

Province of British Columbia	Ministry of Energy, Mines &	Geological Survey Branch 159-800 Hornby Street Vancouver, B.C., V6Z 2C5 604 - 660-2708	Table Mtn
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December 3, 1987

MEG TALK

Date: Dec. 2nd, 1987  
Title: The VOLLAUG VEIN: A Flat-Lying Auriferous Quartz Vein,  
 Erickson Gold Camp, Cassiar, BC  
Speaker: Alex Boronowski  
Affiliation: Total Erickson Res., Vancouver  
Introduction: Dave Lefebure, BCBS  
Thanks: Dale Sketchley, Minequest

History:

- 1872 initial discovery
- 1937 Cominco - trenching, mapping
- 1950 Table Mt. Mines - in 1973 drove adit on Vollaug Vein
- Dec. 1978 - Erickson Gold Mine started with 9,000 tons of proven ore @ 85 TPD (on Jenny Vein). Since then Total Erickson has tied up most of favourable stratigraphy in the area. At present operating at 300 TPD. Produced to date 540,029 tons @ .455 OPT Au & .33 OPT Ag. 422,099 tons were from quartz veins in vertical dipping shear structures. The remaining 117,930 tons grading 0.306 OPT Au have been produced from the flat-lying Vollaug Vein.

Location/Access:

- NTS 104F/4E
- 12 km SE of Cassiar, BC
- Stewart Cassiar Hwy # 37 passes through camp

Regional Setting:

- Located within Sylvester allochthon
- Oceanic package consisting of argillite (hanging wall) in contact above footwall metasomatized serpentinites (listwanite) which are underlain by metabasaltic flows and interbedded cherts.
- Oceanic material thrust onto continent ~ Late Triassic to Mid Cretaceous.
- Fossils indicate Late Devonian to Late Triassic age for oceanic material.
- K-Ar dating of host rocks (Sylvester) indicate early Cretaceous - therefore predates Cassiar batholith and associated plutons.

Reserves:

- Total proven reserves = 119,000 @ .233 oz. per ton Au

## VOLLAUG VEIN:

### Geology:

- 2.7 km striking  $75^{\circ}$  -  $80^{\circ}$ , dipping  $35^{\circ}$  -  $40^{\circ}$  N.
- West end of vein terminates against Erickson Creek Fault.
- The vein usually occurs at the contact between graphitic argillite (hanging wall) and the underlying metasomatized serpentinites (listwanites). (see sketch)
- Vein is flat-lying, ribboned (graphitic stylolites).
- Cross cutting veinlets and breccia
- Parallel black graphitic ribbons with milky quartz and minor siderite.
- Ribboned texture indicates repeated opening within the flat-lying shear zone.
- Vein thickness up to 3 m but varies due to deformation within the vein. Ductile deformation within the vein has caused lensing, stacking, and pinching out of the vein.

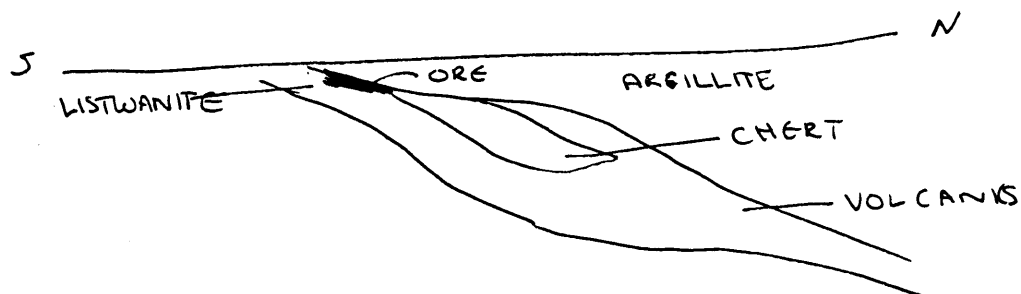
### Structure:

- Vein in shallow dipping shear zone - sinistral displacement (shallow dip is unusual in that most gold-bearing quartz veins in the camp are vertical).
- Argillite is north dipping.
- Erickson Creek fault - dextral motion, some normal
  - strikes north - south (most faults in area are E-W)

### Mineralization

- Tetrahedrite, pyrite, sphalerite, galena, graphite, free gold, Ti-oxides, chalcopyrite. Sulphides are minor with pyrite being the most common.
- Hanging wall tends to have higher grades.
- Grade related to graphite (mineralization found in graphite stylolites, rolls).
- Listwanite has shearing oblique to vein.
- $290^{\circ}$  trend in mineralization with splay shallow to NW.
- Mineralization - early Cret. (K-Ar dates on sericite)
- Most drilling has been done up dip since argillite cover above down dip extension becomes excessive (1200 ft.)
- Plan to drill East side (down dip) and looking for vertical structure/ extension of vein.
- The fact that the Jennie Vein flattens somewhat at the top could support the assumption that there is a change in dip. A feeder for the vein is another possibility.

### Typical Cross Section:



Questions:

1. All graphite or some chlorite? - clay, white mica (sericite), yes there is chlorite - along partings (strolites) - also see v.g.. Indicative of motion along shear zone.

2. Is pyritohedral shape of pyrite significant or related to gold? - gold found as free gold and with pyrite - didn't know whether shape was significant.

3. Alteration of argillite? - hard to recognize alteration of argillite. In volcanics - dolomite alteration easy to see - like Mississippi Type with reduced volume. Alteration in listwanite - diff. types - carbonate alteration, quartz-mariposite-carbonate alteration. Spatial relationship especially with the vertical veins- usually get good grades within 30m of listwanite.

4. Any large alteration zones in foot wall that indicate vertical structure/veins? - yes therefore reason for the structural study.

5. Any movement up and down dip on vein? - something they need to work on. They can see sinistral movement but there are no exposures of vertical movement.

Comments:

They are trying to find a vertical extension of Vollaug Vein. The fact that the Jennie Vein flattens somewhat at the top could support this assumption. A feeder for the vein is another possibility.

Notes by Cathy Lund