823555
Greenwood

1720 Kingsberry Cres
Victoria B.C.
January 7, 1989.

Dear Bill/Ken/George,

The following notes are in response to the maps and data from Bill on the Heavy Mineral Sampling program and my field observations of last summer. The attached map shows the locations and types of deposits known in this area. They all occur in the pre-Tertiary rocks. The geological framework is outlined in my October report to the Ministry copies of which I sent to Vernon and Greenwood. Little's map(GSC Map 1500A) is a satisfactory base. None of this study is " in depth" --it is my first reaction after very brief visits to the properties shown and to reading the readily available reports on the deposits. Some of this I have already discussed with George in September and he had a copy of a similar map.

The skarn deposits are spatially related to granitic rocks- the Wallace Creek batholith in the north and the Quartz Feldspar Porphyry (QFP) in the area west of Midway (midway window)

It is clear in the field that the grades of thermal metamorphism increase in the Knob Hill and Brooklyn rocks toward the northeast--at the heads of Lee ,Ingram and Wallace Creeks.A few very small granitic satellitic bodies are exposed in this area. Dark grey argillites and cherty argillites of the Knob Hill Group become purplish rusty hornfels and zones of massive and semi-massive pyrite and pyrrhotite have been explored by old pits in the high country between these creeks. Samples I collected from these showings did not carry any significant amounts of gold. Sharpstone of the Brooklyn Formation at the head of the east ranch of Ingram Creek becomes progressively more skarnified northward into the Copper Camp where the calcareous layers are heavy skarn with or without sulphides. The Forshaw zinc showing is anomolous in this group of deposits. It is within the favourable stratigraphy of the Brooklyn , the sphalerite is dark and associated with pyrite and possibly the mineralization is controlled by a fault. These deposits are described briefly in my report to the company of July 1986 "notes on the geology of the Copper Mountain Area GOMS report file #356.

The QFP in the midway window can be correlated with similar rocks in the Sappho- Lexington area, which in the past has been considered to be Tertiary. Neil Church, however,recently got a 200my zircon date from drill core in the porphyry taken from the City of Paris workings. In the midway window on our Rainbow property the QFP "looks" old, probably intrudes the serpentinite and is cut by Tertiary

manzanites. Ihave concluded that the skarn deposits in this

monzonites. Ihave concluded that the skarn deposits in this area in the Brooklyn carbonates(Texas and Bruce Crown Grants and Mamac drilling area) are related to the QFP. They are local skarn zones close to the contacts of the plutonic rocks and not as obviously related to the stratigraphy as are the skarn deposits in the Brooklyn to the north. They contain a few small spectacular lenses of chalcopyrite.

The serpentine-related silver lead deposits include the Riverside etc on the Kettle River, a prospect in lower Bubar Creek, the Midway mine and the Murray showing southwest of Dry Lake on the Rainbow property. I have grouped them together because of the similarities in tenor indicated by the productioin figures.

TONS	Au/oz	Ag/oz	Cu/#	Pb/#	Zn/#	Name
20	8	920	0	343	343	Midway
290	16	8508	0	1761	1814	Riverside
840	66	9278	266	20170	21407	Imperial

They occur as veins and lenses with quartz and carbonate in serpentinite or in nearby volcanic rocks and the Old Diorite. I suggest that the metals may have been inherited from the original volcanic environment. Possibly Skomac and the No 7 have a similar association.

The epithermal quartz-sulphide zones are all in the midway window and most of the showings are within our Rainbow group. In my traverses, which took me into only the basal Tertiary, I found quartz veins within or just below the Tertiary only in a very few places. I have shown one, which is very insignificant, on the divide between Nicholson and Fiva Creeks - a small zone of fractured quartz-bearing arkosic sandstone just above the base of the Tertiary along a fault. My conclusion from the Heavy Mineral sampling results is that the best mineralization of this type is in the Rainbow area. I think we may be able to define a trend (the Rainbow-Tam O'Shanter trend!) from the knowledge that there is strong Tertiary fracturing trending between north and northeast(N10-N35E) with steep dips, that the Picture Rock-Farm zone drilled recently by BP has this trend, and from the

distribution of the heavy mineral anomalys.

The showings are in the pre-Tertiary rocks but the fracture zone will penetrate the Tertiary and may well be mineralized at that level. Fractures and faults with this trend are the latest in the sequence of Tertiary extension faulting, and therefore the depth at which Tertiary (pre-Klondike Mtn) mineralizing solutions were circulating depends only on the thickness of the Tertiary sucession at that time and at that location. Although the Trend is near the edge of the Toroda Creek graben I suggest that the showings are deeper than the gold deposits on the edge of the Republic graben (Key, Valley, Knob Hill) because the basement is exposed. Thus we are justified in looking more carefully higher in the Tertiary section north and south of the Rainbow. Of course this is supported by the distribution to the gold anomalys in the heavy mineral survey, and anyway , there is no other way to go! We should look carefully south of the Kettle River for any other indications on trend, in addition to the anomoulous gold in lower March Creek.

No doubt you have all figured out your own conclusions about the survey. This note records bits of bedrock information and my conclusions from working in the area. I look forward to discussing this with you.

Best wishes for 1989

Sincerely

James T. Fyles.