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Eagle Creek

(2)

EAGLE M452
1st Draft R.C.D. report.
Fall 76.

HISTORY

Prospecting by various members of Chevron Canada's staff in recent years and detailed mapping of an adjacent claim group (KU) by D. Arscott led to the acquisition of the new claims. Cursory geological examination and a vertical mag (magnetometer) survey (3 lines, 109 stations), were carried out by L. Dick in 1974. G. Laforme prospected for one day along a snow chute and collected chip samples and float showing varying amounts of Py, Cpy, Sphal. (pyrite, chalcopyrite, and sphalerite) In previous years, E. Dodson prospected the Chehalis Lake area.

Of significance is the proximity of these claims to the Seneca showings (operated by Cominco), both geographically and lithologically speaking.

REGIONAL GEOLOGY

The lithologies of consequence in the area are a sequence of Jurassic, shallow marine, volcanic rocks which have been locally distorted, metamorphosed and interrupted by Cretaceous intrusions. Associated with these are volcanically derived sedimentary rocks.

The volcanic belt occupies an area approximately 30 miles long by 8 miles wide bordered on the east Harrison Lake and the north, south, and west by intrusive rocks. Descriptions of the underlying Harrison Lake Fm. (Formation) (mainly pyroclastics) and the overlying Fire Lake Gp. (Group) (volcanic sediments) taken from GSC Memoir 335 appear in the appendix. The new claims cover a locally complex zone of predominantly Fire Lake rocks.

Roddick (GSC Mem. 335) describes the area as being a west trending, gently plunging anticline truncated to the west by intrusions. Rice (1957) however, describes the area as a westerly plunging syncline. (see GSC Map 1069A)

DESCRIPTION of WORK

A party of 2 ~~or~~ to 3 men examined the area from September 14 to October 1, 1976. The work consisted of:

2) geological mapping
3) prospecting
~~3~~) soil sampling
~~4~~) claim staking

The mapping was done at 1:5000 scale but locally more detail was required. Samples of all unique lithologies were collected for laboratory study.

A precipitous snow chute terminating in a fan-like boulder accumulation against the western bank of Eagle Creek was prospected in hopes of tracing the occurrences of sulphide rich float rock. This met with some success, isolating at least one zone of sulphide mineralization in situ. The chute was mapped to an altitude of about 3500' ASL.

Soil samples of about 0.5 kg. each were collected from the 'B' horizon (zone of accumulation) at 100' intervals on lines spaced at 400' and oriented NE-SW. The samples were analyzed by atomic absorption spectrometry after hot aqua regia treatment for Cu, Pb, Zn. (results and contoured maps in appendix) The samples were collected over the southern extremity of the Shrew claim, an area largely logged off.

The soil cover appears in several places to be well stratified alluvium and mixed till of up to several metres thickness, the top 1 metre showing a fair A-B development. The C layer, at least in areas of extensive alluvium and till, is obscured. It is likely that these areas are "masked" geochemically from bedrock layers. The soils are well drained and aereated over the sampling grid.

~~Mineral claims totalling 20 units were staked.~~

LOCAL GEOLOGY

In general, the rocks mapped show successions from andesite flows to dacite and/or rhyolite tuffs, sometimes with minor chert and sediments or siliceous breccias being uppermost. Thickness of separate sequences is most often indeterminate.

The character of the rocks changes from very fresh,

EAGLE RIVER PROSPECT

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INTRODUCTION

Previous geological work in the region, proximity to occurrences of economic interest, favourable general lithologies, and the recovery of mineralized float from the newly staked areas prompted more detailed work on the ground in the fall of 1976.

The new claims ~~are~~ is recorded in the name of:

Chevron Canada Limited

901-355 Burrard St.

Vancouver, B.C.

and ~~are~~ is described as follows:

SHREW	15250	staked September 24,1976, and recorded 27 September, 1976
~~BFB#2~~	~~15251~~	~~staked October 1,1976~~

The field work was carried out by employees of Chevron Canada Ltd. from September 24 to October 1, 1976.

LOCATION

The property is located on GSC Map Sheet 1069A about 5 miles north of Chehalis Lake, some 24 miles north of Harrison Mills and 70 miles east of Vancouver, B.C. Access is via highway #1 East and active logging roads from Harrison Mills.

GEOGRAPHY

Salient features can be summarized as follows:

Altitude: 2000'-4500' ASL

Terrain: moderately steep and bush covered over much of the claims but locally precipitous.

Vegetation: fir, cedar, hemlock, assorted berry bushes, and thorn bushes of various types.

Climate: coastal, snow cover in some areas year round and in general from October to June.

Drainage: the claims are drained by several ephemeral streams feeding Eagle Creek and another creek to the west; generally well drained.

essentially unaltered, to highly fractured rock showing rather intense chlorite, and epidote alteration and, in some cases, apparent Mg, Si enrichment and Fe depletion.

The metamorphic grade in the area is low; lower greenschist facies. Marginal contact effects are seen as one approaches the quartz diorite intrusion.

The overall attitude of bedding in the area indicates some macroscopic folding has occurred. Other structural features include joints of various orientations, shear zones and veins striking about 0° and dipping steeply, and a well developed foliation. (see ~~appendix~~ Fig. 4 for orientations) The foliation becomes more intense (ie. planes more closely spaced) to the west and proximal to shear and fault zones. This may be due to foliation being compounded by shear.

Hand specimen and thin section examination revealed several distinct rock types:

1) fine grained, massive andesite flows, some showing intense epidote and chlorite alteration. These are interpreted as being flows because of the lack of any pyroclastic features and their massive nature. Some of these rocks contain disseminated Py and Py accumulations along fractures. (pyrite) One sample in particular shows phenocrysts that have been altered almost entirely to epidote. (see sample 1059)

2) tuffs ranging in composition from andesite to rhyolite, the latter being altered to sericite schist or brecciated. The fragment size varies from finely crystalline to lapilli size in general, but some agglomerates are present. Many of these tuffs contain disseminated Py. (pyrite) Some evidence of at least minor reworking by water was noticed. (cross-bedding, fining upwards sequences, load features) The tuffs are by far the most common rocks in the area.

3) minor occurrences of sediments (sandstone, greywacke) of little importance volumetrically. Some minor chert bands are also present.

pyrrhotite - sphalerite - pyrite - chalcopyrite

4) heavily fractured and altered rocks carrying Mag-Po-Sphal-Py-Cpy mineralization. These are found in local shear zones and fractures and are ubiquitously gossaned. The mineralization has probably been remobilized along shear and other fracture planes.

5) heavily mineralized float rocks recovered from the banks of Eagle Creek and along the length of a snow chute near the northern Shrew-~~BRB#2~~ claim boundary. The assemblage is Po-Py-Sphal-Cpy but the Mag is lacking.

write out similar to

There are 4 modes of occurrence of metallic minerals in the area:

magnetite

1) fracture concentrations of Po-Mag-Py-Sphal-Cpy of limited extent and grade. These occur in the shear zones of the snow chute.

2) accumulations of Py-Sphal-Cpy in siliceous breccias. The sulphides occur interstitially. (see sample 1067)

pyrite

3) heavy accumulations of massive and disseminated ~~Py~~ in discrete, concordant pods, in concentrically zoned "bombs", and over a wide, heavily pyritized zone of varying rock types. ~~The concentric Py accumulations have been described as bombs~~. In one locality, a fairly well defined bedding plane (crystal size gradation) was noticed to continue without interruption through one of these "bombs". For this reason, and the concentric banding, I prefer a concretionary origin, either from magma residue or loosely compacted tuffaceous material. (ie. iron concretions) No disruptive effects were noticed around any of the "bombs".

4) float containing assemblages of Po-Cpy-Sphal-Py some with remnant crystal tuff attached. (see sample 1068) There are vein sections in the float containing veinlets of Cpy. The relative amounts of Po-Py-Cpy-Sphal change markedly but Po is overall the most abundant. Associated with all float are gossan and MnO_2 coatings.

chalcopyrite

pyrrhotite

Especially, rocks collected from the snow chute show heavy chlorite alteration and, in many places, veinlets of epidote.

Polished section examination of samples 1044, 1056 (from shear), 1068, 1069, and 2000 confirmed the basic mineralogical difference to be the presence or absence of magnetite. Samples taken from the shear zones show cataclastic deformation of both host rocks and sulphides whereas the other samples showed much more normal textures.

In thin section, the rocks are composed of varying amounts of qtz-K fd-plagioclase (andesine to labradorite)-mafics, principally hornblende and chlorite. The feldspars are almost always altering to clay minerals, and epidote is common. Several of the thin sections show grain size variations assumed to represent bedding, micro folds, micro-faults, veining and foliation.

Ordinarily, Fe rich, green pleochroic chlorite is the predominant phase at any distance from sulphide accumulations. Closer to sulphides, the Si rich, $Fe^{+2}+Fe^{+3}$ poor, low Fe^{+2} + $Fe^{+3}/Fe^{+2}+Fe^{+3}+Mg$ form pennine becomes predominant.

This could represent either Mg metasomatism or apparent Mg, Si enrichment due to leaching in the vicinity of a feeder pipe system. The predominantly Po mineralization is compatible with this.

The modes of mineralization may have a common origin. The Mag-Po-Py-Sphal-Cpy assemblage has probably been re-mobilized along fracture systems by the qtz diorite intrusion, the oxide developing en route. All other occurrences show fairly typical massive sulphide characteristics:

1)siliceous volcanic host rocks

2) expected mineralogy (Po-Py-Sphal-Cpy)

3) stratiform in geometry

4) alteration of host rocks to epidote, chlorite and various clay minerals

5) apparent Mg,Si enrichment

CONCLUSIONS

It is my feeling that both the Harrison Lake and Fire Lake formations are represented on the staked area. To the east of Eagle Creek and stratigraphically higher than the staked ground, upper Fire Lake, identified by a ~~course~~ coarse greywacke and conglomerate series with some fossils, outcrops. The southern extremity of the mapping represents middle or lower Fire Lake rocks; tuffs and intercalated sediments. The northern wall of the snow chute represents the best choice for Harrison Lake rocks, being an up-faulted block. This conclusion is based on:

1) rock types do not match ocross the snow chute

2) mineralization is present on the north wall but noteably absent on the south wall (except ~~Py~~ pyrite

3)mineralized float is accumulated on the north side of the chute and the upper north fork but absent on the upper south fork

4) physical expression of faulting (matching chutes across the Eagle Creek valley)

5)all other structural elements become more intense in the vicinity of the chute

Soil values were treated numerically and, although the absolute values are considered low, there are interesting anomalous trends in all three elements. Keeping in mind that the soil survey was not conducted under the most favourable conditions or over the most favourable ground, the overlapping anomalies for Pb,Cu,Zn warrant closer examination.

The mapping coverage is less than adequate for the area, due primarily to a lack of accessible outcrop. Much more basic information can be gathered with increased map coverage.

RECCOMMENDATIONS

On the basis of mapping, laboratory examination of some specimens, and the soil survey, my reccommendations are as follows:

1) establish a helicopter assissted fly camp for 5-10 days above the cliffs barring access to much of the outcrop of the area and complete mapping the newly staked ground

2) extend the mapping and prospecting to the north-west and, of less importance, to the west to the intrusive contact

3) extend the soil sampling grid if suitable areas are located

4) attempt to locate the source of mineralized float.

Signed: R.G. Dales, B.Sc.

Co-signed D. Ascott, P. Eng.