

PROSPECTING REPORT

ON THE

MOHAWK GROUP

Located near Tahsis Inlet, Vancouver Island

NTS 92E/15E

British Columbia

at

49º 47.5' North Latitude

126º 34.5' West Longitude

for

Neil DeBock

by

David A. Caulfield, Geologist

April 1985

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1.0 INTRODUCTION

The Mohawk Group is located near Tahsis Inlet – on the west coast of Vancouver Island, British Columbia (Figure 1). Neil Debock of Clearwater, B.C. staked the VIG I & II (40 units) in March 1984 to cover a reported gold occurrence. The similarities in style of mineralization and geological setting to that of the Zeballos Gold Camp located to the northwest suggest that Mohawk showings may contain comparable economic mineralization.

Two separate trips to the property were made during this year. An initial trip by N. DeBock in the first week of January met with heavy snowfalls and no groundwork could be completed. The second visit in February by N. DeBock, E. DeBock, and D. Caulfield was successful in locating and sampling the old Mohawk workings as well as prospecting the new road cuts placed by the Tahsis Company Ltd. An area of approximately 700m x 500m was prospected and a total of 20 rock samples were collected for gold geochemistry. Underworkings were surveyed by chain and compass and were skeletal mapped.

2.0 LIST OF CLAIMS

The project area is covered by the Mohawk Group of two claim blocks totalling 24 units (Figure 2). The B.C. Ministry of Energy, Mines, and Petroleum Resources indicates the following claims are wholly owned by N. DeBock:

Mohawk Group*

<u>Claim Name</u>	Record No.	<u>Units</u>	Record Date	Expiry Date
VIG I	1986	4 ××	March 12, 1984	March 12, 1987
VIG II	1987	20	March 12, 1984	March 12, 1987

* Claims grouped March 12, 1985

** VIG II reduced by 16 units March 12, 1985

The author has checked the Legal Corner Post and it appears the claims have been staked in accordance to the regulations of the B.C. Mineral Act.





3.0 LOCATION, ACCESS AND PHYSIOGRAPHY

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The property is situated along the Tsowwin River which drains into Tahsis Inlet, on the west coast of Vancouver Island (Figure 3). Property coordinates are 49° 47.5' N. Latitude and 126° 34' W. Longitude (N.T.S. 92E/15E; Alberni Mining Division).

Excellent access by two wheel drive to the property may be obtained though a system of gravel logging roads. One travels west from Gold River on route to Tahsis via Head Bay Forest Road and exit on the Tsowwin Main Line along the Sucwoa River. Branch lines (T-40, T-63) off of the Tsowwin Main Line provide access to a major portion of the claim area. In fact, T-40 which was just constructed in late 1984, passes within 100 meters of the Mohawk adits. The Tsowwin Main Line is maintained year round by the Tahsis logging company to bring supplies into their camp at the mouth of the river.

Food, fuel, and accomodations are available at Tahsis (pop. 2,200) 15 km. to the north and Gold River (pop. 2300) approximately 40 km. to the east. Both communities have deep water ports and a major transmission line connecting the two towns passes within 4.5 km. of the Mohawk property. The nearest commercial flights land at Campbell River but float planes may be flown into the above towns.

The area is mountainous and rugged. Elevations range from 80m A.S.L. along the river bottom to over 1200m A.S.L. on the the highest peak. The climate is wet and mild. Annual precipitation in excess of 500 cm may be expected. Snowfalls are not severe; therefore areas up to the elevation of the adits are open 11 months of the year.

Vegetation is typical of the west coast of the island. The area is covered by first growth hemlock, cedar and balsam of which part is currently being logged. Devil's club is found in some of the creek bottoms.



4.0 HISTORY

It is expected that the first gold exploitation in the region dates back to the 18th century when the Spaniards were believed to have extracted gold from the gravel bars of the Zeballos Riven. However, it was not until the turn of the century that prospecting syndicates working up the west coast made the first lode gold discoveries near what is now the town of Zeballos. Following a period of inactivity until 1934, rich gold-quartz veins were found further up the Zeballos River and soon the Zeballos camp became an important gold producer. Operations continued to 1948 when mining at the Privateer Mine was finally suspended. Total production of gold was 287,811 ounces and the total silver amounted to 124,700 ounces. Overall grade for the camp was approximately 0.44 ounces/ton of gold mined and an average of 0.75 ounces/ton gold for milled ore.

The Mohawk prospect was first staked in 1939. Prospectors, hoping to locate rich gold-quartz veins such as those found to the northwest at Zeballos, were likely alerted to the potential of Tsowwin drainage by the presence of placer gold in the river system. By prospecting up the valley, they were able to find the gold-bearing veins of the Mohawk and further north, those of the Vivian mineral claims.

Reference was made to only pne 15 meter (50 foot) adit, in the government literature (see Appendix II). This adit was drifted along the vein to exploit its strike potential. However, upon descending the mountain slope another adit, located approximately 40 meters downslope, was discovered. The crosscut adit extends 39.5 meters (130 feet) into the mountainside. A vein, 31.5 meters (103 feet) in, was drifted upon for 15 meters (50 feet). The hand steels, jacks, shovels and a wheel barrow that were found at the portal leads one to believe that no person has entered the two adits since the early 1940's. One can venture why work was not continued, however by the middle of 1942, the shortage of men and supplies because of World War II forced all but the Privateer and Prident mines to close, and the following year even these properties were unable to continue operations. It appears that the exploration on the Mohawk property was halted by similar circumstances.

5.0 REGIONAL GEOLOGY

The Tahsis Inlet area is underlain by a thick succession of Upper Triassic submarine volcanic and limestone horizons. These strata have been folded, faulted and later intruded by Upper Jurassic plutons (Figure 4).

The oldest rocks (unit 1), those of the Karmutsen Group, occupy the slopes east of the Sucwoa River. Basaltic and andesitic lava flows, agglomenates, breccias and tuffs comprised the bulk of the Karmutsen Group.

Conformably overlying the Karmutsen Group are the deep water crystalline limestones (unit 2) of the Quatsino Formation. It's apparent thickness is estimated to be 600 to 1500 meters. Where the limestone units have been cut by intrusive elements, the limestone has been marblized and contact metamorphic silicate minerals have been generated.

The Quatsino Formation is conformably overlain by rocks of the Bonanza Group (units 3-5). Lowest in the succession are thin interclated argillitic, lava pyroclastic and impure limestone units of the Parsons Bay Formation (unit 3). An excellent exposure of these rock types is found on the road cut leading from the Sucwoa River into the Tsowwin River drainage. Andesitic lavas, agglomerates, tuffs and breccias overlie the lower sedimentary sequence. The Bonanza Group rocks occupy the core of the limestone belt stretching from the head of Tahsis Inlet to Tlupana Inlet.

Cutting all of the above units are intrusive bodies ranging from dioritic to syenitic in composition and spanning in age from Upper Jurassic to Tertiary. J. W. Hoadley's map (Figure 4) groups all the intrusive masses as part of the Upper Jurassic Coast Intrusions. However, K-Ar dating by later researchers (Carson, 1972) has indicated that some of these plugs are Tertiary in age. The intrusion to the northwest of Tahsis Mountain has been determined to be much younger than the typical Coast Intrusive.

The major structure in the area is that of a northwest plunging syncline. Government mapping (Figure) shows the older Quatsino limestones enveloping a nose of younger Bonanza volcanics in the southeast corner of the map. By the attitudes of the underlying strata, the folding must be of a tight and upright nature. Major faulting occurs along two prominent directions: northwesterly (Sucwoa River) to northerly (Tahsis Inlet) and northeasterly (Santiago Creek).



LEGEND

JURASSIC AND/OR CRETACEOUS UPPER JURASSIC AND/OR LOWER CRETACEOUS



Granite, granodiorite, diorite, quartz diorite; minor syenite, aplite, and micropegmatite

TRIASSIC AND (?) JURASSIC UPPER TRIASSIC AND (?) LATER

4. Ande 4,5 limesto

4. Andesitic lavas, agglomerates, tuffs and breccias; basaltic, trachytic, and dacitic lavas; minor, intercalated limestone

GROUP

BONANZA

5. Similar to 4, but may include some undifferentiated 3

MESOZOIC



3

Thin-bedded argillite, tuffaceous argillite, impure limestone, and tuffaceous limestone; agglomeratic limestone and quartzite: numerous, thin, intercalated andesitic lavas and associated pyroclastic rocks

2

1

QUATSINO FORMATION: crystalline limestone, with minor volcanic rocks

UPPER TRIASSIC AND (?) EARLIER

Basaltic and andesitic lavas, agglomerates, breccias, and tuffs; minor intercalated limestone

Heavily drift-covered area
Bedding (horizontal.inclined, vertical).
Schistosity (inclined)
Fault (arrow indicates direction of dip)
Shear zone
Glacial striæ
Fossil localityÔ
Mineral prospect
Adit

LIST OF MINERAL PROSPECTS

1	Beano group (gold)	
2	Friend group (gold)	
3	Harlow group (gold)	
4	Mohawk group (gold)	

5 Vivian group (gold)
6 Head Bay magnetite group (iron)
7 Ubell Creek showings
8 Ubell showings

Geology by J.W.Hoadley, 1947, 1948, 1949

6.0 **PROPERTY GEOLOGY**

Very little emphasis was placed on detailed mapping of the Mohawk prospect at this time. During prospecting, the bulk of outcrop encountered were volcanic rocks of the Upper Triassic Bonanza Group. The mineralization at the adits is hosted within a fragmental unit of the group. Along the bottom of the Tsowwin River outcrops of intrusive rocks may be seen. J. W. Hoadley's mapping indicates that exposures of limestone will likely be observed in both the northeast and southwest of the claim group.

6.1 ECONOMIC MINERALIZATION

To date, all significant mineralization is hosted within quartz veins striking north 30 degrees east and dipping 50° - 70° to the southeast. The veins follow sheared and slicken sided structural breaks in andesitic volcanics. Vein matter consists of mainly quartz and carbonate with pyrite and trace galena comprising the sulphide mineralogy. An alterations halo of disseminated sulphides and a light-buff mineral (sericite?) surround the larger veins. The quartz material exhibits comb texture, banding and commonly is found cementing brecciated fragments of angular, altered wall rock. Vein widths are narrow, (2-50 cm) but maintain a uniform strike, dip and width along their exposure lengths. There was reference to only one vein in the government literature, although ground observations uncovered veins both in the hanging wall and footwall. therefore, the mineralization would be more accurately described as a sheeted zone.

The Mohawk vein was tested by two underground tunnels. The upper adit was located along the length of the vein whereas the lower adit was oriented to crosscut the vein at depth (Figure 6). The lower adit may not have been driven far enough and perhaps only intersected a footwall vein. This hypothesis is illustrated in (Figure 7) but more accurate survey and geological data must be obtained to safely substantiate this idea. It is completely reasonable that a structural flexure of faulting could offset the vein. Four other quartz veins, similar in style and type of mineralization, were discovered along the new road cut passing the the west of the adits.

The best geochemical results were obtained from sampling of the main vein at the upper adit. Values of 17, 59, 317, 620, 711, and 1080 ppb gold were returned for the main vein. Results from the lower adit were low (20,30, and 54 ppb) suggesting that perhaps the main vein dips beyond the length of the adit and the vein encountered is a weaker mineralized footwall vein. Samples 30217 (21ppb) and 30218 (5ppb), taken at the south end of the property, were from quartz, carbonate and pyrite altered zones in a limestone host. Samples taken from along the legging road returned enly lew gold values.







7.0 CONCLUSIONS AND DISCUSSION

February's program demonstrates anomalous gold metallization existing on the Mohawk prospect. The deposit type is described as a quartz (minor carbonate) vein hosted in shear zones penetrating Bonanza Group volcanics. Sulphide minerals include mostly pyrite with trace amounts of galena. In 1939 and 1940, the Mohawk vein was explored by way of two adits. The upper adit was driven along the strike of the vein for 15m whereas the lower adit had 39.5 m of crosscutting and 15m of drifting. It appears that the lower workings were not pushed far enough ahead to intersect the main vein and therefore a footwall vein may have been driven along. Four other pyritic quartz veins were discovered along a logging road to the west of the adits. Two silicified and pyritized zones hosted within limestone returned negligible gold values.

The close relationship in geological setting between the Mohawk prospect and the rich Zeballos Gold Camp to the northwest suggest that an excellent potential exists for the Mohawk. A list of characteristics common to the two areas is as follows:

- 1. MAIN METALS: Gold, minor lead.
- 2. HOST ROCKS: Bonanza Group volcanics, Quatsino Fm. limestone intruded by Tertiary Intrusions.
- 3. STRUCTURAL CONTROL: Shear, fault, fracture zones; particularily along northeasterly trends.
- 4. ASSOCIATED ALTERATION: Silification, carbonatization, sericitization.
- 5. VEIN TEXTURES: comb structure, banding, brecciation.

In addition to the above, quartz vein systems related to the emplacement of high level Tertiary intrusions, deposits of gold associated with silicified limestone horizons, and contact metasomatic (skarn) zones may occur in the rocks underlain by the Mohawk Group. Anomalous gold values have already been received, but with a more detailed exploration program, other auriferous zones are likely to be discovered.

Respectfully submitted

David L. Paulfield

David A. Caulfield, Geologist

8.0 **BIBLIOGRAPHY**

- 1. Bancroft, M.F. (1940): Zeballos Mining District and Vicinity, British Columbia. G.S.C. Paper 40-12.
- 2. Carson, D.J.T. (1972): The Plutonic Rocks of Vancouver Island, G.S.C. Paper 72-44.
- 3. Hoadley, J.W. (1953): Geology and Mineral Deposits of the Zeballos-Nimpkish Area, Vancouver Island, British Columbia, G.S.C. Memoir 272.
- 4. Stevenson, J.S. (1950): Geology and Mineral Deposits of the Zeballos Mining Camp, British Columbia, BCDM Bulletin 27.

APPENDIX I

ITEMIZED COST STATEMENT

MOHAWK PROPERTY - 1985

WAGES

	N. DeBock, Prospector Box 3506, R.R. #2 Clearwater, B.C. January 4-7, 4 days February 21-26, 6 days 10 days @ \$150/day	\$1,500.00	
	E. DeBock, Prospector Box 3506, R.R. #2 Clearwater, B.C. February 21-26, 6 days 6 days @ \$150/day	900.00	
	D.A. Caulfield, Geologist 3142 Gambier Avenue Coquitlam, B.C. February 22-25, 4 days 4 days @ \$250/day	<u>1,000.00</u>	\$3,400.00
<u>ACCO</u>	MODATIONS AND MEALS		
	January 4-7 February 21-26	161.54 <u>357.19</u>	<u>5</u> 18.73
TRUC	KRENTAL		
	January 4-7, 4 days @ \$50/day February 21-26, 6 days @ \$50/day	200.00 <u>300.00</u>	500.00
FUEL			
	January 4-7 February 21-26	132.05 <u>237.50</u>	369.55

APPENDIX III

SAMPLE DESCRIPTIONS

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5	SAMPLE NO.	LOCATION	ΤΥΡΕ	WIDTH	SAMPLE DESCRIPTION
	30201	Creek	Grab	20 cm	2 cm quartz & alteration envelope, minor pyrite
	30202	Road Cut	Grab	100 cm	fault zone, pyritic
	30203	Road Cut	Grab	100 cm	gouge, pyritic
	30204	Road Cut	Grab	15 cm	quartz, minor carbonate vein breccia, pyrite
	30205	Road Cut	Grab	40 cm	quartz vein, comb texture, minor pyrite
	30206	Road Cut	Grab	10 cm	quartz vein, pyrite fragments
	30207	Upper Adit	Grab	20 cm	pyrite, trace galena in hanging wall quartz vein
	30208	Upper Adit	Grab	20 cm	same vein, sampled along strike
	30209	Lower Adit	Grab	15 cm	U/G sample of exposed quartz vein breccia, minor pyrite
	30210	Lower Adit	Grab	?	U/G sample along vein described above
	30211	Upper Adit	Grab	70 cm	surface exposure of main vein (15cm) & alteration envelope
	30212	Upper Adit	Grab	30 cm	Footwall quartz vein, minor pyrite
	30213	Upper Adit	Grab	30 cm	Main vein U/G
	30214	Upper Adit	Grab	5-6 cm	side stringers around main vein U/G
	30215	Upper Adit	Grab	50 cm	main vein at face U/G

Excerpt- Page 54, Memoir 272, Geological Mineral Deposits of the Zeballos- Nimpkish Area, Vancouver Island, British Columbia by J.W. Hoadley 1953

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The upper showing consists of a quartz vein exposed on both sides of the creek at an elevation of 1,600 feet, about 1,500 feet upstream from the camp. It has been explored on the east side by an adit 110 feet long, and by a shorter adit and several open-cuts on the west side of the creek. On the east side, the 'vein' is a silicified zone 1 foot to 5 feet wide containing stringers and lenses of later quartz, and pyrite, arsenopyrite, and pyrrhotite. In places the sulphides comprise almost 20 per cent of the 'vein' matter. Samples taken by Stevenson assayed 0.25 ounce gold or less except for a 1-inch stringer of quartz and heavy pyrite, which assayed 1.09 ounces gold and 1.4 ounces silver a ton.

MOHAWK GROUP

The Mohawk group lies on the south side of Tsowwin River, 3 miles from Tahsis Inlet. It was staked in 1939 and some work done that year and in 1940, after which it was abandoned. The cedar-shake buildings have since been flattened by the heavy winter snows.

The mineral deposit, a 12-inch quartz-filled vertical fissure in fragmental volcanic rock, is exposed on the hillside at an elevation of 1,000 feet. The quartz vein has been explored by a drift adit for a distance of 50 feet. The drift is lagged for the first 25 feet, after which the vein is visible in the back of the adit striking north 35 degrees east and dipping 50 degrees southeast. At the face it is 12 inches wide and has a dip of 80 degrees. Banded and comb quartz are common, with crystals of quartz up to $\frac{1}{2}$ inch in length. The only sulphide mineral is minor, finely divided pyrite. The vein matter is sheared and slickensided.

VIVIAN GROUP

The Vivian mining claims are situated at the confluence of the north and south forks of Tsowwin River about 6 miles by trail from Sand Spit on Tahsis Inlet. They were staked in 1939, when a little exploratory work was done, and were abandoned in 1940.

The deposit consists of one 2- to 4-inch vein of quartz and calcite occupying a fissure in altered volcanic rock. Where it is exposed on the rocky sides and bottom of the south fork of Tsowwin River, 200 yards upstream from its confluence with the north fork, it strikes north 40 degrees west and dips 80 degrees northeast. On the south side of the stream, an inclined shaft was sunk on the vein but was filled with water at the time of the examination. No sulphides were visible in any of the exposed vein matter, but a sample from the north bank assayed 2 ounces of gold a ton. A sample of similar material from the vein at the entrance to the inclined shaft contained only a trace of gold. The extension of the vein to the northwest has been prospected for 175 feet by open-cuts at intervals of about 25 feet, but no vein matter could be seen as the pits are filled with dirt and forest debris. Two hundred feet northwest of the south fork, a 50-foot adit has been driven into the hill following the vein, which is exposed at a few places in the back of the drift. At the face, it consists of 8 to 12 inches of calcite and quartz containing no visible sulphides. It strikes north 60 degrees west and dips 70 degrees northeast. Eight inches northeast of the vein, a parallel band of fault gouge 2 to 3 inches wide contains a little quartz and calcite. Channel samples of the vein and gouge were assayed, but yielded only a trace of gold.

ITEMIZED COST STATEMENT

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MOHAWK PROPERTY - 1985

FERRY

January 4-7 February 21-26	\$ 36.00 54.00	
	<u></u>	\$ 90.00
GEOCHEMISTRY		
CHEMEX LABS LTD.		
20 Rock Geochem Au @\$6.25 e 20 Rock Sample Preparation @\$2.50 e	ach 125.00 ach <u>50.00</u>	175.00
FINAL REPORT		
Wages, drafting, typing, and reproductio	n	1.000.00
TOTAL COST		<u>\$6,053.28</u>

30216 30217	Upper Adit Upper Adit	Channe1 Channe1	75 cm 75 cm	consecutive channels across portal width ,includes vein & alteration envelope
30218	SW Corner VIG II	Grab	50 cm	quartz, carbonate vein exposed for 25 m in limestone host
30219	SW Corner VIG II	Grab	20 cm	limey gouge, fault zone
30220	Lower Adit	Grab	15 cm	U/G sample of quartz vein breccia

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APPENDIX IV

GEOCHEMICAL CERTIFICATE

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Chemex Labs Ltd.

212 Brooksbank Ave. North Vancouver, B.C. Canada V7J 2C1 Telephone:(604) 984-0221 Telex: 043-52597

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Analytical Chemists •

Geochemists • Registered Assayers

CERTIFICATE OF ANALYSIS

TO : PAMICON DEVELOPMENTS LIMITED

215 - 543 GRANVILLE ST., VANCOUVER, B.C. V6C 1X8

CERT. # : A8510880-001-A INVOICE # : I8510880 DATE : 15-MAR-85 P.O. # : NONE MOHAWK (ELDEN 1718)

ATTN: DAVID A. CAULFIELD

	Sample	Ргер	AU NAA		 · · · · · · · · · · · · · · · ·		
	description	code	ppb				
	30201	205	3		 		
	30202	205	1		 		
	30203	205	3	~-	 		
ļ	30204	205	46		 		
	30205	205	71		 		
	30206	205	7		 		-
	30207	205	86	~~	 		
	30208	205	171		 		
	30209	205	30		 	~~	
	30210	205	54		 		
	30211	205	620		 		
	30212	205	317	~-	 		
	30213	205	59		 		
	30214	205	181	~-	 		
	30215	205	17	~ -	 		
	30216	205	1080		 	· · · · · ·	
	30217	205	711		 		
	30218	205	21		 		
	30219	205	5		 		
	30220	205	20		 		

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STATEMENT OF QUALIFICATIONS

I, DAVID A. CAULFIELD, of 3142 Gambier Avenue, Coquitiam, in the Province of British Colubia, DO HEREBY CERTIFY THAT:

- 1. I am a Geologist in the employment of Pamicon Developments Ltd. with offices at 215, 543 Granville Street, Vancouver, British Columbia.
- 2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Geology.
- 3. My primary employment since 1978 has been in the field of mineral exploration.
- 4. My experience has encompassed a wide range of geological environments and has allowed considerable familiarization with geophysical, geochemical and diamond drilling techniques.
- 5. I visited the property during the month of February 1985. Property work was completed with the assistance of E. DeBock and N. Debock.

DATED at Vancouver, British Columbia, this _______ day of

MAY 19.85

David A. Caulfield, Geologist