681042

MAPPING AND SAMPLING
of the Cliff Area
on the
VIC Claims
N.T.S. 92-O/5

November 1987

C. Hrkac

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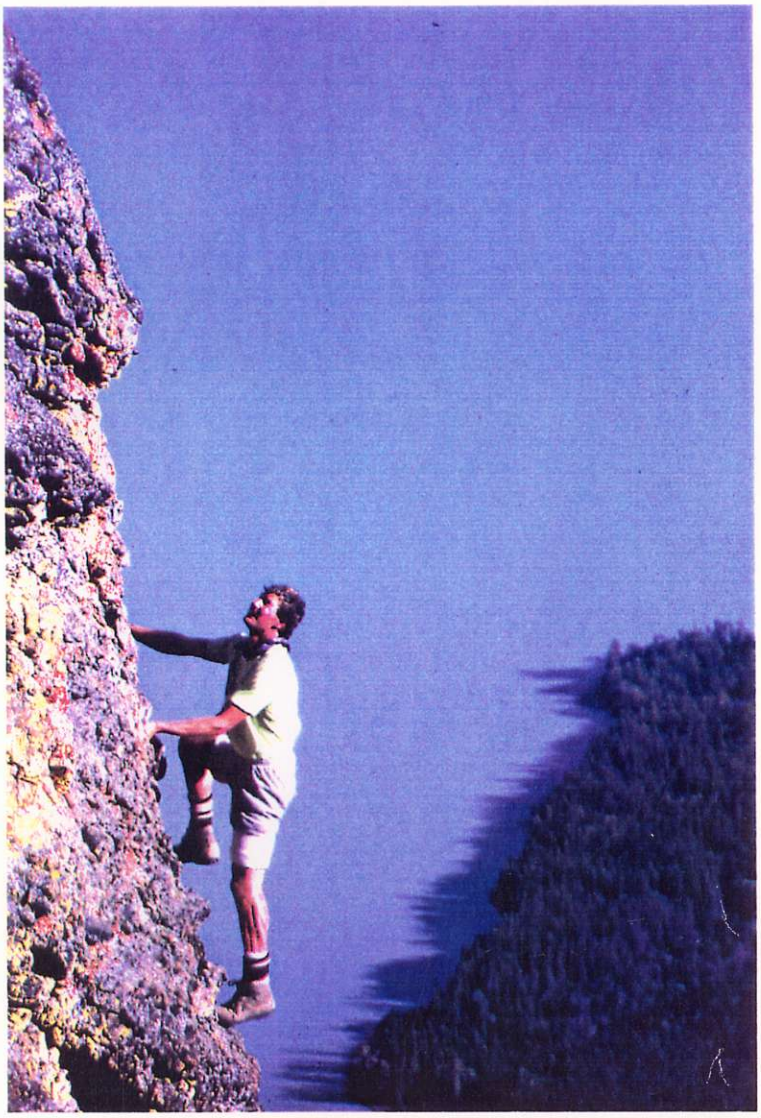


INTRODUCTION

Between August 20 and September 2, 1987, Quest Canada Exploration Services Inc. carried out a geological mapping and sampling program on the steep eastern slopes of the VIC claims in southwestern British Columbia.

Alpine climbing techniques were implemented to facilitate the ease of movement throughout the nearly 3700 feet of cliffs and steep slopes between the VIC Mountain peak and Taseko Lake.

A number of new mineralized quartz veins of various widths were discovered on the steep eastern slopes. These veins cover a wide area and returned promising gold values.

This report gives an overview of the geology and mineralization on the steep eastern slopes as well as descriptions of the climbing techniques used.

TOPOGRAPHY

The VIC claims are located at the eastern margin of the Coast Mountains, above the northwest shore of Taseko Lake (see Fig. 1). It is at this location that the rugged topography of the Coastal Mountains gives way to the gentle plateaus of the Chilcotin.

Up to 3700 feet of relief is present along the claim's eastern boundary. It consists of steep barren slopes, greater than 30 degrees, and rugged cliffs of varying heights. Other sections of the claims consist of gentle to moderate grassy meadow-covered slopes which are treed at lower elevations.

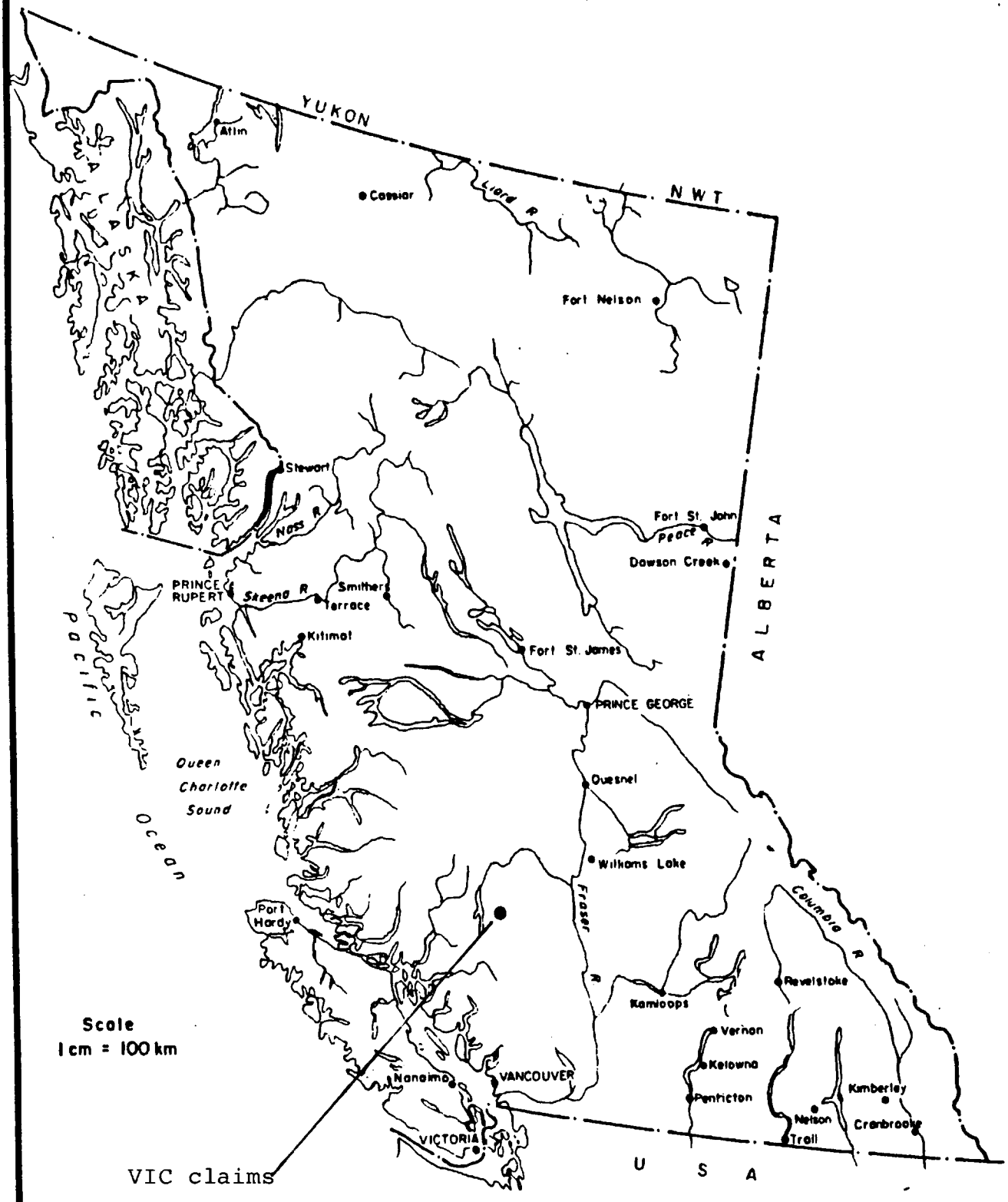
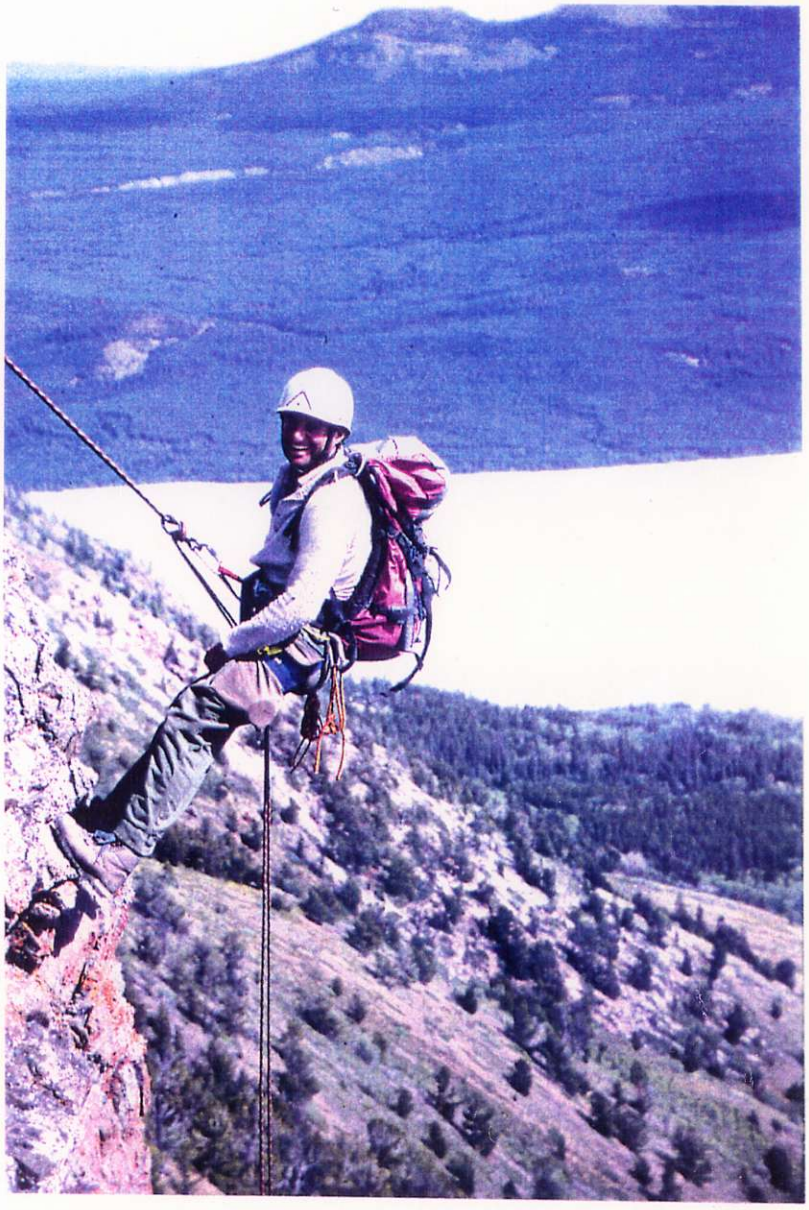


Figure 1.

Location Map



CLIMBING TECHNIQUES

The author and John Buffery, climbing assistant, used alpine mountaineering techniques to move around on the cliff area. This involved carrying minimal climbing equipment, thus allowing faster and freer movement. In the steepest sections rappel anchor stations were set and ropes were used to aid in the descent. Rappel anchors consisted of one or a combination of pitons, metal pins driven into cracks in the rock, or rock bolts. Holes for the rock bolts were drilled using a battery powered Black and Decker hammer drill or by hand using a rawl hand drill. The rock bolts used were 1/4 inch, 1 3/4 inch long Red Wing industrial concrete bolts. This bolt system worked well although a 3/8 inch, 1 3/4 inch long Hilti bolt backed up by a 1/4 inch Red Wing or equivalent bolt would be suggested in the future to increase the safety factor.

GEOLOGY

Lithology

Within the cliff area, lithology is limited to three rock types (Fig. 2, in pocket). The dominant unit is a green to greenish grey andesitic volcanic breccia of the Cretaceous Kingsvale group which covers over 95% of the cliff area. Fragments from this unit range from less than 1 cm to greater than 1 meter in size, are angular to subrounded, porphyritic, and close in composition to the matrix. The unit is massive and blocky weathering, with differential weathering between fragments and matrix not uncommon.

Two maroon coloured andesite breccia beds were found at the 7200 foot level of the cliff area. These andesite beds are up to 25 metres in apparent thickness and could be traced from the north to the south end of the cliff area.

The two beds vary from maroon to almost purple in colour and contain abundant feldspar phenocrysts in both the matrix and fragments. Fragments in the breccia are subrounded to angular and are usually more competent than the matrix. The crumbly weathering appearance of the matrix is common throughout the andesite beds. These thin maroon andesite breccia beds are likely sub-aerial equivalents to the overlying and underlying green andesite breccias.

Thin, up to 1 meter in thickness, massive weathering volcanic siltstone horizons are found interlayered with the massive andesite breccias. These siltstone layers vary in colour from brown to grey to green on both weathered and fresh surfaces.

Graded bedding, load casts and flame structures (see photograph, page 8), which helped to define structural tops, were noted at various locations.

Diorite dykes of various thicknesses and orientations were found to crosscut all the units on the cliff area. These dykes are medium grained, massive to blocky weathering with generally northeast to southwest strikes and steep dips.

Structure

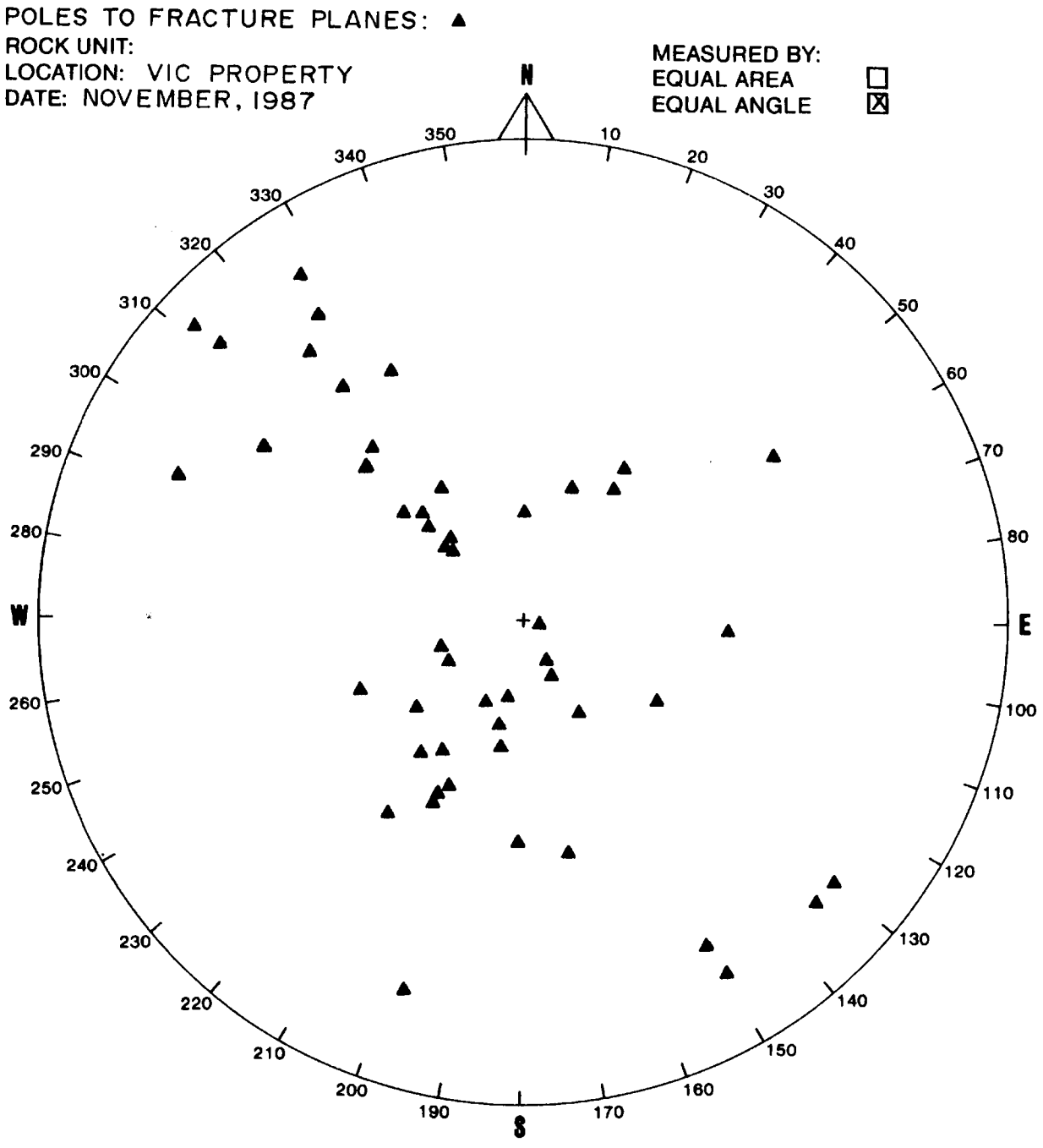
Structure on the VIC claims is limited to faulting, fracturing and regional warping.

Faults and shear zones are likely the most important structural features as related to mineralization. These zones form steep gullies within the cliff faces and at times extend

for their full length. As a rule, quartz veins occur within these fault and shear zones. Southwest trends with steep dips dominate the shear and fault orientations. Movement along the faults is limited to non-existent. The greatest amount of fault movement noted was approximately 10 metres of right lateral movement on a steeply dipping normal fault.

Fractures in the cliff area are abundant and vary in frequency from greater than 10 per metre to less than 1 per metre. A stereonet plot of poles to fracture planes (see Fig. 3) was plotted to see if a dominant orientation was present, but none was found. A stereonet plot of poles to veins (and therefore most faults and shears) was made to see if any relationship exists with fracture orientations (see Fig. 4). No such relationship was found, but it was noted that the veins had a consistent easterly dip.

The occurrence of thin volcanic siltstone beds provided some good bedding measurements. Poles to these bedding planes were plotted (see Fig. 5) and a cluster was noted in the northeast quadrant. This cluster of poles likely represents one limb of a very open regional warp which would have little bearing on local geology. By plotting the pole to a great circle drawn through this cluster, one can determine the fold orientation, which is a 5 degree plunge towards 300 degrees.


POLES TO FRACTURE PLANES: ▲
ROCK UNIT:
LOCATION: VIC PROPERTY
DATE: NOVEMBER, 1987
MEASURED BY:
EQUAL AREA
EQUAL ANGLE
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70
80
100
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Figure 3.

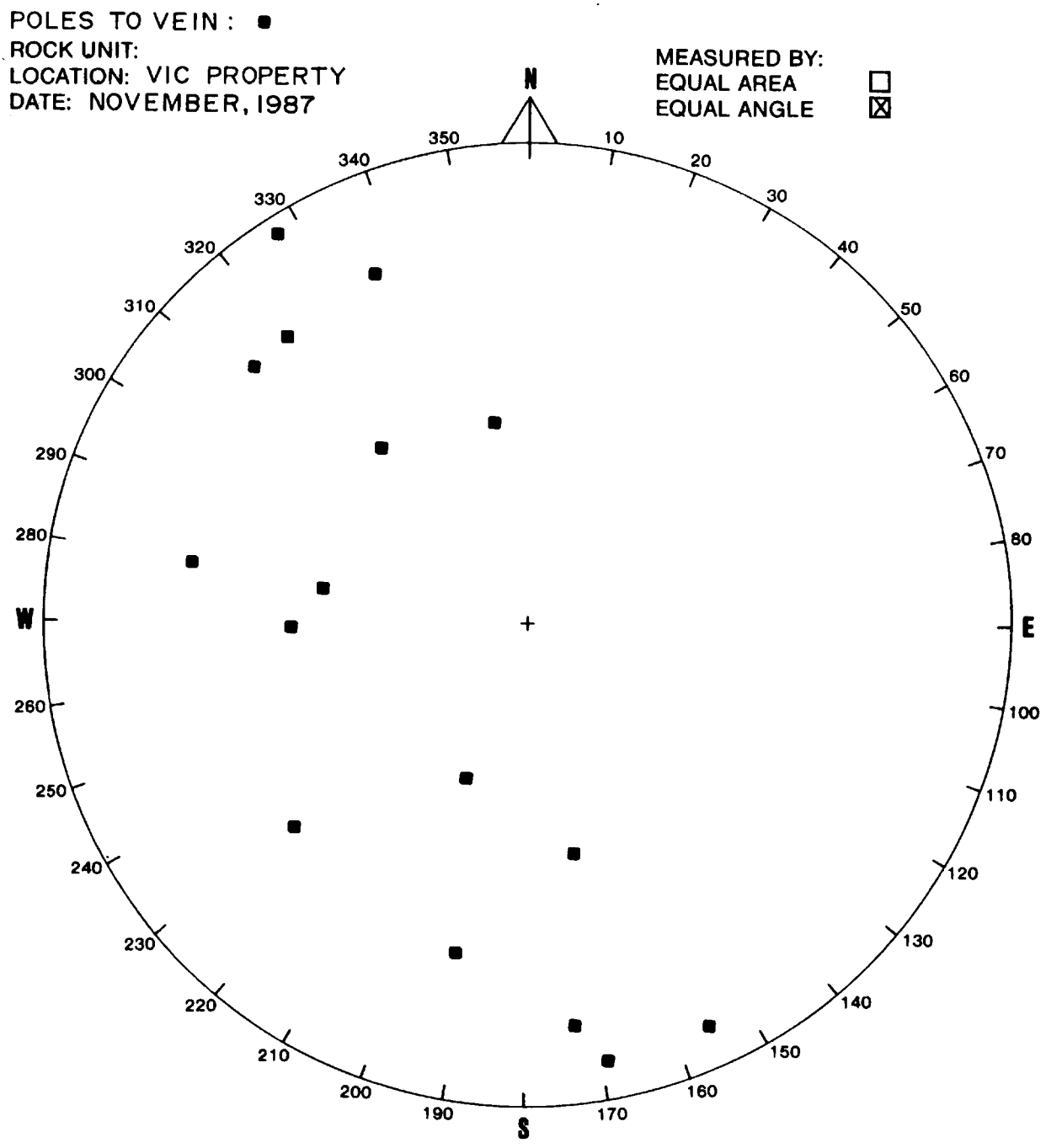
POLES TO VEIN :
ROCK UNIT:
LOCATION: VIC PROPERTY
DATE: NOVEMBER, 1987
MEASURED BY:
EQUAL AREA
EQUAL ANGLE
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Figure 4.

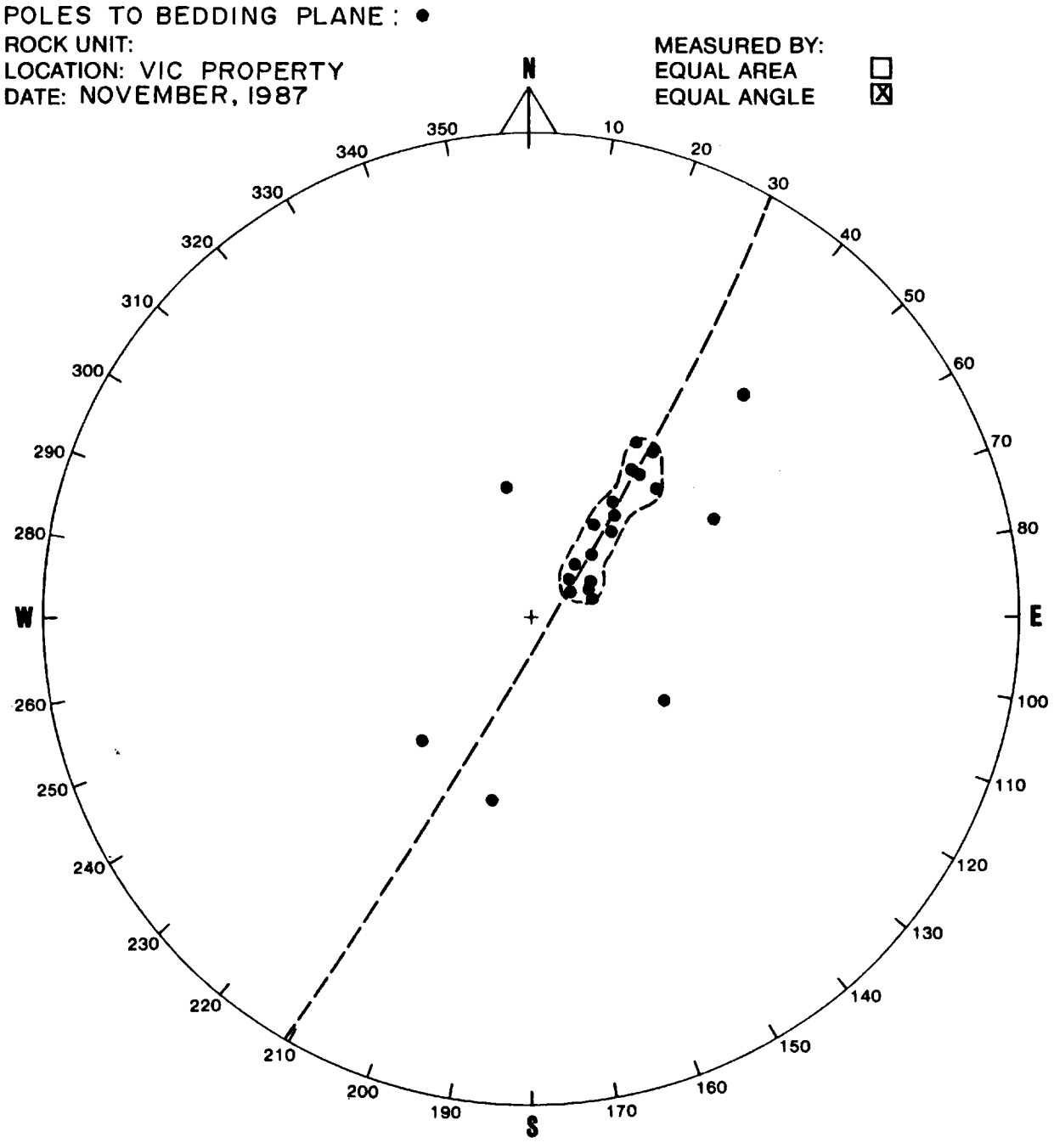
POLES TO BEDDING PLANE : ●
ROCK UNIT:
LOCATION: VIC PROPERTY
DATE: NOVEMBER, 1987
MEASURED BY:
EQUAL AREA
EQUAL ANGLE
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Figure 5.

MINERALIZATION

Mineralization on the steep eastern slopes, cliffs, of the VIC property is confined to quartz and quartz carbonate veins within shear zones which transect the andesite host rock (see Fig. 6). The quartz veins are found to be massive to ribboned and vary in width from less than a centimeter to more than a meter. Variations in width also occur, to a lesser extent, along strike within single veins.

Mineralization within the veins occurs as sulphide lenses as well as a lesser amount of disseminated sulphides. Pyrite, chalcopyrite, malachite and azurite are the dominant minerals within the veins, although on the northernmost section of the cliff area a 10 cm to 1 m wide vein was found to contain pyrite, chalcopyrite, galena and sphalerite as well as small amounts of a white mineral which may be barite.

Gold values from veins on the steep eastern slopes range from 0.001 oz/ton to 1.260 oz/ton, silver values range from 0.01 oz/ton to 2.85 oz/ton and copper values from 0.01% to 10.72%.

The highest gold values (sample numbers 2151 - 2156) were obtained from veins occupying the main shear zone in the central cliff area. These veins were the focus of previous work on the VIC property. Veins in the main shear zone vary from 10 cm to greater than 1 m in width and have a southwest orientation,

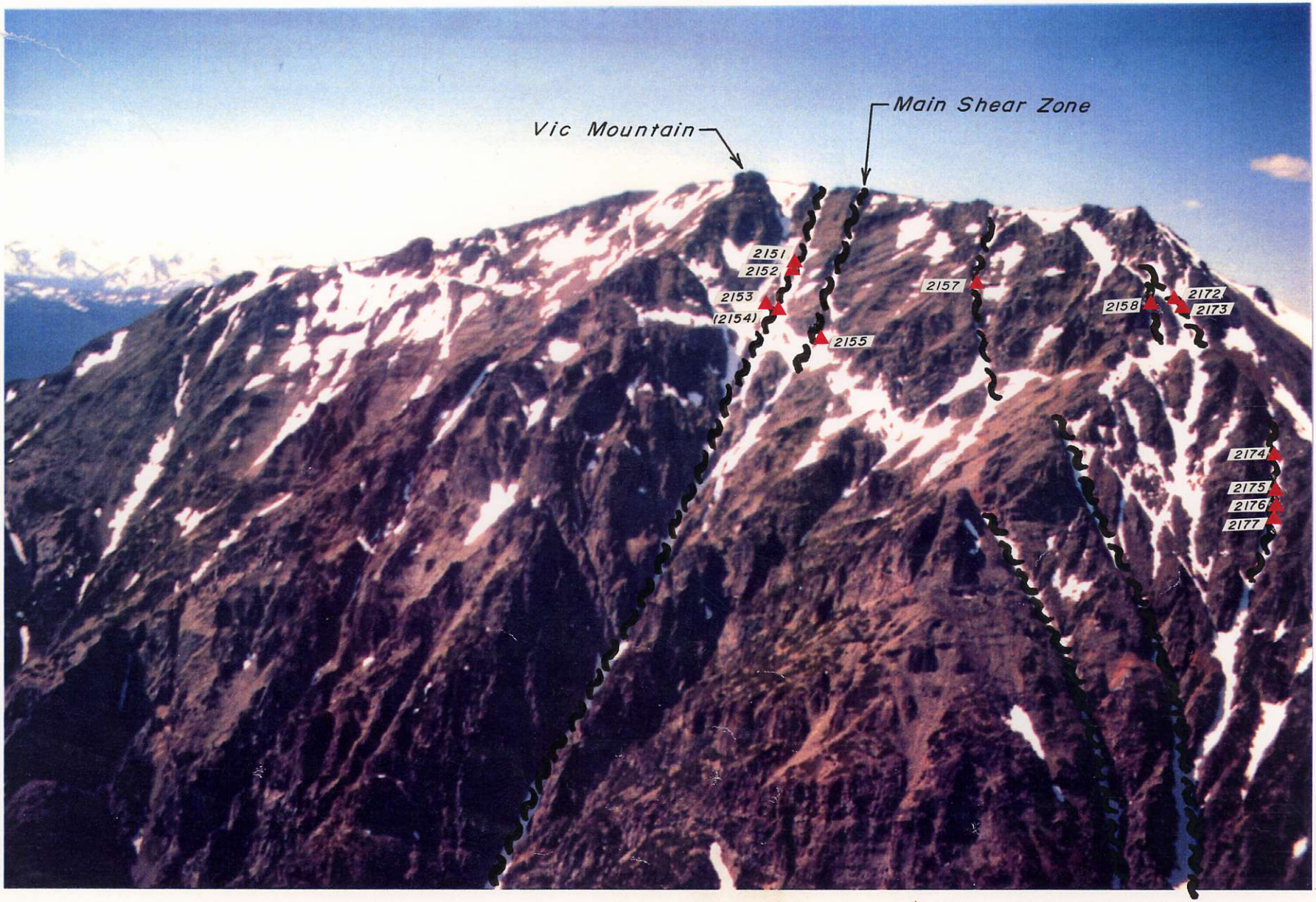


Figure 6. Photograph of the cliff area.

dipping steeply to the southeast. Mineralization occurs as intermittent lenses of sulphide, pyrite and chalcopyrite surrounded by a zone of moderate to intense malachite and lesser azurite staining. The high gold values are associated with the sulphide lenses.

Two large, up to 1 meter in width, mineralized quartz veins were found within the cliff area. One vein is located in the southern section of the cliff area at an elevation of approximately 6520 feet, at the central part of the exposed section of the vein. This vein varies in width from 10 to 100 cm, trends easterly to southeasterly, and dips steeply to the northeast. The narrow sections of this vein are highly weathered with abundant limonite and minor goethite. Less weathered sections show some disseminated pyrite, chalcopyrite, malachite and minor azurite, as well as small amounts of an unidentified silver-grey mineral. In the section of vein that reaches 1 meter in width, malachite and azurite staining is more abundant. Chalcopyrite and pyrite are also more abundant, occurring primarily in disseminated form, but also present in more massive lenses. Gold values from this vein are 0.202 oz/ton, sample 2161, from the highly weathered section, and 0.024 oz/ton, sample 2162, from the 1 meter wide section.

The second large vein occupies a large shear and is located at the northern section of the cliff area. The vein has a northeast trend and dips steeply to the southeast. It extends from an elevation of 6720 feet to below 6000 feet, with widths varying from 10 cm to 1 meter. Some sections of the margin of this vein are highly weathered with abundant limonite and goethite lining boxwork. Mineralization in the main body of the vein consists of disseminated pyrite in cubic form with cubes up to 2 mm in size, minor chalcopyrite, galena, malachite and azurite staining, sphalerite and small amounts of a white mineral, possibly barite. Disseminated mineralization occurs as discontinuous lenses usually concentrated near the vein walls. Gold values from this vein range from 0.001 to 0.014 oz/ton (sample numbers 2124 - 2177). Except for the main shear zone, this was the largest vein found in the cliff area.

Two smaller veins, less than 40 cm in width, in the northern section of the cliff area,, at an elevation of 7400 feet, returned gold values of 0.122 to 0.443 oz/ton. These veins are similar to those found in the main shear zone, but are smaller in size.

Many small, <10 cm, veins were found at various locations in the cliff area. Some of these veins returned significant gold values, but their limited size gives them a low priority for further investigation.

Carbonate alteration zones of varying size were found at different locations in the cliff area. Although some of these zones contained minor disseminated pyrite, none of them returned any anomalous gold values.

CONCLUSIONS

Alpine climbing techniques were used to map and sample the cliff areas on the VIC claims. A massive sequence of green andesite breccia is crosscut by shears and faults, many of which are occupied by mineralized quartz veins. Mineralization consists primarily of pyrite and chalcopyrite with malachite and azurite staining. These sulphide sections carry gold values as high as 1.26 oz/ton. Large open folds were discovered using stereonet analyses, but these folds were found to have little or no effect on local geology.

RECOMMENDATIONS

The potential for additional mineralized quartz veins to be found in the cliff area is excellent. It was found that the larger quartz veins occupied steep gullies formed by faults and shears. It is recommended that a helicopter be used to survey the cliff area and any quartz veins or major gullies be noted on a photograph of the cliff area. These areas could then be visited by climbers and any quartz veins that were found could be sampled. Due to the extent of the cliffs, it may be necessary to set up a small mountaineering fly camp on one of the ledges to allow for longer working days. Larger samples could then be taken and stored, to be picked up later by helicopter.

It is also recommended that some of the larger quartz veins discovered in the 1987 season be revisited and a more extensive sampling program be undertaken in order to give a more accurate representation of vein size and grade.

APPENDIX

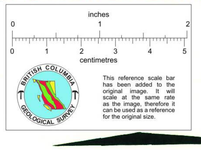
ROCK SAMPLE ASSAYS

SAMPLE #	CU %	AG OZ/T	AU OZ/T
G 2151	2.22	.91	.255
G 2152	.13	.03	.068
G 2153	.18	.57	.322
G 2154	10.72	2.85	1.260
G 2155	.01	.04	.026
G 2156	.09	.12	.185
G 2157	.01	.01	.001
G 2158	.01	.01	.001
G 2159	2.33	1.62	.044
G 2160	2.91	.17	.009
G 2161	.86	1.55	.202
G 2162	2.74	.83	.024
G 2163	6.88	1.86	.069
G 2164	3.77	1.15	.040
G 2167	.25	.05	.001
G 2168	.01	.04	.001
G 2169	.01	.03	.001
G 2170	.03	.05	.122
G 2171	.01	.02	.001
G 2172	1.01	.24	.179
G 2173	.32	.46	.443
G 2174	.02	.34	.010
G 2175	.01	.04	.001
G 2176	.56	.27	.005
G 2177	.04	.53	.014

CORDILLERAN ENGINEERING

GEOLOGY OF THE CLIFFS ON THE VIC CLAIMS

Work by: C. Hrkac and J. Buffery
QUEST CANADA EXPLORATION, Inc.



ROCK TYPES

1 Andesite Flow Breccia
- angular and sub-rounded light green, grey and maroon porphyritic andesite fragments in a porphyritic andesite brecciated matrix, massive, knobby weathering, rare narrow volcanic siltstone horizons mark bedding planes.

2 Maroon Andesite Breccia
- maroon sub-rounded to angular porphyritic andesite fragments in a maroon to purple porphyritic andesite matrix. Crumbly weathering with fragments often more competent than matrix.

3 Dacite Pyroclastic Breccia
- angular to sub-rounded porphyritic greenish-grey and maroon andesite fragments and light grey dacite fragments in a fine to medium grained light grey porphyritic dacite matrix, minor laminated ash tuff horizons, local disseminated pyrite (<1%) areas.

4 Diorite Dykes
- massive, medium grained, predominantly light grey plagioclase feldspar with 5 - 10% hornblende laths or needles, local disseminated pyrite.

5 Carbonate Alteration
- orange weathering carbonate-rich alteration with carbonate (mostly siderite or ankerite) veinlets.

100 0 100 200 300 400 500
metres

SYMBOLS

Fault zone, with quartz vein

2172 •, (•) 2154 — Rock, float sample location

38 — Bedding

64 — Fracture system

Drawn by: G. Hodge
November, 1987
Fig. 2