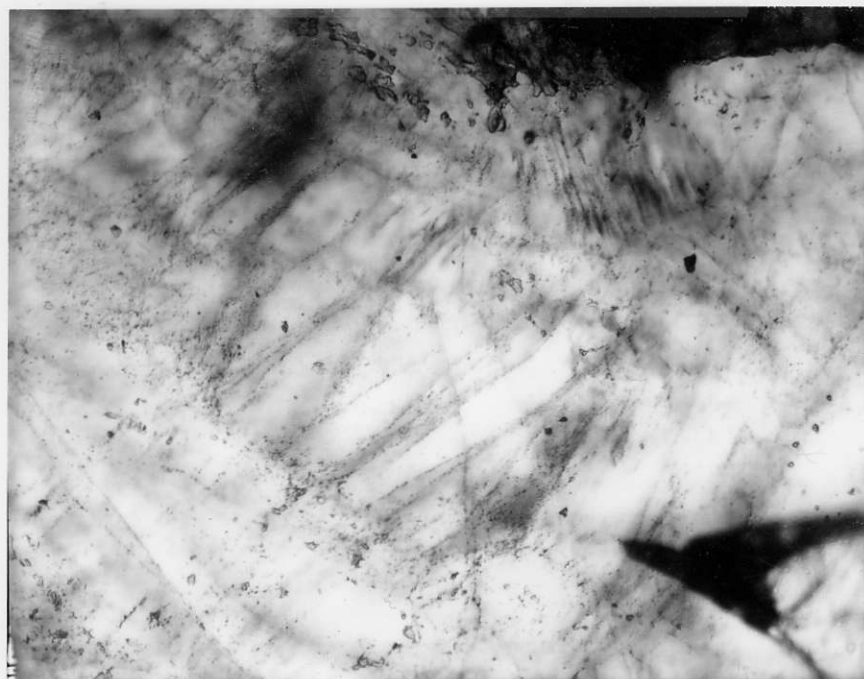


1 May 1990

RECONNAISSANCE FLUID INCLUSION SURVEY
OF FOURTEEN SAMPLES FROM THE
SAMATOSUM DEPOSIT

OBJECTIVE OF STUDY: Eight drill core samples (see attached map) and 6 open pit samples of early veins (penetratively deformed) were collected by Keith Glover for routine fluid inclusion analysis to define the general environment of formation of gangue quartz.

RESULTS: 1. All submitted samples contain ubiquitous inclusions defining healed microfractures crisscrossing back and forth across quartz in sheety, wispy arrays:



Photomicrograph of wispy texture (400X). All streaks are healed microfractures defined by small (<3 micron) fluid inclusions.

2. Quartz with growth zoning defined by small primary inclusions outlining remnant euhedral quartz crystal faces are present in a sample from drill hole RG 85 at 249 meters:



Photomicrograph of quartz crystals with growth zones overprinted by wispy textures (160X).

CONCLUSIONS:

The characteristics of the fluid inclusions described above are sufficient data to define the general environment of formation based on the author's experience:

1. Wispy textures are common in metamorphic rocks of greenschist and amphibolite grade.
2. Quartz exhibiting growth zones like those shown above are common in the epithermal environment (see Bodnar, Reynolds, and Kuehn, 1985, Reviews in Economic Geology, Volume 2: Fluid Inclusion Systematics in the Epithermal Environment). Such textures have also been observed by the author and Ross Large in veins from VMS deposits with minimal metamorphic overprint. This is a consistent similarity as VMS deposits are also formed at relatively shallow depths.

3. Given the general stratigraphic and structural features of the deposit, with the alteration and ore mineralogy, the fluid inclusion characteristics are consistent with the hypothesis that the deposit is of VMS origin and was later deformed during greenschist grade metamorphic events.

RECOMMENDATIONS:

The general environment of formation has been conclusively defined by visual observations. Temperature and compositional data that might be collected would only be recording the later events which intensively and pervasively overprint the quartz. Therefore, microthermometric determinations from the inclusions (homogenization temperatures and melting points) are NOT recommended. No further fluid inclusion work is warranted.

SUBMITTED TO:

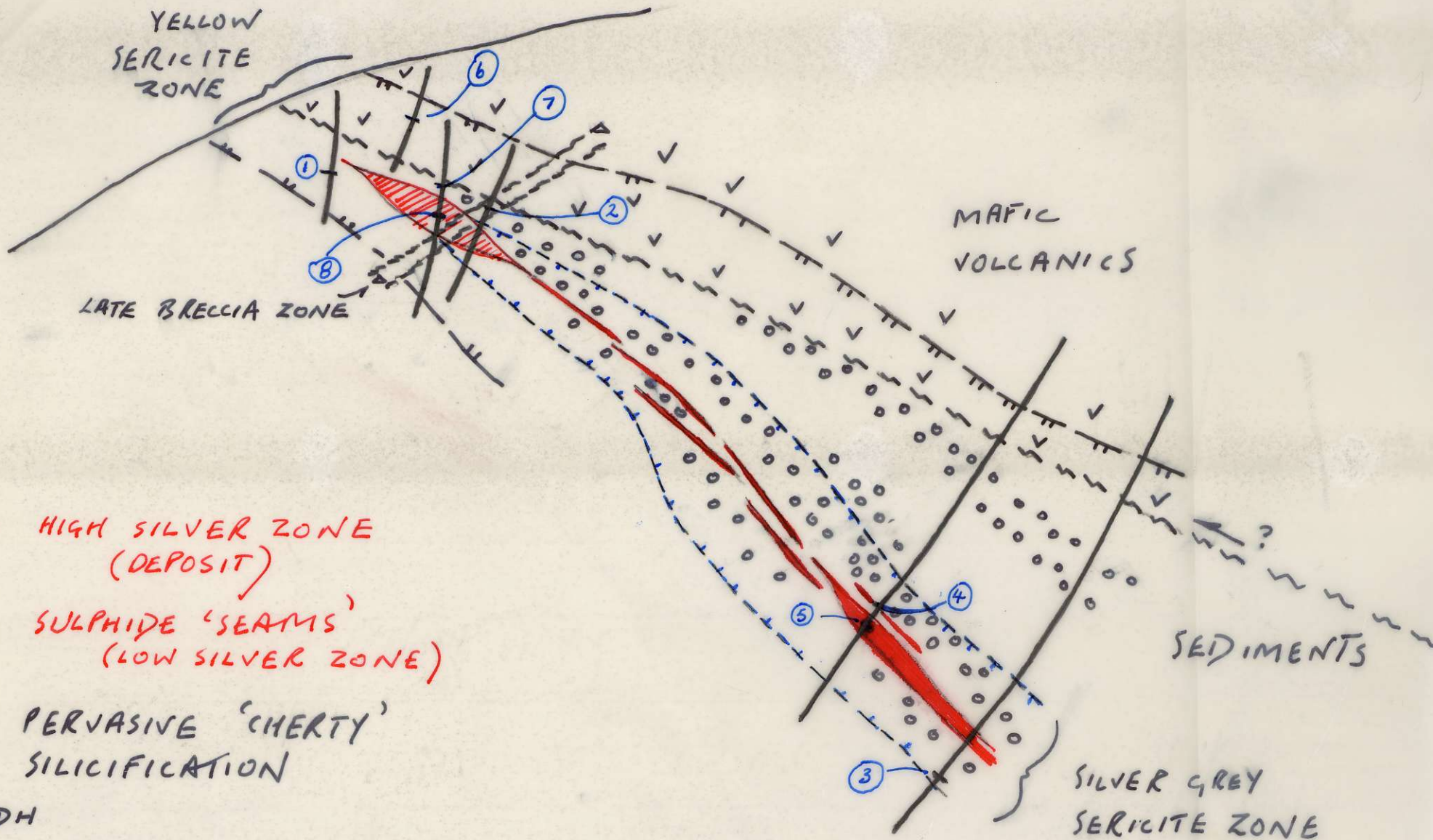
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