

1.5 Regional Geology

Recent work by Struik of the G.S.C. indicates the geology of south central British Columbia to be composed of four fault separated terranes; from west to east they are, Quesnel, Slide Mtn., Barkerville and Cariboo. The general Wells - Barkerville map area lies within Barkerville terrane and is underlain by a thick package of highly deformed metasedimentary rocks generally referred to as the Snowshoe Group. Age and correlation of rock units within this package is uncertain.

The Wells-Barkerville-Cunningham Creek area is underlain by a north west trending belt of clastic rocks (Snowshoe Group) of the Barkerville Terrane. Further to the east, these rocks are in fault contact with black clastic rocks of the Cariboo Terrane. The immediate Wells - Barkerville - Cunningham Creek mineral properties lie within the Downey Creek formation (Mississippian age?) of phyllites, slates, micaceous quartzites, limestones, marble and green meta-tuffs.

Regionally, the Snowshoe Group rocks have been folded into the Lightning Creek anticlinorium which trends northwest and plunges about 20 degrees north west.

1.6 Geology Of The Wells' Gold Deposits

The Mosquito Creek, Island Mountain and Cariboo Gold Quartz deposits at Wells have a recorded production of some 3 million tons grading 0.40 oz/t gold. The gold occurs with pyrite as "replacement" ore bodies and as quartz vein ore bodies, they occur near the contact between sericitic phyllites/limestones (Baker Member) and micaceous quartzites (Rainbow Member). The "replacement" deposits are shallowly plunging pencil shaped bodies in folded limestone. The vein deposits occur as steeply dipping quartz/pyrite filled faults in micaceous quartzites and argillites (Figure 4).

Several theories have been advanced as to the origin of the deposits. One theory suggests that gold-bearing hydrothermal fluids penetrated fractured and folded strata, precipitating quartz and pyrite in the fractures (quartz vein feeders) and "replacing" chemically reactive limestone beds. Some geologists question the "replacement" origin of the massive pyrite bodies, alternatively suggesting them to be of syngenetic origin.

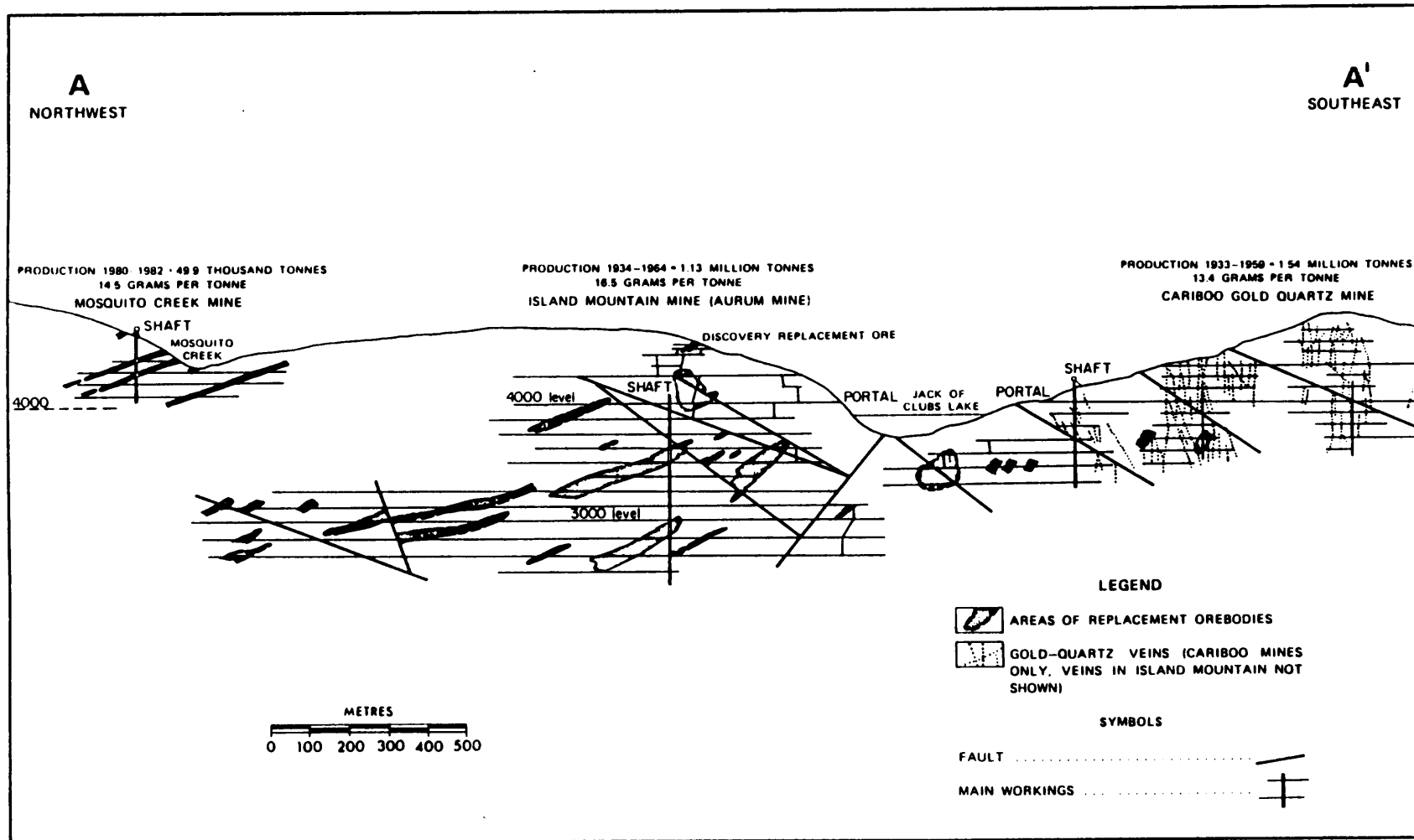


Figure 4. Longitudinal section. Projections of Mosquito Creek, Island Mountain, and Cariboo Gold Quartz mines (From D.J. Aldrick, Paper 1983-1, Ministry of Mines, B.C.)

Mosquito Creek Gold Mining Company is presently mining a limited tonnage of "replacement" type ore and stockpiling it for processing in their 100 ton per day cyanide plant. Geological exploration of the property is continuing and old data is being reevaluated to try to get a better understanding of the geological framework for the location of the ore bodies.

1.7 Summary of Work Done in 1987

The first phase of the 1987 program included:

1. Property mapping of a scale of 1:1,000.
2. Fill-in and extension of soil grids (940 samples).
3. Prospecting and sampling areas of old workings, anomalously high soil samples, geophysical anomalies, or quartz vein/float occurrences, total 356 rock samples.
4. Detailed mag surveys over limestone stratigraphy favourable for "replacement" targets.

The second phase of exploration included twelve NQ drill holes totalling 1098 m. Four holes totalling 487 m tested the southern extension of the 605 Vein; four short holes totalling 176 m tested mag anomalies within the limestone sequence; two holes tested a gold bearing chlorite schist immediately west of the Shata Vein; one hole tested an auriferous galena/quartz vein along the north extension of the Cariboo-Hudson Vein and one hole tested the Moneta Showing (Figure 6). Most exploration was within the M32 Mining Lease.