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COPPER PASS MINES LTD.

GEOLOGIC REPORT NO. 1

DALVENIE, MAC, and NEW DEAL CLAIMS

STIKINE PLATEAU AREA, B.C.

M.A. ROED GEOLOGICAL EXPLORATIONS LTD.

EXPLORATION - CONSULTING - RESEARCH

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Edmonton, Alberta

DATED: July 12, 1966

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INTRODUCTION

General Remarks

This report is a preliminary geologic study of thirteen Crown-Granted Mineral claims named Dalvenie 2, 3, 4, 5, 6, 7, 8, 9; Mac; New Deal 1, 2, 3, 4, located in the Liard Mining Division of British Columbia. The claims are shown on claim sheet 124M published by the Department of Mines and Petroleum Resources, Victoria, British Columbia.

Location of Claims

The claims are located in the west half of the Cake Hill Map Sheet, B.C., 2 miles southwest of Upper Gnat Lake (104 $\frac{1}{2}$ west) above timber line at an elevation of approximately 5100 feet (see index map, Figure 1). From Dease Landing at the southern end of Dease Lake the claims are located approximately 22 miles in a direction south 12 degrees east.

Access

Upper Gnat Lake, located approximately 2 miles northeast of the claims, can be reached by an all weather gravel highway (part of the Cassiar-Stewart Highway scheduled for completion in 1968?). This road joins the Cassiar-Watson Lake road 94 miles to the north--from this junction the distance to Watson Lake is

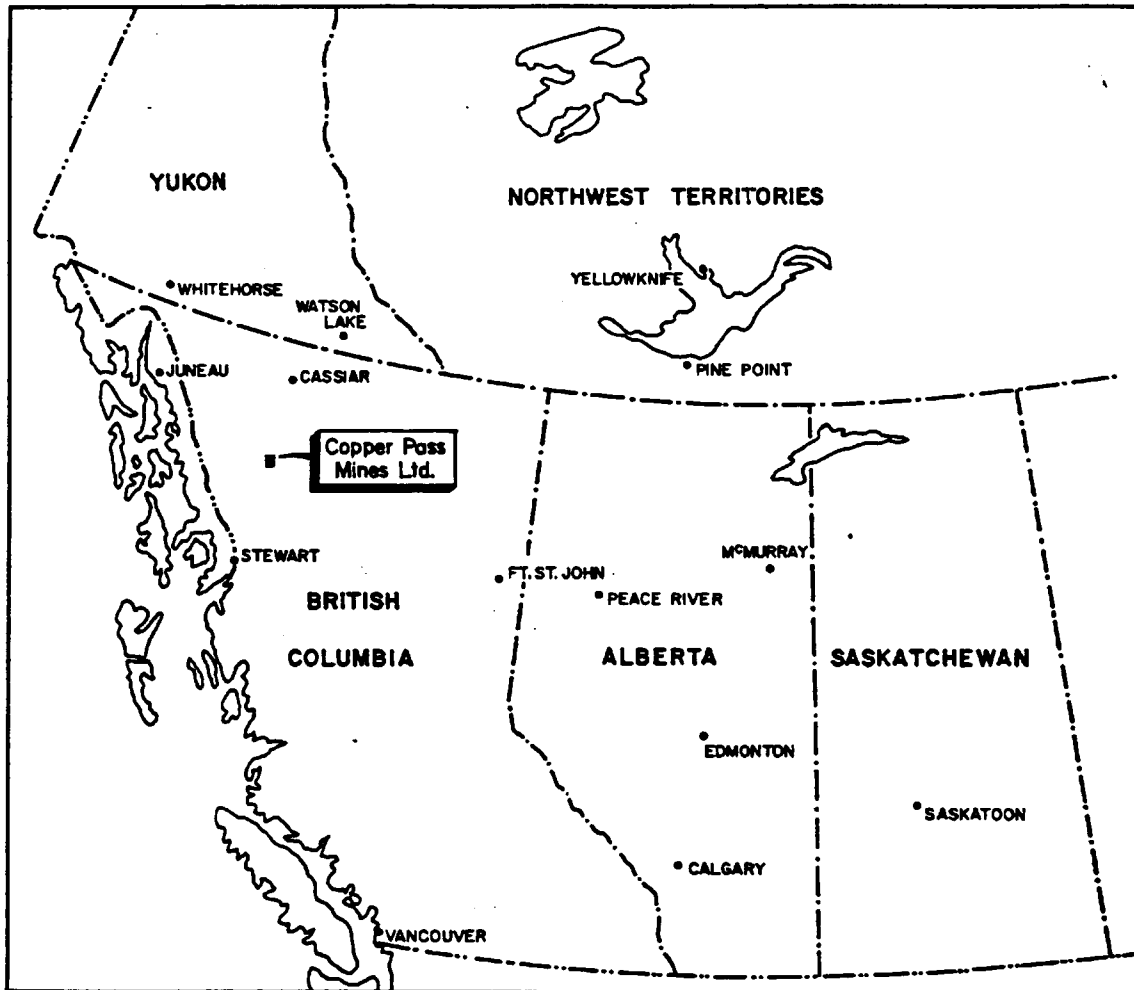


Figure 1

**INDEX MAP
SHOWING LOCATION
OF
REPORT AREA**

*To Accompany Geologic Report No. 1 Dalvenis,
Mac and New Deal Claims, Stikine Plateau Area, B.C.*

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85 miles. A descending footpath $3/4$ of a mile long connects the property with the Cassiar-Stewart Highway in the valley.

Small float equipped aircraft may land on Upper Gnat Lake (elevation 3965) and the Morchuea airstrip is located approximately 10 miles to the southwest. The landing strip at Dease Lake will accommodate aircraft up to at least the size of a DC 3.

Physiography

The property is located in the Hotailuh Range of mountains near the northeastern edge of the Stikine Plateau which abuts against the Cassiar Mountains. Relief is in the order of 2000 feet. Valleys have been heavily glaciated hence u-shaped and trend in a north-south direction. Intervening mountains are generally rounded by glacial action but rise to elevations of up to 6170 feet in the area.

Specifically, the claims are located at an elevation of approximately 5100 feet in a north-south trending depression on the east flank of an extensive north trending mountain. The property is situated almost directly on the Arctic Ocean and Pacific Ocean drainage divide but is swampy, and poorly drained in general by several small stream systems flowing north and south respectively.

Mining History

The property was first staked in 1899 by Joseph Clearihue at the time of the Dease Lake gold rush (see Appendix A). It had been restaked several times after that and in 1935 the Dalvenie Syndicate of Victoria presumably acquired the claims at which time they became Crown Granted. Numerous trenches had been opened along the mineralized zone up until 1935 but since then very little work has been done. Assays of samples from some of the trenches are included in Appendix A, B, and C. Most of the old trenches are still visible but have infilled with debris. One newer trench has been excavated relatively recently but it is not known who did the work.

GEOLOGY

Method of Study

A general survey of geologic publications was made prior to the field examination and a preliminary photogeologic study was carried out. This was followed by 10 days in the field mapping the geology of the claims at a scale of 1 inch to 835 feet aided by enlarged aerial photographs and a surveyed base map of the claims. At the same time old trenches were

cleaned out and re-sampled and samples of the various rock types were collected and assayed. Since the showings along the mineralized area appeared favourable, a small packsack diamond drill (x-ray size) was immediately employed to ascertain depth of mineralization. A general aerial reconnaissance was made of the property and adjacent areas using a Cessna 180 float equipped aircraft.

The rock units were mapped by pace and compass traverses at intervals of approximately 800 feet. Well over half the area is covered with glacial till and colluvium so that the contacts of the various rock types are approximate. Major rock types have been examined in thin section using a petrographic microscope.

A series of geochemical soil samples have been collected to establish the geochemical characteristics of the mineralized zone and wall rock. These will be processed by Barringer Research, Toronto, Ontario.

All assays of samples collected in the present study have been run by Mr. R. Sawyer of Atlas Testing Laboratories of Edmonton, Alberta.

Previous Work

The property was examined by Mr. Joseph T. Mondy, Resident Mining Engineer, Prince Rupert, B.C. in the fall of 1935--the full text of his report is included in Appendix C.

An anonymous government report (B.C. Report Minister of Mines, 1935) of the claims is included as Appendix A. Both of these reports indicate an extensive mineralized zone possibly 2500 feet long and up to 30 feet wide with the most important metal being copper.

The geology of the area has been mapped by the Geological Survey of Canada (Map 9-1957 and Map 29-1962) on a scale of 1 inch equal four miles and the general tectonic framework has also been determined by the Geological Survey of Canada (Gabrielse and Wheeler, 1961).

General Geology

Sedimentary and igneous rocks of three ages occur on the property (Gabrielse, 1962). From oldest to youngest they are: (1) Upper Triassic and (?) earlier rocks; (2) Jurassic and/or Cretaceous Intrusives; (3) Pleistocene glacial deposits.

(1) Upper Triassic and (?) Earlier Rocks

Upper Triassic and (?) earlier rocks comprise a variety of bedded volcanic and sedimentary rocks including andesite, basalt, tuff, breccia, quartzite, argillite and shale. Some small intrusive bodies have also been described by Gabrielse (1962).

Triassic rocks underlie much of the Hotailuh and Three Sisters Ranges of mountains and are common on the property, but here they consist mainly of folded thin bedded siltstones, quartzites, cherts and argillites with minor beds of volcanic origin (Figure 2, in pocket). Their distribution is erratic since they have been intruded by hornblendite and gabbro of Jurassic-Cretaceous age.

(2) Jurassic and/or Cretaceous Intrusives

(a) Plutons and sills

Intrusive rocks of Jurassic-Cretaceous age form the Hotailuh Batholith of the Coast Intrusions which comprises much of the eastern part of the Hotailuh and Three Sisters Ranges of mountains. Small massive plutons of the Hotailuh Batholith occur on the claims where they are found to intrude the Triassic rocks as discordant masses and also as thin sills along the bedding planes of the sedimentary rocks. In composition the intrusives are basic, tentatively identified as gabbro (ranging to hornblendite) with hornblende as the dominant mafic mineral. The texture ranges from coarse equicrystalline to coarse porphyritic. In some places considerable alteration to chlorite has occurred whereas in other places, notably separated from fault zones, the intrusives appear relatively unaltered.

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(b) Dikes

Two diabase dikes occur on the property trending N 16° E, dip 75° W. The dikes are 3 to 4 feet thick and are separated by 2 to 6 feet. They appear to be roughly parallel to each other and have been intruded along a highly sheared fault zone which carries the main part of the mineralization of the area. Since the fault zone along which the dikes occur postdates other intrusive rocks of the area, the dikes are believed to be the youngest intrusive rocks on the property.

The dikes cannot be conveniently showing on the scale of the present geologic map (Figure 2), however, they have been identified at Showings #1, 2 and 3 indicating a horizontal extent of approximately 3,760 feet. It is reasonable to assume that they are present at depth unless they have been folded or offset by faulting in the subsurface.

(3) Pleistocene Deposits

The property has been heavily glaciated by north-south moving valley glaciers. Valleys and depressions have been overdeepened and resistant rock outcrops smoothed and rounded by glacial action. A thin mantle of glacial till covers over half of the bedrock of area and is much thicker in the valleys.

and depressions. Up to 15 feet of glacial till has been measure in the southern-most stream valley on the property.

An interesting point concerning future prospecting of the area is that most of the mineralization has been found in and adjacent to topographic depressions on the property. This is believed to be the result of more active glacial erosion in weathered mineralized zones (hence less resistant) compared to more resistant unweathered and unmineralized zones in the adjacent bedrock. Also, the glacially deepened topographic depressions may be reflecting fault zones in that fault zones are commonly less resistant to erosion than surrounding rock types.

Structural Geology

The regional structure of the area is composed of an extensive east-west trending anticlinal structure which may be related in part to the Hotailuh Batholith (Gabrielse and Wheeler, 1961, Figure 4). Locally, however, the structure does not conform to any particular pattern.

The Triassic sedimentary rocks on the property have been steeply folded and faulted, but the tops of the beds have not been observed so that the type of folding cannot be determined at present.

Faults are common on the property and are of two principal trends. The most prominent fault trend is roughly north to northeast and is marked by linear topographic depressions, silicified and mineralized fault breccia, highly weathered and gossaned outcrops, and complex fracture systems. It is along one of these fault zones that the diabase dikes occur and in which extensive mineralization has taken place (main fault zone shown in Figure 2). Relative movement along the north-northeast fault trend is unknown as is the dip, but due to the linear character across the topography of the fault zone, the dip of the fault is believed to be quite steep. In the case of the main fault zone at Showing No. 1 and No. 2 (Figure 2) the inferred topographic extension of the fault zone suggests that it is dipping steeply to the east.

The other less prominent fault zones trend northwest and have been identified obliquely intersecting the eastern side of the main fault along the showings. By tracing the diabase dikes which have been offset by these oblique faults, it has been inferred in some cases that the northeast side of the oblique fault zones have been moved to the right relative to the southwest side.

All of the rocks have been fractured and from aerial photographs two distinct fracture systems have been recognized--

the most prominent set strikes northeast and is nearly vertical; the less prominent set strike to the north and is also believed to be nearly vertical. In fracture zones along areas of faulting, the fracture system is complex and has therefore not been studied in any detail.

Economic Geology

The main mineralized zone investigated is located in a north trending topographic depression extending from Showing #1 to Showing #3 (Figure 2). Old trenches present at Showing #1, 2, 3 have been cleaned out and sampled and some new trenches have been excavated. A diamond drill hole (Appendix D) has been drilled to a vertical depth of 10 feet at Trench #1 of Showing #1 (see Figure 3).

Mineralized Zone

Sulphide mineralization is in the main fault zone shown on the geologic map (Figure 2) and although outcrop is very limited where the mineralized zone is exposed it occurs in association with two parallel diabase dikes. The dikes and the mineralized zone have been traced horizontally for 3760 feet along a belt trending N 16 E. The maximum width of the mineralized zone is unknown but in Showing #1 it is at least 32 feet wide (including dikes) and may be much wider

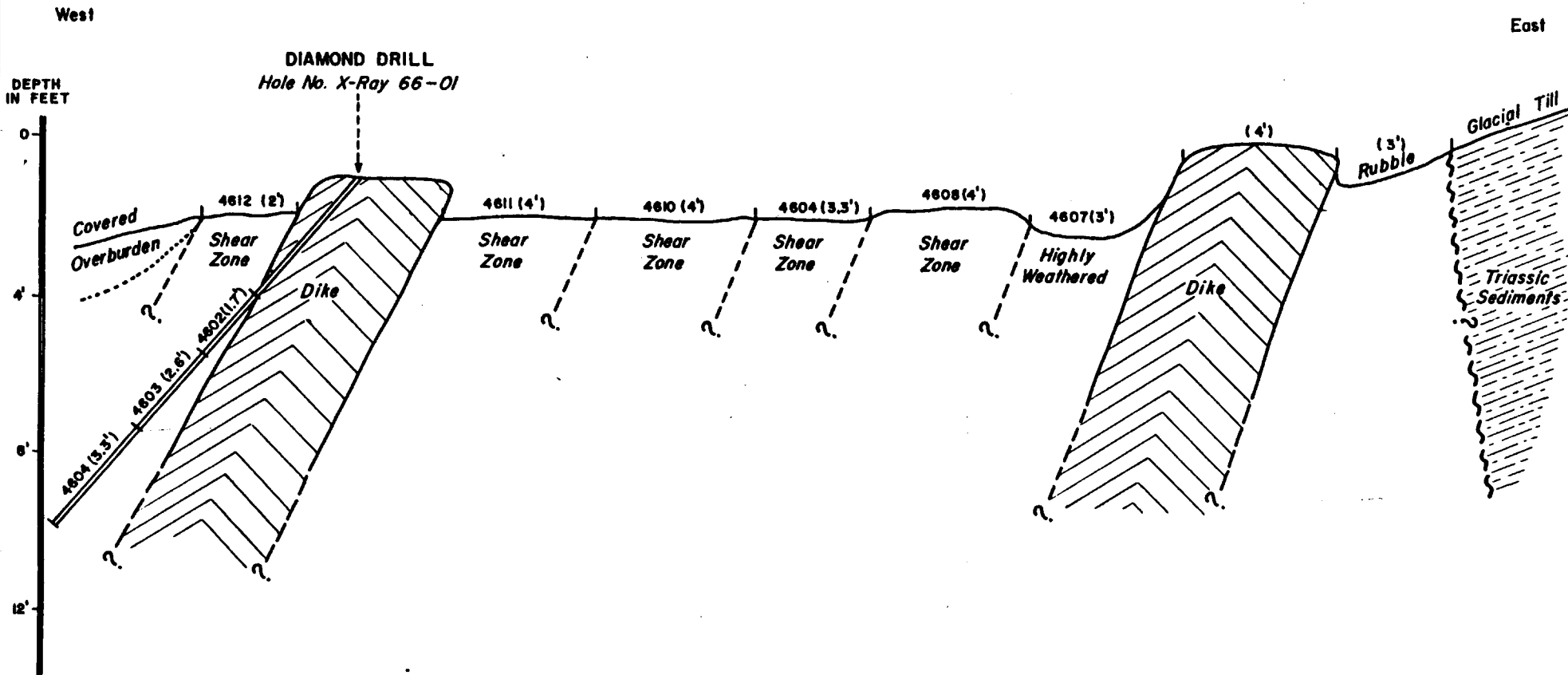


Figure 3
**CROSS SECTION ACROSS
 TRENCH NO. 1, SHOWING NO. 1**
 NUMBERS REPRESENT ASSAY NOS.(eg.4608)
 Vertical & Horizon Scale: 1inch=4 feet
 — July, 1966 —

*To Accompany Geologic Report No.1 Dalvenie,
 Mac and New Deal Claims, Stikine Plateau
 Area B.C.*

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in this part (Figure 3). Most of the mineralized zone is badly weathered and characterized by rust stained decomposed rock and honeycomb quartz with irregular and cubical cavities.

The fault zone is composed of smokey grey quartz with abundant sulphide mineralization at all three showings. Sulphide mineralization is mainly massive pyrite with blebs of chalcopyrite, arsenopyrite, and smears of bornite and hematite along fractures; some siderite and sphalerite has also been tentatively identified. In Trench #1 of Showing #1 massive fine grained pyrite occurs with approximately 2% chalcopyrite for 2 feet on the west side of the trench. The area to the east and between the dikes is highly altered but contains only minor sulphide mineralization. A cross-section of Trench #1, Showing #1 is given in Figure 3. A strong magnetic deflection was repeatedly observed at this locality.

In Trench #1 of Showing #3 large blocks one to three feet long contain almost 90% sulphide mineralization comprising mainly pyrite some chalcopyrite and minor arsenopyrite. A spectrographic analysis of two grab samples from this showing are given in another part of this report (see (3) under Assays)-- of economic significance is that both samples show approximately 1% copper content.

The wall rock of the mineralized zone is mainly the Jurassic-Cretaceous ultramafic intrusive but in the extreme southern part (Showing #1) the wall rock is the Triassic sediments. Generally, the wall rock is unmineralized but adjacent to the mineralized zone pyrite and chalcopyrite occur at several localities. An assay of the wall rock (altered hornblendite) on the east side of the mineralized zone between Showings #2 and 3 give the following values--gold-trace; silver-trace; copper-0.07%; platinum-trace; nickel-trace.

Assays

(1) Assay Across Trench #1, Showing #1

A cross-section of the mineralized zone at Trench #1, Showing #1 is presented in Figure 3 and is believed to be representative of the geology of that part of the mineralized zone which is exposed on the property.

In Table 1 the assays for copper, gold and silver are tabulated for Trench #1, Showing #1. A weighted average assay gives a value of 1.19% copper over a length of 24 feet (including western dike which was not sampled). This is believed to be a conservative figure since the samples were all weathered.

TABLE 1

Assays of Samples Across Trench #1, Showing #1

(See Figure 3)

Sample Number	Thickness (feet)	Au Oz/ton	Ag Oz/ton	% Cu
4612	2	.02	.1	.6
4611	4	.02	.4	1.4
4610	4	.04	.9	3.4
4604	3.3	.02	.7	1.1
4608	4	tr	tr	.6
4607	3	tr	tr	.85

(2) Assays From Diamond Drill Hole -- No. X-Ray 66-01

An inclined diamond drill penetrated a vertical depth of 10 feet in Trench #1, Showing #1 (a geologic description of the core of this hole is given in Appendix D along with a copy of the assay sheet). Assays from this hole are given in Table 2 and the location of the samples is shown in Figure 3. A weight average gives an assay value of 1.05% Cu over the lower 7.6 feet. Although the hole is very shallow, the deepest sample gives the best copper values suggesting that samples of the weathered zone are not representative.

TABLE 2

Assays of Samples From Diamond Drill Hole No. X-Ray 66-01

Sample Number	Thickness (feet)	Au oz/ton	Ag oz/ton	% Cu
4602	1.7	tr	tr	.12
4603	2.6	.06	.4	.9
4604	3.3	.02	tr	1.1

(3) General Assays

Two samples for a general assay were collected from Showing No. 3, Trench No. 1 (Figure 2) at the northern end of the mineralized zone. A spectrographic analysis was run on these samples the results of which are shown below--assays have not been completed up to the time of writing.

Lab. No. 0131 Sample No. GA-1

Major Constituents

Silicon, Iron

Magnesium, Aluminum

Approximately 1%

Copper

0.01% - 0.1%

Molybdenum, Titanium

0.001% - 0.01%

Nickel, Cobalt Manganese,
Chromium, Silver

Lab No. 0131 Sample No. GA-2

Major Constituents	Silicon, Iron, Magnesium, Aluminum
Approximately 1%	Copper
0.01% - 0.1%	Molybdenum, Titanium
0.001% - 0.01%	Nickel, Cobalt, Manganese, Chromium
Traces	Silver

A separate assay of a grab sample from Showing No. 1, Trench No. 1 (4605) gave the following values--Gold-0.08 oz/ton; Silver-trace; Copper-0.23%; Zinc-0.42%. The value of the gold in this sample was calculated to be \$2.80 per ton (see Appendix D).

(4) Other Assays

Recent grab samples collected along the main fault zone by Mr. Roy Ericison, a prospector, were assayed but they cannot be considered to be representative. Irregardless, they do give some idea of the mineralization in the area of Showings #1, 2, and 3 and are therefore included in Appendix B (11).

The resident engineer in Prince Rupert, 1935, Mr. Joseph T. Mondy, also ran a number of assays. These values are given in the complete text of a letter to Mr. Joseph B. Clearihue included as Appendix C of this report. The exact locations of these assays are unknown, but there is only 1 of 4 that is favourable.

Numerous assays, apparently from grab samples, were received from the original owners of the Crown-Granted claims. These old assays are recorded in Appendix B 1 of this report. Since the exact locations of the assays are not known, their significance is limited, but out of 21 samples an average value of 4.25% copper was obtained. From values obtained from assays of the present study, the old assays are judged to be too high.

Other assays of showings on the claims are given in the anonymous government report of 1935 (B.C. Report of Minister of Mines, p. B 22, 1935) included as Appendix A in this report.

Other Showings

Upon geologic mapping of the property, a number of other showings were discovered. The showings consist mainly of pyrite and chalcopyrite along the wall rock of suspected faults zones and even in the faults zones. All showings are

gossaned and are indicated by small arrows in Figure 2. These showings are presently being prospected.

GEOCHEMICAL SAMPLING

A series of geochemical soil samples were collected along a controlled grid across the known mineralized zone. This initial sampling was carried out in order to determine the general geochemical characteristics of the mineralized zone. Results of the survey are not known at the present time, but it is hoped that the geochemical survey will help delineate the mineralized zone and possibly lead to the discovery of other zones of mineralization.

RECENT CLAIM STAKING

After an initial field examination of the geology of the property, a photogeologic study, and an aerial reconnaissance, it was decided to stake a number of claims to the west, south, and east of the Crown-Granted claims. These claims were staked in order to acquire the property where the mineralized zone may continue and where other mineralized areas are likely to occur. A number of fractional claims were also staked. A list of the claims is given in Appendix E of this

report and a map showing the location of the claims is given in Figure 2 and Figure 4.

CONCLUSIONS

On the basis of the assays of Trench #1, Showing #1, assays of Diamond Drill Hole No. X-Ray 66-01, and assays at Showing #3, along with the geologic information of this report, it is concluded that a mineralized zone carrying good copper and gold values occurs on the property. The assays in the southern trench give values of 1.19% copper over 24 feet and in the drill hole give values of 1.05% copper over 7.6 feet. Gold values are also associated with the copper. These values occur in a mineralized fault zone associated with two diabase dikes. The zone is at least 32 feet wide at the surface and can be traced by field geology for a distance of 3760 feet. It is expected that the copper values obtained above will be present throughout the length of this zone, but that these copper values represent minimum values since only the weathered zone has been sampled up to the present time.

Further exploration to delineate the width and minimum depth of the mineralized zone is strongly warranted by the present study. Due to the geologic structure of the mineralized zone as inferred from field geology, a small scale diamond

drilling program should serve to indicate the economic extent of mineralization.

Since additional showings were discovered in the general area, along other faults zones, these showings demand careful inspection and sampling. This may lead to extension of the known mineralized zone or discovery of new mineralized zones.

RECOMMENDATIONS

1. I recommend that the present activities of prospecting, trenching and sampling be continued in order to thoroughly cover the known mineralized zone and other areas of showings.
2. I recommend that a small scale diamond drill program of approximately 1000 feet be started immediately in order to determine the depth and width of the mineralized zone.
3. I recommend that exploration beyond the above ~~the~~ stage be deferred until results of the diamond drill program are known.

ESTIMATED COST

The estimated cost to carry out the recommendations of this report is tabulated below.

Assays and geochemical analysis	\$ 2,000.00
Camp costs	5,000.00
Transportation	3,000.00
Line cutting	1,000.00
Diamond drilling	10,000.00
Geological services	<u>5,000.00</u>
Total	\$ 26,000.00

AUTHOR'S NOTE

I, Murray Anderson Roed, President of M.A. Roed Geological Explorations, Ltd. have conducted the exploration program for Copper Pass Mines Ltd. in the field and laboratory. Under my supervision much of the detailed sampling and description of the mineralized zone was carried on by Mr. Norman W. Reynolds, B.Sc., Chief Mining Geologist, M.A. Roed Geological Explorations, Ltd. Mr. Reynolds who has had extensive experience in exploration geology is presently in charge of the geologic exploration on the property.

PROFESSIONAL QUALIFICATIONS

1. I, Murray Anderson Roed, reside at 8728 - 101 Avenue, Edmonton, Alberta.
2. I have a B.A. (1959) and a M.A. (1961) in Geology from the University of Saskatchewan, Saskatoon.
3. I am a Professional Geologist registered with the Alberta Association of Professional Engineers.
4. M.A. Roed Geological Explorations Ltd. is registered in the Province of Alberta.
5. I possess experience in the following fields of geology: structural and stratigraphic geology; photogeology; engineering geology; subsurface coal exploration; surficial geology; paleontology.
6. I have worked in the Mackenzie Mountains, Franklin Mountains, Richardson Mountains, Mackenzie River Valley, Rocky Mountains and Foothills, Old Crow Mountains, Keele Range, Eagle Plain, west coast of Vancouver Island, and southern Alberta.
7. I belong to the following professional societies:
Alberta Association of Professional Engineers;
Geological Society of America; Association of Engineering Geologists; Canadian Institute of Mining and Metallurgy.

8. I have no material interest in the subject property, contemplated or otherwise.

Within the scope of this study, all information contained within this report is believed to be accurate.



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REFERENCES

B.C. Report of Minister of Mines, 1935. Dease Lake area;
p. 13-22.

Gabrielse, H. and Wheeler, J.O., 1961. Tectonic framework of
southern Yukon and northwestern British Columbia;
G. S. C. paper 60-24.

Geological Survey of Canada, 1957. Map 9 - 1957; Stikine
River area, British Columbia.

Geological Survey of Canada, 1962. Map 29 - 1962; Cry Lake,
British Columbia.

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APPENDIX A

APPENDIX A

The following account is taken verbatim from the B.C. Report of Minister of Mines, 1935, p. 13 - 22.

DEASE LAKE AREA

Dalvenie This group of eight claims, and two additional claims staked in 1935, is owned by the Dalvenie Syndicate, of Victoria. It is situated on the easterly slope of a prominent unnamed mountain ("Dalvenie") rising above the plateau to an altitude of 6,000 feet on the divide between Gnat creek, a tributary of the upper Tanzilla river, and Ptarmigan creek, a tributary of the upper Stikine river. The group is about 22 miles in a direction south 12 degrees east from Dease Landing at the head of Dease lake. The property is reached by following the Tanzilla trail for about 2 miles from the Telegraph Creek-Dease lake road to the Tanzilla river. At this point the Tanzilla river is crossed and, as there is no trail, the most unobstructed route is taken across country through a lightly timbered and extensively burnt-over rolling plateau which gradually rises to the slope of "Dalvenie" mountain. The mineral deposit was first staked in 1899 as the Big Chief* group by Joseph Clearihue and has been restaked several times since, most recently by the Dalvenie Syndicate.

The rolling lowlands of the plateau are extensively covered by deep glacial drift and rock-outcrops are scarce. Rising about 3,000 feet above the plateau-level, "Dalvenie" mountain, about 4 miles long and 2 miles wide, forms an outstanding feature of the topography. The prominent form of this mountain is composed of a boss of gabbro varying in texture from fine to coarsely holocrystalline and from fine to coarsely porphyritic. This intrudes slates and quartzites. About 5 miles westerly from the north-easterly-striking axis of "Dalvenie" mountain there is a parallel mountain of about 6,000 feet elevation which is composed of oxidized limy slate and limestone. Several thin remnants of pyritic quartzite roof-rocks, in places hybridized by partial digestion in the intrusive, are preserved along the easterly slope of "Dalvenie" mountain. These are generally characterized by rusty outcrops. Along the lower elevations of the easterly slope the slate roof-rocks are more common.

*Upon a thorough search of the B.C. Report of Minister of Mines, no record of the Big Chief group was found which fits the description of this property--it is suspected that there is a misprint and the name should actually be Big Thief group, but this is still under investigation.

The mineral deposit consists of a replacement-zone with an indicated width of 20 to 34 feet traced for 1,200 feet by thirteen shallow open-cuts and one pit 3 feet deep on the Dalvenie No. 3 claim. The zone strikes north 10 degrees east between an elevation of 4,075 feet at the southerly end and 5,100 feet at the northerly end; the dip could not be determined definitely. In places the zone contains horses and tongues of barren or sparsely replaced gabbro and quartzite. The zone occupies the upper horizon of the gabbro boss, mineralization occurring in both the gabbro and the hybrid slate, but apparently not extending into sections roofed by quartzite. The northerly 600 feet of the zone is marked by a depression about 30 feet wide in which short cuts have been driven into the west rim, exposing heavily oxidized material. The most extensive work has been done along about 500 feet of the southerly end of the zone in gently sloping and swampy ground. All exposures are extensively oxidized, but in the deeper cuts there is considerable pyrite, pyrrhotite, chalcopyrite, and arsenopyrite in a gangue of altered rock, quartz, and some barite.

In a cut, 40 feet long, transversely across the west side of the zone at its southerly end, a sample of unoxidized sections mineralized with pyrrhotite, pyrite, chalcopyrite, and arsenopyrite, with quartz and barite gangue, assayed: Gold, trace; silver, trace; copper, 0.3 per cent.; arsenic, 2.3 per cent. At the north end of this cut a compass-deflection of 62 degrees east was observed. In an open-cut 22 feet east from the south end of this cut, a sample across 15 feet of the east side of the zone assayed: Gold, trace; silver, trace; copper, 0.3 per cent; arsenic, 2.1 per cent. A sample across 22 feet of the easterly side of the zone exposed in an open-cut midway along the zone at an elevation of 5,100 feet assayed: Gold, trace; silver, trace; copper 1.7 per cent; arsenic, 2 per cent.

About 2,500 feet north 8 degrees east from the cuts on the Dalvenie No. 3, a possible continuation of the zone has been exposed on the New Deal No. 1 claim adjoining the Dalvenie No. 6 on the north. Here, at an elevation of 5,000 feet, a cut 10 feet long exposes heavily oxidized material and honey comb quartz with some patches of pyrite. A selected sample of pyrite in this cut assayed: Gold, 0.02 oz. per ton; silver, trace.

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APPENDIX B

APPENDIX B

I Old Assays of Joseph Clearihue

(Note: Exact locations of the samples assayed below are not known.)

Assays August 25, 1935

Sample Number	Gold oz. per ton	Silver oz. per ton	Copper %
#1 A	trace	trace	--
#2 A	none	none	2.7
#1 B	.10	14.0	1.2
#2 B	.02	.8	.2
#3 B	.04	.8	1.0
#1 C	trace	1.6	6.3
#2 C	trace	1.0	8.3
#1 D	.02	.8	--
#2 D	trace	trace	
#1 E	.02	trace	.5
#2 E	.04	trace	1.7
#3 E	.04	trace	--
			1934
#1	.01	3.2	23.25
#2	.02	1.6	1.5
#1 #1 on Main cut	.14	1.5	4.6

Sample Number		Gold oz. per ton	Silver oz. per ton	Copper %	
#2	North cut about 500' from main cut	.10	3.0	3.9	
#3	cut 10'	.20	5.6	13.2	
#4	Copper ore from main cut	trace	5.5	11.8	
#5	#2 crosscut	.10	4.0	5.6	
#6	from ore all over	.20	2.0	1.9	zinc 2.1
#3	main cross cut	trace	2.2	7.3	

II Assays of Recent Prospector Grab Samples

(Note: Exact locations unknown)

Sample Number		Gold oz. per ton	Silver oz. per ton	Copper %
#1		.12	1.56	5.85
#2		.44	15.5	6.45
#3		.12	1.46	3.08
#4		.12	.20	.07
#5		.32	2.96	3.82
#6		.01	1.16	
#7		.06	.20	
#8		1.10	3.16	

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APPENDIX C

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Department of Mines
RESIDENT ENGINEER'S OFFICE
Prince Rupert, B.C.

November 8, 1935

Joseph B. Clearihue, Esq.,
903-7 Bank of Toronto Bldg.,
Victoria, B.C.

Dear Mr. Clearihue:

Re: Dalvenie Property on Gnat Creek.

I have just returned to the office from the field and find your letter of September 4th awaiting attention. I examined this property during July 18th and 21st but as yet have not completed my report concerning it. Details will be contained in the Minister of Mines Annual Report for 1935 which should be published some time in the early spring of 1936. However, for your immediate guidance I would inform you that the sum and substance of my investigation indicates that the general geology of the area conforms more to possibilities for base metal mineralization with values possibly tending towards mainly copper. Indications are that the area is not favourable for occurrence of gold and silver and that values in these metals would generally be subdued. This aspect is further bared out by the results from my samples and I note from the results of your assay list that this aspect is further verified.

Surface exposures and general geological conditions indicate however, the possibility for the occurrence of a fairly appreciable base metal deposit and as such would be worth further exploratory work. You can understand, however, that the importance and value of such a type of deposit in that remote area is primarily relative to transportation aspects and the property might have to be held for some considerable time before any value materialized.

The general geology, however, suggests the possibility that perhaps platinum might be associated with the general base metal mineralization and I would suggest that you verify this aspect from

the samples which are in your possession. Should such a condition occur it would tend to quite appreciably alter the present aspects of the picture. For your information the results of my samples are as follows:

1. Selected unoxidized material, mostly pyrite from open-cut 15 ft. long and 4 ft. deep at elevation 5,000 ft. on the New Deal No. 1 M.C.: Gold, 0.02 oz. per ton; silver, trace.
2. Selected sample of unoxidized material containing pyrite, pyrrhotite, chalcopyrite and mispickel in a gangue of quartz gossaned vein matter at elevation 5,100 ft. on the Dalvenie No. 3 M.C.: Gold, trace; silver, trace; copper, 1.7 per cent; zinc, 2.0 per cent.
3. Unoxidized material from a cut about 40 ft. long, generally highly oxidized and gossaned, containing mineralization replacement with pyrite, chalcopyrite and mispickel in a quartz-barite gangue: Gold, trace; silver, trace; copper, 0.3 per cent; arsenic, 2.3 per cent.
4. Unoxidized material across about 12 ft. in a cut about 20 ft. long showing mineralization of pyrite, chalcopyrite, pyrrhotite and mispickel: Gold, trace; silver, trace; copper, 0.3 per cent; arsenic, 2.1 per cent.

As cuts are all highly oxidized and gossaned and as the samples could only be taken as representative of the unoxidized material, showing in these cuts, it is evident that a more general distribution of sulphide mineralization would be achieved by the attaining of greater depth. Should further work be undertaken on this property it is suggested that this could be most constructively carried out by initial diamond-drilling with a light x-ray diamond-drill. If it is considered worth while to hold this property as a base metal prospect this work should be carried out as guidance to this policy.

I would like to remark that Dan McPhee carried out very constructive work on these claims during this season and devoted several days of his own time to remaining on the property for the purpose of guiding me over the showings and facilitating my examination. During the course of my examination it also became apparent that in order to cover the zone the original staking did not conform and was not adequate. To protect your interests in this respect and

by your fraction in an important section of the property. Dan
McPhee has carried out staking on your behalf.

With kindest regards, I am,

Very truly yours,

Joseph T. Mondy
Resident Mining Engineer

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APPENDIX D

APPENDIX D

DIAMOND DRILL HOLE NO: X-RAY 66-01 -- GEOLOGIC DESCRIPTION

Dip 59°. Date commenced July 2, 1966

Dirn. N 70° E. Date completed July 3, 1966

Depth--12' -- still in shear zone

Vertical trace--10.2' Horizontal Trace 6.1'

Depth
(in feet)

0 - .6	Fine grained siliceous dike with trace pyrite dark grey
.6- 1	Dark grey--grey green (in weathered areas)--highly fractured dike. Weathered out mineralization pits?
1 - 3.6	Dark grey siliceous dike--At 2.6' fracture of 15° with drill hole. Dark green weathering along fracture. Fracture @ 3.6 angle of 15° with drill hole.
3.6- 4.4	Highly fractured siliceous dike. Hematite staining on fracture.
4.4-12	Highly altered shear zone. Massive fine grained-coarse grained pyrite, smokey grey quartz.
Sample 4602	- 4.4' - 6.1' Au, Ag, Cu Smokey grey quartz with 50% fine grained massive pyrite. Small blebs of chalcopyrite, and minor hematite on fractures. Small bleb of arsenopyrite.
Sample 4603	- 6.1' - 8.7' Au, Ag, Cu Highly fractured--smokey grey quartz--in 50% pyrite 1% scattered chalcopyrite
Sample 4604	- 8.7' - 12' Au, Ag, Cu Highly fractured--smokey grey quartz--greater 50% pyrite barnite on fractures--1% chalcopyrite

End of Hole 12.0'

ATLAS TESTING LABORATORIES LTD.
7911 Argyll Road • EDMONTON, ALBERTA • Phone 469-2391

CERTIFICATE OF ASSAY

TO M.A. Roed Geological Explorations Limited, Attention: Mr. Murray Roed.

Lab No. 0127

10147 - 103 Street,

July 11, 1966.

Edmonton, Alberta.

I hereby certify that the following are the results of assays made by me upon the herein described samples.

MARKED	GOLD		SILVER		COPPER	ZINC			TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Value per Ton	Percent	Percent	Percent	Percent	
1.- 4601	trace	---	trace	---	---				
2.- 4602	trace	---	trace	---	0.12				
3.- 4603	0.06	\$2.10	0.4	---	0.90				
4.- 4604	0.02	\$0.70	trace	---	1.10				
5.- 4605	0.08	\$2.80	trace	---	0.23	0.42			
6.- 4607	trace	---	trace	---	0.85				
7.- 4608	trace	---	trace	---	0.60				
8.- 4609	trace	---	0.4	---	1.42				
9.- 4610	0.04	\$1.40	0.9	---	3.4				
10.- 4611	0.02	\$0.70	0.4	---	1.4				
11.- 4612	0.02	\$0.70	0.1	---	0.60				

Gold calculated at \$35.00 per ounce

Calculated at per lb.

Silver calculated at \$..... per ounce

Calculated at per lb.

NOTE:

Rejects retained one month.
Pulps retained three months
unless otherwise arranged.

J. R. [Signature]
.....
Registered Assayer, Province of British Columbia

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APPENDIX E

APPENDIX E

Claims Recently Staked Around Dalvenie, Mac and New Deal Claims

Copper Pass Mines Ltd.

<u>Claim Name</u>	<u>Serial Number</u>
Frac 1	692 103
Frac 2 (fractional)	692 221
Rac 1 (fractional)	692 104
Tac 1- 6	692 105 - 692 110
Tac 7	692 080
Tac 8	692 078
Tac 9	692 079
Tac 10 (fractional)	692 231
Tac 11 (fractional)	692 232
Tac 12-21	692 234 - 692 243
Tac 22	692 233
Tac 23	692 244
Tac 24	692 251
Tac 25	692 252
Nat 1-3 (#3 fractional)	692 215 - 692 217
Fog 1-8	692 061 - 692 068
Pass 1-11	692 150 - 692 160
Pass 12	692 072
Pass 13	494 459
Pass 14	692 073
Pass 15-18	692 146 - 149
Pass 19-24	692 225 - 692 230
Lin 22	692 076
Lin 23	692 077
Lin 24	692 075
Lin 25	692 074
Lin 30-31	692 098 - 692 099

Claim NumberSerial Number

Lin 46-51	692 140 - 692 145
Lin 53	692 246
Lin 54	692 245
Lin 55	692 248
Lin 56	692 247
Lin 57 (fractional)	692 222