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GEOLOGICAL AND GEOCHEMICAL REPORT ON RAT 3, 4, 5 AND 6 MINERAL CLAIMS SITUATED 8 KM NW OF PORT RENFREW VICTORIA M.D. NTS 92C/058

LATITUDE 48° 36' N / LONGITUDE 124° 29' W

SUB-RECORDER OWNER, OPERATOR AND AUTHOR MATTI TAVELA

FEB 2 1990

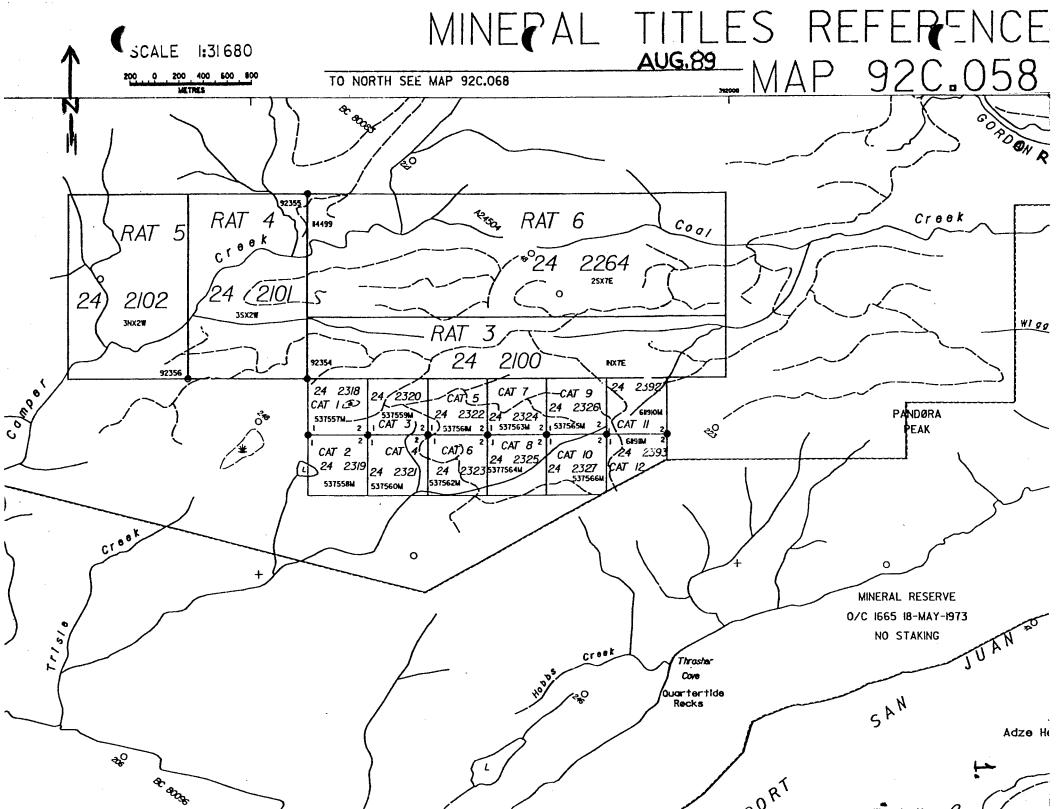
CONTENTS

LOCATION MAP
INTRODUCTION
GEOLOGICAL REPORT
SUMMARY AND RECOMMENDATIONS
PROSPECTING REPORT
GEOCHEMICAL REPORT
GEOPHYSICAL REPORT
STATEMENT OF COSTS
QUALIFICATIONS
FIGURE
MAP 1, 2, 3, 4 AND 5
in

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ASSESSMENT REPORT

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INTRODUCTION

MAP p. 1, MAP 1, 2

General Description

RAT claim group is accessible by automobile: 10 km W from Gordon River Bridge (5.5 km NNW from Port Renfrew) successively along Pandora, San Juan and Campber MLs. to the latter's dead end.

<u>Topo Control</u> is based on 1:5,000 maps surveyed by theodolite and chain by B.C. Forest Product Ltd. and MacMillan Bloedel Ltd. and compiled; now consolidated by Flecher Challenger Ltd., situated N of Port Renfrew Bay, N of West Coast Trail Park.

Object of the Work and Property Description

Object: To extend the 1988 prospect oriented surveys to the total igneous /volcanic centre by geologic and magnetic surveys; to continue detail work in prospect (b).

Description: Submarine extrusion upon ophiolites and basalts, turned vertical with concurrent diorite/andesite sills of 0.5×5.5 km striking E-W, with an intrusive cluster and extrusive latites/tuffs in its centre. Submarine cherts are high in mercury; gold (20 - 800 ppb) in scattered in chlorite/kaoline alterations and silicifications/veinlets associated with the latter. This geosyncline remnant is compressed between Island Intrusions and Leech Formation.

Summary of Work

Geologic: 1:2,500 and 1:625; 7 units = 175 ha

Geophysical: magnetics: 8.5 km, 1378 stations

Geochemical: gold for 84 rock samples

Petrographic: one thin section

Prospecting: 1:2,500 and 1:625; 80 ha

Preparatory: picket lines 2.6 km; 20 test pits = 30 m

GEOLOGICAL REPORT

MAPS 1, 2, 3, 4, 5

The gold/mercury mineralization appears mainly in a east-west elongated 1.5 km long, 0.5 km wide bowl on Camper Creek Trough. In the north, the bowl has graben-like escarpments and in the south similar but restricted into two locations: south of Tent/Camper Creek junction and south of 90° bend in Camper Creek. The bowl coincides with a major aeromagnetic low's nadir. In the east, the bowl closes gradually without change in lithology; in the east, the enclosure is abrupt with clusters of intrusives. The description draws particular from magnetics and is segmented from west-east (S 1-4).

Segment 1

The cluster consists of partially well exposed and magnetically distinct units of basalt, micro gabbro, epidote andesite, all medium grained, fresh and granular and a rhyolite, totally deuteric and mixed with the bowl's dominant pre-intrusive sediments of submarine cherts.

One of the rhyolites' two exposures on the creek is adjoined by an appendix-like sliver of glassy pyritized andesite (8377 - 149 ppb Au), several barren coarse quartz lumps and kaoline pockets at chert contact, also barren. Further south a test pit exposed a rhyolite - chlorite contact. Chlorite has segregations of coarse pyrite but barren (8384 - 385). Thin section of the rhyolite shows near submicroscopic mass of kaoline after feldspars, quartz and disseminated pyrite (approximately 0.0X%). The same specimen of rock (8386) shows Au 19 ppb, considered indicative. Name rhyolite has to be verified by total analysis.

Magnetically, the rhyolite which occupies a flat, resembles the bowl's prevailing diorite/chert mosaic with notable exception of considerably steeper and higher amplitudes, taken as a sign of deep vertical extent.

Segment 2

Vents and diorites dominate the segment. The Camper/Tent Creek's junction area's vent, plug and an isolated diorite lens can be considered as extensions for the larger rhyolite intrusion.

The vent is a totally mashed porridge of chert in chert with diffuse boundaries, diameter 60 m, alteration kaolin, quartz and chlorite, barren (8417 / 419). It's companion andesite plug has steep walls on the Camper Creek side. It is partially glassy, green grey and unique for the area, unaltered, not mineralized.

The diorite's north wall rises steeply from the creek; it is continually peeling along this surface with slight lineation. Occasional quartz/pyrite veinlets show no gold (8420 - 421).

The silica glass pipe with abundant pyrite high in Hg (up to 5000 ppb) but is void of Au (less than 5 ppb) as described in detail in 1988. Several similar pipes appear on both sides of the Central Ridge. This one penetrates a silica chert; it has a magnetic expression (4). The relationship of these pipes with the wide-spread mercury mineralization in cherts and with later gold mineralization is still obscure.

At the Ridge's top, a steep dome-like diorite joins a basalt. This diorite and its extensions to east, north and west are magnetically 25 to 50 G (= gamma) lower than the diorite in general. Mineralogy reveals it too: they are pale, in parts void of dark minerals. Possibly here is the core part of the eastward elongating ridge. This diorite joins the intrusive cluster in west.

Segment 3

The ophiolite lense is laterally surrounded by the diorite/chert mosaic, injected by a 1x30 m diorite dipping steeply south, and by sparsely scattered augen-like nodules of diorite material and by a few vertical and perpendicular thin quartz/pyrite vein with Au up to 400 pb (1988).

The diorite at Camper South ML (CSML) is part of the Central Ridge's larger body, but separated from it by a chert roof pendant. It also has similar quartz vein as if in unison with the veins in the ophiolite.

Towards east and north at the vicinity of the 90° bend in Camper Creek is a second larger ophiolite, also with pink nodules, then towards west a pillow basalt, and ophiolites again bending and closing the bowl in west end. These aphiolites lack veins but have pyrite segregation, all barren (1988) and one current (8379, less than 5).

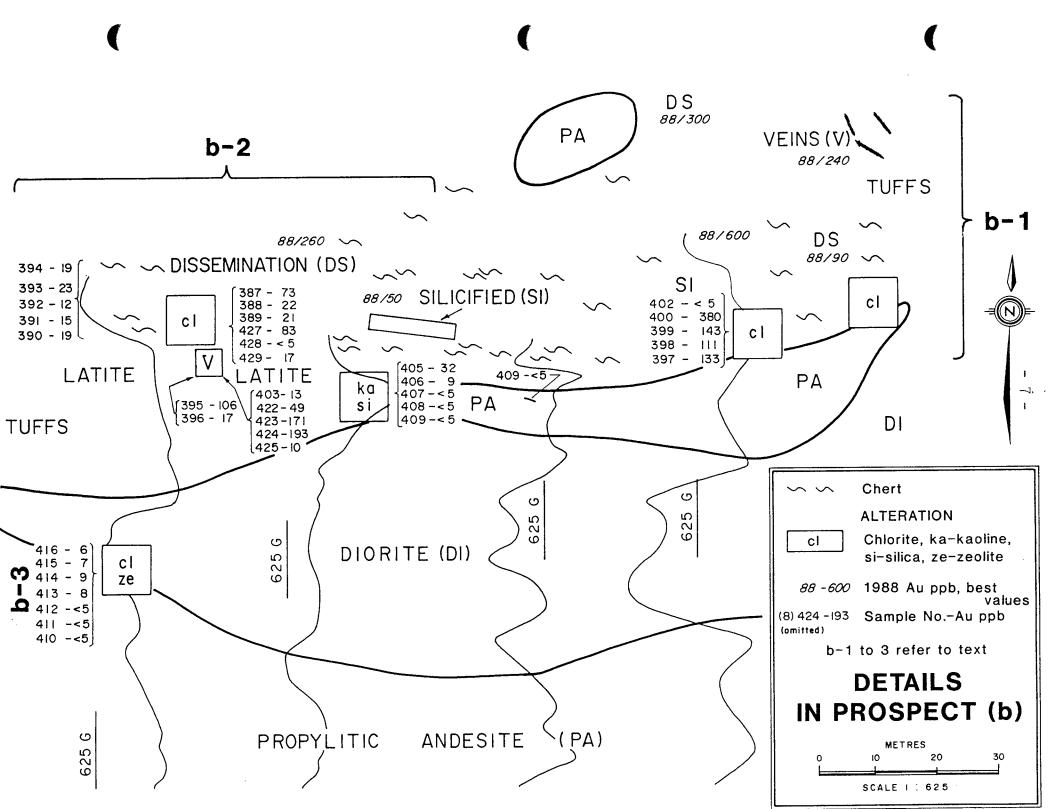
The ophiolite continues and cuts in west forming at the claim group's south border as equally formable unit as in north. Further east, along the border area, appears thin slivers of weakly re-crystallized limestone and conglomerate. Together they may be the bottom for the submarine cherts.

Segment 4

The 1988 prospect (b) was reviewed by magnetic survey, test pits and sampling. Consolidated results are in p. 7 and discussed in three parts from east to west (b-1, b-2 and b-3).

b-1: The section in silicification 88-600 (88 survey's best Au ppb) was extended to south to meta-andesite contact. The last 0.5 m is in massive chlorite rock with 380 ppb Au. The total width of silicification is then 9 m with Au in order of 200 ppb. The north contact with chert shows narrow band with magnetite build-up.

A smaller pocket-like silicification (88-90) is 15 m east; a veinlet type in mudstone is 35 m northeast (88-240) and a dissemination, also in mud, 40 m to northwest. Reference is made to b-2, with many similarities.



b-2:

88/50 is a 0.6 m thick horizontal, steeply south dipping, banded silicification below an overhang of 3 m wide chert ridge. Then, to south follows a small but steep topo/mag depression with test pits: first half is softish grey melee with hazy feldspar and clear hornblende phenocrysts (405/406) with 32 and 9 ppb Au respectively. The second half, with a definite contact with the above, is a fresh mush of kaoline/silica ending without contact in fresh diorite (407/409; Au less then 5.

Similar mag/topo profile across the chert to diorite continues to west and widening into a plateau-like trough, 30 m wide and open.

88/260 is a massive graphitic chlorite rock after chert. To south, the chert ridge (387/429) has Au 5-83 ppb. Corresponding depression has one 2.5 deep test pit with free standing vertical walls in grey laterite with phenocrysts as above. Upper half has quartz veinlet remnants (395) in this matrix (395), Au 106 and 17 ppb respectively. Lower half has a 15 cm wide quartz vein striking northeast, dipping steeply southwest with veinlets in hanging wall. A cross-section with 20 cm sampling (422 - 424) shows Au 49-171-193 ppb respectively. The closeness of this and the adjoining Au dissemination in chert/chlorite suggests that they are one and same.

The next chert ridge to West (390-394) shows elevated Au values at 15 to 23 ppb level. The laterite soils in this vicinity and in the two test pit areas have a tentative name of latite.

b-3:

Is a cross-section at the diorite's south contact, a similar mag/topo high/low but without the chert. Pitting starts from the diorite and crosses the depression towards south. The darkish diorite gradually turns chloritic ending in a soft

chlorite/zeolite mush (416-414) at 6 - 9 ppb level of Au. Then follows grey homogenous soft clay, possibly after altered andesite (413 - 410) with less than 5 ppb Au.

Of the total 20 test pits, 16 are in this (b) prospect and four in the new (f) prospect (2).

SUMMARY AND RECOMMENDATIONS

The 1988's geochem indicated two Au distributions: low apex at 8 ppb and high apex at 35 ppb (20 - 800 ppb). This later is connected mainly with chlorite/kaoline alteration, minor amount of samples coming from silicification or quartz veinlets.

During current season, four more the above alterations were examined: three barren and one in contact with Au bearing silicification. Further on, clearer and stronger quartz veins plus dissemination with Au was discovered in latite. The classification of Au mineralizations then breaks as follows:

- minor Au in Hg bearing cherts;
- diorite/rhyolite associated gold in some of the cusp-like pocket of chlorite/kaoline alterations;
- a separate quartz vein/dissemination type in the above intrusive vicinity but linear with the east-west strike associated with tuffs and latites, now laterites; latites are flows or pipes.

In the prospect (b) a second follow-up is necessary with detail magnetics and test pitting. In the new prospect (f), the follow-up should be similar with bottom soil sampled and panned for analysis.

PROSPECTING REPORT

MAPS 2, 3

Reportable prospecting has not been done previously. In 1989, prospecting was done afternoons after magnetic surveys and concentrated on the 30-140 m wide Camper Creek bed with many recent changing channels and five flats formed by braided glacial streams. The resulting boulder field of large Island Intrusion floats is about 4 m thick with few exposures and thin, shallow bottom tills penetrable by blasting.

The output was meager resulting with one mineralized outcrop (prospect, 8377-1491) and with test pits (8384, 85, 86) with useful information (Geol. report).

The (b) prospects' slope on bottom tills south of Camper Creek's 900 bend has patchy soils of fine grey/yellow material with here and there a major roundish plutonic float sunk into it. In the centre of (b) two test pits revealed similar condition below surface: lateritized soil after tuffs and latite. This refers to a preserved pre-glacial soft surface. This Camper Creek bend with a steep south wall has patches of thick end moraines at the above site removed partially by landslides exposing the above laterites.

This and 1984's prospecting suggested that further surface expressions of mineralization are scarce and have to be produced mainly by test pits.

GEOCHEMICAL REPORT

MAP 2 AND PAGE 7

The 58 rocks for Au at geochemical level do not make an independent report feasible, but combined with 1988 statistics and that 1989 discovered veinlets have Au 100 - 380 ppb, contributes to the geological implication that the higher level distribution of Au (30 - 800 ppb) is divisible into two:

- chlorite / kaoline diorite related;
- quartz latite related.

The former has a dual character: barren and high level. The latter so far has always high level distribution. As a consequence, the statistical analysis cannot separate the two, alteration vs. quartz.

Trace element analysis was done in 1988 for both types for limited amount of samples and without knowing this division. Review of results show little promise save the possibility with Ag, which at the trace level has lowest analytical resolution compared with other pathfinders. Search is pending.

The rock sample location with Au in ppb are market:

- #8372 to #8386 in segments 1 and 2, Map 2
- #8387 to 8429 in p. 7, prospect (b)
- In sample numbers, the first digit 8 is omitted.

Bondar-Clegg & Company Ltd. 130 Pemberton Ave. North Vancouver, B.C. V7P 2R5 1 985-0681 Telex 04-352667

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Geochemical Lab Report

CRUSH, PULVERTZE -150

15

1.5

REPORT: V89-01595.0			REPORT: V89-(13843.1)			REPORT: V89-05282.0		
SAMPLE NUMBER	ELEMENT UNITS	Au PPB	SAMPLE NUMBER	ELEMENT UNITS		SAMPLE Number	FI ENENT UNITS	A PP
R2 8372		12	R2 8386		19	S1 8410		<
			R2 8387		73	S1 8411		<
REPORT: V89	REPORT: V89-02033.0		R2 8388		22	R2 8412		<
			R2 8389		21	R2 8413		
SAMPLE NUMBER	ELEMENT UNITS	Au , PPB	R2 8390			R2 8414		
NOTICEN	VIII.0		R2 8391		15	R2 8415		
R2 8373		<5	R2 8392		12	R2 8416		
R2 8374		<5	R2 8393		23			
R2 8375		< 5	R2 8394		19			
R2 8376		< 5	R2 8395		106			
R2 8377		149	R2 8396		17	REPORT: V89-1	06025.0	
REPORT: V8	9-02385.0		R2 8396 R2 8397		133			
			R2 8398		111	SAMPLE	ELEMENT	
SAMPLE	ELEMENT	Au ;	R2 8399		143	NUMBER	UNITS	
NUMBER	UNITS	PPB	R2 8400		380	04.0404		
				V 89 -03957.0		S1 8426 R2 8417		
R2 8378		10				R2 8418		
R2 8379		<5	SAMPLE	ELENEI	NT Au	R2 8419		
REPORT: V89-	02917.0		NUMBER	UNI	rs PPB	R2 8420		
SAMPI E	ELEMENT	Au	R2 8401		11	R2 8421		
NUMBER	UNITS	PPB	R2 8402		< 5	R2 8422		
			R2 8403		13	R2 8423		
R2 8380		12	R2 8404		<5	R2 8424		
R2 8381		11	R2 8405		32	R2 8425		
R2 8382		<5	P0 0/0/		l			
R2 8383		8	R2 8406		9	R2 8427		
			R2 8407 R2 8408		<5 \ <5	R2 8428		
REPORT: V89	-03024.0		RZ 84119		<5 \	R2 8429		
04401 5								
SAMPLE	ELEMENT	Au			l			
NUMBER	UNITS	PPB						
X2 8384		<5			-			
X2 8385		<5						
					_			
ORDER	ELEMENT		NUMBER OF ANALYSES DET	LOWER ECTION LIMIT	EXTRACTION	METHOD		
1	Au Gold -	Fire Assay	15	5 PPB	F3RF-ASSAY	Fire Assay AA		

GEOPHYSICAL REPORT

MAPS 1, 3, 4, 5

The magnetic survey's aim was to relate prospect with magnetics and to clarify the local area geology as expressed in the GSC aeromag map (5). The survey profiles cross-section in the former and longitudinal section in the latter; section were then related to know, interpolated to unknown geology and translated in the Geological Report.

1. Methodology

The area has three east-west strike parallel feature: Central Ridge, Camper Creek and north escarpment and slope, all recently logged with good long distance visibility. Surveys on prospects (3, 4) have two grids (west and east) with pickets at CSML at 50 m spacing and auxiliary line in south and north respectively. Profile lines were shot by compass to a distant fix, spaced by foot and stations divided between known distance. The five longitudinals are along roads or well defined physical features. Station interval was from 2.5 to 50 m according to task.

The ground in full of logging debris, cable remnants, steel culverts. Solar activity was at its maximum. The precession instrument sensor was carried in back with west orientation. All possible corrections, excluding diurnal, were made at stations by repeated reading in extended time and moving around station until two consecutive readings were produced within 4 G. Speed was slow, around 80 stations from 5:00 a.m. until noon, necessitated to acquire an instrument vs. rental.

A second hand GSM-8 proton magnetometer was purchased from its manufacturer. Part of the cost is reflected in the Cost Calculation. The instrument with vaguely magnetic internal wet battery and sensor in back has a precision of \pm 4G. Together with a reading at stations within 4 G the total maximum standard error is 8 G, but in reality possibly twice as much. Best results are achievable by profiling at 2.5 - 5.0 m steps.

The overall magnetic range of 55600 G is drawn into the profiles except as individually market in detail surveys (4). The interpretation is by distinguishing different magnetic fingerprints and including exposures by blasting in intriguing spots. The vertical G ranges is 1 cm = 506 in (3,5) and 1 cm = 25 G in (4).

(a) Magnetics on Prospects (3) and Details (4):

The general, even background of 55625 ± 25 G belongs to the pervasive diorite/andesite clan; e.g. section I-I' in (5) and repetitions of the same with cross-sections in (3). This 55600 level is used as reference in general.

The fluctuations of this background are systematic: the higher levels of 55625 + 25 G belong to the east end including the isolated diorite lens in prospect (b). The lower level values belong to the west end, on both sides of the CSML at 55600 - 25 G range. This confirms with the aeromag ultimate nadir meaning that this part of the aeromag local large low takes it shape and intensity from a deep seated intrusion, it is the diorite and its parents in depth, including a granite.

The non-background parts of the bowl are occupied essentially only by the same diorite with chert pendants, magnetically divisible into two:

- in south between CSML and Central Ridge true roof pendants without magnetite build-up;
- between CSML and Camper Creek limited raft-like pieces of chert in variable positions swimming in the intrusion. Two kinds of magnetite build-up and distraction are present: narrow build-up in dark chert contacts, destruction in chlorite/kaoline pockets. Resulting fingerprints is irregular frequency of moderate amplitudes often clearly above 55600 G with the exception of the rhyolite flat in west. Here the amplitudes are two-fold or more with near vertical gradient, commented in the Geological Report.

(b) Magnetics - Geology Compilation (5)

The above comments also covers the profile I-I' (background) and II-II' at Camper Creek (diorite/chert). Profile III-III' is at the escarpment area at Camper flat's level and above. The low areas have similar characteristics as elsewhere in the trough. There are no exposures. In the profile's center, the small fluctuations around 55600 G belong to a chlorite rock, an ophiolite.

In profiles IV-IV' and V-V', the general level drops decisively below 55600 G with three areas with columnar high peaks at 57000 G range, all genuine gabbros with clean granular features. All intervening space except 0.5 km in west (profile V-V') have signatures very similar to the diorite/chert territory except they include majority of peaks, decisively below 55600 G. These areas are well exposed revealing a meta-gabbro build-up in a chlorite country rock, a common feature for the entirely Island Intrusions' south rim against San Jan trough.

The profile V's last 250 m in West is unique; from east to west; after the saw-toothed pattern of meta-gabbro/chlorite rock at 55500 G level, a peak of 55700 G emerges followed by a steady down gradient to 55400 G (mag and topo low) and then this same pattern of wide, loose pyramid is repeated. Both of them are chlorite/amphibole ophiolites. The trough between is the likely narrow where the pyritized, gold-bearing andesite of prospect (f) continues (Map 2, 3).

The remaining 70 m west-end resembles the finerprints of the diorite/chert mosaic. Here one major chert exposure in a creek is surrouned by ophiolite; narrow diorite sills appear in further west. The aeromag's contours at Camper/Tent Creeks turn southwest reflecting a similar turn of the ophiolite whereas the diorite sills and its cohorts continue straight west.

COST CALCULATION

1**989 / 199**0

M. Tavela, P.Eng. April 14 - 18; April 28 - May 2; May 10 - 16; May 31 - June 6; June 15 - 20; June 28 - July 04; July 13 - 17; July 26 - 31, August 9 - 14; August 23 - 28; September 14 - 17 Total 64 days, 11 round trips, Ferry TSWW - SWT2, average 530 km by 4x4 vehicle; Trips and Support at \$285 per day	\$ 18,240
Payroll within the above dates Jari Koikkalainen of Port Renfrew; 19.5 days (\$50 to \$100 per day) with Workers' Compensation Benefits	1,969
Magnetometer: 1/3 of purchase price of \$3,500 (see Geophysical Report: Methodology, p. 15)	1,167
Explosives (forcite, B-line, fuses) Continental Explosives Ltd.'s billings	1,059
Geochemical Analysis, 84 rocks for Au Bondar-Clegg Co.'s billings	650
Petrographic, one thin section Coot's Petrographic billing	8
Reporting: drafting, typing, reproduction Geodraft, On-Words, Image, Acme Co.'s bills	 1,035
TOTAL	\$ 24,128

STATEMENT OF QUALIFICATIONS

I, Matti Tavela, hereby state that:

- I am a Prospector, a citizen of Canada and 2125 Harrison Drive, Vancouver, in the Province of British Columbia.
- 2. I have a M.Sc. degree in Chemistry and a Ph.D. degree in Geology from the University of Helsinki, Finland. I have practiced these professions since 1947.
- My Canadian experience is: 1961-62 Geologist/ Geochemist for Selco Inc.; 1970-72 Geochemist for Kennco Explorations, (Canada) Limited; 1973 Project Manager for Brinco Limited; 1975-78 Vice President of Compass Exploration Limited; 1979-present as independent.
- My foreign experience has been in Scandinavia, 4. the Far East, NE Africa, Cental and West South America, and California.
- I am a Registered Professional Engineer in B.C., 5. Registered Geologist in the State of California, and Licenced Mining Surveyor in Finland.

Matti Tavela, P.Eng.

Matti Tavela

Feb. 02.1990

