Report

on the

Preliminary geology and petrography

of the

Puff Group of claims

with special attention to discovery quarry

in the

Nanaimo Mining Division

in

092L/08 (or 092L040)

at

50 21 N and 126 08 W

for

Mikkel Schau, owner

November 15, 2002

delivered February 17 for February 15, 2003

Mikkel Schau, P.Geo.

0.0 SUMMARY

Puff Group Claims are located parallel to the Island Highway but just west of the Adam River and south of the Adam River bridge. Kim Creek joins the Adam River within the claim group. The group is staked on an epidosite +/- magnetite bearing shear zone and hydrothermal system associated? with a nearby contact between the Triassic Vancouver Group and the Jurassic Adam River Batholith. The claim group contains two showings already in the provincial inventory (Minfiles 092L 163 and 249) The main NEW copper mineral occurrences are located in a quarry excavated for road metals along logging roads in area. They occur within at least three subparallel shear zones and veins within a larger shear system some 60 meters or more wide.

Sulphide bearing sheared vein materials show secondary enrichment of malachite, chrysocolla? and copper oxides. The primary vein minerals appear to be epidote, magnetite, sulphide (mainly chalcopyrite) alteration and associated felsic dykes in a shear zone and brecciated with quartz and sulphide fill. Adjacent propylitic basalts of the Karmutsen are exceedingly magnetic, mainly due to secondary magnetite.

Grab samples have returned assays with up to Cu values of 6.06% and silver of 34.9 ppm in epidosites. Similarly, Cu assays 2.3% and silver 12.3 ppm, in quartz cemeted brecciated felsic dykes. A chip sample across a 2.2 metre section, normal to a shear zone, returned .9% copper. Anomalous amounts of gold and palladium are recorded locally, as well.

This is a grass roots project and the extent of the postulated hydrothermal system is still being explored. The Puff group contains two known Minfile locations, both of them drilled, as well as the new showing reported on in this report. The adjacent Kringle Group contains a set of contact related showings also locally rich in copper and silver. There is a possibility that significant metal concentration has occurred in this general area, but estimates of volumes and concentrations will require defining by geophysical, geological and other methods.

Obtaining funding for a next phase of exploration or the optioning of the property to someone with the means to carry out a program, would appear to be the next phase in this project. A possible exploration scenario costing about $50,000 would provide enough new information to make an informed decision as to whether to drill or not.

0.1 TABLE OF CONTENT

FIGURES

Figures in Appendices

1.0 INTRODUCTION

Northern Vancouver Island has been prospected actively since the first world war. The general Adam's River region has been prospected in particular, since logging opened up the area in the 1960's. Previous operators have staked the area of the new Puff Group Claims. Minfiles 092L 163 and 092L 249 are positioned within the Puff Claims, but reported work makes no mention of the quarry locality.

The quarry location was first found to be of interest in 2001 as part of a regional prospecting effort financed by a Prospector's Assistance Program grant from the province. Vein samples were found to be anomalous and carry very anomalous Palladium values. The anomalous metal values were judged to have a more than local significance, and the area was staked in fall 2001.

Sampling has proceeded, paying special attention to the shear zone and vein systems and associated felsite, mineralized epidosites and quartz veins. Metal values of several percent copper and with up to an ounces of silver are recovered from samples selected to show presence of mineralization.

Efforts are ongoing to vector towards the most economically mineralized area. This report is a step towards this process.

The locating, staking, and ongoing geological work has been performed by the owner and authour of this report.

2.0 PROPERTY LOCATION, ACCESS, AND TITLE

The main showing is a new one, located along the Kim Creek main road, opposite the Island Highway and near the mouth of Kim Creek. It was with the help of a PAP grant received in 2000, and explored further and enlarged in 2001 with the continued aid of a PAP grant (Figures 1,2).

Claims of the Puff Group are across the river (west) of the easily identifiable 250 km marker on the Island Highway (Highway 19) within the 092L040 trim sheet (Figure 3). The claims are staked along a line parallel with the Kim logging main, and claim posts are located on either side of the road. Additional claims are positioned along a nearby logging spur.

The Puff Group, newly formed, comprise 10 claims, of 240 ha. and consiting of the 10 units shown below:

Name	Record	Units	Anniversary	Date	year recorded
PUFF1	391117	1	Nov 17	2006	2001
PUFF2	391118	1	Nov 17	2006	2001
PUFF3	391119	1	Nov 17	2006	2001
PUFF4	391120	1	Nov 17	2006	2001
PUFF5	391121	1	Nov 17	2006	2001
PUFF6	391122	1	Nov 17	2006	2001
PUFF7	391123	1	Nov 17	2006	2001
PUFF8	391124	1	Nov 17	2006	2001
PUFF9	391125	1	Nov 17	2006	2001
PUFF10	391126	1	Nov 17	2006	2001

The anniversary date is adjusted to take into account the work listed herein.

All claims, which are focused principally on precious metals, but include an ancillary interest in base and industrial metals, are wholly owned by Mikkel Schau.

The land situation is typical; I believe I have claimed the mineral rights in a lawful manner; the region, including the claimed area, is in a Timber License previously logged and reforested; and to the best of my knowledge the land claim treaty process has not directly discussed these lands. It is, however, listed on MapPlace as part of the Kwakiutl_Laich_Kuul_Tach SOI. There has been no impediment to my claiming or working the land to time of writing. And I have no expectation of any. In fact, people of nearby communities would like there to be more exploration, and possibly mining, to shore up the local economy.

Fig. 1. Location Map of Puff Group in BC

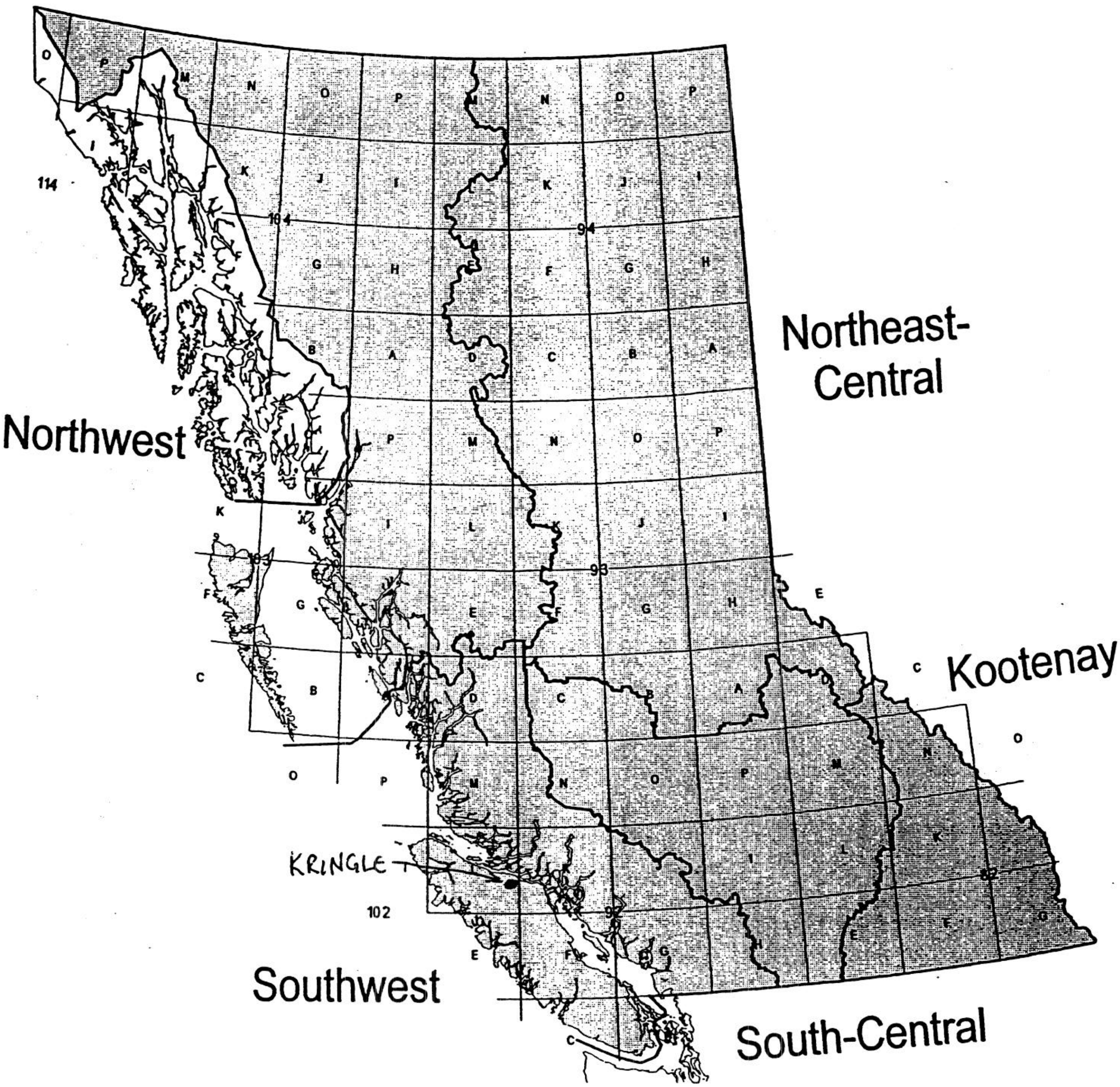
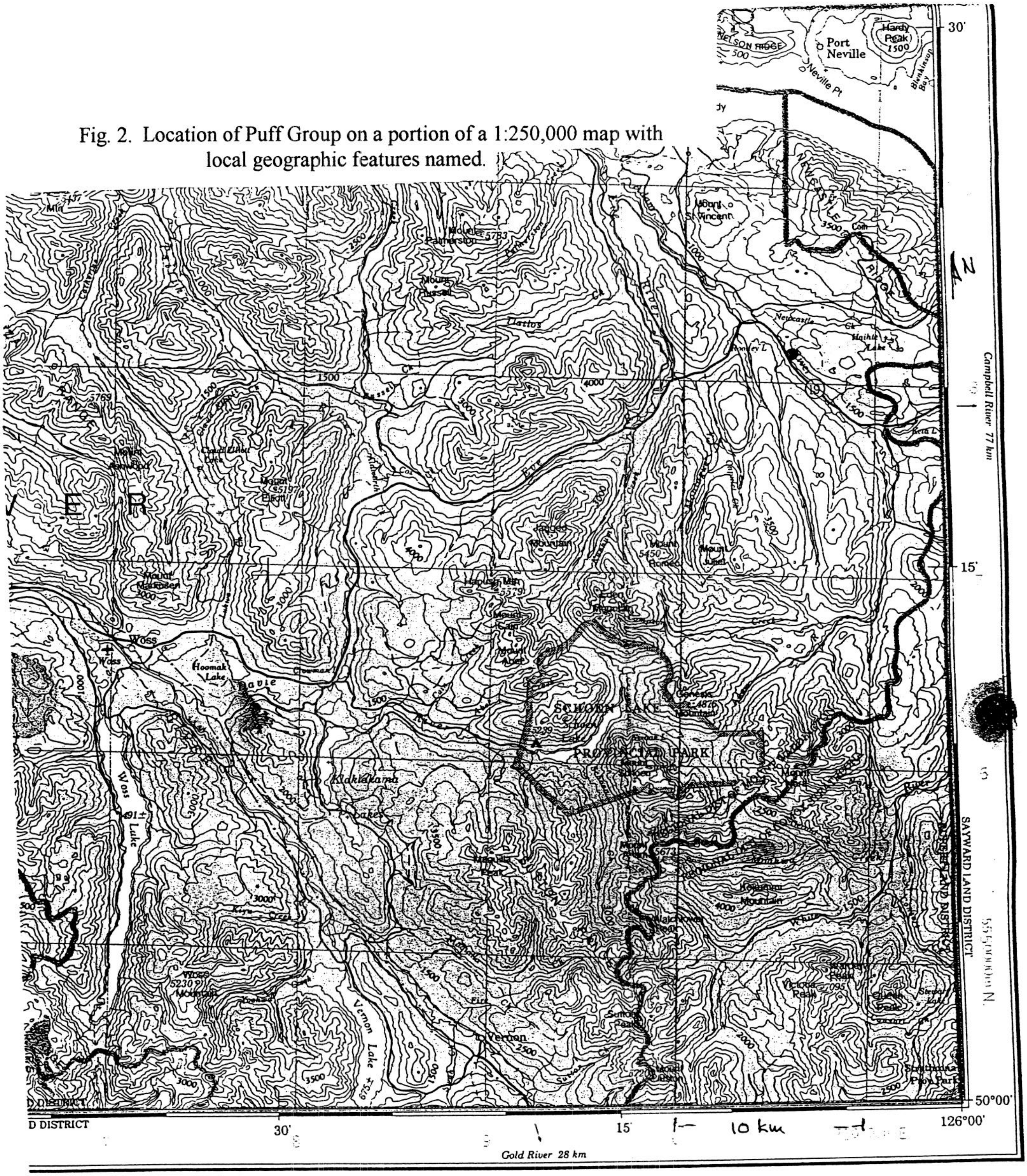


Fig. 2. Location of Puff Group on a portion of a 1:250,000 map with local geographic features named.



3.0 PREVIOUS WORK

The quarry showing discussed in this report has not been noted in previous work, although prospecting work has been carried out in the general Adam River region for about a century.

The ground was prospected for silver and gold in the first quarter of the century and showings of copper and gold veins were reported. Some distance south of the claims, but in the same geological context, a showing (Lucky Jim) of a contact deposit with copper (5.92%), silver (1.8 opt) and gold (.9 opt) was described as early as 1918 (page K270, 1918 BC Minister of Mines Report).

Logging opened up the area in the 60's and regional prospecting campaigns located scattered copper rich showings. A large block was staked in 1965 by W.R. Boyes, and was taken over shortly thereafter by Western Standard Silver Mines. The lands include showings categorized as "Volcanic Redbed Copper" in government data banks: Minfile 092L163 is located in PUFF 4 and 092L249 is located in PUFF10.

AR 1993, commissioned by Bethlehem Copper Corporation, and carried out by W.M. Sharp, P.Eng., in 1969, sketched in the regional geology of a large area, some of which includes the area currently claimed. He noted the presence of a large NW trending granodiorite batholith emplaced in a sequence of Karmutsen "basalt-andesites" and the Quatsino Limestone. He notes that much mineralisation of the area is mainly in veins. The first mention of the Billy Claims occurs in this report as a parcel covering widely dispersed copper mineralization. The geological framework presented by Mr. Sharp has not changed substantially, although he mentioned the occurrence of Bonanza volcanics in the general region; and suggested that the granodiorite had been emplaced within the Bonanza Group; this latter conclusion has not been confirmed by later workers.

AR 3795, commissioned by Sayward Explorations Ltd, and carried out by Sheppard and Associates in 1972, reported on the geology of the Billy Claims Group and documents showings now known as Minfile 092L163 (then in Billy 19) and 092L249 (then in Billy 11). These showings have not yet been located by the authour but are shown to lie within the claim group. In Sheppard documented the mineralized nature of amygdaloidal portions of basalts and the adjacent faults.

In 1974 the GSC published a map of the area (Mueller et al, 1974) that generally follows the geology determined by previous consultants. No Quatsino limestone was indicated near the claims despite Sheppard's mapping (see above). But, thin beds of limestone in the upper most Karmutsen was noted in the geological notes.

AR18255, commissioned by Germa Minerals, and carried out by L.J. Peters of Cossack Minerals in 1988, concerns a report on geochemistry and geophysics of the area studied by

Sayward Explorations. Most of the work was done on Adam's Claim. This overlaps only slightly with the Puff claims in the northwest of the group.

A geological compilation of area in digital form (Massey, 1994) contains contacts assembled in part from previous assessment reports. The granodiorite contact is incorrect in detail, but not at the level of accuracy claimed by Massey.

Thus sporadic and widespread mineralization of copper and silver with occasional gold values occurs in country rock adjacent to a large granodiorite batholith. The country rock is mainly feldspar-phyric basalt, as amygdaloidal or massive flows, or as thin sills with intercalated, but minor, beds of limestone and associated clastics, overlain by thicker beds of limestone. The actual surface expression of the limestone is uncertain, in part, because it is a recessive unit. New roads have exposed new subcrops and the area mapped as underlain by limestone has been enlarged. Earlier workers foccussed on mineralized veins and shears.

4.0 SUMMARY OF WORK DONE

The majority of the geological and prospecting work has focused on a new showing located in Puff1. It is in an aggregate quarry constructed in highly sheared material to provide road metal for logging roads. The quarry has been mapped on a first pass, but many details remain to be puzzled out. Hence the geological work is preliminary.

The rest of the area has been checked to see if previous work was appropriate, by conducting preliminary geological and prospecting traverses along available roads, as well as in other significant off road sites (240ha).

20 Samples of the mineralized shear zones, mainly from the quarry, have been collected and analysed for 30 aqua regia soluble elements by ACME laboratories.

20 samples as above have been analyzed for precious elements (Pt, Pd, and Au) by fire assay and ICP-ES- Finish (also ACME Labs)

6 samples from representative units have been analysed for total whole rock composition (major oxides+C, S, LOI and 5 traces by LiBO2 fusion and ICP-ES analysis, by ACME)

6 samples from samples noted above have also been analysed for total trace element composition (30 trace elements by LiBO2 fusion, ICP-MS finish, 10 trace elements usually in sulphides by dissolution with acid and ICP-ES finish, by ACME)

Petrography of 13 representative samples have been processed.

Density of 2 samples has been determined

Magnetic Susceptibility of 18 sample locations have been determined

The raw data is located in appendices A to F inclusive.

5.0 DETAILED DATA AND INTERPRETATION

5.1/ Purpose

This work is aimed documenting the mineralization seen in the quarry and to try to place it a geological context.

5.2/General surficial geology

The Puff Claim group is west of the north-north west flowing Adam River south of its confluence with Eve River. The river follows a typical U shaped valley, between tall hills trending roughly the same direction. Local areas of till have been noted in lower areas where road construction has laid it bare. At least three different terraces indicate that the river has had a complex geomorphic history. The river is currently incising its course through thick, earlier river and till deposits.

The course of the river is along the outcrop trend of the Quatsino Limestone and it, and adjacent creeks, locally seem to occupy zones with high strain or faults. A smaller valley, west of the river also seems to be underlain by a thin layer of limestone. The hills are variably covered with colluvium and thin till deposits; only where logging roads expose subcrops, or in outcrops on cliff faces, tops or on steep sided valleys are bedrock visible.

5.3/ General remarks about Shear Zones

Shear zones provide conduits for mineralizing fluids, highly reactive crushed or milled rock to alter such fluids as they pass, and sporadic open space allows precipitation of oversaturated minerals.

5.4/ Regional Geology

Contacts regions near batholith are possible regions of metal concentrations. At the adjacent Kringle showing basalts of the Karmutsen Formation, limestones of the Quatsino Formation are metamorphosed and metasomatised in the locally sulphidized contact of the Adam River Batholith.

In the Puff showing, a brecciated and veined, complex shear zone which contains fragments of felsic dykes, epidosites, magnetite rich domains, local sulphide rich portions and other metasomatic mineralogy, is set in propylitized basaltic country rock. Because both Claim groups have very similar copper and silver tenors and ratios, and other similarities to be noted below, it is postulated that the Puff showing is probably part of the same hydrothermal system that generated the nearby proximal endo and exo skarns of Kringle Group along to the east.

5.4.1Units

Vancouver Group

The units are generally as described by Massey (1994) but many lithological and petrological details are taken from Carlisle (1972), Surdam, (1973), Kuniyoshi and Liou, (1976), and Cho et al. (1986)

The Vancouver Group (Karmutsen, Quatsino, and Parson Bay Formations) underlies much of the region in the vicinity of the claims.

The *Karmutsen Formation* (or "subgroup" of Carlisle, 1972) is a low potash tholeiite basalt mass of remarkably consistent structure and thickness that constitutes the lower third of the Vancouver Group in this area. The lower 2500 to 3000 m. invariably consists of classical closely packed pillow lava. the next 600 to 1000m consist of pillow breccia and aquagene tuff, typically with unsorted beds ½ to 2 m thick in the lower half. The upper 3000m is composed of amygdaloidal and non-amygdaloidal basalt flows intercalated with, particularly in the upper third of the unit, are sporadic and commonly incomplete sequences of 3 to 20 m thick consisting of thin discontinuous bioclastic, micritic, cherty or tuffaceous limestone. These are overlain by closely packed pillows, which are overlain in turn by pillow breccia. The well developed recrystallized limestone unit(s) on the Puff claims is thought to be part of one of these sequences.

The structure of the unit is marked by gently folded and locally severely faulted areas. The folding is part of a regional shallowly north plunging antiform, whose axis would be to the northwest of the Group. To the east and northeast the complimentary shallow plunging syncline is outlined by the trace of the upper contact of the Karmutsen with the Quatsino Limestone. Faults and well developed linears trend north and north westerly directions as well as in easterly directions and separate large panels of gently dipping lavas.

The volcanic rocks have been metamorphosed to lower greenschist grades. Albitized feldspars, amygdules and veins of pumpellyite, prehnite, epidote, calcite, and chlorite are widely noted. Near contacts with later intrusives, amphibolite bearing assemblages are more common. Studies in the adjacent mapsheets (092K) in the late 70's outlined the nature of the low-grade (prehnite pumpellyite and locally laumontite bearing) metamorphism all of the Karmutsen underwent, as well as the detailed changes (up to Hornblende hornfels) undergone at the edges of plutons.

Considerable regional variation is shown on aeromagnetic map, including local positive anomalies, within the area underlain by the Karmutsen, indicating that magnetite concentrations of the volcanic rocks are not uniform and/or area is underlain at shallow depth by highly magnetic bodies.

Jurassic Intrusives

Jurassic granodiorite to diorite underlies the area to the east-northeast of the Adam River.

It has been called the Adam River Batholith (Carson, 1973, Muller, et al, 1974). It is about 4 km wide and trends northwesterly in excess of 10km. It occupies the synclinal core of one of the large scale folds in the area.

It consists mainly of mesozonal granodiorite. Rocks studied are mainly medium to fine grained biotite hornblende granodiorite and quartz diorite with a locally elevated content of mafic minerals. In thin section, pyroxene cores to amphibole grains are noted. Local veining of darker phases by lighter more feldspathic phases are common. At contacts the volcanic rock inclusions are transformed into dioritic inclusions and limestones become skarn and marble rafts.

Carson (1973), suggested that the Adam River was emplaced as a sill, along the Quatsino Formation horizon. He suggested that the sill was shaped as a gentle syncline and figured the geology in the general area on his Fig. 15 (Carson, op cit). An anticline has been postulated to the west currently expressed at surface by the Karmutsen Formation. The sense of movement of a synkinematic sill would be upper units to move away from the synclinal core. That would predict an east over west component in folds and faults. The consequence of this model would be that the Puff claims would be underneath the possible extension of the granodiorite sill.

K-Ar dates of 160 on Hornblende and 155 on biotite from a quartz diorite of this batholith confirm the Jurassic age and does not contravene a possible synkinematic mode of pluton emplacement.

Contacts are known to be hornfelsed for short distances, with local skarnification near and in limestone beds.

The high concentrations of magnetite in these I-type intrusions are well reflected in the regional anomalies over these plutons.

Later dykes

Some dykes, possibly associated with the adjacent Adams River Pluton?, cut the Puff claims. One in particular, an albitite, is associated with the new showing reported herein.

Fig. 3. Detail location map of KRINGLE claims on a DEM of BC TRIM 092L040; the east side vertical line is the east side of 092L040 at 126 deg West , the west at 126 deg. 12 min.; the bottom horizontal line is the south edge of 092L040 at 50 deg. and 18 min. the northern edge is at. 50 deg 24 min.

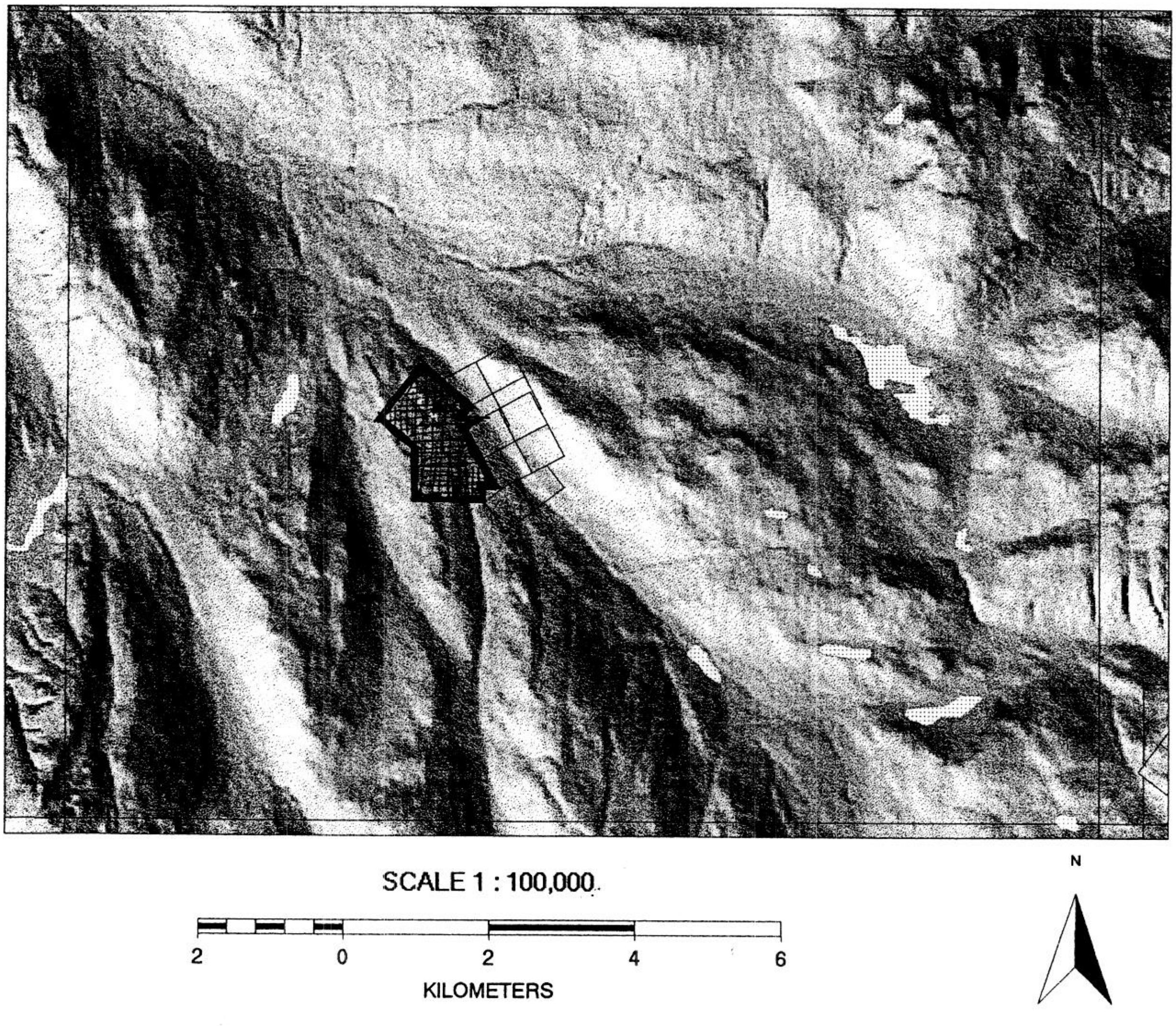
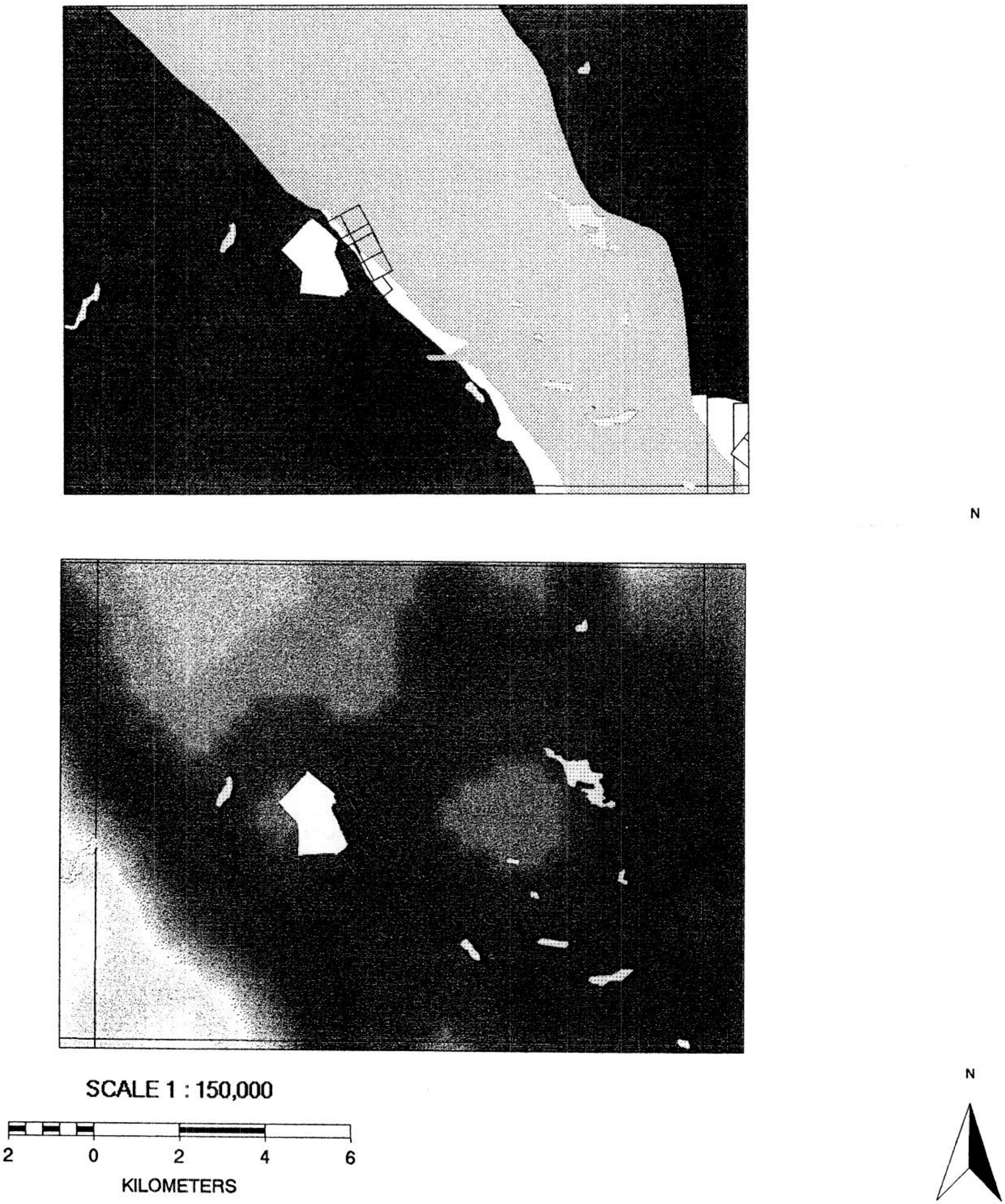


Figure 4; Two maps; top map shows geological contacts, bottom map shows aeromagnetic field. Note that contacts are not reflected in the aeromagnetic field..



5.4.2 Regional structures

The area of interest lies within the shallow east north east dipping homocline of Triassic rocks and the Adam River Batholith, called by Muller et al (1974), the White River Block; it is bounded to the west by a major fault, the north northwest trending Eve River Fault. To the north the Johnson Strait Fault terminates the block, the eastern and southern borders are faults on adjacent map sheets. The faults in the vicinity of claimed area of interest are subparallel to the border faults, or are second or third order subsidiaries of it. It is thought that these faults contain a large normal component but a dextral component is often also mentioned in reports. On a regional scale, a northerly directed shallowly plunging anticline is suggested by scarce bedding determinations. The claims are the east side of this structure. Carson (op cit) suggested that the homocline mentioned above was but the western side of a larger open, shallowly plunging syncline, containing in part the Adam River Batholith (or sill), as noted above.

A consequence of the synclinal model is that the Karmutsen to the west would underlie the batholith.

The region is noted for its copper bearing veins and have been described as the BC Mineral Deposit type: volcanic redbed copper. Muller et al.(1974) assigns the showings in the vicinity of the claims to his category C; veins in basalts.

5.4.3 Regional Geophysics

The magnetic character of the Adam River Batholith is well expressed on regional aeromagnetic maps. Of some interest is a magnetic domain of similar magnitude seemingly located over Karmutsen Basalts (as shown on Map Place, February, 2003), and presented in figure 4. The contact, between the magnetic batholithic rocks and the non magnetic limestone is not seen on the low resolution aeromagnetic map. Instead a sharp magnetic boundary is located several km to the west.

Whether a large batholith underlies a thin cover of basalt and limestone, whether the metasomatism underneath an overlying sill/batholith, or whether the basalts are intrinsically more magnetic than usual, and if so, why? seems an obvious question to seek to answer. An aerial survey with closer flight line spacing may show internal variations and help explain the anomaly. The Cu-Ag vein showings located previously are located in this anomalously magnetic region.

5.5/ **Geology of Puff Claim group**

5.5.1 Introduction

The Karmutsen Formation of the Vancouver Group underlies the claims, and The Adams River Pluton is to the north east of claims (figure 5). The sketch map included is largely taken from Sheppard and modified in light of later logging and road work.

The intrusive contact, which approximates the course of the Adam River, is here developed in the upper part of the Vancouver Group. Mineralization is associated with the emplacement of the nearby Adam River Batholith is reflected in veins, skarn masses, and shear zones in the upper Vancouver Group.

5.5.2 Karmutsen Formation

The group is underlain by Karmutsen basalts, as a mix of autoclastic breccias, pillowed and massive flows with thin intercalations of volcaniclastic and limey sandstones cut by thin dolerite/gabbro sills. These lithologies, i.e. massive and amygdaloidal basalts, intercalated calcareous sediments, and volcanic breccias and the nearness to a pure grey limestone would suggest that the rocks are from the upper part of the Karmutsen Formation.

Petrology and metamorphism

The Karmutsen Formation has been cited as showing typical of prehnite pumpellyite grade metabasalts (Surdam, Kuniyoshi and Liou, ...).

The question of metasomatism was posed in the seventies: it was called the spilite problem then, and the conclusion was that metabasalts underwent some local reorganisation into domains of more albitic, more chloritic and more epidotic domains. The prevailing opinion was that the re-organization was local.

The question of metasomatism is raised again in the propylites of this claim group. Now however the element in question is iron. There is no question that the propylites near the claims are more magnetic than the Karmutsen is in general. (Fig). They seem to be more iron rich nearer the pluton than some distance removed (Appendix). Eastwood () on the other hand thought that the Karmutsen Formation itself was more iron rich than most tholeiites. More data on nonmineralized Karmutsen is required to provide a good answer to this question.

Kuniyoshi and Liou, 1976 provided another possible answer to the greater magnetism observed. They note that titaniferous magnetite-ilmentite intergrowths are broken down in the lowgrade metamorphism to form small pure magnetite grains and leucoxene. Small domain magnetite certainly is more magnetic than the precursors. But the regional distribution of lowgrade Karmutsen Formation and anomalously aeromagnetic regions do not match.

Another explanation of more magnetic region might be that magnetite has been metasomatically added to rock at time of mineralisation. Since magnetite veins and magnetite epidosites are mineralized with sulphides in the quarry area, it seems likely the iron was introduced along with the more economically interesting metals.

A fourth explanation is that a magnetic body such as the Adam's River Pluton underlies at shallow depth the altered rocks.

Either of the two latter suggestions imply possibility of mineralization at depth.

5.5.6 Felsic dykes

Felsic dykes are hard to map, but are displayed to advantage in the road outcrops across the river where many types of dykes, both fresh and extremely altered are found.

A breccia composed of felsic dyke cemented by quartz and chalcopyritr is found in the southwest corner of the quarry, it is locally associated with, epidosite alteration.

A thin grey fine-grained andesite dyke was noted west of the river cutting through a basaltic accumulation.

The term fresh and altered are relative; even the freshest has been subjected to propylitic reconstitution, the matrix is a fine intergrowth of quartz, white mica, clay, and zoisite. The mafics are generally altered, to green amphibole chlorite.

5.5.7 Claim sized structures

Structures in country rock, west side Adam River

Primary layering in the basalt pile suggest very gentle north-north east dips. This is marked by pillow lava interbeds. Way up is up. Limestone lenses have the same general orientation.

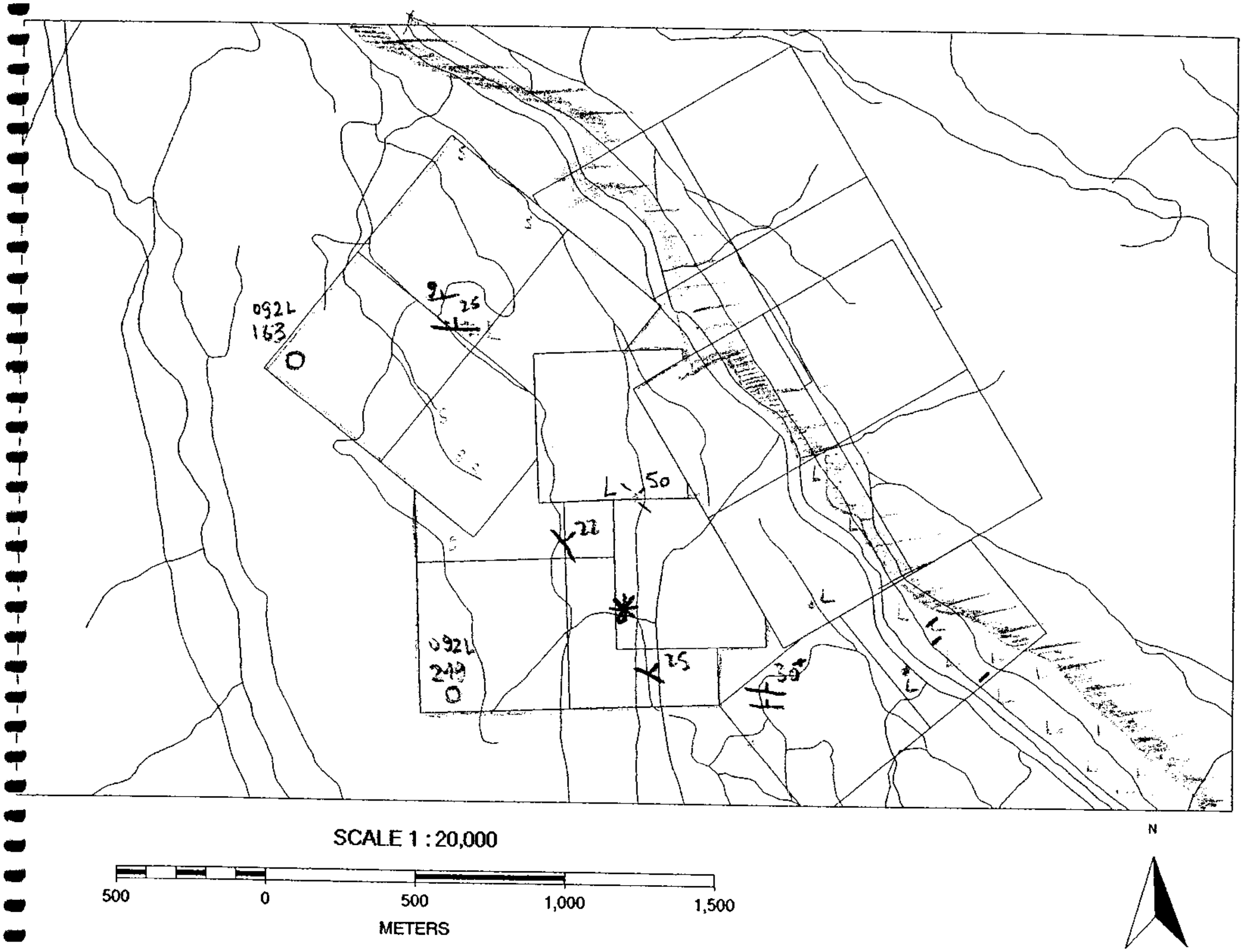
Possible interpretation of structures in regional context??

The presence of shallow dipping beds, far from the contact, and steep ones, across the river to the east near the contact, can be taken in conjunction with the regional possibility of an overlying intrusive sill with a synclinal core to the northeast. The sill might have moved out of the center, in such a way so as to upper beds move westward and lower beds move eastward makes the suggestion that the beds are cast into S folds.

The high-strain zones such as those seen in the quarry could be part of this re-organization. The irregularities in the contact would be places about which there would be considerable stress gradients leading to local under-pressures and over-pressures. The regional NNW linears and faults with shallow slickensides imply some transverse movement on faults.

Fig. 5 Preliminary geological sketch map of Puff Claims. Outlined in thicker line.

Note northwest trending contact, granodiorite to east, and Karmutsen to the west. Note small wedge of Quatsino limestones at contact in south. Also note isolated limestone lenses west of river. Star marks location of quarry. Circles, reported locations of Minfiles. Orientation symbols show bedding surfaces with shallow north-northeasterly dips. Information from Sheppard, previous work on adjacent and own fieldwork on these claims.



Veins

Veining in the shear zones is a predominant feature.

5.5.8 Mineralization

Shear/vein zones in Karmutsen were drilled in late sixties and one hole yielded .485 copper over 3.6 metres (Minfile 092L 249) and several similar zones, the best reaching .53% copper over 1.5 metres (Minfile 092L 163). A feature of this area is that Karmutsen Basalts is that the amygdales of region carry quartz, epidote, speckled with small grains of bornite or chalcopyrite.The new locality in the quarry carries mineralization in a northerly trending set of three high strain zones with mineralization in the zone and in locally developed veins adjacent to the zone.

Veins in Puff quarry

Newly located veins of quartz-chalcopyrite emplaced in fracture zones where it forms the matrix of brecciated country rock, including a nearby felsite. Other highly sheared and locally veined zones of magnetite bearing epidosite carry chalcopyrite.

The ***west*** vein is a 6 cm. quartz vein emplaced in crush zone which is mineralized with copper minerization more on the eastern 15 cm. than the western 10cm. The vein can be traced along strike to the south for some tens of metres as it curves up the cliff in a southwesterly direction and eventually pinches out.

The north-north easterly trending ***central*** high-strain zone is developed largely in epidosite with variable amounts of magnetite and sulphide. A felsite is caught up in the zone and well mineralized felsite breccias cemeted by quartz locally abundant. The zone cannot be traced across the covered quarry floor, but a similar high strain zone, at the north end of the quarry is thought to be the continuation.

The narrow eastern highstrain zone is only on some occasions exposed in the floor of the quarry, depending on the nature of the latest roadwork. It is along the edge of the quarry and is not well exposed. It seems to trend in a north-northeasterly direction as well.

5.6/ Detailed sampling results

5.6.1 *prior to staking*

Three samples across a vein, and a sample along strike, yielded anomalous values in copper, silver, gold and palladium.

The best values were gotten from a 6cm wide portion of sheared altered basaltic wall rock adjacent to a thin quartz vein with copper alteration.

Cu	**4.5**	%;
Ag	**23.9**	ppm;
Au	**107**	ppb
Pd	**118**	ppb.

5.6.2 *after staking*

Three shear and vein systems were located in the quarry in Puff-1. A thin western set which is deflected and thins out along the strike (this was first vein located and assays are given above); a central vein set is the largest and most complex. A third set is along the edge of the road and the quarry and is variably exposed, since maintenance road work covers it up and is freed by erosion during high water when the overflowing creek washes it clear, this is the eastern vein set.

		Ppb		ppm	
	Pd	Pt	Au	Ag	Cu
Western shear vein set					
B204420 crushed rock and comminuted country rock	32	4	5	.3	818
B204421 vein of quartz set in middle of zone	13	<2	13	.4	402
B204422 mineralized crushed rock	**118**	10	**107**	**23.9**	**45134**
B204423 shear zone large handspecimen of shear zone	**49**	4	**74**	**14.5**	**29462**
B-204438 malachite stained talus from western vein set	16	<2	9	1.1	**13217**

Central shear zone and vein set

The copper sample with the highest tenor of copper as yet sampled from the main showing is given below. It is an example of the Cu-Ag mineralization which is known from the general area and this sample was collected from the talus beneath the center shear zone:

B204437-cp2a

Cu	**6.06**	%;
Ag	**34.9**	ppm;
Au	**198**	ppb
Pd	**97**	ppb

It is highly likely that supergene enrichment has locally upped the tenor; copper oxides are present in the rock, as can be shown by scratching a droplet of HCl placed on the reddish covering of the sample with a nail (the nail becomes copper plated).

A chip sample some 2.2 m long was collected across a mineralized shear zone (the center vein)

Cu	**.95**	%;
Ag	**4.62**	ppm;
Au	20	ppb
Pd	46	ppb

It is the impression that parts of this particular chip sample was somewhat leached. But the prediction of which samples are "fresh" has not been very succesful yet. Analysis shows that this sample has very little sulphur present.

Other hand sized grab samples from within this shear zone ran up to (not all from same specimen)

Cu	**3.0**	%;
Ag	**18.7**	ppm;
Au	**295**	ppb
Pd	**72**	ppb

A polished slab of a talus piece below the main shear noted above shows a vein some 5 cm across of mainly chalcopyrite and minor epidote.

A brecciated felsic dyke cut by quartz and chalcopyrite veins within this zone returned

Cu	**2.25**	%;
Ag	**12.3**	ppm;
Au	**67**	ppb
Pd	23	ppb

A less veined felsic dyke gave (B204449-sz12d)

Cu	365 ppm	
Ag	.2	ppm;
Au	2	ppb
Pd	14	ppb.

Clearly the later chalcopyrite-quartz veining that cemented brecciated felsic dyke rock was main mineralization event. But not all crushed rock is unmineralized as is shown in contrasting pairs below. Compare B20441 and B20442, vs B20445 and B20446.

	Quartz vein		adjacent crush zone	
	B20441	-445	B20442	-446
Cu	**3962** ppm	290 ppm	494 ppm	971 ppm
Ag	2.7 ppm	<.3 ppm	.5 ppm	.3 ppm
Au	19 ppb	<2 ppb	7 ppb	12 ppb
Pd	26 ppb.	11 ppb	25 ppb	28 ppb

The dyke, on the other hand, is almost pure albite (see appendix **). This type of dyke is associated with magnetite alteration and metal enrichment in many types of ore deposits.

A sample of this magnetite rich alteration (mag sus 668 10-3 SI units) adjacent to the albitite is mineralized as below

Cu	**.87**	%;
Ag	**7.2**	ppm;
Au	**195**	ppb
Pd	15	ppb.

Magnetite and albite alteration is known is some large hydrothermal systems.

The eastern vein set

(B204486P-v-rd)

Cu	**.904**	%;
Ag	4.3	ppm;
Au	**106**	ppb
Pd	32	ppb.

These anomalous values contrast strongly with the basaltic country rock

B203383P- from north end of quarry

Cu	340 ppm	
Ag	.6	ppm;
Au	23	ppb
Pd	15	ppb.

And

B204450-pr13 a basalt from 60 m south of the quarry

Cu	350 ppm	
Ag	.2	ppm;
Au	9	ppb
Pd	20	ppb.

Pods of almost pure pyrite up to five centimetres across are found in the country rock some distance from a major shear but connected by a thin vein to a nearby tertiary fault zone.

Cu	13	ppm
Ag	.6	ppm;
Au	23	ppb
Pd	**51**	ppb.
Co	**454**	ppm (this is unusually high for these rocks)

Local propylite nearer and/or between the vein sets are also mineralized.

Cu	**.94** %	
Ag	**4.7**	ppm;
Au	9	ppb
Pd	27	ppb.

The extent of this mineralization is not known, and will become focus of continuing work.

Figure 6, Geological sketch map of quarry.

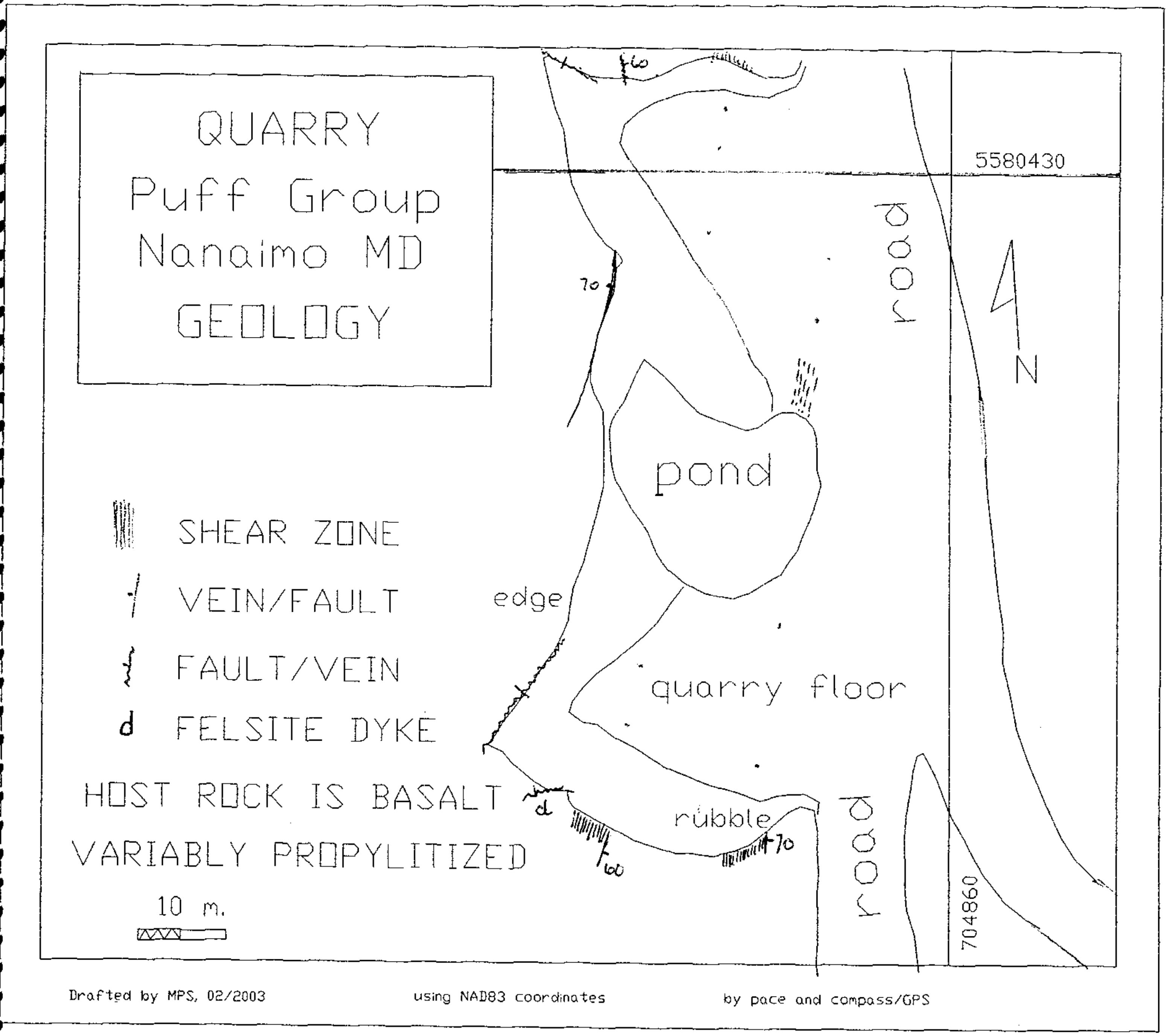
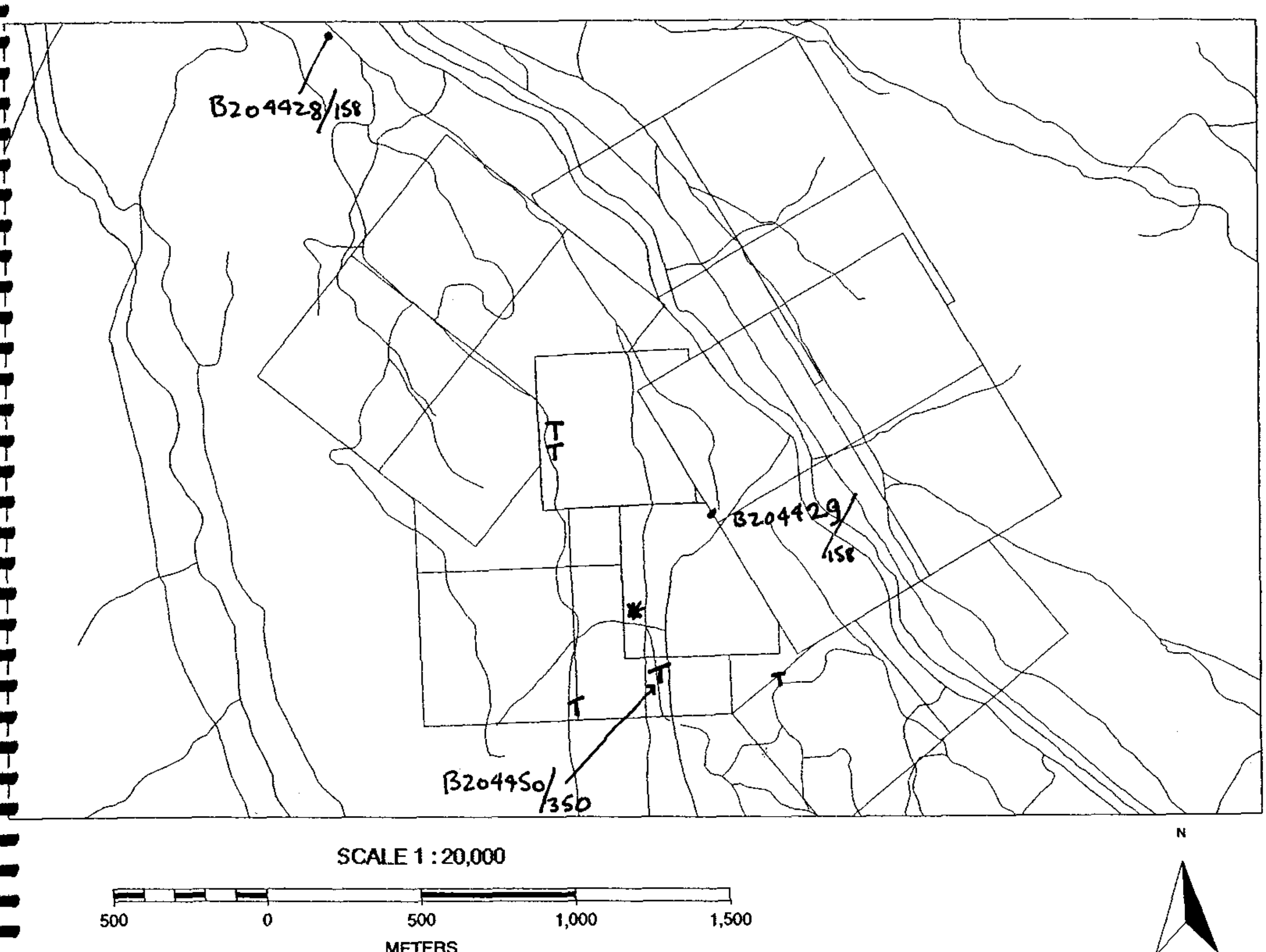


Figure 7. Sketch map of assay locations and copper values of Puff Claims. Also note thinsection locations.(T)



5.7/ Petrographic and petrochemical results

Microscopic examination of selected samples has been undertaking to confirm the composition of some rock types. The reports are given in Appendix D. Some whole rock major and are reported in Appendix E and complete chemical details are found in Appendix C.

Magnetic Epidosites

The importance of epidosite with magnetite as a host for mineralization is the most important conclusion of the work. Also the identification of the felsite as an albitite is considered important. Maybe the case can be made that these are distal skarn deposits. The mobility of iron as magnetite or pistacite and soda to form albitite suggest that very hot medium was active. Later sulphides were deposited in these well prepared sites.

Recrystallized limestones

The extensive recrystallization of the limestone in this claim group was a surprise. It suggests that perhaps factors which enhance recrystallization at distance from a pluton were at play. Differential movement along the limeston lenses, within the Karmutsen, could be focussing localized ductile flow resulting from possible lateral deformation of the sequence. Perhaps the gentle dip is not a sign of minimal deformation. Maybe bedding parallel movement is of import. Across the Adam river this suggestion has been made previously in limestones exposed in the southern part of the Kringle Group, to account for dikes folded with shallow dipping axial planes.

Supergene Copper in quarry

Some of the gossanous epidosites are earthy brown and this material will, if dissolved in cold hydrochloric acid, plate an iron nail with copper. Some of the copper in solution may be from malachite veins that clearly cut through the rock, but some is derived from the supergene copper oxides in the rock. The recognition that some leaching and concomitant enrichment has taken place, makes evaluation of the "primary"mineralized rocks below the water table a priority.

5.7.6 Copper and silver related

Copper and silver tenors in veins are correlated (Figure 8). This relationship was also noted at skarns of the Kringle Group.

5.7.7 Palladium is possibly mobile along with Ag, Co and As.

The possibility that Pd, Co and As are co-related is shown in Fig*. Should this be confirmed with more work it would imply that the Pd is moving in the mineralizing system along with Ag, Co, and As.

5.8/ Petrophysical results

Two types of physical parameters were measured on individual samples or meter sized locations: magnetic susceptibility and density. These two parameters provide ground truth to allow a more robust interpretation of regional and detailed geophysical surveys.

Magnetic susceptibility measures the response to a magnetic field and is thus a useful tool to help interpret aeromagnetic tools. Raw data is listed in Appendix B. The magnetic susceptibility of many basalt samples is about ten times those usually encountered for basalt. The elevated magnetite content may in part explain the regional aeromagnetic anomaly over the Karmutsen basalts in question.

The knowledge of the *density* of rock types makes interpretation and modelling of detailed gravimetric surveys possible. Raw data is listed in Appendix B. It is clear that alteration changes the density measurably. Epidosite are much denser than their protoliths.

5.9 / Interpretation and conclusion

5.9.1 classification of showing:

It could be a volcanic redbed copper deposit as the minfile occurrences in the group are currently classified. The proximity to oreskarn systems on the other hand suggests that they may be distal skarns. The mobility of iron oxide with copper mineralization suggests it may be a candidate for a version of the IOCG deposits. Clearly more work is required to make the decision.

5.9.2 Mineralization in shears, and hints for finding more

Since magnetite is associated with mineralized epidosite, a magnetic method seems the preferred means for locating potential sites.

5.9.3 Significance of magnetic basalts

The magnetic basalts are apparently more iron rich than normal tholeiite basalts (based mainly on their high magnetic susceptibility, and on a small sample of basalts/gabbro). No magnetite is noted in amygdales.

Whether the basalts are intrinsically iron rich in this part of the section, or the magnetite is part of a regional metasomatic event, the enhanced iron content has exploration consequences.

The upper Karmutsen may be exceedingly well differentiated along a tholeiitic trend. Hence this iron (and associated Ti, V and Mn) enrichment should have regional and stratigraphic expression. Currently, very few systematic lithochemical studies have been conducted on the stratigraphy of the Karmutsen Formation. It is not known whether the Karmutsen Formation is chemically zoned, through time and space.

Alternately, if the magnetite is metasomatic, then the possibility of iron oxide-copper deposits should be considered. The La and P contents of the magnetite are not elevated, hence at least one of the subclasses of metasomatic iron deposits is not applicable. The hematite bearing variety of iron oxide-copper-gold-deposit type is thus ruled out, but more reduced varieties are still possible candidates. Since a large area is underlain by rocks with silicate and sulphide filled amygdales and veins, as well as containing enhanced magnetite in the groundmass the conclusion that large scale metasomatism of some type is known to have occurred.

Currently, both models are being investigated. The hypothetical Adam River Batholith granodiorite "sill" which may possibly have overlain the area west of the river, may have been an important factor in the localization of the fluids. Detailed petrology may establish that the rocks nearest the "overlying" sill were inundated with hotter fluids than those deeper and further away from the heated body. Many new observations before these speculations can be put on a factual basis.

Figure 8, Detail map of quarry showing locations of assays and associated copper values.

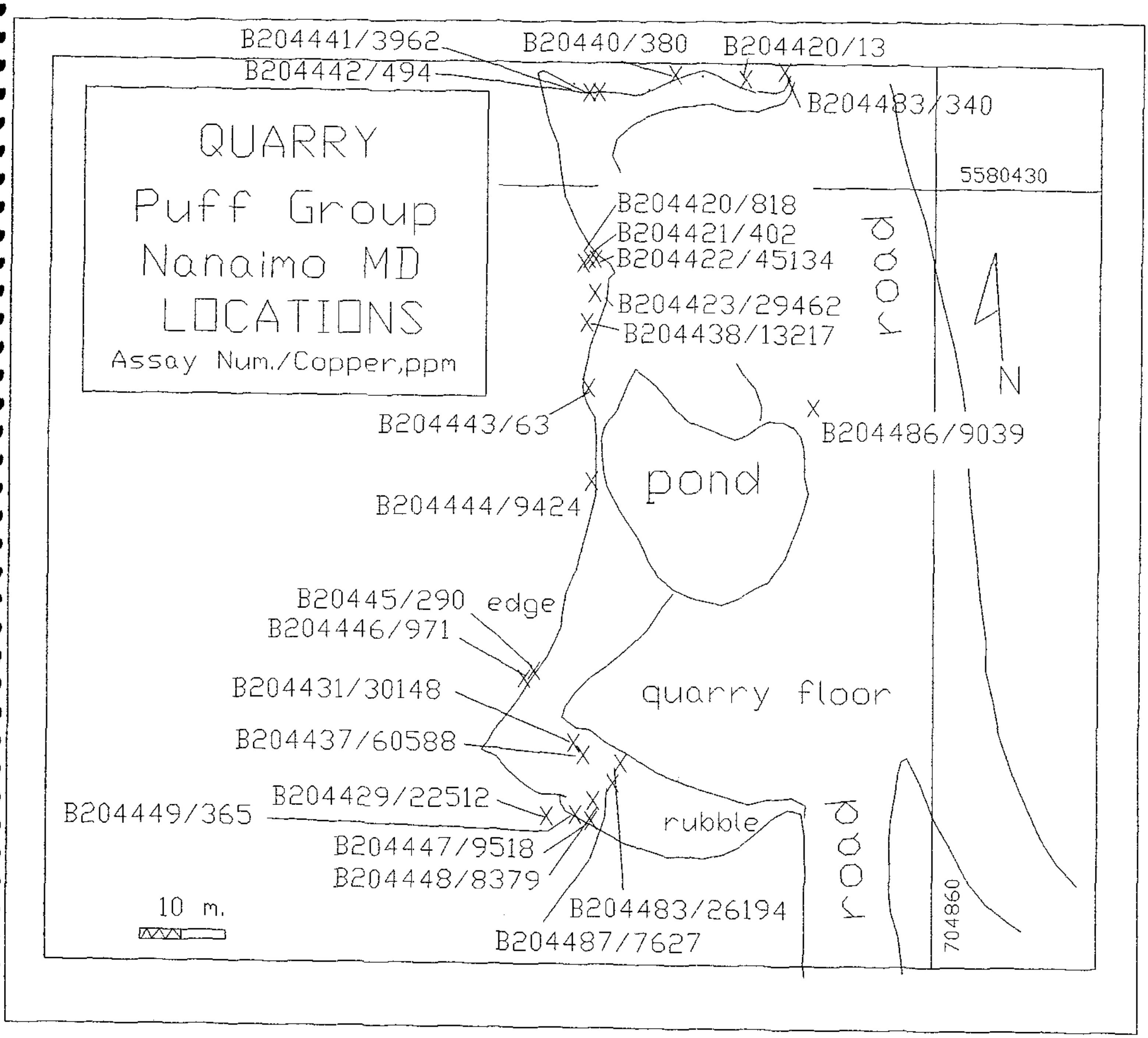
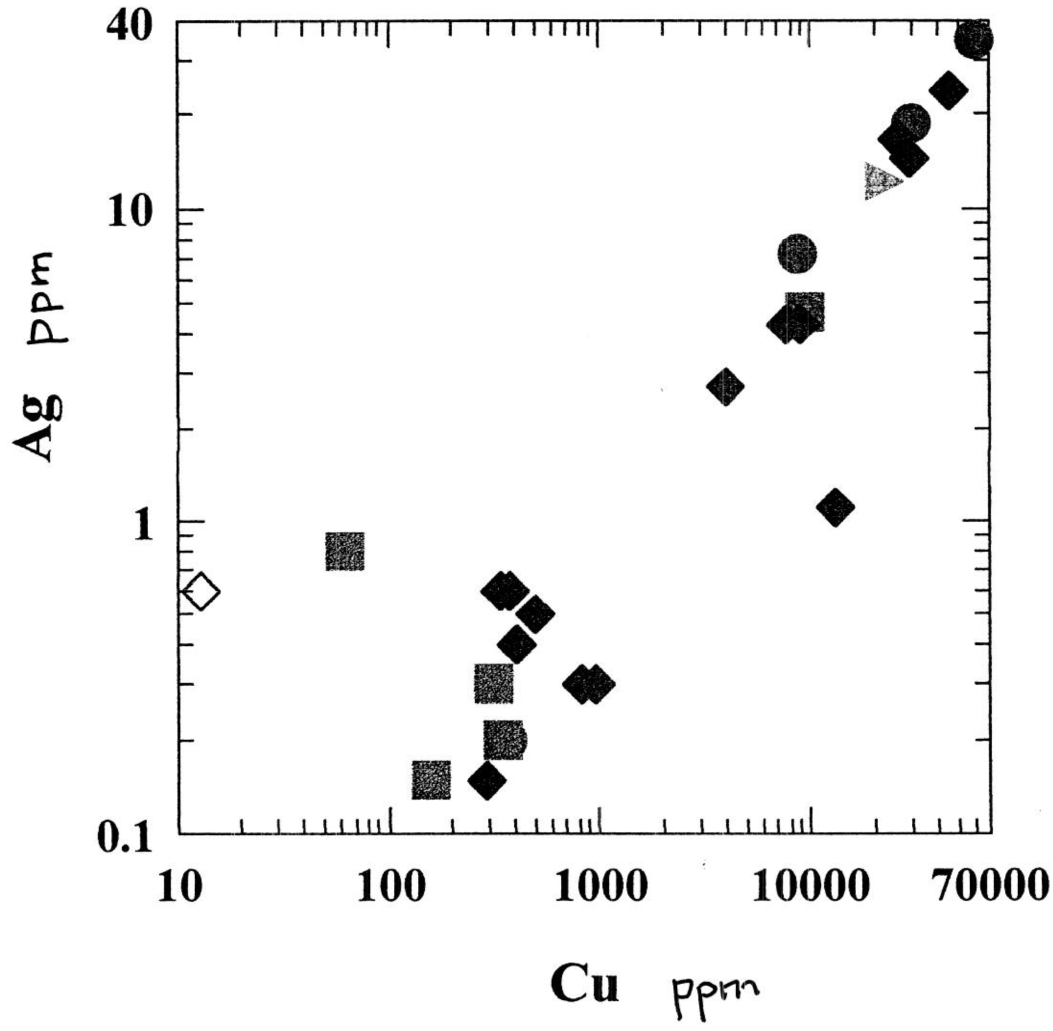


Figure 9. Copper vs Silver in lithogeochemical samples.



5.9.4 Conclusions

The Puff Group is located adjacent to the northwest striking contact of the Adam River Batholith, and is located on outcrops of the hosting upper Karmutsen Formation. The new mineral zone, is located in a north-northeast striking, and steeply dipping high strain zone system consisting of at least three shear zones and auxiliary veins. The mineralization is best developed in magnetite epidosites and brecciated felsites.

Mineralization is irregularly distributed, and values up to 6% Copper have been attained from selected samples. A chip sample across the central vein yielded .9% copper over 2.2 metres. The shear zones may continue along strike for many tens of metres.

Some veins have more Pd, Au and Ag than others, but this distribution is not yet understood.

6.0 FUTURE WORK

Future work should focus on establishing the areal extent of the various types of mineralized zones and their individual mineralization. There are various ore deposit models that might be fitted to this and nearby showings. Evaluation of these models will require careful collection and analysis of more data.

To find the extent the magnetic phases (magnetite, pyrrhotite) of the shear zones a magnetic survey is clearly indicated. To find the extent of conductive portions (sulphide concentrations) of the shear zones, one of several types of survey can be contemplated; the size of the exploration commitment would seem to dictate the method. Both these surveys can be done off the same grid, which should include at least 250 m. on either side of the contact as currently located.

Interpretations of the surveys will be fraught with errors. The presence of the many roads with their infill of materials trucked in from unknown sources will pose a problem. The Adam River valley and adjacent parallel valleys with the deep (glacio)- fluvial fill will shield anomalies located along the fault traces in the valley bottoms. Nevertheless if enough surface anomalies along the valley sides are successfully tested, then deeper exploration will be easier to justify.

A possible exploration scenario is given on the following page. Many others can be proposed, the main determinant is the amount of money available for further work. What is certain is that this program will need funding from a partner, or someone taking an option on the property.

A POSSIBLE EXPLORATION SCENARIO

1/ A program which could rapidly fulfill the needs outlined above, is to run a small helicopter survey (about 10km by 10km) measuring the magnetic and electromagnetic parameters simultaneously. This would focus the search.

ESTIMATED COST ; $25,000 (recent, but unofficial quote, subject to usual limitations)

2/ After the airborne survey, more staking, a more accurate GPS survey of claim posts as well as positioning, prospecting and collecting the newly located (see above) near-surface geophysical targets would be appropriate. (Using a BeepMat to help locate thinly covered magnetic and/or sulphide mineralization would be useful)

ESTIMATED COST: $10,000

3/ Petrographic analysis and detailed mapping of all rock types near the shear zones may establish the locations of hydrothermal ore bearing channels and the nature of the mineralizing fluids, and, possibly, estimate their extent.

More litho-geochemistry and systematic assaying of new and old showings on the property will help decide as to which type of mineralizing fluid the nearby pluton might have generated.

Both methods will result in vectoring towards most mineralized area.

ESTIMATED COST: $15,000

At the end of this phase of the scenario, several target regions, of coincident geological, lithogeochemical and geophysical anomalies, will probably have been established. At this point there should be enough information to decide on the feasibility and design of a drill campaign.

The quarry area could be drilled earlier in the exploration campaign than indicated; two sites with a multiple holes drilled in a fan pattern from each site would indicate extent the unweathered distribution of copper and associated metals in this shear system. But more exploration work may yield more targets; The presence of 2 other minfile showings in the claim group suggest that mineralization may be widespread. Hence drilling is best postponed until after geophysical, geological and geochemical methods have been evaluated.

7.0 REFERENCES

Anon, 1918
Lucky Jim; BC Minister of Mines Report, p.K270.

Carlisle, D., 1972
Late Paleozoic to mid Triassic sedimentary-volcanic sequence of northeastern Vancouver Island; in Report of Activities, Nov-March 1972, GSC Paper 72-1B, pg 22-29.

Carson, D.J.T., 1973
Petrography, chemistry, age and emplacement of plutonic rocks of Vancouver Island GSC paper 72-44.

Carson, D.J.T., Muller, J.E., Wanless, R.H. and Stevens, R.D. 1972
Age of contact metasomatic copper and iron deposits, Vancouver and Texada Islands, BC; Geological Survey of Canada, Paper 71-36.

Cho, Moonsup, Liou, J.G., and Maruyama, 1986
Transition from the zeolite to Prehnite Pumpellyite Facies in the Karmutsen Metabasites, Vancouver Island, BC; Journal of Petrology, vol 27, pp. 467-494.

Eastwood, G.E.P., 1965
Replacement magnetite on Vancouver Island, BC; Economic Geology, vol 60, p. 124-148.

Holmes, Arthur, 1921
Petrographic Methods and Calculations, Thomas Murby and Sons, London, 515 pg.

Kuniyoshi, S. and Liou, J.G., 1976a
Contact metamorphism of the Karmutsen volcanics, Vancouver Island, BC; J. Petrology, vol 17, pp. 73-99.

Kuniyoshi, S. and Liou, J.G., 1976b
Burial metamorphism of the Karmutsen volcanics, northeastern Vancouver Island, BC; Am J. Sci. vol 276, pp. 1096-1119.

Kwak, T.A.P., 1994,
Hydrothermal Alteration in Carbonate- Replacement Deposits: Ore Skarns and Distal Equivalents *in* Lentz, D.R., ed, Alteration and Alteration Processes associated with Ore-forming systems: Geological Association of Canada, Short Course Notes, V11, p. 381-402.

Massey, N.W.D., 1994
Geological compilation, Vancouver Island, British Columbia (NTS 92B, C, E, F, G, K, L, 102I); BC Ministry of Energy, Mines and Petroleum Tesources, Open File 1994-6, 5 digital files, 1:250 000 scale.

Muller, J.E., Northcote, K.E., and Carlisle, D., 1974
Geology and Mineral Deposits of Alert-Cape Scott Map Area, Vancouver Island, British Columbia; Geological Survey of Canada, Paper 74-8, 77pg and map 4-1974.

Northcote K.E., and Muller J.E. 1972
Volcanism, Plutonism, and mineralization on Vancouver Island: Bull Can Inst Mining and Metallurgy, Oct 1972, p. 49-57.

Peters, LJ, 1988
Report on Geological, Geochemical, and Geophysical Survey on Adam Claims Property; BC Dept. Mines; AR18255.

Sangster, D.F., 1969
The contact metasomatic magnetite deposits of southwestern British Columbia; GSC Bulletin 172, 85pg.

Schau, Mikkel, (unpublished)
Report on PAP grant 95-2000, submitted to BC dept of Energy and Mines

-do- Report on PAP grant 91-2001, submitted to BC dept of Energy and Mines

-do- Report on Kringle, assessment report AR -new-, BC Dept of Energy and Mines, ** pages.

Sharp, W.M., 1969
Geological Report on the Boyes Copper Prospect located near the Adam River, Sayward Area, BC, in Nanaimo M.D.; BC Dept of Mines, AR1993.

Sheppard and Associates, 1972
Geological Report on the Billy Claims Group, Sayward Area, Nanaimo MD, Vancouver Island BC; BC Dept of Mines, AR3795.

Surdam, RC, 1973
Low grade metamorphism of tuffaceous rocks of the Karmutsen Group, Vancouver Island, BC; Bull. Geol. Soc. Am. Vol 84, 1911-1922.

8.0 AUTHOUR'S QUALIFICATIONS

I have been a rock hound, prospector and geologist for over 40 years. My mineral exploration experience has been with Shell, Texas Gulf Sulfur, Kennco, Geophoto, Cogema and, several mining juniors. I have worked 10 years in southern BC and spent 23 years with the GSC as a field officer focused on mapping in northeastern Arctic Canada. For the last 8 years I have prospected and explored for PGEs in Nunavut, Nunavik and BC.

I reside at 1007 Barkway Terrace, Brentwood Bay, BC, V8M 1A4

I am currently a BC Free Miner, # 142134, paid up until August 31, 2003.

During 2000 and 2001, I received Prospector's Assistance Program (PAP) grants to prospect on Vancouver Island. In 2002 I received YMIP grant to prospect in the Yukon.

My formal education is that of a geologist, I graduated with an honours BSc in 1964 and PhD in Geology in 1969, both, from UBC.

I am a P.Geol. licensed (L895) in Nunavut and NT, and a P.Geo. (25977) in BC.
I am sole owner of the claims in question.

I have affixed my stamp to this document on the table of content and on my statement of qualifications.

9.0 ITEMIZED COST STATEMENT

Wages:
prospecting 1 AT+1 PGeo(Oct 20 2001) showing recognised, not billed

staking and sampling logging road and up back with 1AT+1Pgeo. (Nov 17, 2001)
sampled group, 1/2V and 1/2Pgeo. (Nov 27, 2001)

June 13-14 visit (some data collected while mapping on adjacent Kringle Group(not billed here)

Geology and sampling trip, 1 AT + 1 Pgeo. (Oct 18, 20,2002)

Mikkel Schau P. Geo.		
3 1/2 days x 400	1400	
Alec Tebbutt, contract helper(AT)		
3 days x 100	300	
also one volunteers 1 x ½ no wages(V)		
TOTAL Wages		*$1700*

Food and Accommodation:	
6 persondays, @$60. Total Food and accommodation	*$ 360*

Transportation:
From Brentwood Bay to claims, and local transportation
2 return trips, (+ 2 trips not charged for)
2000@.38/km+2 Mill Bay ferry trips *$787.*

Analyses:

Chemistry			
20 prepare rocks $20@ 4.50		90.00	
20 Geo4 (ICP-ES of AR dissolved elements + PGE (Pt, Pd, Au) FA with ICP-ES finish 20@16.65+		333.00	
6 -4Aand B (whole rock majors and minors)(@31.50)		189.00	
Diskettes 3 @1.50		4.50	
Freight		30.00	
Total		646.50	
GST	$45.26		
TOTAL:			*$691.76*

Thin section preparation

Vancouver Petrographics		
13 thin sections@14	$182.00	
Offcuts and polished slabs@.75	$ 9.75	
Shipping	$ 20.00	
Total	$ 211.75	
Total with GST @ 7%		*$ 226.57*
Petrographic reports 13@$110/thinsection /inc GST		*$1430*
Petrophysics:		
18 Magnetic susceptibility measurements@$5/station /inc GST		*$ 90*
Density determinations @$5/sample /inc GST		*$ 10*
Map preparation and digitizing (2 ½ hrs@40/hr)		*$ 100*
Photocopies of maps, assesment reports, staking maps		*$ 20*
Staking fees, grouping fees,		*$ 110*
Exploration supplies, sample bags, hip chain coils claim tags		*$ 35*
Data-basing, Plotting, and Drafting(5 hrs @40/hr)		*$ 200*
Report preparation(10hrs@$50)		*$ 500*
Copies, binding 3 copies,		*$ 15*
Telephone (portion of Sat phone rental)		*$ 24.67*
Total project cost		**$ 6300.00**

10.0 APPENDICES

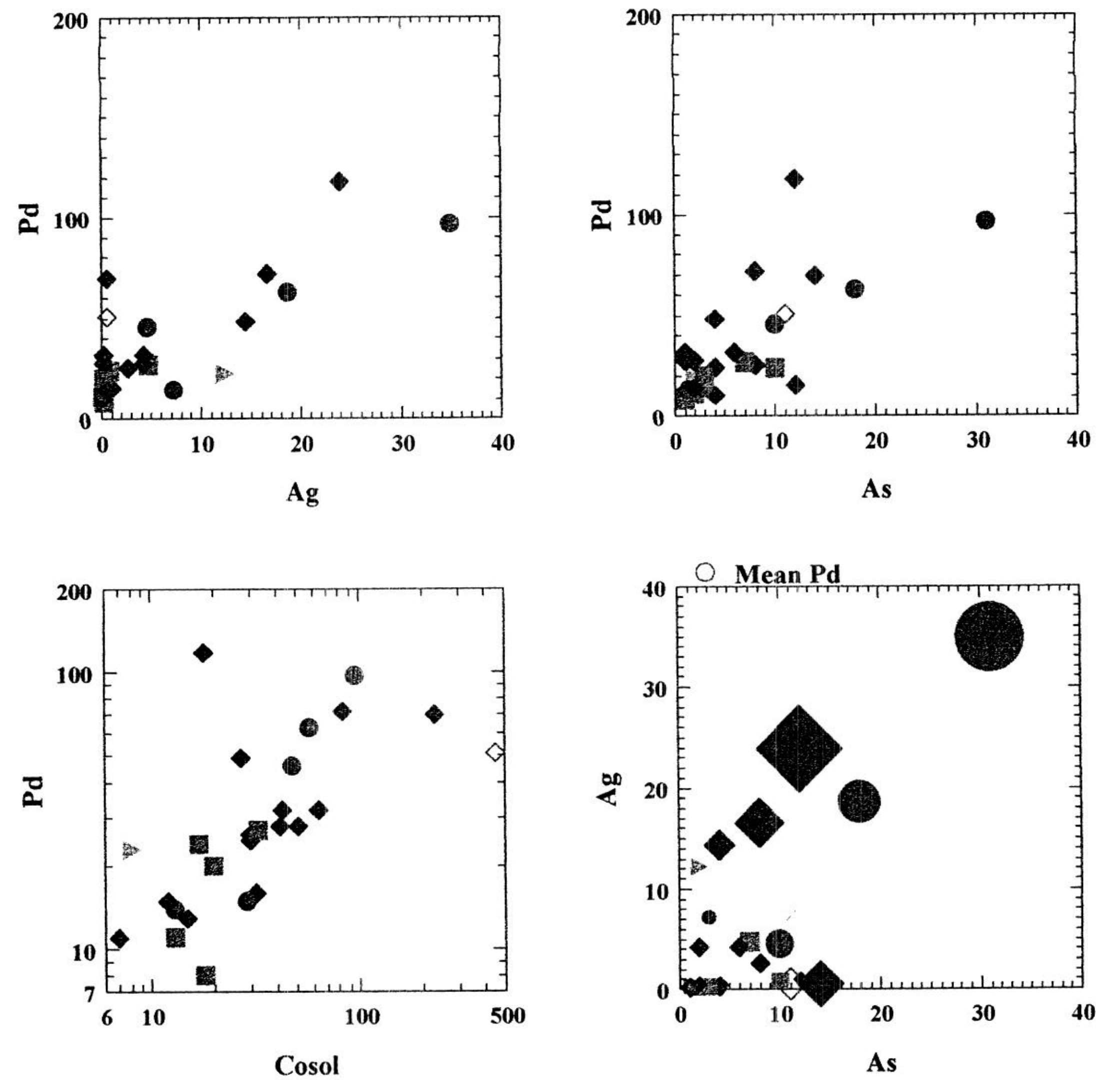
10.1 Appendix A Rock Descriptions of analysed samples, with Pd, Pt, Au, Ag, Cu tabulated

STATION kind, type, description	all in zone 9 UTME	UTMN	ppb PD	PT	ppm AU	AG	CU
before staking							
A103803 Nov 07, 2001							
B204420 vw	704820	5580410	32	4	5	.3	818
B204421 vq	704820	5580410	13	<2	13	.4	402
B204422 vce	704820	5580410	**118**	10	**107**	**23.9**	**45134**
B204423 v-strike	704820	5580405	**49**	4	**74**	**14.5**	**29462**
B204424 262 porph diabase sill	705011	5580687	8	1	4	.3	313
B204428WR 252/q3/d	704014	5582374	11	7	4	<.3	158
After staking							
A200497 March 05, 2002							
B204429 felsite breccia with quartz cement and prominent chalcopyrite and copper alteration	704840	5580360	23	4	**67**	**12.3**	**22512**
B204431 CP2 dense black copper stained gossanous epidosite w/ chrysocolla and malachite.	704841	5580358	**63**	3	**78**	**18.7**	**30148**

B204437 CP2A 10x4x4cm black and red copper stained fragment of gossanous epidosite	704842	5580357	**97**	15	**198**	**34.9**	**60588**
A204804, Nov 2002 B204438 Crush zone in western vein set, along strike from initial find in quarry.	704820	5580406	16	1	9	1.1	**13217**
B204439 from a 5 cm pyrite nodule in propylite, in quarry	704836	5580440	**51**	10	23	.6	13
B204440 pr06	704832	5580439	**70**	4	23	.6	380
B204441 pr-07a	704815	5580429	26	1	19	2.7	3962
B204442 pr07b	704815	5580429	25	5	7	.5	494
B204443 pr08	704825	5580407	24	1	11	.8	63
B204444 pr09	704820	5580388	27	2	9	**4.7**	**9424**
B204445 pr11a	704805	5580368	11	2	1	.15	290
B204446 pr011b	704805	5580368	28	1	12	.3	971
B204447 (SW start->NE) pr-12sz-chip 2.2 m	704839	5580356	**46**	5	20	**4.6**	**9518**
B204448	704840	5580356	15	1	**159**	**7.2**	**8739**

pr12sz-mag								
B204449	704840	5580356	14	1	2	.2	365	
pr12szz-dyke								
B204450	704867	5580297	20	1	9	.2	350	
pr13prop								
A203473, Aug 30, 2002								
B204482-P-cp2 ;	704842	5580357	**72**,	7,	**295**,	**16.6,**	**26194**	
B204483-P-quarry-basalt	704842	5580440	15,	12,	23,	.6,	340	
B204486-P-vein-road:	704847	5580400	32,	3,	**106**,	**4.3,**	**9039**	
B204487-P-dyke-cp:	704839	5580356	28,	6,	4,	**4.3,**	**7627**	

Fig. A-1. Showing Covariation of Pd with Ag, As and Co. Summary figure shows Ag vs As, and a value of Pd which also increases.



10.2 Appendix B, Petrophysics

10.2.1 Magnetic Susceptibilities of selected rocks and outcrops

Introduction

The magnetic susceptibility of a rock is a volume percent average of the magnetic susceptibility of its constituent minerals. The magnetic susceptibility of a mineral is a measure of how it responds to a magnetic field. The common rock-forming minerals are generally not particularly responsive. Minerals such as quartz and feldspar show dia-magnetic magnetism with negligible, negative, magnetic susceptibilities that do not contribute appreciably to the rock magnetism. Para-magnetic minerals such as olivine, pyroxene, amphibole, biotite and garnet, with weak, positive magnetic susceptibilities contribute a minor amount to rock magnetism. Finally, ferri-magnetic minerals such as magnetite and pyrrhotite show moderate to high complex magnetic susceptibilities and contribute largely to the overall rock magnetism. Consequently, magnetic susceptibility can be regarded as a crude measure of the volume of magnetite, and in certain special, usually self-evident, cases, pyrrhotite, in the rock.

Instrumentation:

All measurements were performed using a KT-9 magnetic susceptibility meter (manufactured by Exploranium Radiation Detection Systems). This instrument is capable of measuring magnetic susceptibilities in the range 0.01 x 10^3 to 999 x 10^3 (dimensionless SI units), which is adequate for all situations except those involving massive magnetite layers or masses. The unit was operated in "pin" mode to minimize errors introduced due to surface irregularities (Exploranium Radiation Detection Systems, KT-9 User's Guide).

<u>Magnetic Susceptibility of sampled locations</u>

	UTME	UTMN	{n/s*}	max	med	min
WP187, shear zone	704839	5580356	12/4	91.3	58	42.4
Quarry, approximate	704830	5580400	24/9	668	30.7	0.96
quartz veins are low, rest are elevated						
highest value from magnetite epidosite						
WP211 limestone	704380	5581243	3/1	-.15	-.18	-.19
WP213, pillows	704520	5581070	3/1	7.56	7.29	7.19
hyaloclastite	-do-	-do-	7/1	41.4	21.2	1.88
massive basalt	-do-	-do-	7/1	22.7	8.61	2.62
FP Puff-1 limestone	704840	5580800	3/1	+.08	-.08	-.17
			59/18			

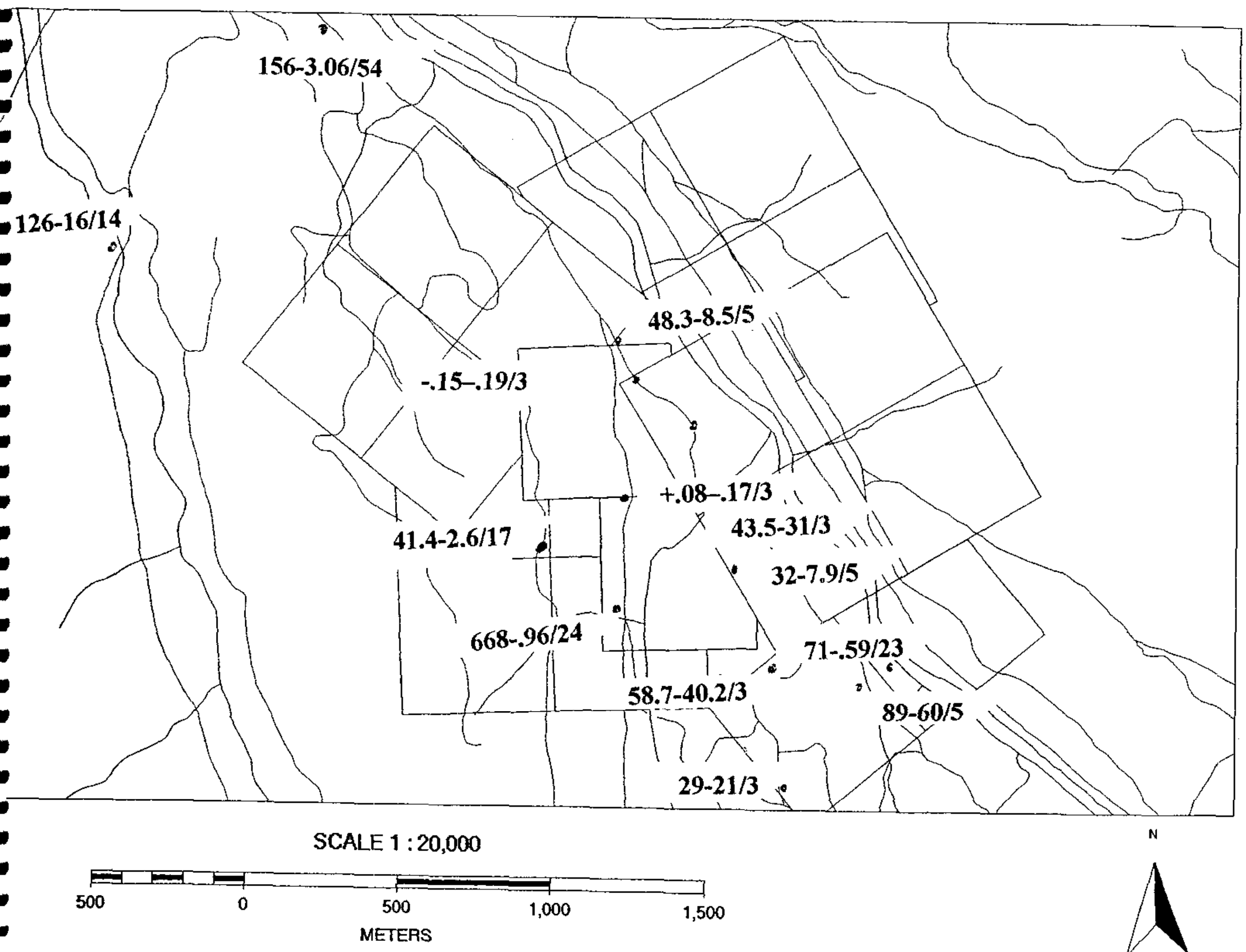
NB, locations on map include these new determinations, and also some reported previously.
* n=determinations (3 within a meter of each other), s=sites are more than a meter apart.
Comments

Comparing the MS readings from the basaltic rocks (propylites) in this region with those of Karmutsen Formation elsewhere in the region, the distinctly magnetic character of these altered rocks is apparent. In a previous study (Schau, 2001), the great majority (75+%) of Karmutsen basalts returned magnetic susceptibilities of less than 2, with only 7/45 widely scattered sites returning values higher than 10.

Rocks can become more magnetic by alteration of less magnetic ilmenite to magnetite. For example, some sub-aerially weathered, oxidised, basalts have higher magnetic susceptibilities. Liou and Kunyoshi have shown that in the Karmutsen Basalts, under lowest grade regional metamorphism, small grains of pure and very magnetic magnetite is formed from much less susceptible titaniferous iron ores, thus magnetic susceptibility presumably has been increased as a result. This would be a regional effect, and as site specific as reported here. The test as to whether more magnetite has been added to rocks must include positive answers to two questions: is the magnetic susceptibility greater and does the rock contain more iron than other Karmutsen basalts? The answer to both questions is clearly affirmative as shown in the appendices provided.

Fig. B-1. Sketch map of the values of magnetic susceptibilities on Puff Claims

Puff Group, Magnetic Susceptibility



10.2.2 Density determinations of selected samples

The densities of different rock types are important variables in gravimetric investigations. Skarns, magnetite deposits and basic rocks are well known as units with higher densities than the normal granodioritic rocks of the crust. Thus their geometry can be modeled by very detailed gravimetric surveys.

The data is of use as a check as to whether the rock has been infused with dense minerals such as magnetite or chalcopyrite.

Method of determining density.

A method outlined with great clarity in Holmes (1920, p.32-33) called the "Walker Steelyard Balance" method has been used. It depends on the principle of a lever, an object of a given weight and a fixed distance from the fulcrum is used to compare to the relative distances on the other side of the fulcrum, of an object weighed in air vs the same object weighed in water.

The relation is
Specific gravity = weight in air/
weight of displaced water of same object

translated into distances on a lever:

= distance from fulcrum of rock weighed in water/
(difference in distance from same fulcrum between weighed in air and in water)

Results

The use of an old method raises the question of sensitivity, accuracy, and precision

Sensitivity:
Distance (in this report) is measured to nearest ½ mm.

Accuracy
Quartz crystal fragment (mean= 2.64) vs 2.65 (reference)

Precision
Repeat measurements +/- .02

Data:

sample	rock	Utme	Utmn	SG
Basic rocks (mainly Karmutsen Formation)				
Puf2	Veined amygdaloidal propylite			2.82
Epidosite				
Chalcopyrite bearing epidosite, Quarry				3.41

Remarks:

Standard SG for Karmutsen Basalts are about 2.81-3.00. Propylites are about 2.8-2.9 or so reflecting metamorphism, hydration, and local influx of quartz, alkali feldspar veins and the like. Epidosites are 3.4 or so, indicating major addition of materials, including the observed influx of magnetite as well as sulphides in veins.

10.3 Appendix C Certificates of Analysis

(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A200497
1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
SI	<1	<1	<3	1	<.3	1	<1	2	.03	<2	<8	<2	<2	2	<.2	<3	<3	<1	.08	<.001	<1	2	<.01	2	<.01	<3	.01	.42	.01	<2	<2	<2	<2
B 204429	3	22512	<3	55	12.3	19	8	295	4.02	2	<8	<2	<2	6	3.3	<3	4	67	.13	.003	<1	25	.75	6	.09	3	.82	.02	.02	5	67	4	23
B 204430	2	116	3	31	<.3	6	12	422	3.23	3	<8	<2	<2	167	.2	<3	<3	88	1.78	.072	4	9	.69	121	.11	<3	2.77	.34	.17	<2	<2	<2	<2
B 204431	4	30148	4	91	18.7	212	58	536	25.23	18	<8	<2	<2	54	2.6	<3	26	250	.52	.012	1	132	.51	5	.14	<3	1.14	.01	.01	4	78	3	63
B 204432	6	76	<3	7	.3	13	6	100	1.40	3	<8	<2	<2	229	.2	<3	<3	33	1.60	.133	8	13	.11	66	.12	<3	1.87	.28	.03	2	2	3	2
B 204433	3	68	3	4	<.3	17	8	45	1.69	3	<8	<2	<2	460	<.2	<3	3	22	2.23	.063	6	16	.03	85	.11	4	2.85	.35	.03	3	<2	<2	3
B 204434	3	111	5	25	<.3	9	17	392	3.34	<2	<8	<2	<2	97	.2	<3	<3	99	1.36	.060	4	11	.80	153	.17	5	2.20	.23	.20	3	<2	<2	2
B 204435	2	22	24	32	<.3	3	1	361	.71	<2	<8	<2	7	14	.3	<3	<3	3	.19	.009	8	8	.08	57	.03	<3	.49	.05	.14	2	2	<2	<2
B 204436	15	172	<3	16	<.3	7	27	160	3.26	<2	<8	<2	<2	149	<.2	<3	3	90	.62	.043	4	18	.59	82	.21	5	.97	.10	.31	3	4	5	3
B 204437	8	60588	<3	97	34.9	167	96	443	19.18	31	<8	<2	<2	50	2.7	<3	33	221	.58	.009	1	124	.55	5	.17	<3	1.20	<.01	.01	7	198	15	97
STANDARD DS3/FA-10R	11	130	30	136	.3	33	12	740	2.90	29	9	<2	4	29	5.4	6	7	70	.51	.085	16	166	.53	169	.08	4	1.59	.04	.15	5	479	486	488

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK R150 60C AU** PT** PD** GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)

DATE RECEIVED: FEB 26 2002 DATE REPORT MAILED: March 5/02 SIGNED BY C. ....D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

REVISED COPY for cd

3 Puff

P=Puff

KRINGLE + PUFF

176

Data ✓ FA ___

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A103803 Page 1

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm
SI	<1	1	<3	1	<.3	1	<1	5	.04	<2	<8	<2	<2	2
B 204415	1	191	<3	209	.4	27	36	3850	13.66	20	<8	<2	<2	1
B 204416	3	454	<3	192	.8	55	57	3708	14.89	33	<8	<2	<2	2
B 204417	141	1956	55	479	4.3	24	183	1097	23.25	76	<8	<2	<2	26
B 204418	101	3801	62	5566	9.5	32	221	1044	25.45	59	<8	<2	<2	18
B 204419	2	80	4	39	<.3	22	14	357	2.47	<2	<8	<2	<2	61
B 204420	<1	818	4	113	.3	74	43	1226	7.03	<2	<8	<2	<2	28
RE B 204420	<1	831	3	113	.3	77	44	1249	7.18	<2	<8	<2	<2	28
B 204421	3	402	<3	48	.4	26	15	455	2.91	<2	<8	<2	<2	7
B 204422	5	45134	<3	119	23.9	43	18	636	7.78	12	<8	<2	<2	5
B 204423	3	29462	<3	144	14.5	50	27	813	7.21	4	<8	<2	<2	13
B 204424	1	313	<3	37	.3	30	18	343	3.73	<2	<8	<2	<2	66
B 204425	<1	129	<3	58	<.3	496	64	1089	7.34	17	<8	<2	<2	32
B 204426	2	73	<3	28	<.3	301	38	614	3.36	3	<8	<2	<2	27
B 204427	1	124	<3	40	<.3	559	60	860	5.32	8	<8	<2	<2	67
B 204428	2	158	5	24	<.3	30	13	259	3.05	2	<8	<2	<2	72
STANDARD DS3/FA-10R	11	128	33	160	<.3	35	12	822	3.23	30	9	<2	4	27

SAMPLE#	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
SI	<.2	<3	<3	<1	.08	<.001	<1	2	<.01	2	<.01	<3	.01	.39	<.01	<2	<2	<2	<2
B 204415	2.1	<3	<3	484	.32	.099	6	13	3.16	9	.15	<3	5.84	.01	.01	<2	6	5	20
B 204416	1.9	<3	<3	475	.34	.101	8	43	2.97	40	.16	<3	5.63	.01	.01	2	7	4	24
B 204417	6.1	<3	<3	100	.33	.011	2	6	.85	15	.02	<3	2.26	.01	.02	6	407	<2	<2
B 204418	62.3	<3	<3	108	.21	.005	2	3	.79	9	.02	<3	2.04	.01	.02	9	82	<2	<2
B 204419	<.2	<3	<3	116	1.85	.068	3	20	.82	42	.15	4	2.04	.34	.10	2	6	<2	14
B 204420	1.4	<3	<3	272	1.24	.072	4	118	3.18	6	.49	<3	3.53	.03	.02	2	5	4	32
RE B 204420	1.3	<3	<3	275	1.26	.071	3	118	3.25	6	.49	<3	3.60	.03	.02	2	6	5	32
B 204421	.2	<3	<3	112	.34	.030	1	52	1.16	5	.24	<3	1.15	.03	.01	2	5	<2	13
B 204422	2.1	<3	<3	211	.27	.014	1	48	1.77	2	.18	<3	1.72	.03	.01	<2	107	10	118
B 204423	1.7	<3	<3	239	.44	.028	2	54	2.16	8	.30	<3	2.30	.03	.03	<2	74	4	49
B 204424	.2	<3	<3	185	1.83	.092	5	23	1.07	11	.19	<3	2.37	.35	.05	3	4	<2	8
B 204425	1.1	<3	4	154	3.55	.019	1	1163	9.36	3	.21	16	6.75	.01	<.01	3	5	10	9
B 204426	<.2	<3	<3	59	2.66	.016	1	551	4.97	3	.10	11	2.58	.02	<.01	<2	6	8	8
B 204427	.8	<3	<3	114	4.45	.019	1	1158	5.76	8	.15	7	6.22	.38	.04	2	<2	4	8
B 204428	<.2	<3	<3	143	1.43	.061	3	43	.81	7	.16	4	1.54	.24	.04	<2	4	7	11
STANDARD DS3/FA-10R	5.9	5	6	80	.55	.097	18	185	.61	147	.09	3	1.78	.04	.17	4	485	482	474

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: P1 ROCK P2 ROCK PULP AU** PT** PD** GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)
<u>Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.</u>

DATE RECEIVED: OCT 26 2001 DATE REPORT MAILED: Nov 7/01 SIGNED BY: C. Leong ...D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A203473
1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm
SI	<1	13	4	3	<.3	<1	<1	6	.04	3	<8	<2	<2	3	<.5	<3
B 204477	<1	141	3	24	.5	20	31	1344	4.92	16	<8	<2	<2	359	<.5	<3
B 204479	6	8546	87	160	8.4	137	173	1570	15.08	58	<8	<2	<2	6	2.4	<3
B 204480	7	7829	11	106	7.1	211	141	1587	15.26	65	<8	<2	<2	4	1.5	<3
B 204481	9	8280	46	149	6.7	174	105	1574	14.50	71	<8	<2	2	4	2.7	<3
B 204482	<1	26194	5	139	16.6	66	84	706	5.79	8	<8	<2	<2	60	.8	<3
B 204483	1	340	3	19	.6	45	12	143	1.64	2	<8	<2	<2	136	<.5	<3
B 204484	<1	226	4	55	<.3	30	18	941	3.91	<2	<8	<2	<2	139	<.5	<3
B 204485	1	54	6	83	<.3	5	14	841	2.79	2	<8	<2	2	648	<.5	<3
RE B 204485	1	55	4	83	.3	5	14	851	2.83	4	<8	<2	2	661	<.5	<3
B 204486	<1	9039	72	78	4.3	173	64	786	4.91	6	<8	<2	<2	71	1.1	4
B 204487	1	7627	24	89	4.3	55	51	489	3.74	2	<8	<2	<2	38	<.5	<3
STANDARD DS4/FA-10R	7	134	33	147	<.3	34	13	807	3.03	20	<8	<2	2	27	5.2	5

SAMPLE#	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
SI	3	<1	.15	<.001	<1	4	<.01	7	<.01	<3	<.01	.63	.01	<2	5	<2	<2
B 204477	<3	70	7.75	.074	4	20	.17	45	.15	8	5.95	.26	.04	<2	39	4	5
B 204479	<3	249	9.96	.009	2	36	.03	6	.08	4	1.78	.01	<.01	3	112	<2	13
B 204480	<3	279	10.37	.019	3	30	.04	7	.09	<3	1.82	.01	<.01	2	9	<2	5
B 204481	<3	265	10.66	.100	8	47	.08	11	.09	<3	1.79	.01	<.01	4	27	3	7
B 204482	7	160	1.35	.059	1	40	.72	4	.37	4	1.64	<.01	<.01	5	295	7	72
B 204483	<3	53	3.67	.038	3	43	.85	19	.11	<3	5.26	.62	.04	<2	23	12	15
B 204484	<3	142	13.94	.024	3	66	1.62	9	.37	6	2.72	.01	.10	<2	<2	<2	8
B 204485	<3	77	4.97	.044	9	14	1.05	20	.19	6	4.73	.01	.02	3	<2	<2	4
RE B 204485	<3	80	5.00	.045	10	12	1.06	21	.19	4	4.77	.01	.02	2	<2	3	6
B 204486	<3	118	4.72	.033	1	96	1.27	6	.42	<3	1.89	.03	.02	5	106	3	32
B 204487	<3	239	.88	.091	1	80	1.26	4	.37	3	1.69	.07	.01	5	4	6	28
STANDARD DS4/FA-10R	5	72	.51	.086	15	168	.57	144	.09	<3	1.66	.04	.15	5	479	488	492

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK R150 60C AU** PT** & PD** GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 30 2002 **DATE REPORT MAILED:** Sept 11/02 **SIGNED BY**............D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

P= Pull 4 Pull

Data ✓ FA ✓

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A204808 Page 1

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
SI	<1	8	12	17	<.3	1	<1	5	.06	<2	<8	<2	<2	4	<.5	<3	<3	<1	.16	.001	<1	4	.01	5	<.01	<3	.03	.65	<.01	<2	<2	<2	<2
B 204438	1	13217	11	200	1.1	58	32	1202	6.91	12	<8	<2	<2	5	1.6	8	<3	298	.50	.052	3	89	3.42	8	.30	<3	3.33	.07	.01	<2	9	<2	16
B 204439	1	13	12	22	.6	68	454	126	31.10	11	<8	<2	4	20	<.5	4	<3	37	.35	.005	<1	38	.26	8	.08	4	.47	.01	.02	2	23	10	51
B 204440	<1	380	4	115	.6	111	232	1314	8.64	14	<8	<2	<2	79	2.0	<3	<3	309	4.66	.059	1	209	3.18	3	.49	<3	5.15	.02	.02	<2	23	4	70
B 204441	2	3962	15	68	2.7	25	30	915	2.82	8	<8	<2	<2	74	2.1	8	<3	112	4.78	.027	2	36	.73	2	.28	<3	1.76	.01	.01	3	19	<2	26
B 204442	<1	494	6	123	.5	57	30	1101	6.34	4	<8	<2	2	42	.8	<3	<3	242	3.51	.060	2	101	2.50	13	.40	<3	2.30	.05	.02	<2	7	5	25
B 204443	<1	63	17	58	.8	33	17	338	3.80	10	<8	<2	<2	44	.7	10	<3	163	1.46	.070	3	30	1.20	17	.20	<3	1.32	.16	.04	<2	11	<2	24
B 204444	1	9424	<3	161	4.7	76	33	1695	8.04	7	<8	<2	2	10	2.0	<3	<3	269	1.01	.059	3	100	3.49	4	.31	<3	3.33	.04	<.01	<2	9	2	27
B 204445	3	290	4	40	<.3	16	7	275	1.47	4	<8	<2	<2	18	<.5	<3	<3	88	1.12	.057	2	31	.82	1	.22	<3	1.38	.07	.01	2	<2	2	11
B 204446	1	971	<3	138	.3	47	42	1149	6.09	<2	<8	<2	<2	57	1.3	<3	<3	255	4.21	.040	2	52	2.88	9	.15	<3	6.15	.01	.01	7	12	<2	28
RE B 204446	1	970	<3	139	<.3	48	42	1143	6.09	<2	<8	<2	<2	57	1.3	<3	<3	255	4.19	.039	2	50	2.88	6	.16	<3	6.15	.01	.01	<2	20	3	29
B 204447	1	9518	4	127	6.2	64	48	678	4.92	10	<8	<2	<2	84	1.1	3	<3	218	1.38	.081	2	64	1.35	14	.41	<3	2.12	.02	.03	<2	20	5	46
B 204448	2	8739	<3	52	7.2	98	29	256	15.62	3	<8	3	3	52	<.5	<3	<3	114	.84	.022	<1	121	.30	2	.16	<3	.95	<.01	.01	<2	159	<2	15
B 204449	1	365	3	38	<.3	13	13	346	1.55	<2	<8	<2	<2	17	<.5	<3	<3	128	.60	.088	2	94	.68	15	.25	<3	.96	.08	.04	2	2	<2	14
B 204450	1	305	<3	53	<.3	36	20	482	4.03	3	<8	<2	2	51	.5	<3	<3	157	1.35	.066	3	26	1.54	46	.30	<3	1.61	.17	.10	<2	9	<2	20
STANDARD DS4/FA-10R	6	121	34	157	<.3	35	12	747	3.02	26	<8	<2	3	30	5.5	5	5	74	.59	.093	17	161	.59	154	.09	<3	1.62	.04	.16	6	475	485	486

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: P1 ROCK P2 ROCK AU** PT** PD** GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: OCT 31 2002 **DATE REPORT MAILED:** Nov 19/02 **SIGNED BY**..........D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

WHOLE ROCK ICP ANALYSIS

Schau, Mikkel File # A204808 Page 2

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba ppm	Ni ppm	Sc ppm	LOI %	TOT/C %	TOT/S %	SUM %
B 204443	48.67	13.09	13.92	7.25	9.49	3.20	.19	1.83	.19	.22	.017	97	80	39	1.8	.11	.05	99.90
B 204444	59.84	10.84	11.58	5.98	2.16	2.58	<.02	1.54	.17	.17	.012	16	80	32	4.2	.16	.58	99.09
B 204447	46.30	16.19	13.60	2.33	12.77	1.39	.08	2.29	.23	.12	.008	60	66	45	3.4	.10	.02	98.73
B 204448	50.53	8.25	28.90	.54	8.49	.04	<.02	.57	.12	.06	.043	10	96	24	1.4	.06	.17	98.97
B 204449	63.25	17.22	3.22	1.18	3.18	7.83	.26	2.35	.20	.05	.023	88	22	49	1.1	<.01	<.01	99.88
B 204450	50.25	14.06	12.21	7.20	7.72	3.47	.97	1.73	.18	.21	.012	347	76	37	1.8	.01	<.01	99.87
STANDARD SO-17/CSB	62.12	13.64	5.73	2.30	4.60	4.06	1.40	.59	.98	.52	.429	395	40	23	3.4	2.40	5.40	99.82

GROUP 4A - 0.200 GM SAMPLE BY LIBO2 FUSION, ANALYSIS BY ICP-ES. LOI BY LOSS ON IGNITION.
TOTAL C & S BY LECO. (NOT INCLUDED IN THE SUM)
- SAMPLE TYPE: P1 ROCK P2 ROCK

DATE RECEIVED: OCT 31 2002 **DATE REPORT MAILED:** Nov 14/02 **SIGNED BY**......D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A204808 Page 2 (a)

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Co ppm	Cs ppm	Ga ppm	Hf ppm	Nb ppm	Rb ppm	Sn ppm	Sr ppm	Ta ppm	Th ppm	U ppm	V ppm	W ppm
B 204443	49.4	.4	18.1	2.7	8.8	4.2	<1	455.5	.5	.8	<.1	369	1.0
B 204444	32.3	<.1	17.2	2.0	7.5	.6	<1	55.0	.5	1.2	.3	293	.5
B 204447	47.8	.1	33.7	3.3	10.7	2.4	1	646.3	.8	.8	.3	505	1.7
B 204448	32.2	<.1	23.3	<.5	1.4	.7	<1	358.2	<.1	.3	<.1	239	1.0
B 204449	12.8	<.1	15.2	3.3	10.3	6.2	1	208.4	.8	.5	.6	341	1.8
B 204450	41.0	.4	21.7	2.5	8.6	19.7	1	300.6	.6	.8	.4	353	.4
STANDARD SO-17	19.2	3.9	19.9	12.5	25.3	23.7	8	310.5	4.4	12.0	11.2	127	10.1

SAMPLE#	Zr ppm	Y ppm	La ppm	Ce ppm	Pr ppm	Nd ppm	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm	Yb ppm	Lu ppm
B 204443	98.5	31.3	8.5	20.3	2.90	14.8	4.3	1.53	4.72	.87	5.26	1.03	2.97	.40	3.00	.40
B 204444	81.7	25.6	5.5	13.2	2.13	10.7	3.5	1.26	3.65	.70	4.07	.85	2.45	.34	2.13	.32
B 204447	118.4	36.8	10.1	23.7	3.60	16.6	5.3	2.10	5.78	1.03	5.71	1.23	3.29	.48	2.84	.49
B 204448	24.2	14.8	4.7	11.5	1.52	7.9	2.0	.88	2.01	.32	1.99	.43	1.23	.21	1.30	.20
B 204449	116.5	36.0	11.2	26.9	3.88	19.2	5.8	1.72	5.79	.98	4.95	1.20	3.10	.51	3.33	.51
B 204450	92.6	29.5	7.8	19.0	2.75	13.5	3.5	1.42	4.38	.92	4.44	1.03	2.46	.43	2.08	.38
STANDARD SO-17	359.3	26.6	11.4	24.6	3.00	13.2	3.2	1.04	4.00	.68	4.17	.96	2.82	.43	2.94	.45

GROUP 4B - REE - LiBO2 FUSION, ICP/MS FINISHED.
- SAMPLE TYPE: P1 ROCK P2 ROCK

DATE RECEIVED: OCT 31 2002 **DATE REPORT MAILED:** Nov 18/02 **SIGNED BY** C. L..........D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Schau, Mikkel File # A204808 Page 2 (b)

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	As ppm	Cd ppm	Sb ppm	Bi ppm	Ag ppm	Au ppb	Hg ppm	Tl ppm
B 204443	.6	60.1	16.0	63	35.9	9.5	.2	9.0	.2	.6	6.3	.13	<.1
B 204444	.5	8549.9	2.1	162	64.0	2.2	1.3	.7	<.1	3.8	2.5	.02	<.1
B 204447	1.2	8796.4	4.2	124	63.7	6.2	1.0	.7	.2	4.8	9.8	.04	<.1
B 204448	1.5	8229.1	2.4	58	95.3	3.1	.6	.9	.1	6.5	122.9	.06	<.1
B 204449	.9	377.1	3.1	45	15.0	1.4	.1	1.0	<.1	.2	.6	.02	<.1
B 204450	.5	281.3	1.6	57	34.4	1.3	.1	.9	<.1	.2	4.9	<.01	<.1
STANDARD DS4	6.4	126.8	29.7	154	35.9	21.8	5.2	4.9	5.0	.3	24.8	.25	1.2

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: P1 ROCK P2 ROCK

DATE RECEIVED: OCT 31 2002 DATE REPORT MAILED: Nov 19/02 SIGNED BY.......D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data ✓ FA ____

10.4 Appendix D Petrographic Reports

Index

PF1 white weathering fissile recrystallised limestone, Karmutsen Formation

PF2 Grey weathering recrystallized limestone, Karmutsen Formation

PF3 Vesicular propylite (once a feldspar phyric basalt), Karmutsen Formation

PF4* Earthy brown epidosite with magnetite and copper mineralization, mineralization event

PF5* Malachite stained epidosite with magnetite and copper mineralization, mineralization event

PF6 Grey faintly layered recrystallized limestone, Karmutsen Formation

PF7 Leached vuggy silicified felsite breccia, Dyke

PF8 Magnetite rich propylite (after a flow center or sill), Karmutsen Formation

PF9 Leached vuggy propylite with potash feldspar vein and alteration, Karmutsen Formation

PF10* malachite stained epidosite with vuggy rusty spots, mineralization event

PF11* malachite stained epidosite with vuggy rust spots and with minor sulphide, mineralization event

PF12 sulphidic quartz cemented breccia in felsite, Dyke

MP7 sulphidic quartz cemented breccia with chalcopyrite in dacite, Dyke

* supergene copper minerals present.

Sample Number: PF1

UTM : zone 9, E704272 N5581437

Classification: white weathering fissile recrystallized limestone.

Assigned to The Karmutsen Formation, as one of the lenses of limestone found near its top.later felsic dyke, brecciated by later events.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Calcite

Minor:

Accessory: a few tremolite/actinolite crystals were noted, also weathered rusty patches.

Texture:

Grain Size: fine grained

Description of Texture: slaty, expressed by deformed calcite crystals

Structure: fissile

Alteration:

Veining:

Comment:
Not magnetic; vigourous fizzing in cold HCl, hence calcite.

Sample Number: **PF2**

UTM : zone 9, E704272 **N5581437**

Classification: Grey weathering recrystallized limestone.

Assigned to Karmutsen Formation. The sample is from same lens as PF1, and occurs below it by 2 metres.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: 99+ %Calcite, even grained, cleaved, locally twinned

Minor:

Accessory: tiny cubes of pyrite?

Texture:

Grain Size: finegrained

Description of Texture: granoblastic

Structure: homogeneous

Alteration:

Veining:

Comment:
Not magnetic. Fizzes in cold HCl, therefore calcite.

Sample Number: **PF3**

UTM: zone 9, E704452 **N5580873**

Classification: Vesicular propylite, was once a feldspar phyric basalt

Assigned to Karmutsen Formation.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Feldspars, plagioclase-> clinozoisite, albite, quartz, chlorite, clay
Mafics->bluegreen actinolite, chlorite, clinozoisite

Minor: Titanite/clay, epidote, chlorite

Accessory: Opagues

Texture:

Grain Size: Finegrained, with seriate feldspar microphenocrysts

Description of Texture: Relic diabase texture with amygdales

Structure: massive

Alteration: propylitic alteration, amygdales with chlorite atoll structure and epidote or quartz interiors.

Veining:

Comment:

It is possible that prehnite and pumpellyite also occurs in rock, but no conclusive optical properties were noted. It is possible that some of clay speckled non twinned low relief feldspar is orthoclase, given that nearby rocks are veined by orthoclase.

Sample Number: **PF4**

UTM : Zone9, E704842, N5580357

Classification: Earthy brown Epidosite, with magnetite and copper mineralization

Assigned to a metasomatic event, possibly associated with cooling of Adam River Pluton.

See remarks regarding B-20448 in several appendices. (Carries .8% copper)

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Epidote,
quartz, as very fine chert like aggregate, and later coarse fill between epidote crystals.

Minor: Magnetite, coating the exteriors of epidote aggregates with small grains

Accessory: Local chlorite along epidote grains, chlorite change optical character along Cleavage traces.

Texture:

Grain Size: Variable, from very fine grained quartz to medium grained epidote grains and all ranges between.

Description of Texture: Seriate and granoblastic, with granular magnetite coatings

Structure: massive, veined

Alteration: this secondary assemblage shows variation in optical properties, suggesting that the minerals are zoned.

Veining: at least two sets of malachite veins. The later set has more rust than the earlier set.

Comment:

Very magnetic. Most opagues are probably magnetite.

If an iron nail is put in a cold HCl acid drop placed on a brown altered spot, then the nail is coated with copper. This is a good sign that supergene copper minerals are present.

There is very little sulphur in an analysis of this rock, suggesting all the copper is secondary.

Sample Number: PF5

UTM : Zone9, E704842, N5580357

Classification: Malachite stained Epidosite, with magnetite and copper mineralization

Assigned to a metasomatic event, possibly associated with cooling of Adam River Pluton. Host rock may have been a Karmutsen Formation feldpar-phyric basalt.
See remarks regarding PF4.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Epidote,
quartz, as very fine chert like aggregate, and later coarse fill between epidote crystals.
Magnetite

Minor: Chlorite, feldspar?

Accessory: Local chlorite along epidote grains, chlorite change optical character along Cleavage traces.

Texture:

Grain Size: Variable, from very fine grained quartz to medium grained epidote grains and all ranges between.

Description of Texture: In relic patches the palimpset diabasic texture, new minerals are Seriate and granoblastic, with granular magnetite coatings

Structure: massive, veined

Alteration: this secondary assemblage shows variation in optical properties, suggesting that the new minerals are zoned.

Veining: Epidote magnetite veins,
epidote veins with edges coated with very fine grains of magnetite
Chert-like quartz with seriate epidote crystals and speckled with magnetite grains
Thin malachite veins.

Comment:

Very magnetic. Most opagues are probably magnetite.

If an iron nail is put in a cold HCl acid drop placed on a brown altered spot, then the nail is coated with copper. This is a good sign that supergene copper minerals are present.
There is very little sulphur in an analysis of this rock, suggesting all the copper is secondary.

Sample Number: PF6

UTM : zone 9, E704262 N5581427

Classification: Grey faintly layered recrystallized limstone

Assigned to Karmutsen Formation, to the upper part where lenses of limestone are intercalated with basalt. (See PF1, 2)

THIN SECTION DESCRIPTION?

Mineralogy:

Major: 99+ %Calcite

Minor:

Accessory: few flakes of talc?, tiny cubes of pyrite? And black platy specks of graphite?

Texture:

Grain Size: fine grained

Description of Texture: recrystallized and strained, crudely foliated (cleavages aligned)

Structure: Homogeneous, with several millimetre thick layers of slightly darker calcite

Alteration: local stylolites, coated with very fine grained black material (graphite?)

Veining: thin quarz veins with quartz fibers subparrallel to vein wall and foliation

Comment:

Not magnetic.

Fizzes vigourously in cold HCl, hence calcite

The fabric suggests a tectonite episode, perhaps ductile faulting occurred along the limestone horizon?

Sample Number: PF7

UTM :Zone9, E704839, N5580356

Classification: Leached, vuggy, silicified felsite breccia

Assigned to later felsic dyke, brecciated by later events. Thought to be part of mineralizing event.

See B-204449 in various appendices for more details.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: plagioclase feldspar-> fine grained epidote, albite, quartz, chlorite, titanite, chlorite
Quartz, some exceedingly fine grained
Minor: calcite, epidote, titanite, chlorite, pumpellyite?

Accessory: opaques,

Texture:

Grain Size: Very fine grained, local patches with slightly different sizes, represent altered fragments in vein

Description of Texture: granoblastic secondary minerals over palimpset porphyry texture

Structure: brecciated, silicified/albitized , veined

Alteration: as well as above, the matrix, once quartzo felspathic is now clay and chlorite,

Veining: quartz veining

Comment:
Not magnetic.
Chlorite and pumpellyite patches are scattered throughout. It is possible that the bluegreen mineral is a form of amphibole, or that both co-exist in thin section. Probe work would be neccessary to confirm either.
The rock is very sodic, and albite must be present as a large part of the finegrained "silicified" portions.

Sample Number: PF8

UTM :

Classification: magnetite rich propylite (after a flow center/gabbro sill?)

Assigned to later Karmutsen Formation.

See B-204450 in various appendices.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Plagioclase, hornblende

Minor: chlorite, actinolite, pumpellyite? very local prehnite?

Accessory: opagues, some magnetite, and sulphides

Texture:

Grain Size: Old: Seriate, fine grained with phenocrysts to 4 mm, new: very fine grained

Description of Texture: A few feldspar glomeroporphyroblasts set in a relic diabasic texture, a few amygdales.

Structure:Vesicule filled with quartz, calcite, and local actinolite?on edge.

Alteration:Feldspars->calcite, quartz, albite, clinozoisite, pumpelleyite?
Mafics: Old hornblende->chlorite, actinolite, pumpellyite?
"Ore"-> titanite/clay
Interstial-> chlorite and titanite and clay.

Veining: Mm thick veins of quartz, chlorite and calcite. Rimmed with pumpellyite?

Comment:
Magnetic.
Pumpellyite and prehnite are thought to be present in this rock, but have not been defitely confirmed by diagnostic checks.

Sample Number: PF9

UTM : Zone9, E704841, N5580355

Classification: Leached, vuggy, propylite with potash feldspar veining and alteration

Assigned to Karmutsen Formation with later alteration and veining

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Altered twinned feldspar, clay, quartz,
Mafics are epidote, titanite/clay and chlorite
Matrix -> epidote, plagioclase, quartz and chlorite
Minor: Chlorite, several compositions (from optical properties),
epidote, several compositions (from optical properties)
pumpellyite, in chlorite blebs
Muscovite

Accessory: Opaque, Titanite/clay

Texture:

Grain Size: primary grains fine? grained. Secondary mineral very fine grained

Description of Texture: patchily silicified, relic feldspars still recognizable.

Structure: variably silicified, veined

Alteration: standard propylitic alteration, potash felspar speckled with "clay".

Veining: Potash feldspar and quartz veined again by later ***muscovite*** and some quartz

Comment:
Faintly magnetic
This is one of a few places where muscovite veins have been recognized in region.

Sample Number: PF10

UTM : Zone9, E704843, N5580358

Classification: malachite stained epidosite with vuggy rusty spots

Assigned to Mineralizing event.

See B204437 or -31 in several appendices.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Epidote 90+%

Minor: quartz, opagues, chlorite

Accessory:sulphide and leached sulphides, titanite

Texture:

Grain Size: Seriate, epidote from 2 mm. to very fine grained, opagues little bounding grains

Description of Texture: seriate to granoblastic
The very small opague grains cluster about epidote aggregates

Structure: massive, veined

Alteration: rusty patches

Veining: malachite veins

Comment:
Faintly magnetic
An iron nail applied to a spot of cold HCl over a rusty spot becomes plated with copper, a definite sign of supergene copper.

Sample Number: PF11

UTM : Zone9, E704844, N5580355

Classification: malachite stained epidosite with vuggy rusty spots

Assigned to Mineralizing event; possible precursor to Karmutsen Formation.

See B204437 or -31 in several appendices.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Epidote 95+%

Minor: quartz, titanite, albite?, opagues, chlorite

Accessory:Cm bleb of sulphide (chalcopyrite) and other leached sulphides, titanite

Texture:

Grain Size: Seriate, epidote from 1 cm. to very fine grained, opagues little bounding grains

Description of Texture: seriate to granoblastic
The very small opague grains cluster about epidote aggregates

Structure: massive, veined

Alteration: rusty patches

Veining: malachite veins

Comment:
Faintly magnetic
An iron nail applied to a spot of cold HCl over a rusty spot becomes plated with copper, a definite sign of supergene copper.
Opagues probably weathered copper minerals.

Sample Number: PF12

UTM : Zone9, E704838, N5580357

Classification: sulphidic quartz cemented breccia in felsite

Assigned to later felsic dyke, brecciated by later events.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Quartz

Minor: Epidote, chlorite, opague-chlorite intergrowth, opagues

Accessory: Chalcopyrite, magnetite

Texture:

Grain Size: Quite variable, but mainly fine grained except for local blebs of epidote or sulphides

Description of Texture: patchy, mono-mineralic domains and altered fragments

Structure:fragments set in a quartz breccia

Alteration: opagues interstial to quartz crystal outlines. Blebs of chalcopyrite locally developed.

Veining: 3 mm wide quartz with epidote, chlorite, opagues
Later quartz veins
Later epidote veins

Comment:

Magnetic

Breccia fill and altered fragments. Visible sulphides show up in cut surface. Not altered as much as epidosites etc.

Sample Number: MP7

UTM : Zone9, E704837, N5580354

Classification: sulphidic quartz cemented breccia in felsite

Assigned to later felsic dyke, brecciated by later events.

THIN SECTION DESCRIPTION?

Mineralogy:

Major: Feldspar with clinozoisite and clay
, Quartz as part of the fragments, and as part of the veins.

Minor: Epidote, chlorite, opague-chlorite intergrowth, opagues

Accessory: Chalcopyrite

Texture:

Grain Size: Quite variable, with fragments, but mainly fine grained except for blebs of sulphides to 1 cm across. Some fragments with relic trachytic texture, others were feldspar porphyry

Description of Texture: patchy, mono-mineralic domains and altered fragments. Altered fragments probably were quartzofeldspathic, but are now a mixture of chlorite, titanite/clay, feldspar and quartz.

Structure:fragments set in a quartz breccia, opagues (sulphides) are interstial to quartz.

Alteration: opagues interstial to quartz crystal outlines. Blebs of chalcopyrite locally developed. Chalcopyrite rimmed by black, also rusty boxwork in chalcopyrite.

Veining: early chlorite, sulphide veins fragments. Small malachite veins.
Later abundant quartz veins jumble fragments
Later quartz veins
Later quartz veins
Later epidote veins

Comment:
Magnetic
Breccia fill and altered fragments. Visible sulphides show up in cut surface. Not altered as much as epidosites etc.

10.5 Appendix E Petrochemical Analytical Results

Several rocks were analysed to determine the complete chemical composition Acme methods 4A and 4B. The major oxides are shown below.

	B204428	B200443	B204447
SiO2	49.52	48.67	46.30
TiO2	1.84	1.83	2.29
Al2O3	14.45	13.09	16.19
Fe2O3t	12.74	13.92	13.60
MnO	.19	.22	.12
MgO	6.45	7.25	2.33
CaO	10.03	9.49	12.77
Na2O	3.07	3.20	1.39
K2O	.29	0.19	.08
P2O5	.17	.19	.23
LOI	.9	1.8	3.4

	204424 wp262 from Kringle sill	B204450	median of 11 basalt Kuniyoshi and Liou 1976 K251
SiO2	46.70	50.25	47.3
TiO2	2.46	1.73	1.94
Al2O3	15.56	14.06	15.6
Fe2O3t	13.68	12.21	11.8
MnO	.18	.21	...
MgO	5.91	7.20	5.75
CaO	9.74	7.72	10.3
Na2O	2.85	3.47	3.17
K2O	.08	0.97	0.21
P2O5	.21	.18	..
LOI	2.3	1.8	3.14

Remarks

The basaltic rocks in this claim area are somewhat more iron rich than the median of samples collected away from the magnetic anomaly.

The basalts are otherwise fairly typical with respect to normal element diagrams. The lighter rare earth elements are somewhat elevated compared to midocean basalt, and less elevated than ocean island basalts. The propylitization may have altered them somewhat. In the most affected rock, the

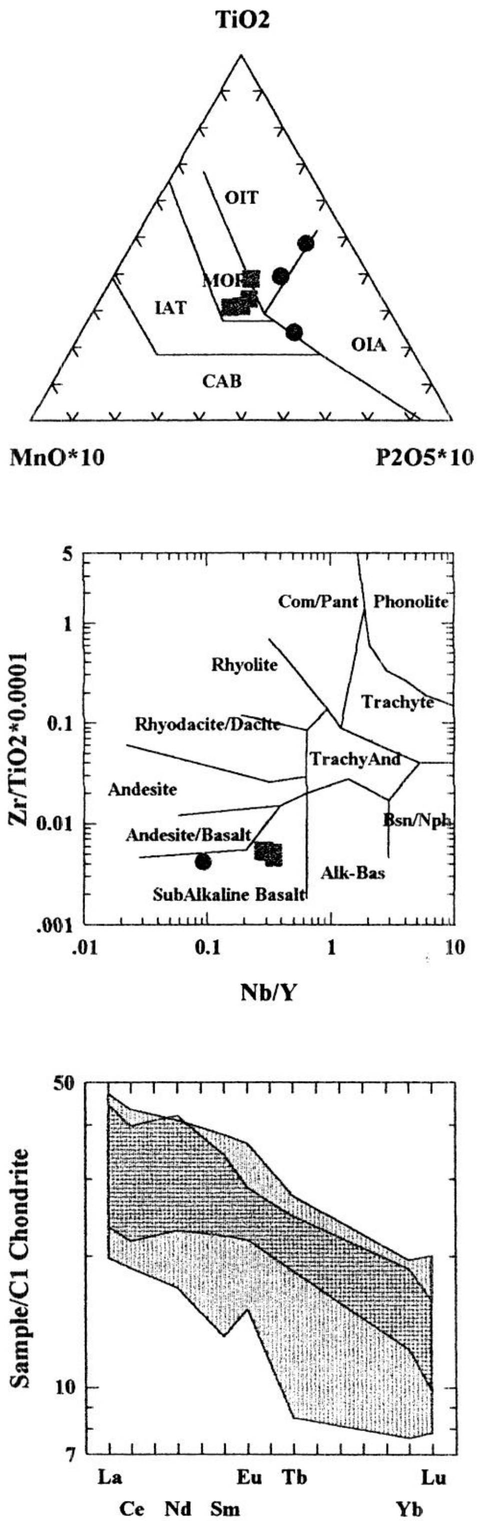
REE are the lowest value, and the typical europeum signature of hydrothermal alteration shows up.

Other rocks were analysed as well:

	B204444 propylite mineralized	B204448 magnetic epidosite mineralized	B204449 leuco-Albitite
SiO2	59.84	50.53	63.25
TiO2	1.54	0.57	2.35
Al2O3	10.84	8.25	17.22
Fe2O3t	11.58	**28.90**	3.22
MnO	.17	.21	.05
MgO	5.98	.54	1.18
CaO	2.16	8.49	3.18
Na2O	2.58	0.04	**7.83**
K2O	<.02	<0.02	0.20
P2O5	.17	.12	.20
LOI	4.2	1.8	1.1

The extreme compositions associated with large scale metasomatism are evident in these samples. Clearly iron has been locally added, and adjacently, soda.

Fig. E-1. Showing various classification parameters. The upper digrams show the propylitic basalt to be rather typical. The bottom diagram suggests that the Rare Earth concentrations are more La enriched than expected for mid ocean basalts. Also the most diluted host rock a positive Eu anomaly.



10.6 Appendix F Notes on Precision of analytical results

Precision of analytical results

Each sample batch is provided with an analyses of a standard provided by ACME Labs. Below selected elements are shown to give a sense of the precision and accuracy that the lab provides:

Geo4, aqua regia partial solution, with precious metals done by fire assay ICP-ES

Standard S1 (quartz blank)

batch #	Mo	Cu	Zn	Au	Pt	Pd
A10358, Oct 18/01	<1	1	2	<2	<2	<2
A103803, Nov 7/01	<1	1	1	<2	<2	<2
A200497, Feb 26/02	<1	<1	1	<2	<2	<2
A200497, March 5/02	<1	<1	1	<2	<2	<2 corrected
A203473, Sept 11/02	<1	13	3	5	<2	<2
A204808, Oct 31/02	<1	8	17	<2	<2	<2

Standard DS3/FA-10R

batch #	Mo	Cu	Zn	Au	Pt	Pd
A10358, Oct 18/01	9	129	160	484	474	477
A103803, Nov 7/01	11	128	160	485	482	474
A103803, Nov 7/01	10.6	131	155	n/a	n/a	n/a, no FA-10R done
A200497, Feb 26/02	11	130	136	479	486	488
A200497, March 5/2	11	130	136	479	486	488 corrected

Standard DS4/FA-10R

batch #	Mo	Cu	Zn	Au	Pt	Pd
A203473,Sept 11/02	7	134	147	479	488	492
A204808, Oct 31/02	6	121	157	475	485	486

Standard C3/FA-10R

A004894, Dec 12/00	25	62	169	481	465	489
A101911, July 9/01	25	68	169	484	468	468
A102490, Aug 20/01	27.2	65	177	480	473	484

Whole Rock Analyses 4A, 4B,
whole rock is fused and mass is brought into solution:

Standard	SO-15/CSB								
	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5
A004893, Dec 21/00	49.30	12.67	7.22	7.14	5.78	2.36	1.79	1.72	2.64
Standard	SO-16/CSB								
A102490, Aug 20/01	58.12	10.93	11.01	5.52	.14	.34	6.27	.86	.26
Standard	SO-17/CSB								
A103803, Nov 7/01	61.09	14.10	5.93	2.37	4.74	4.10	1.43	.63	.95
A204808, Nov 14/02	62.12	13.64	5.73	2.30	4.60	4.06	1.40	.59	.98

	Mo	Cu	Zn	Au	Pt	Pd	
Standard C-3							
A004893, Dec 21/00	27	67	172	481	465	487	
Standard G-2							
A004894, Dec 12/00	1	3	40	3	<2	2	
A004893, Dec 21/00	2	3	45	-	-	-	
A101911, July 9/01	1	4	43	-	-	-	
A102490, Aug 20/01	1.6	9	46	-	-	-	
	Co	V	Zr	Y	La	Eu	Yb
Standard SO-15							
A004893, Dec 21/00	22.4	154	1029.3	24.3	30.1	1.00	2.52
Standard SO-16							
A102490, Aug 20/01	408.7	113	223.0	98.5	59.6	2.47	9.78

Standard SO-17

A103803, Nov 7/01	18.7	125	351.2	26.5	11.4	1.04	2.87
A204808, Oct 31/02	19.2	127	359.3	26.6	11.4	1.04	2.94

	Mo%	Cu%	Ag,gm/mt
Standard R-1 for assays			
A101911R, July 24/01	.090	.831	100.3

Part B Estimates of precision for precious metals

Calculation showing how precision estimates for precious metals were derived:
Lab Standard FA-10R

batch #	Au	Pt	Pd (all in ppb)
A004894, Dec 12/00	481	465	489
A004893, Dec 21/00	481	465	487
A1011911, July 9/01	484	468	468
A102490, Aug 20/01	480	473	484
A10358, Oct 18/01	484	474	477
A103803, Nov 7/01	485	482	474
A200497, Feb 26/02	479	486	488
A203473, Sept 11/02	479	488	492
A204808, Oct 31,02	475,	485,	486
estimate of mean	481	476	482
estimate of variability			
+/- 1 s	3	9	9
%	.75	2	2

To the unpractised eye there seems to be a time drift in the Pt values; the more recent ones being higher.

This means that values of Au between 478-484 ppb cannot be distinguished with any precision, similarly Pt between 465-485ppb and Pd between 473-491ppb cannot be separated.
The lab thus indicates that their estimate of Pd is less reliable than Au, at these concentration levels. Au is well measured with a very small standard deviation.

Considering the variability given for gold above, and given that the lab reports larger instrumental variability for Pt and Pd than for Au, then by analogy it follows that the values for variability of Pt and Pd will be of a somewhat larger magnitude, than those estimated for gold, and the smaller the tenor, the larger the percent uncertainty.

Nevertheless there will be no difficulty in distinguishing anomalous samples (arbitrarily set at over 30 ppb for Au, 40 ppb for Pt and 40 ppb for Pd) from background values (also arbitrarily set at about 3 ppb Au, 3 ppb of Pt, and 15 ppb Pd, in gabbro and basalts and in contrast to the values of <2, <2, and <2 ppb respectively for other units).

Several values of Pd and Au reach the anomalous level as defined herein.

8.0 AUTHOUR'S QUALIFICATIONS

I have been a rock hound, prospector and geologist for over 40 years. My mineral exploration experience has been with Shell, Texas Gulf Sulfur, Kennco, Geophoto, Cogema and, several mining juniors. I have worked 10 years in southern BC and spent 23 years with the GSC as a field officer focused on mapping in northeastern Arctic Canada. For the last 8 years I have prospected and explored for PGEs in Nunavut, Nunavik and BC.

I reside at 1007 Barkway Terrace, Brentwood Bay, BC, V8M 1A4

I am currently a BC Free Miner, # 142134, paid up until August 31, 2003.

During 2000 and 2001, I received Prospector's Assistance Program (PAP) grants to prospect on Vancouver Island. In 2002 I received YMIP grant to prospect in the Yukon.

My formal education is that of a geologist, I graduated with an honours BSc in 1964 and PhD in Geology in 1969, both, from UBC.

I am a P.Geol. licensed (L895) in Nunavut and NT, and a P.Geo. (25977) in BC.
I am sole owner of the claims in question.

I have affixed my stamp to this document on the table of content and on my statement of qualifications.

0.1 TABLE OF CONTENT

FIGURES

Figures in Appendices