

GEOLOGICAL REPORT

BIG BULK CLAIMS

SKEENA MINING DIVISION

103° P 11 W

55°39'48"N 129°20'43"W

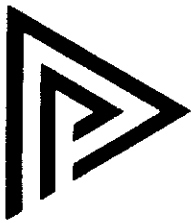
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Owned by K.W. Livingstone

Operator: PRISM RESOURCES LIMITED

George Cavey  
Geologist

October 1980



**Prism  
Resources  
Limited**

November 7, 1980.

Chief Gold Commissioner  
Department of Energy, Mines and Resources  
Victoria, B.C.

Dear Sirs:

The accompanying report on a portion of the Big Bulk Mineral Claims at Kinskutch Lake, by George Cavey, describes work carried out by him. Mr. Cavey is a geologist employed by this company and I consider him qualified. The work was done under my general supervision. I visited the property, examined the principal exposures and accept the report.

Yours very truly,

D.H. JAMES, P. Eng  
Chief Geologist

DHJ/mw  
enclosure

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## BIG BULK

### SECTION 1: INTRODUCTION

The Big Bulk mineral group is located on the South East side of Kinskuch Lake, (Figure 1), latitude  $55^{\circ}39'48''\text{N}$ , longitude  $129^{\circ}20'43''\text{W}$ , in the Alice Arm district British Columbia, between elevations of 3,666 feet and 6,500 feet (1,117 meters and 1,981 meters).

Access to the claims is by float plane or helicopter from a base either in Terrace or Prince Rupert, 90 miles south or southwest of the claim. The property is 13 miles north of Alice Arm, but to date there is no road access to the small community nor will there be until 1982. The town is serviced by boat and float planes from Prince Rupert. A gravel road extends northwest from the town along the west bank of the Kitsault River and passes within five miles of Kinskuch Lake.

The property consists of 50% glacier, 20% moraine overburden, 20% cliffs with creek cut exposures and 10% scrub pine vegetation. The climate of the area is influenced by the Pacific Ocean with considerable rainfalls throughout the summer and long winters with large accumulations of snow due to the high elevations.

The mineralization and gossan of the lower areas at the southeast end of the lake have been known for over 40 years. As the glacier receded, more and more work was done. No appreciable work

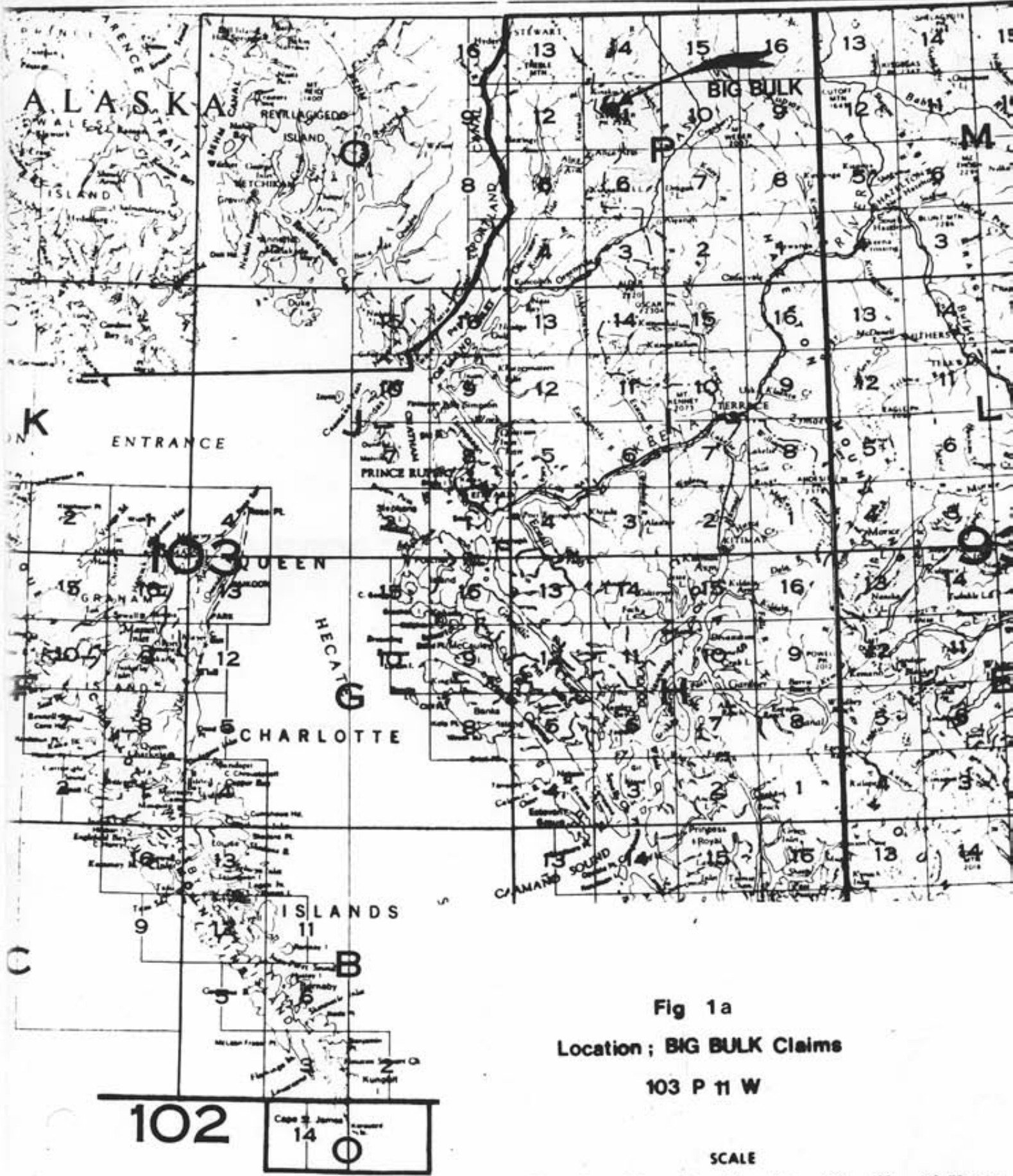
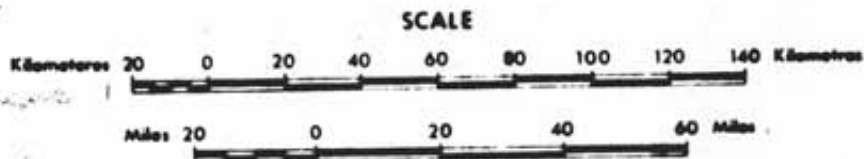


Fig 1a  
 Location; BIG BULK Claims  
 103 P 11 W

102  
 Cape St. James  
 14



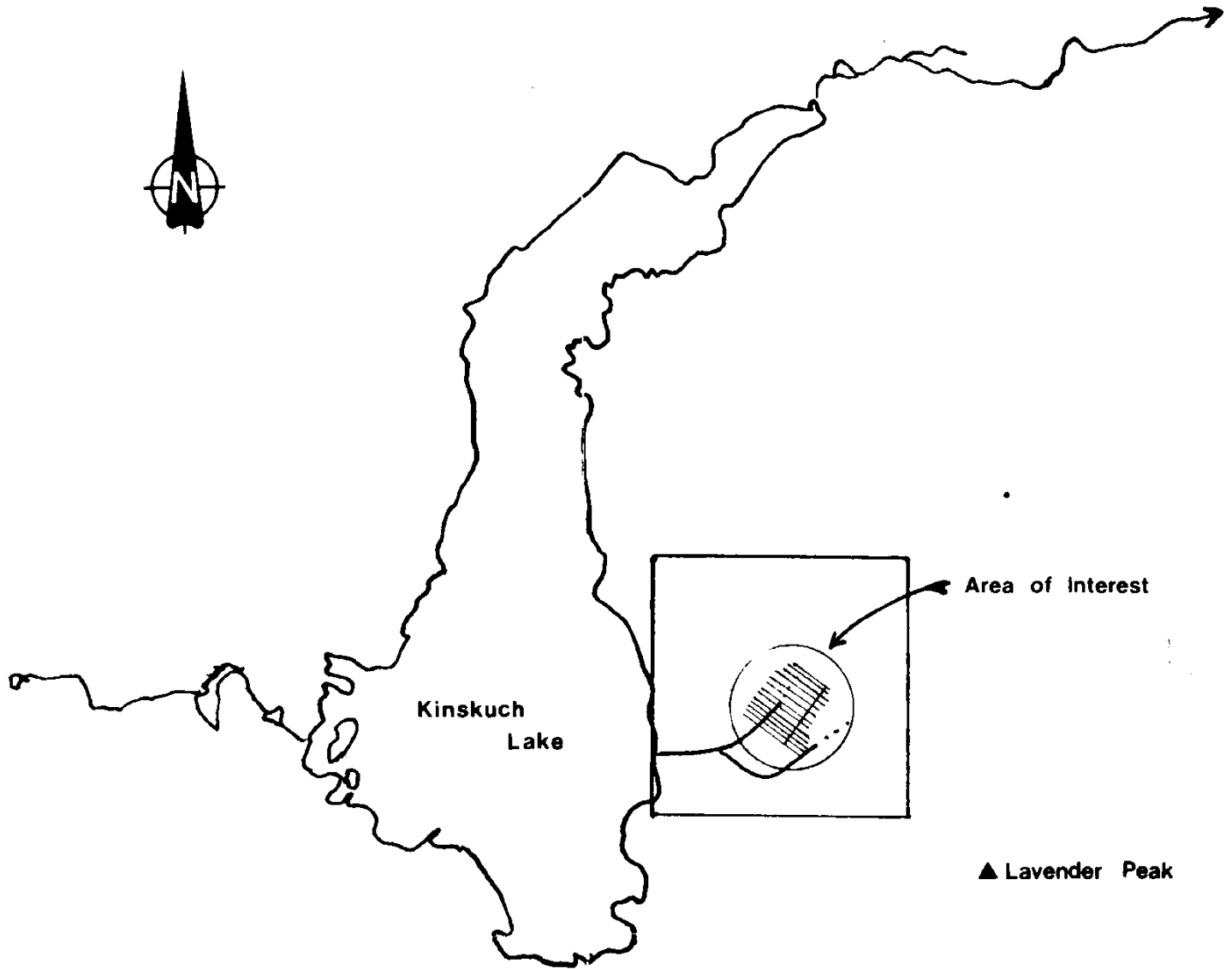
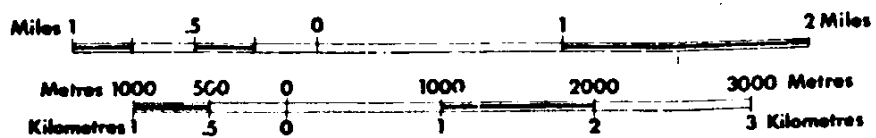


Fig 1b  
Location, BIG BULK Claims  
103 P 11 W



had been performed on the exposed mineralization until 1955, at which time, Kennco Explorations Ltd. carried out an unsuccessful drill program. In 1965, Forest Kerr carried out detailed mapping, sampling, Induced Polarization (I.P.) survey, magnetometer survey and some diamond drilling. Drilling confirmed the presence of sulphide mineralization below geophysical anomalies but the results were not conclusive. Further drilling was recommended. In 1970, more Induced Polarization and Magnetometer surveys were carried out by Kerr Adison, but the results achieved were not very good.

The work performed in 1980 was restricted to an area in the northeastern portion of the Big Bulk Claim, indicated by the 1979 work to have the most potential. It consisted of detailed mapping of the North East corner of Big Bulk Claim off a 6.1 kilometer grid and chip sampling locations within the grid (Figure 2). Work was carried out by the crew of 5 on August 7 until August 13th, 1980, serviced by float planes from Terrace, B.C. The area was mapped at a scale of 1:5000 over a grid approximately 600 meters X 550 meters on a line space of 50 meters and a station spacing of 50 meters. The baseline is positioned arbitrarily at the junction of the three small creeks draining the area of interest, and it's bearing is  $035^{\circ}$ . The grid lines run  $90^{\circ}$  to the baseline.

SECTION 2: GENERAL GEOLOGY

The volcanic rocks in the area of Kinskuch Lake have been mapped as part of the Jurassic aged Hazelton Group. Two units can be recognized in the south west portion of the lake, the area encompassed by the Big Bulk Claims.

The upper unit (unit 2, Figure 2) is exposed on Lavender Peak, to the east of the claims and covers much of the higher elevations and most of the eastern and northern portions of the claims, layering appears to be almost flat. The rocks are notable for the large amount of agglomerate and presence of a small amount of hematite in the matrix giving much of the rock a faint reddish tinge. This unit is unmineralized on the claims.

The lower unit (unit 1, Figure 2) is host for all significant mineralization. It consists of fine grain greenish-grey andesite, minor breccias, possible tuffs and some vesicular lavas. The andesites are altered and fractured around areas of mineralization, but the unmineralization portions also show some degree of alteration.



SECTION 3: GEOLOGY OF GRID AREA

(A) Geology

The upper two lines of the grid (line 550N and Line 500N) extend over the upper unit. The volcanics are green and purple (depending on amounts of hematite) medium grained pyroclastic andesites with minor chlorite and minor calcite.

The remainder of the grid is underlain by the lower unit. The rocks are volcanic, green-grey, medium and fine grained andesite with irregular concentrations of carbonate-sericite quartz alterations and varying intensities of shattering and fracturing.

A rough pyriterich halo with minor amounts of malachite staining but no visible copper sulfide mineralization can be drawn around the area of most interest. The area of most interest is comprised of the same basic rock type, a green andesite, but containing areas of malachite staining and zones of visible chalcopryrite mineralization. The only non-andesite rocks within the halo are intrusive rocks. A small 4 meter wide quartz feldspar porphyry dyke intrudes the andesite in the south portion of the grid. It extends for approximately 100 meters in a northwest southeast direction. The other non-volcanic rocks occur around L250N at 100-150W and extending approximately 10 meters north and 40 meters south of the grid line. They are grey-green medium grained, hornblende diorites, containing epidote and malachite staining and some chalcopryrite (around 100W). A chip sample across 12 meters from this area assayed 0.32%Cu.

(B) Alteration

The main style of alteration on the rock of the grid is carbonate alteration. Most of the rock reacts to acid, with the exception of the two dykes. There was no noted increase or decrease in the carbonate alteration within the halo or around the areas of shattering, but outside the halo the rock demonstrated less of a reaction to the acid testing.

Many of the fractures both within the halo and outside the halo have chlorite alterations present. This was apparent on the diorite as well as the host andesite. Some sericite could be found within the halo but it is quite rare and very fine grained. The quartz veins do not show any alteration envelopes.

Hematite staining is apparent as mentioned previously in rock of the upper member, but some minor amounts could be seen on a few of the andesites within the halo.

A few remnants with andesite textures remain. Some areas have a strong development of limonite surface alteration.

Epidote alteration is the only other visible style of alteration but is mainly restricted to around and in the hornblende diorite. Two small occurrences were noted in the andesite within the halo, but as a general rule epidote alteration is not common.

(C) Veining

There are two varieties of veins within the grid, quartz veins and carbonate veins. Carbonate veins do not play a very important role in the economics of the property. Minor veins can be found in the highly fractured and shattered areas, but don't seem to effect the mineralization in any way. They are only 1 - 10 centimeters wide and mostly form in short elongated lens or short veins cut by the fractures. There is no increase of mineralization around the veins, nor is there any visible evidence of mineralization within the veins.

The quartz veins are similar to the carbonate veins. They pinch and swell in length and thickness and have been displaced by the intense fracturing of the host andesite. Quartz veins are generally rare, a few can be found in the area of the best mineralization and most intense fracturing. The veins don't seem to follow any consistent or significant fracture direction and are also displaced in and cut off by other fractures. The veins are seen as blebs or discontinuous lens in the andesite and show no evidence of affecting the mineralization in the area. Pyrite is evident in some of the veins as crystals or disseminated in the veins, but chalcopyrite is very rare. There is some chalcopyrite near one vein, but that's probably more coincidental than a reason for the mineralization being found there.

(D) Fracturing

Two creeks flowing from the northeast to the southwest form the boundary of the pyrite halo. Within this halo, the shattering and fracturing becomes more intense. Conversely, a small creek drains the main showings, from this creek outward the intensity of the shattering decreases towards the halo. Beyond the halo, fractures are evident, but don't display any trace of copper mineralization or show the degree of shattering seen with the halo.

The most intense fracturing occurs in the central portion of the grid, around station 60W between lines 250N and 300N. In this area there are at least three definite fracture directions plus numerous shatter faces with non measureable traces.

Along many of the fracture surfaces malachite can be found, leading to a conclusion that at least some of the phases of fracturing occurred after metal deposition. A detailed study of the fractures and mineralization will have to be done to further qualify the above statement.

(E) Mineralization

Copper mineralization occurs in only one visible form, chalcopyrite and occurs as disseminations in the host andesites. Pyrite is very abundant in a disseminated form in the andesite and especially in the halo.

Mineralization increases in concentration similar to the fracturing. Outside the halo there is no chalcopyrite, and increases from trace amounts around the inside margin of the halo, to the best concentrations in the most intensely fractured rock. Samples 0511 - 0515 are from the highly shattered zones and range from a low of 0.41% Cu to a high of 0.715% Cu with samples varying from 12 meters to 17 meters in length (Table 1).

The hornblende diorite dyke around station 100W Line 250N contains finely disseminated chalcopyrite. A chip sample over 12 meters assayed 0.32% Cu.

TABLE 1

<u>SAMPLE NUMBER</u>	<u>LENGTH OF SAMPLE (M)</u>	<u>LOCATION LINE STATION</u>	<u>Cu %</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
0511	17	280N 60W	.536	.015	.02
0512	13	270N 65W	.715	.051	.01
0513	17	270N 70W	.575	.022	.01
0514	12	300N 50W	.410	.012	.02
0515	15	300N 50W	.705	.009	.02
0516	13	360N 120W	.100	.019	
0517	11	380N 90W	.109	.033	
0518	14	100N 200E	.089	.002	
0519	3.5	150N 100E	.024	.001	
0520	6	250N 100E	.012	.002	
0521	10.5	200N 125W	.235	.002	.01
0522	10.5	200N 300W	.022	.002	
0523	10.5	275N 250W	.022	.001	
BB01712	12	250N 95W	.320	.006	.01

SECTION 4: COST SUMMARY

GEOLOGIST:	George Cavey		
	Field Work	August 7 to August 13 @ 93.79/day	656.53
	Report Preparation	October 8--9 @ 93.79/day	187.58
ASSISTANT:	Diane Howe		
	Field Work	August 7 to August 13 @ 80.87/day	566.09
	Report Preparation	October 10-20 @ 80.87	161.74
FIELD ASSISTANTS -	Ted Wong, Frank Sivertz, Miles Kirkwood		
	August 7 to August 13 @ 45.49/m.d.		955.29
ACCOMMODATIONS:	August 4 to August 6 and August 13 to August 14		425.95
FOOD:	Terrace Co-Op 35man/days @ 10.62/man/day		371.74
SUPPLIES and EQUIPMENT:			204.37
TRANSPORTATION:	Transprovincial Air Ways		
	6 Flights @ 421.00/flight		2,526.00
VEHICLE:	August 6 to August 14		
	9 days @ 36.83/day		331.49
ANALAYSES:	14 Assays for Cu, Au @ 15.50/sample		217.00
	2 Assays for Co @ 7.50/sample		15.00
	7 Assays for Ag @ 6.50/sample		45.50
TYPING and BINDING			52.50
			<hr/> <hr/>
	TOTAL		\$ 6,716.78

SECTION 5: CONCLUSION

The property work during the summer of 1980 produced encouraging results. Mineralization was found over quite a large area with a possibility of more being encountered under overburden and vegetation.

The grades were good for the initial prospecting and sampling methods used. Further work should include systematic and complete correlation between mineralization and fracturing. The results of a more detailed survey could lead to drilling.



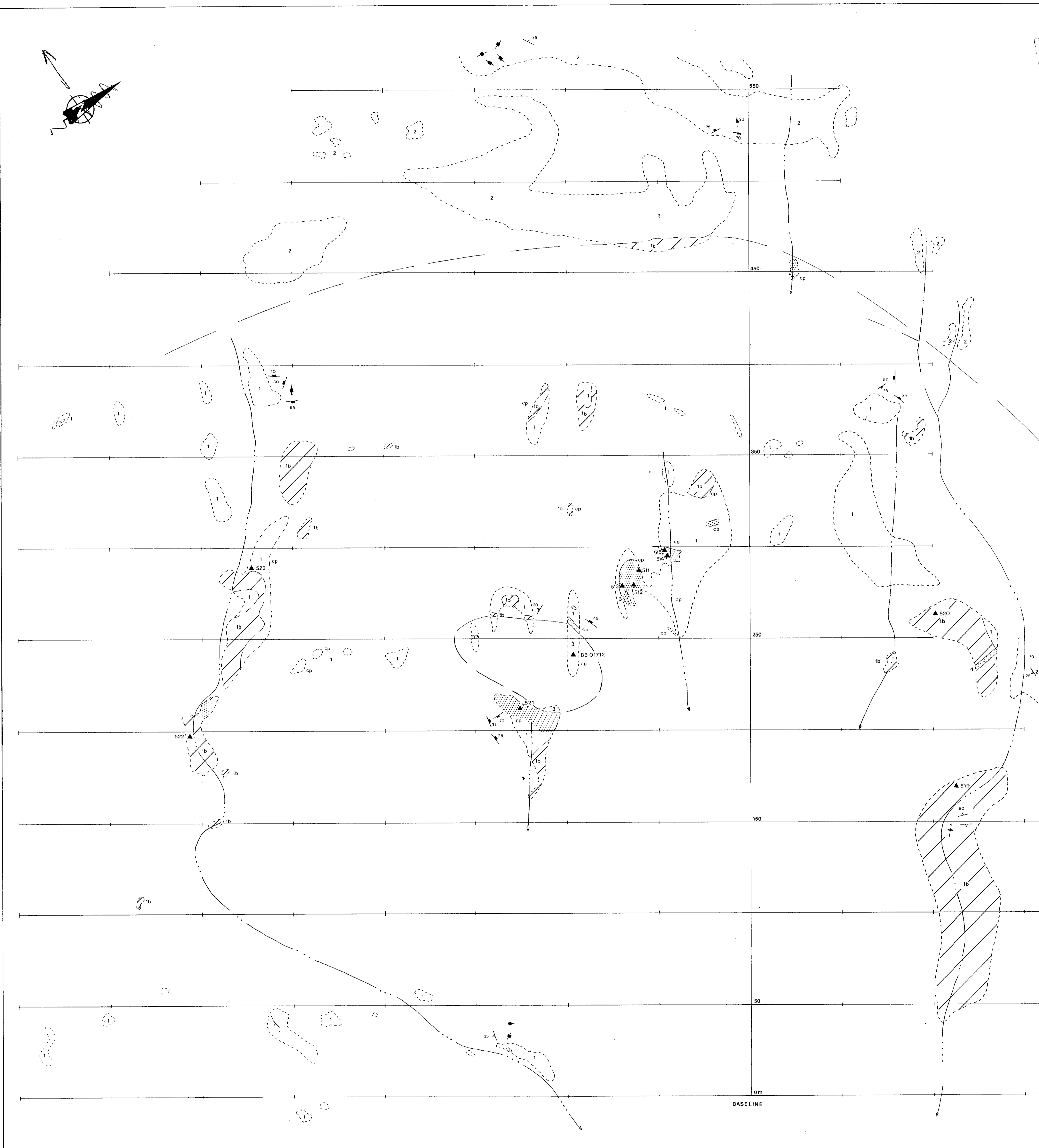
CERTIFICATE

I, GEORGE ROSS CAVEY, hereby certify that:

1. I am a geologist residing at 3926 Valley Drive, Vancouver, British Columbia.
2. I received a B.Sc degree in Geology from the University of British Columbia in 1976.
3. I have been practicing my profession since June 1976.
4. I am the author of this report.
5. I have been employed with PRISM RESOURCES LIMITED since August, 1976, with previous intermittent employment with various companies since 1974.
6. I have no beneficial interest in the claims described in this report nor do I expect to receive any.

  
\_\_\_\_\_  
GEORGE CAVEY, B. Sc.

**8785** ~~8785~~  
**BIG BULK  
 GEOLOGY**



- LEGEND
- 4 FELDSPAR PORPHYRY DYKE
  - 3 HORNBLENDE DIORITE (SILICEOUS, MALACHITE STAIN & CHALCOPYRITE)
  - 2 UNALTERED GREEN/PURPLE AGGLOMERATE, ANDESITE, MINOR TUFF & BRECCIA
  - 1 GREEN ANDESITE (CARBONATE ALTERATION)
  - ALTERED ANDESITE (CARBONATE ALTERATION, ABUNDANT MALACHITE, VISIBLE CHALCOPYRITE, QUARTZ VEINS)
  - lb LIMONITE OXIDATION (ABUNDANT PYRITE & QUARTZ VEINS)
  - STREAM
  - OUTCROP
  - GEOLOGIC CONTACT ASSUMED
  - cp CHALCOPYRITE
  - ▲ ROCK CHIP SAMPLE
  - fs FRACTURE
  - QV QUARTZ VEIN

**PRISM resources limited**

**BIG BULK CLAIMS**  
 Geology of the Northeast Section, BIG BULK Claim ①

NTS: 103 P 11W    FIGURE No: 2  
 DATE: 10/20/80    DRAWN BY: DH    SCALE: 1:1000

