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REPORT ON

THE COPPER CREEK PROPERTY
WILLIAMS LAKE, B.C.

for

MALABAR MINING CO. LTD.

VANCOUVER, B.C.

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BY

Alfred R. Allen, P.Eng.,

September, 1964

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of

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INTRODUCTION

This report is based upon examinations of the property, and supervision of the 1964 field programme thereon, by the writer, May to September, 1964. Included is information from reports of the B.C. Minister of Mines, Canadian Geological survey, and independent exploration engineers.

The purpose of the report is to compile the available information from exploratory work over the past several years and outline results of the 1964 works programme to date.

LOCATION AND ACCESSIBILITY

The property is located in southern British Columbia on the east side of the Fraser River, five miles east of the village of Marguerite. Longitude 122° - 18' west and latitude 52° - 31' north pass through the property.

Access is by highway 2, through Williams Lake 34 miles to McLeese Lake thence 5 miles by good secondary road to the Paxton Ranch and an additional 2 miles to the property.

C O N T E N T S

TOPOGRAPHY, CLIMATE, TIMBER AND WATER

The property lies on the lower southwest slope of Granite Mountain five miles east of the Fraser River. The general trend of the topography and drainage down to the west and southwest. Cuisson Lake touches on the southwest corner of the claims and there are several small sloughes near the east boundary.

The climate is moderate and logging and mining operations are carried on throughout the year.

Timber stands cover most of the property and, over the years,much of the area has been logged. There are several abandoned millsites on the property and there is one mill operating about three miles to the south.

There is an ample supply of water in the two branches of Copper Creek which flow through the property.

PROPERTY

The property comprises the following located adjoining mineral claims:-

Zephyr	1 to 16 inclusive
Al	1 to 20 "
Al	21 Fr and 22 Fr
Pan	1 to 5 inclusive
Xaire	1 and 2

Plus 20 recently located claims as yet not recorded.

GEOLOGY

Sedimentary and volcanic rocks of the Permian Cache Creek formation, and sedimentary rocks of the Upper Triassic Bonanza group have been intruded by Jurassic granite and granodiorite. Younger Tertiary sediments and volcanics cover large areas of the older rocks. On the property only the granitic rocks are in evidence.

The granite has been faulted, fractured, and highly foliated. Quarts veins, some carrying sulphides of iron and copper, have filled many of the fracture zones. The foliated granitic rock has in places been impregnated with pyrite and cholcopyrite. These sulphides of iron and copper occur as disseminations and fillings along the small slip planes in the foliated rock. They are uniformly distributed over a remarkably large area and have been encountered to a depth of 1,200 feet underground. On the exposed section in Copper Creek the granite is locally contorted where steep dipping shears cut the nearby flat foliation. ~~There~~, lenses of nearly pure pyrite lie parallel to the ~~fractioning and the~~ ~~fractures are filled~~ with quarts carrying pyrite and chalcopyrite. The zone is enriched near the surface with secondary chalcocite. This large zone appears to be anticlinal with the ~~axis~~ axial plane striking southeasterly and dipping steeply southwesterly ~~to vertical~~. Limited exploratory workings have shown a uniform character to this zone over a length of about 1,500 feet, a width of 500 feet and a depth of 1,200 feet.

ADIT TUNNEL

From the south bank of Copper Creek an adit tunnel has been driven south 30 degrees east for 110 feet.

The tunnel starts on a fracture zone containing irregular quartz stringers and leases of heavy pyrite. Throughout the length of the tunnel the foliation dips at a low angle to the southwest, and the fracturing dips steeply to the southwest, and there is considerable pyrite, chalcopyrite and chalcocite throughout the quartz and foliated granite. An 8-foot crosscut to the southwest at the face of the tunnel shows similar mineralisation. Several short diamond drill holes directed at right angles to the tunnel and from the face southeasterly reportedly encountered similar mineralisation. A series of short holes directed vertically and at steep angles from the surface near the tunnel also reportedly showed similar mineralisation.

Face sampling, during the driving of the tunnel, reportedly averaged 2.5% copper.

Sample results by the writer, May 17, 1964, are as follows:-

Location In Tunnel	Assay, % Copper
Southwest wall 10 feet from portal	0.87
" " 20 " " "	0.93
" " 30 " " "	1.00
" " 40 " " "	0.70
" " 50 " " "	1.50
" " 60 " " "	1.60
" " 70 " " "	2.30
" " 80 " " "	2.80
" " 90 " " "	0.65
" " 100 " " "	0.90
Face of tunnel	1.30
Northeast wall, 30 feet from portal	0.57
" " 60 " " "	1.52
" " 90 " " "	1.75
Face of crosscut	0.90

The arithmetic average of the fifteen samples is 1.28% copper.

DIAMOND DRILLING

Surface

In the area around the adit tunnel, about 120 feet by 150 feet, eight 100-to 125-foot diamond drill holes were located to test the zone.

To the northwest two diamond drill holes were located about 500 and 800 feet from the adit portal. These holes were collared at an elevation somewhat lower than the tunnel level and drilled to 481 and 346 feet of depth.

Two additional holes were drilled 350 feet southeast of the adit portal, about 100 feet higher in elevation. They were 100 feet apart and directed at about 60 degrees northeast. One is 438 feet and the other 364 feet deep.

One vertical hole was diamond drilled from a location to the southeast 70 feet from the tunnel portal and about 30 feet above it, this summer. The hole was drilled to a depth of 1,175 feet.

In 1957, Mr. R. Clothier, who was in charge of driving the adit tunnel and diamond drilling in that immediate area reported an average grade for all diamond drill holes, and tunnel of 1.15% copper.

There are no results available for the two holes drilled to the northeast of the portal, but by visual examination of the split core left at the property the writer would estimate it to be very similar in grade to the two holes located to the southeast of the portal and the 1175-foot hole diamond drilled ~~this~~ summer. The following are resumes of the sample results from these three holes, named 63-1, 63-2 and 64-1.

63-1: Core AX1, Interval	-70°, N. 45° E. Length	Line 4E - 25S % Copper
31 to 36	5 feet	0.39
36 to 41	5	0.40
41 to 50	9	0.20
50 to 55	5	0.68
55 to 60	5	0.56
60 to 65	5	0.65
65 to 75	10	0.16
117 to 122	5	0.30
129 to 135	6	0.18
210 to 219	9	0.05
219 to 224	5	0.40
224 to 229	5	0.33
229 to 234	5	0.24
234 to 239	5	0.21
260 to 270	10	0.18
310 to 320	10	0.16
350 to 360	10	0.20
360 to 365	5	0.36
365 to 370	5	0.24
370 to 383	13	0.15
383 to 388	5	0.33
388 to 398	10	0.23
398 to 408	10	0.22
408 to 418	10	0.18
418 to 431	13	0.29

63-21 Core AX1, - 60°, N 45° E, Line 4E - 75N

Interval	Length	% Copper	Sludge
25 - 35	10	0.22	-
55 - 65	10	0.62	1.20
65 - 75	10	0.29	0.52
75 - 85	10	0.21	0.42
85 - 95	10	0.39	0.69
95 - 105	10	0.28	0.52
116 - 124	8	-	0.26
124 - 134	10	-	0.16
134 - 144	10	-	0.30
144 - 156	12	-	0.10
156 - 163	7	-	0.19
163 - 173	10	-	0.24
173 - 183	10	-	0.18
183 - 193	10	-	0.16
193 - 203	10	-	0.26
201 - 211	10	0.27	0.30
213 - 223	10	-	0.22
223 - 240	17	-	0.27
245 - 255	10	0.18	
240 - 255	15	-	0.25
255 - 264	9	-	0.25
300 - 310	10	0.29	-
310 - 320	10	0.16	-
320 - 330	10	0.25	-
330 - 340	10	0.20	-
340 - 352	12	0.14	-
352 - 364	12	0.26	-

64-1: Core AXL Interval	Vertical Length	% Copper
0 - 16	16	Casing
16 - 30	14	0.60
30 - 40	10	1.58
40 - 50	10	0.45
50 - 64	14	0.30
64 - 74	10	0.06
74 - 84	10	0.27
84 - 94	10	0.16
94 - 104	10	0.28
104 - 114	10	0.30
104 - 124	10	Tr.
124 - 128	4	0.03
128 - 129	1	2.08
129 - 140	11	0.35
140 - 145	5	0.40
	Weighted Average 16 - 145, 0.40	
145 - 150	5	0.05
150 - 155	5	Tr.
155 - 160	5	Tr.
160 - 170	10	0.10
170 - 180	10	0.05
180 - 190	10	0.15
190 - 205	15	0.03
205 - 212	7	0.01
212 - 220	8	Tr.

64-1: Core AX1 Interval	Vertical Length	% Copper
220 - 230	10	Tr.
230 - 235	5	Tr.
235 - 245	10	Tr.
245 - 250	5	Tr.
250 - 258	8	Tr.
258 - 267	9	Tr.
267 - 277	10	0.12
277 - 297	20	0.03
	Average, 145 to 297	Trace
297 - 311	14	0.35
311 - 326	15	0.07
326 - 341	15	0.10
341 - 346	5	0.16
346 - 351	5	0.42
351 - 357	6	0.27
357 - 362	5	0.13
362 - 367	5	0.20
367 - 372	5	0.15
372 - 377	5	0.18
377 - 382	5	0.23
382 - 387	5	0.18
387 - 390	3	0.16
390 - 395	5	0.25
395 - 400	5	0.40
400 - 405	5	Tr.
405 - 410	5	0.16

64-1: Core AX1 Vertical

Interval	Length	% Copper
410 - 415	5	0.10
415 - 420	5	0.10
420 - 426	6	0.40
426 - 432	6	0.13
432 - 437	5	0.20
437 - 442	5	0.16
442 - 447	5	0.18
447 - 451	4	0.35
451 - 456	5	0.34
456 - 460	4	0.17
460 - 465	5	0.26
465 - 470	5	0.18
470 - 475	5	0.08
475 - 479	4	0.07
479 - 485	6	0.45
485 - 489	4	0.17
489 - 494½	5½	0.40
494½-504½	10	0.15
504½-514	9½	0.25
514 - 524	10	0.40
524 - 538	14	0.17
538 - 548	10	0.15
548 - 558	10	0.18
558 - 568	10	0.10

64-1: Core AX1 Interval	Vertical Length	% Copper
568 - 578	10	0.27
578 - 588	10	0.08
588 - 598	10	0.20
598 - 604½	6½	0.12
Arithmetic Average, 297 - 604½		0.30
604½-611	6½	0.40
611 - 620	9	Tr.
620 - 628	8	0.32
628 - 637	9	0.55
637 - 648	11	Tr.
648 - 657	9	Tr.
657 - 666	9	0.18
666 - 674	8	Tr.
674 - 683	9	Tr.
683 - 693	10	Tr.
693 - 705	12	Tr.
705 - 715	10	Tr.
715 - 736	21	0.30
Arithmetic Average , 604½ - 736,		0.13
807 - 817	10	0.13
817 - 826	9	0.30
826 - 835	9	0.19
835 - 845	10	0.35
845 - 854½	9½	0.19

64-1: Core AX1 Interval	Vertical Length	% Copper
854½- 863	9½	0.18
863 - 872	9	0.13
872 - 881	9	0.14
881 - 891	10	0.20
891 - 901	10	0.11
901 - 922	21	0.21
922 - 955	33	0.09
955 - 985	30	0.06
985 - 990	5	0.19
990 - 996½	6½	0.04
Arithmetic Average, 736 - 996½,		0.17
1040 - 1056	16	0.20
Estimated grade 1056 - 1175		0.20

SOIL SAMPLING SURVEY

A soil sampling survey was conducted over the property using the Rubianic Acid method of determining the relative copper content.

A base line crosses the property in a northwest - southeast direction. From the base line parallel grid lines were surveyed northeast - southwest at 200-foot intervals. At picketed stations 100 feet apart on the grid lines soil samples were taken.

The results of the soil sampling are shown on the map accompanying this report. Briefly, on the western portion of the property extensive anomalies appear to have a general northwest - southeast trend, and on the eastern portion the anomalous zones appear to have a general north by northeast trend.

STRIPPING

Stripping to expose bedrock by the use of a bulldozer was employed to facilitate examination of mineral occurrences in many of the areas indicated to have high copper content in the overburden. This work is currently in progress, but trenches completed to August were as follows:-

Grid Location			Length Feet	Results
12	W	0	50	Small mineralized shear zone
8	W	9N	60	Foliated granite Minor malachite stain
8	W	9N	125	Chloritized granite malachite in fracture
8	W	13N	50	Chloritized granite, shear with quartz, epidote, malachite, azurite and chalcopyrite
4	E	14N	100	Foliated granodiorite
28	E	30N	100	Foliated granodiorite minor copper stain
36	E	35N	75	" " " " "
39	E	37N	75	" " " " "
1	E	9S	60	" " " " "
3	E	8S	70	" " " " "
4	E	5S	80	" " " " "

Grid Location		Length Feet	Results
4E	2S	TS	Foliated granite, minor copper stain
8E	Base Line	100	Quartz veins in flat granite foliated and chloritized.
4E	2½ S	50	Foliated granite minor malachite
4E	4 S	300	" " " "

12E 15
14E 10
16E 20

To date stripping has exposed chiefly foliated and fractured chloritized granite with minor pyrite - chalcopyrite mineralization. This work is continuing on soil sampling anomalies.

SUMMARY AND CONCLUSIONS

The Copper Creek property is accessible from a main highway, all year round, and is in an area of favorable geology.

The discovery showing on Copper Creek is well mineralized foliated, chloritized and sericitized granite. This rock is cut by steeply dipping shear zones with which are associated siliceous and sulphide mineralization, namely quartz, pyrite, chalcopyrite and chalcocite.

Over an extensive area surrounding the discovery showings there are zones of pyrite and chalcopyrite disseminated throughout the choritized granite and quartz veins carrying similar mineralization. Much of the area is masked by overburden. Diamond drilling to a depth of 1175 feet at the discovery

showings, indicates that the iron - copper mineralisation is uniform to this depth.

Chalcocite mineralisation appears to be secondary and to date has been encountered at the adit tunnel location. It appears to be confined to the upper 50 feet of the mineralized zone at that location. Insufficient work, either at the adit tunnel location or elsewhere on the property, has been done to indicate whether additional chalcocite-rich zones may be present.

It is concluded from exploration results to date, particularly at the location of the adit tunnel and to the south and east of same, that considerably more exploratory work is warranted, and it is upon these results that the following work programme is recommended.

RECOMMENDATIONS

Because of the favorable geology and extensive distribution of copper in the overburden, a major exploration program is warranted on the Copper Creek property.

Herewith please find Schedule A representing the first stage of the recommended exploratory work, considered a minimum; and Schedule B to be contingent upon results of the first programme.

Schedule A		Estimated Cost
1	Complete soil sampling, by necessary fill-in lines to define clearly the anomalies.	$ 1,000.00
2	Bulldoze the overburden to expose bedrock on selected areas.	5,000.00
3	Extend the adit tunnel southeasterly and crosscut in alternate direction at 100-foot intervals, 1,500 feet total.	50,000.00
4	Diamond drill from underground 1000 feet.	4,000.00
5	Diamond drill from surface, short holes to test favorable areas.	7,000.00
6	Contingencies	3,000.00
	Estimated cost:	$70,000.00

Schedule B		Estimated Cost
1	Rock trenching over selected areas	$10,000.00
2	Underground extension of workings or adit tunnels at new locations.	50,000.00
3	Diamond drilling, underground	10,000.00
4	Diamond drilling, surface	47,000.00
5	Contingencies	13,000.00
	Estimated cost:	$130,000.00

Respectfully submitted,

Alfred R. Allen, P.Eng.