

The Elizabeth - Yalakom Gold Prospect
 Lillooet Mining Division
 (920 / 2)

Introduction

The Elizabeth - Yalakom property (minfile N^o 0920 012) is centered approximately at latitude 51° 02' north, longitude 122° 35' west, 6.7 km west of the junction of Blue Creek and the Yalakom River (Fig) ^{Shulaps Range}. A gravel road links the property to the Yalakom River road at a point approximately — km north of the Carpenter Lake (Bridge River) all-weather highway; the Yalakom River road - Carpenter Lake road junction is approximately — km west of Lillooet.

- Shulaps Range
- Along the ridge, above Tectonic

Exploration and Development History

Auriferous quartz veins were first discovered in 1934 (Medley, 1941) and subsequently rediscovered and staked as the Crown-granted Elizabeth mineral claims in 1940 and 1941. Surrounding claims staked at this time include the Yalakom Churn and Plateau claims. Boralome Mines Limited and adjoining options the Elizabeth claims and staked additional claims in the vicinity, and completed a total of 760 feet of diamond drilling ^{at five sites} and 1750 feet of surface stripping ^{to expose four (the No. 1, 2, 3 and 4 veins)} ~~were~~ ^{was} completed on the Elizabeth 1 and 2 claims (Anonymous, 1941).

War time conditions delayed further work until 1947 at which time an adit was collared on the Churn 1 claim ^(elev 6640') and driven nearly due west ^{toward the Eliz # 1 claim} to test the downward extension of the ~~Eliz veins~~ ^{the outcrop of} 750' below the "high grade" vein ^(later the west vein). The "high grade" vein ^{or "No. 1"} (later the west vein) 750' below its surface exposure. ^(Pecht 1947) By 1948 ^{this} main course ^{was} ~~extended~~ ^{was}

extended

to a total length of 2204 feet. ~~Each~~ Two quartz veins, the
"B" and "C" veins were intersected 1,611' and 2103' ^{respectively} ↓ from

The portal. ~~The relationship between these quartz veins and the~~

~~intended "high grade" vein target is not known.~~

In addition to 871 feet of diamond drilling,

~~and~~ drifts were put in to follow the lateral extension

of the B and C veins. ^{The B and C veins apparently do not outcrop and their}
The relationship between the "B" and "C" veins
(Fig. ^{Merrett} ₁₉₈₈).

to the intended "high grade" vein target is not known

The following year a raise was driven ^{along the B' vein} to a point 271 feet

~~above the level~~

The following year a raise was driven along a 4' wide
section of the "B" vein to a point 271 feet above the level.

In addition, a raise was driven up 76 feet along the "C" vein.

No significant gold concentrations were encountered during this work

At this time surface work on the Yalation #2 claim

uncovered a quartz vein 2 to 3 feet thick and

continuous for more than 200 feet, known as the #9 vein (Merrett and Stephenson 1949)

(NP) - During 1951 and 1952 a drift, extending from a portal collapsed at an elevation of 7300'

(NP) During 1951 and 1952 a drift was excavated from a portal collapsed at an elevation of ~~7300'~~^{7537'} southward along the #9 vein for a distance of 807 feet. Gold content of the vein is variable: assays ^{as large as} of 0.51 oz/t over a length of 28' and thickness of 2' \downarrow , and 0.45 oz/t over a length of 65' and thickness of 2.5' \downarrow . Surface trenches exposed the #9 vein in two cuts 400' and 600' north of and below the portal. Overall, ~~the thickness~~ ^{the thickness}

of the ~~gold~~ auriferous quartz vein was considered to be (and the gold distribution to erratic) (Merrett 1951, 1952) too narrow to constitute ore. \downarrow Bralorne Mines Ltd

subsequently abandoned the option and its adjacent claims in 1953. (Merrett 1953)

(T Willidge and E White)

Work was resumed by the owners in 1956, and under the supervision of T.W. Willidge a crosscut adit collared on the Elizabeth I claim at 7230' elevation was excavated at $\pm 110^\circ$ Az for 466' to explore ^{at depth} quartz veins exposed on surface. The "main" vein and the "west" vein were intersected by the crosscut at 110' and 455' from the collar respectively ^(Patterson 1956). The following year the "west" vein was followed an additional 320' ^(King 1957). During this time a geological study of surface and underground workings was carried out by R. Thompson (Thompson 1957a,b). ~~The "west"~~

~~vein was followed an additional 320'.~~ ^{Nine} ~~at~~ ^{9 tons}

^{the} ~~ore~~ ^{rock excavated from the west vein drift} was custom processed at Trail BC and yielded

502 Au, 502 Ag, 53lbs Pb and 10lbs Zn ^(King 1958)

The ^{claims} ~~properties~~ remained dormant until 1973 when Southern
(Balsam Resources Inc as of March 1987)
Lyght Resources Ltd acquired the Yukatoon claims and did
additional staking in the area. <sup>no further work has been done on the Elk claims
and the portals have subsequently caved in</sup> In 1983 an option to earn
a 40% interest was given to Cal-Denver Resources Ltd. and

The same year the #9 vein drift adit was re-habilitated,
and sampled and subsequently drilled. Both drift sampling
(Geo Cons 1984³, Cultcat + Log #2 1986)
and drilling yielded encouraging results. During the

Summer of 1987 a total of 1968' of ^{drift} ~~stone~~ was recovered from

four holes drilled from surface designed to test the depth

to which gold-bearing veins continue along dip (Vancouver

(Van 1987a)
Stockwatch Sept 9/87). During ~~then~~ a visit by the writer(s)

the #9 vein portal was being de-iced as a

prerequisite for further underground exploration planned

for the fall of 1987 ^{in conjunction with} ~~with~~ Vanguard Mining Exploration Limited

(Vancouver Stockwatch 1987b)

Geologic setting

The Shulaps Mountain Range in the area of the Elizabeth-Yalakom gold prospect is composed of ultramafic rock, specifically serpentinite and serpentized basaltite, with intrusive masses of porphyritic quartz diorite (Fig. 00-1).

Geology of the area has been documented in previous investigations (McCannon in MM Ann Rept 1946; Leach (1953))

The two largest outcrop areas of porphyritic quartz diorite are on the Elizabeth Nos. 1, 2 and 3 claims and on the Yalakom No. 2 claim on the southeast and north slopes of the ridge that forms the main topographic feature in the area. The porphyritic quartz diorite is typically grey, with plagioclase and hornblende phenocrysts in a finer grained groundmass of plagioclase, hornblende, quartz and some biotite; altered

porphyritic quartz diorite also contains epidote, as well as hornblende partly replaced by biotite to completely pseudomorphed by chlorite. The outline of the

porphyritic quartz diorite bodies are more complex than shown in Fig - .

as mapped (Fig -). Peripheral areas irregular offshoots

and satellite bodies of intrusive rocks similar in

appearance to the main masses but variable [in

texture and composition] from porphyritic to equigranular

qtz-rich diorite to diorite. Abundant white aplite

veinlets occupy irregular fractures in porphyritic quartz

diorite on the ^{northwest} ~~west~~ part of the Elizabeth No 1 claim.

Serpentinized ultramafic rocks typical of the Shulaps ultramafic body surrounds the porphyritic quartz diorite.

Clauval debris consists predominantly of non- to slightly layered serpentinized ^{yellow-rusty surfaced} harzburgite and dark green serpentinite, and obscure much of the ultramafic bedrock exposure and contacts with porphyritic quartz diorite. ~~Exposed~~

Ultramafic rock adjacent to porphyritic quartz diorite is generally well-foliated serpentinite. As a result, age relationships are unclear.

The ultramafic rock contact along the west side of the porphyritic quartz diorite body on the Tolakom No 2 claim is occupied by rusty-colored carbonate-falc-quartz-green mica rocks, or listwanite (Boyle 1979, p. 210). These rocks resemble harzburgite on weathered surface, although more resistant, and form a

30 to 70 foot thick rib along the northwest ^{hillside} ~~side~~ of

the main ridge (previously referred to as the Bealane
dike (Leech 1953)).

Auriferous Quartz Veins

The distribution of gold-bearing quartz veins at the Elizabeth-Yalaton project are ^{mostly} ~~almost strictly~~ confined to porphyritic quartz diorite (McCannox 1946a). Some veins are ^{near or} partly at contacts with ultramafic rocks,

but important veins are generally within the main bodies of

porphyritic quartz diorite (Leach 1953. Thompson 1957b). An area of porph qd that contains abundant sphite dolerite ^{concludes} with an important gold concentration on the No. 4 vein (Fig 00-1).

(NP) Alteration of porph qd along vein margins is slight: plagioclase

phenocrysts originally andesine now contain albite - oligoclase,

sericite, epidote, clinozoisite and clay-like material. A greater

pyrite and quartz ^{content} is also noted (Leach 1953).

Auriferous quartz veins on the Elizabeth-Yalaton project include: the Nos. 1, 2, 3 and 4 veins and the B and C veins on the Elizabeth Nos 1 and 2 claims, and the No. 9 vein on the Yalaton No. 2 claim (Table 00-1). Surface and underground ^{exploration of veins} ~~work on veins~~

3/

on the Elizabeth claims have resulted in ^{the} delineation of gold concentrations considered too erratic and vein widths too narrow to constitute ore. At present the No. 9 vein on the Galatun No 2 claim is the only vein whose underground workings are accessible and being actively explored.

The No. 9 Vein

The No. 9 vein is within the porphyritic quartz diorite body northwest of the main body that contains the Elizabeth veins; it is not known whether the porphyritic quartz diorite is continuous ^{between the two areas} beneath the surface. The No 9 vein is exposed at depth along much of its length by the No. 9 drift, accessed by the 7537' elevation portal (Fig. -). It is generally less than 2' thick although continuous for more than 807', and is

37
actually a system of parallel veins rather than a single vein. Much of the vein quartz is ^{massive and} milky white (a variable amount) calcite and quartzite, with and contains Δ disseminated sulphide minerals

(as observed on the dump site). However, much of the vein quartz is ribboned ^{with laminations and} ~~and contains~~ Δ stylolitic partings of chlorite sericite and carbonaceous material

along which metallic minerals are concentrated (Plate 00-2). Small fragments of what appear to be altered propyl. q. dia are also within ribboned domains.

These Ribbons are generally parallel to vein walls and separate massive to fractured, ^{partly rusty} milky white quartz that contains only sparsely disseminated metallic minerals and a variable ^{calcite} content.

Metallic minerals in the veins are mostly arsenopyrite, pyrite and chalcopyrite (with malachite and azurite) with lesser galena, sphalerite, pyrobitite, magnetite and molybdenite.

Native gold occurs as visible blebs within and thin surface coatings along carbonaceous ^{chloritic} ribbons, (Plate 00-2) and only rarely as isolated ^{visible} blebs within inter-ribbon domain quartz.

An underground sampling program ^{in 1983} cancelled out ^{by}
Baham Resources Inc ^{in 1987,} (Sandman Light Resources

Ltd prior to March 1987) along the length of the #9 drift
delineated three auriferous zones (Table 00-2).

~~test the continuity of these zones at depth~~ Three diamond
drill holes designed to test the continuity of the auriferous
zones ^{subsequently} were drilled (Table 00-3). ^{and intersected numerous other auriferous quartz adj to the #9 vein} Combined drift

Sampling and ^{diamond} drilling results indicate reserves to

be 4,248 tons with an average gold content of
1.199 oz/t (George Goss News letter 1984).

Four additional diamond drill holes drilled in ⁴⁸
1987, totalling 1968 feet, yielded gold concentrations
of 0.144, 0.122, and 0.104 oz/t. Samples taken
from the rock dump contain up to 0.715 oz/t Au
(Vancouver Stockwatch 1987a).

Discussion

Auriferous quartz veins at the Elizabeth-Yalapan project are: a) essentially confined to porphyritic quartz diorite, and b) generally strike north or slightly east of north and are steeply dipping. ~~The relative confinement of auriferous veins to the porph q.dior.~~

The location of auriferous quartz veins indicates that ^{under stress} the porph q.diorite acted as an competent medium and was brittlely deformed in contrast to surrounding ^{incompetent} ultramafic rocks which behaved in a ductile manner.

As a consequence, p qd - related vein rock contacts yield little information on relative age relations.

This has resulted in fracturing ^(of the porph qd) and ^{subsequent} fluid ^{metalliferous} invasion from a source that may have been from an intrusion originating from within the pluton ~~during late stage cooling~~ or from an external source.

The ribboned texture of the veins suggests repeated fracturing during emplacement ^{and vein growth}.

The concentration of metallic minerals, including native gold, along carbonaceous ^{chloritic} partings in ribboned veins may be the

product of precipitation of metals from an evolving metal-rich fluid during repeated ^{vein} fracturing.

product of ^{fluid} percolation of ~~an evolving metal-rich fluid~~

and metal precipitation during repeated vein-fracturing

episodes. ^{In addition,} surrounding serpentinite may have acted as

an impervious barrier restricting fluid movement to

within the p.g. d. d.

~~Re ^{geological environment and} probable structural control to ^{coniferous} vein distribution at the Elz-Yaldon prospect bears some resemblance to that described for the Bullock and Purcell mines (Joubin 1948, Lang 1948)~~