*	MINERALS	METALS	SIZE** TONS x 10^6	GRADE % MoS_2	METAL CONTENT # Mo x 10^6	TYPE***	REMARKS
SIGNIFICANT PROSPECTS										
10. Cascade Moly		82K/12E	SK	mo, au	Mo	1.5	0.27	4.86	MI	Adjacent to Red Mtn. in small separate bodies.
11. Giant, etc.	Scurry-Rainbow	82K/12E	SK	mo	Mo	0.8	0.39	3.74	M	Adjacent to Red Mtn. in small separate bodies.
12. Highmont	Teck	92I/7W	P III	mo, cp, bn	Cu, Mo	150	0.051	91.8	M	Low strip ratio.
13. J-A	Bethlehem	92I/7W	P III	cp, bn, mo	Cu, Mo	286	0.030	97.34	M	High strip ratio.
14. Gnawed Mtn.	Minex	92I/7W	P III	cp, bn, mo	Cu, Mo	36	0.016	6.91	M	
15. Maggie	Bethlehem	92I/14W	P I	cp, mo	Cu, Mo	200	0.017	40	MI	Ecological problems in exploitation.
16. Meg	Utah?	92H/12E	P I	mo	Mo			93.6	MI	
17. Poison Mtn.	Copper Giant	92O/2E	P I	cp, mo	Cu, Mo	85	0.022	22.44	MII	
18. Salal Cr.	B P Minerals	92J/14W	P I	mo	Mo					No reserve established - large potential.
19. OK	Granite Mtn.	92K/2E	P I	cp, mo	Cu, Mo	100	0.03	36	MII	
20. Sarita		92C/15W	P I?	mo	Mo					
21. Red Bird	Phelps Dodge	93E/6E	P I	mo	Mo	30 + ca 60	0.25 0.1	90 120	MI	
22. Ox Lake	Asarco, Silver Standard	93E/11E	P I	cp, mo	Cu, Mo	30	0.07	25.2	M	
23. Huckleberry	Granby, Kennco	93E/11E	P I	cp, bn, mo	Cu, Mo	85				
24. Berg	Placer, Kennco	93E/14W	P I	cc, cp, bn, mo	Cu, Mo	394	0.054	255	M	@ 0.25 cutoff, but only 250 M.T. with 2.75/1 stripping ratio.
25. Lucky Ship	Amax	93L/3W	P I	mo	Mo	15	0.17	30.6	M	Potential for more.
26. Glacier Gulch	Climax	93L/14W	P I	mo, sc	Mo (W)	100	0.29	~~350~~ 348	M	
27. Serb Cr.	Amax	93L/12W	P I	mo	Mo				SM	
28. Mt. Thomlinson	Amax	93M/12W	P I	mo	Mo	45	0.12	64.8	MII	
29. Bell Moly		103P/6W	P I	mo	Mo	35	0.11	46.2	MI	
30. Ajax	Newmont	103P/11E	P I	mo	Mo	196.8	0.121	285.76	MI	Very high stripping ratio - large SM reserve, 460 M.T. @ 0.09 MoS_2.
31. Roundy Cr.	Climax	103P/6W	P I	mo	Mo	1.5	0.347	6.25	M	
32. Liard Copper, Paramount	Hecla, Silver Standard, Paramount	104G/6E,7W	P I	cp, bn, mo	Cu, Mo	294 100	0.036 0.047	183.41	MI	
33. Adanac	Climax	104N/11W	P I	mo, cc	Mo (W)	104.2	0.16	200.15	M	Recent drilling added minor new tonnage and slight increase in grade. Low stripping ratio, 0.63/1.
							SUB-TOTAL =	2,052.06		
							MINES +	882.9		
							TOTAL =	2,934.96 x 10^6 lb. Mo		

* - Geological class, P I, P II, and P III = porphyry deposits; SK = skarn; PEG = pegmatite.

** - Maximum size indicated on initial or subsequent exploration.

MOLYBDENUM PRODUCTION

TABLE III

TYPE	PRIMARY				CO-PRODUCT			BY-PRODUCT			
YEAR / MINE	B.C. MOLY	ENDAKO	BOSS MTN.	MT. COPELAND	COXEY	BRENDA	BETHLEHEM	LORNEX	GIBRALTAR	ISLAND COPPER	YEARLY TOTAL PRODUCTION
1964	---	---	---	---	---	---	28,245	---	---	---	28,245
1965	---	5,622,002	1,615,223	---	---	---	51,900	---	---	---	7,289,125
1966	---	13,229,852	3,534,893	---	316,332	---	13,850	---	---	---	17,094,927
1967	16,249	13,716,016	3,106,460	---	678,818	---	---	---	---	---	17,517,543
1968	4,980,712	12,016,709	2,428,539	---	364,833	---	---	---	---	---	19,790,793
1969	5,723,025	17,685,476	2,346,883	---	842,093	---	---	---	---	---	26,597,477
1970	5,867,377	15,565,807	2,247,135	637,104	564,554	6,394,520	---	---	---	---	31,276,497
1971	4,800,380	9,126,026	1,586,507	988,245	574,971	4,806,638	---	---	---	---	21,884,767
1972	1,680,025	10,950,264	665,350	698,268	302,592	13,399,770	---	---	---	345,334	28,041,603
1973	---	14,134,510	---	301,471	---	11,105,912	---	3,385,000	493,535	570,500	30,390,928
1974	---	14,161,796	1,900,000	---	---	7,657,000	---	3,546,000	800,000	1,173,500	29,238,296
TOTAL	23,067,768	126,208,458	19,432,990	2,625,088	3,644,193	43,363,840	93,995	6,931,000	1,293,535	2,489,334	229,150,201

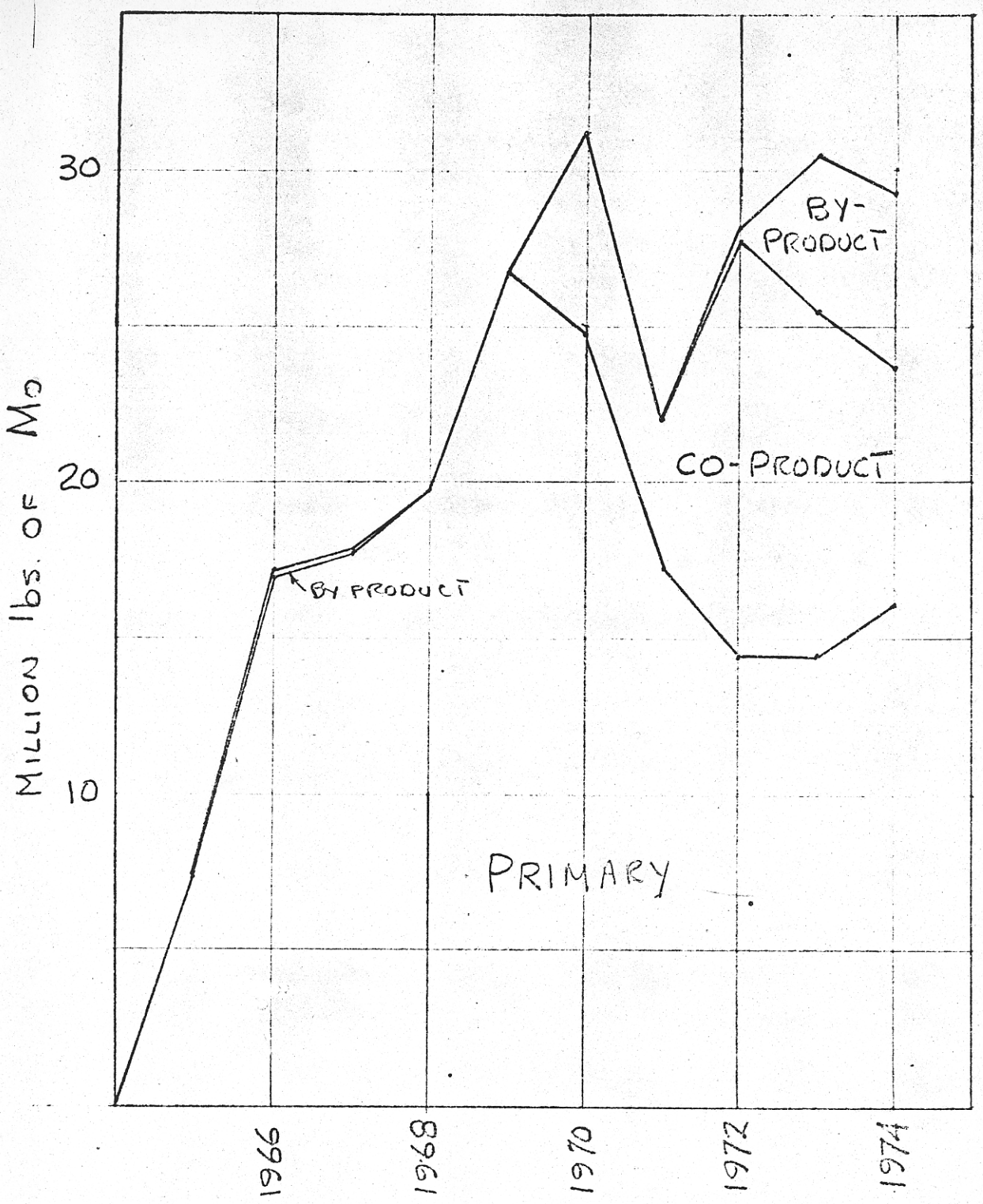


FIG. 2

PRODUCTION OF MOLYBDENUM

RESOURCES MAP NO.

BRITISH COLUMBIA

MOLYBDENUM DEPOSITS

GEOLOGICAL TYPE

- △ SKARN
- ○ PORPHYRY TYPE I
- ▽ " " II
- ⌓ " " III
- X NO EST. RESERVES

STATUS & METALS

	MINE	PROSPECT
Mo	●	●
Cu-Mo	●	●

SIZE

- ⊕ > 350 x 10⁶ lbs Mo
- ⊕ 150 – 350
- ⊕ 50 – 150
- ⊕ 5 – 50

Scale 0 40 80 120 160 MILES

ADANAC
LIARD COPPER
ATAN
BELL MOLY
BC MOLY
MT THOMLINSON
GLACIER GULCH
SERB
LUCKYSHIP
BERG
HUCKLEBERRY
OX
REDBIRD
ENDAKO
GIBRALTAR
ROSS MTN
MT COPELAND
POISON MTN
MAGGIE
SAL AL
LORNEX
HIGHMOUT
BRENDA
MEG
RED MTN
CASCADE MOLY
GIANT ETAC
ISLAND COPPER
QUEEN CHARLOTTE SOUND
DIXON ENTRANCE
PRINCE RUPERT
CALGARY
SPOKANE
U.S.A.