

Thimble Mtn

Comments on Geology

It was very useful to have other experienced geologists look at the property and there were numerous stimulating discussions. A number of points can be made regarding the geology of the property:

1. Art Ettlenger's zoned skarn model for the motherlode Greyhound involving a gold rich halo outboard from a barren hornfelsed zone may be valid for the Thimble-Eholt property (has not been disproved).
2. A significant package of Brooklyn sharpstone conglomerates occur on the Thimble Mountain property and display skarn alteration in the tunnel area. The potential for a large Phoenix style Cu, Au skarn is considered to be excellent.
3. The potential for a proximal Cu, Au enriched 'Motherlode type' skarn is also considered excellent. The Seattle is a poorly exposed example. Groups like Hudson Bay consider this an important target even though such deposits may not feature multi-millions of tonnes (potential for 1% to 2% copper grades).
4. There is potential for a primary gold skarn like Buckhorn (Crown-Jewel) in the property area. The Buckhorn deposit does not cover a large area based on personal observations.
5. The key to finding a significant undiscovered skarn deposit on the property (Cu, Au or Au only) is the correct combination of ingredients such as:
 - a) favourable stratigraphy such as calcareous (matrix) sharpstone conglomerates, volcanoclastics, impure limestone units.
 - b) favourable intrusive rocks. Mesozoic 'Nelson' quartz diorite intrusives are associated with all of the more significant skarn deposits in the area. They also locally host auriferous quartz veins and some disseminated copper mineralization in the Grandforks-Greenwood belt.
 - c) significant pre-Tertiary structures. East and northwest trending faults and fault zones appear to have been

important controls for mineralization in the area during the Mesozoic.

6. It can be clearly demonstrated that there has been limited (local) Tertiary remobilization of Mesozoic mineralization. This involves upgrading of Cu, Au values at the margins of Tertiary dikes cutting the skarn at the Seattle showing. Echo Bay geologists have observed similar remobilization elsewhere in the belt. The gold values associated with the Tertiary age syenite dikes in the 1993 Eholt drilling may be another good example.
7. As a follow up to point 6. Only 13 samples were taken from the 1993 Eholt drilling by Placer Dome Inc. for analyses. Based on a preliminary examination much more sampling was warranted. The potential for gold mineralization in the Tertiary rocks was largely ignored and some altered Brooklyn rocks were not sampled. This lack of sampling is a terrible waste, the holes should be relogged and sampled.
8. All of the parties that visited the Seattle agreed that there was a drill target (core drilling not RC) and that testing would provide valuable geological information for future work.
9. The majority of parties agreed that even at this stage a low level airborne geophysical survey (100m spaced lines) would be very useful, especially as an aid to mapping.
10. All of the parties agreed that detailed (alteration) mapping combined with lithogeochemistry (rather than soil geochemistry) could be a powerful exploration tool. Some suggested detailed mapping of the whole property.
11. The Brown Creek basin and sharpstone conglomerate trend on the Thimble Mountain property have significant exploration potential for large skarn deposits. The southern and western parts of the Thimble Mountain property not covered by previous surveys also have significant potential. No work has been conducted in the Senator area where significant gold values are associated with massive pyrrhotite zones in the Brooklyn?

Conclusion

After revisiting many of the skarn zones on numerous occasions, I still consider the Thimble Mountain to have excellent (skarn) potential. The Eholt part of the property is more of a strategic play (along known skarn trends). Variable overburden depth and till? is a problem in this area.

Other properties in the Grand Forks area have significant gold potential and may be of interest to Orvana. This is another subject and can be discussed at a future time.

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 As Requested.

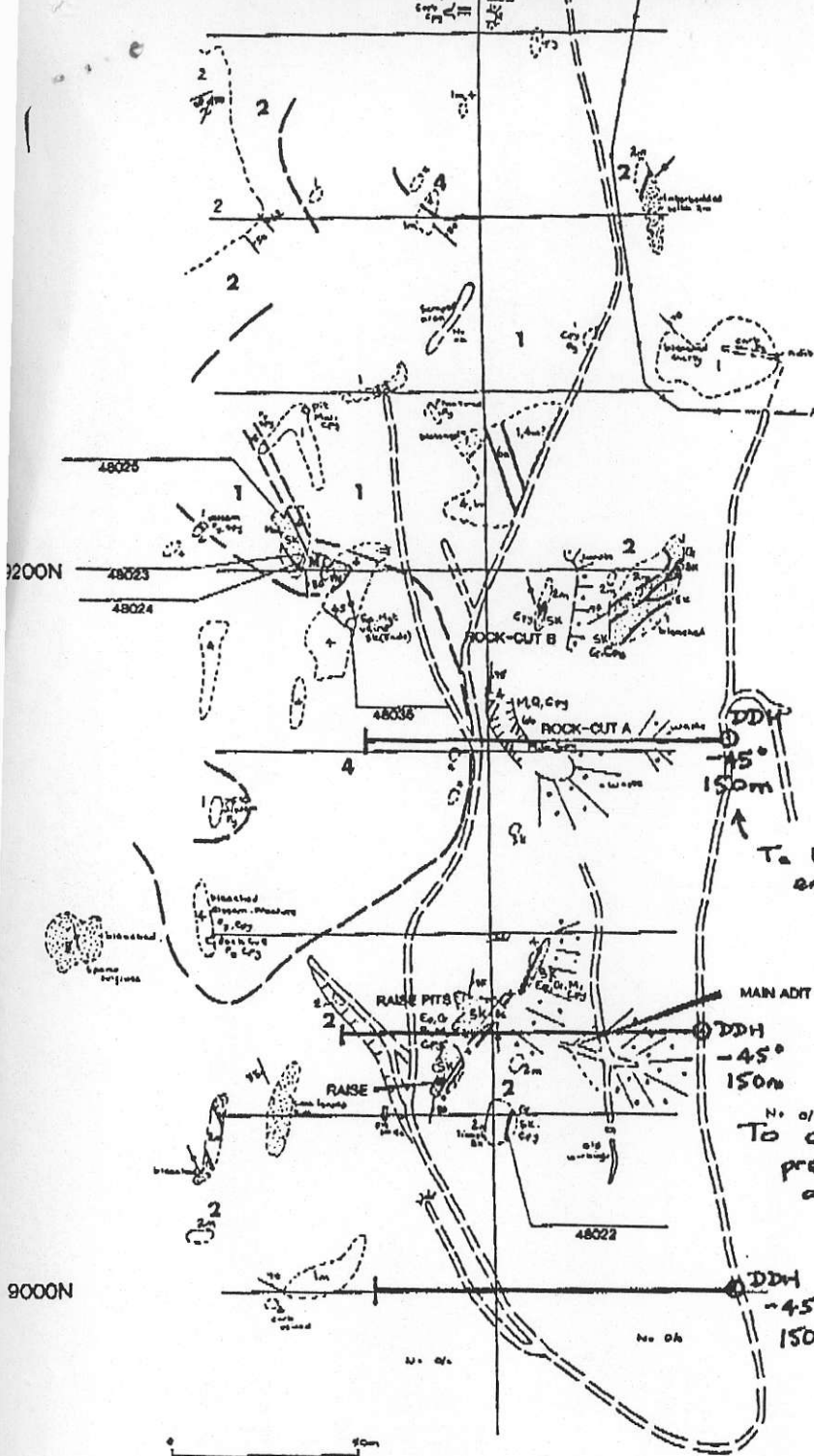
- TERTIARY
 PENTICTON GROUP
 6 Dykes, s.
 5a Sb
 5b Bi
- TRIASSIC TO CRETA
 4 Quartz di
 Plagiocl
- TRIASSIC
 BROOKLYN FORMATION
 2 Limestone
 2a recryst
 1 Metavolc
 Andesitic
 Note: see

ALTERATIC

- Chlor-silicate
 Fine to fine m
 and carbonate
- Skarn
 Medium to coarse
 epidote and ca

MINERALS

- O.g Garnet Pr
 Ch Chlorite M
 Cpy Chalcopyrite Zn



To test
 endo and exo skarn

To confirm
 previous interpretations
 and geometry

Exploration hole

PLACE

SEATTLE
 SHOWING
 AREA.

PROPOSED DRILLING - 1ST PHASE

3 HOLES @ -45° TO 150M DEPTH TOTAL 450M = 1476 FT MINIMUM*

NOTE ALL DRILLING IS FROM EXISTING TRAIL ∴ NO SURFACE
 DISTURBANCE

