

ARIS SUMMARY SHEET

District Geologist, Victoria

Off Confidential: 89.12.06

ASSESSMENT REPORT 18531

MINING DIVISION: Vancouver

PROPERTY: Hummingbird
LOCATION: LAT 50 05 00 LONG 124 27 00
UTM 10 5548684 396261
NTS 092K01W
CLAIM(S): Hummingbird
OPERATOR(S): Ashworth, C.E.
AUTHOR(S): Leriche, P.D.; Yacoub, F.F.
REPORT YEAR: 1989, 33 Pages
COMMODITIES
SEARCHED FOR: Silver, Copper, Gold
KEYWORDS: Jurassic, Quartz diorite, Roof pendant, Metavolcanics, Metasediments
Skarn, Pyrite, Chalcopyrite
WORK
DONE: Prospecting
PROS 1.0 ha
Map(s) - 2; Scale(s) - 1:100
RELATED
REPORTS: 11884
MINFILE: 092K 047

LOG NO: 0830	RD. 3
ACTION: Date received report back from amendments.	
NTS 92K/1 Lat 50 05'N Long 124 25'W	
FILE NO:	

GEOCHEMICAL REPORT
ON THE
HUMMINGBIRD CLAIM GROUP

FILMED

VANCOUVER MINING DIVISION
BRITISH COLUMBIA

For

John E. Fleishman
1232 Marine Drive
North Vancouver, B.C.
V7P 1T2

RECEIVED
AUG 23 1989
Gold Commissioner's Office
VANCOUVER, B.C.

By

Peter D. Leriche, B.Sc., F.G.A.C.
Fayz F. Yacoub, B.Sc.
ASHWORTH EXPLORATIONS LIMITED
718 - 744 West Hastings Street
Vancouver, B.C.
V6C 1A5

February 25, 1989

SUMMARY

Ashworth Explorations Limited carried out a geochemical rock sampling program on the Hummingbird Claim Group during March 1988.

The Hummingbird Claim Group consists of three mineral claims and one reverted crown grant, totalling 44 units, in the Vancouver Mining Division. The property is situated on Goat Island, 25 kilometres north of Powell River, B.C.

The claims are underlain mainly by Jurassic diorite and quartz diorite. A 100 metre wide roof pendant of metavolcanic and metasedimentary rocks unconformably overlies the intrusive rocks. The roof pendant is thought to be part of the Lower Jurassic-Upper Cretaceous Gambier Group. Part of the pendant has been contact metamorphosed to a skarn and these zones contain lenses and masses of chalcopyrite and pyrite.

Previous and recent exploration work, from surface and underground workings, have located mineralized structures that contain potential economic values in copper and silver and accessory gold. The extent of mineralization along strike and at depth has not been determined.

A Phase I exploration program has been recommended, consisting of grid layout, geological mapping, prospecting and rock sampling, soil sampling, blast trenching, magnetometer and VLF-EM geophysics. The estimated cost is \$76,000.

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1. INTRODUCTION

This report summarizes geochemical work performed by Ashworth Explorations Limited on the Hummingbird Claim Group, Vancouver Mining Division, on March 21 and 22, 1988.

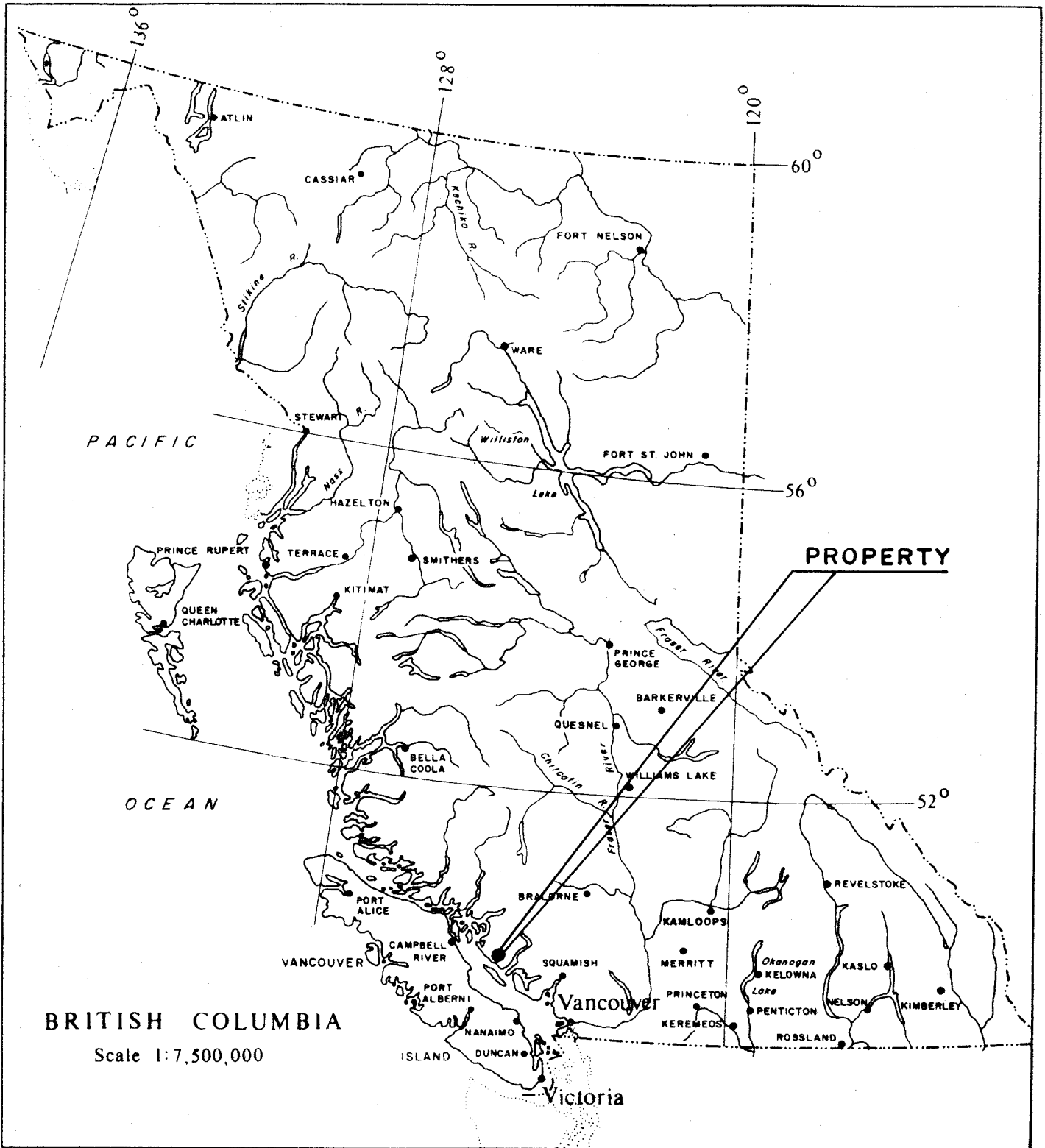
The report also provides a resume of all previous work done on the subject claims including the work program done by Corinth Resources in January, 1983.

One of the writers (P. Leriche) planned and supervised the fieldwork. Mr. Fayz Yacoub was the field geologist on the subject claims for the duration of the project.

2. LOCATION, ACCESS AND PHYSIOGRAPHY (Figure 1)

The Hummingbird Claim Group is located approximately 25 kilometres north-northeast of Powell River, B.C. and 110 kilometres northwest of Vancouver, B.C. The claims lie on the northwest part of Goat Island which is in Powell Lake. The property lies within NTS mapsheet 92K/1, at latitude 50 05' north, longitude 124 25' west.

Access to the claims is by road from Vancouver to the town of Powell River. From Powell River the claims can be reached by boat or helicopter. One logging road exists for 1.2 kilometres, on the Clover I claim, extending from Clover Lake to the west side of Goat Island. This road could be extended to the

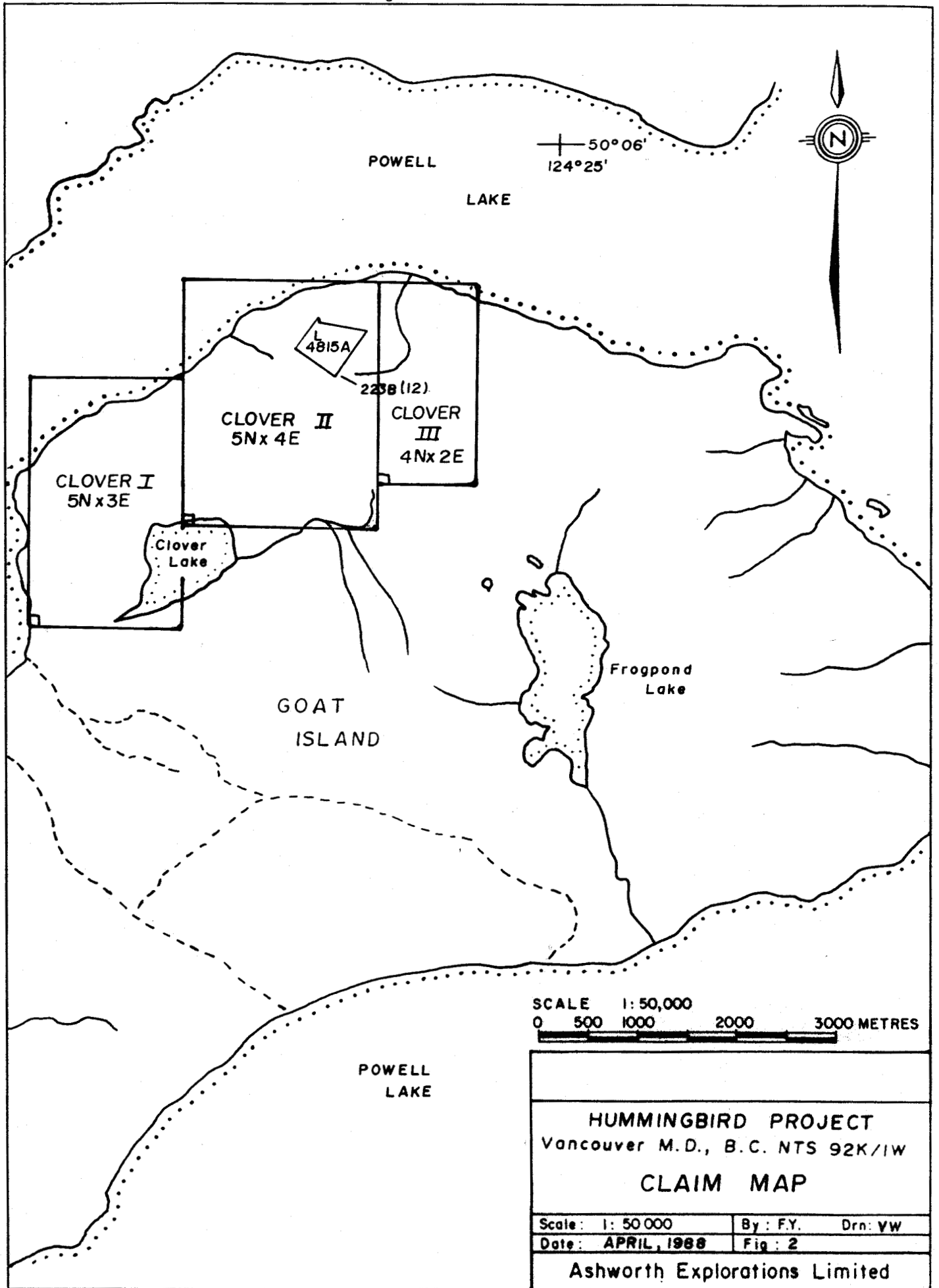


HUMMINGBIRD PROJECT
VANCOUVER M. D., B. C.

GENERAL LOCATION MAP
 NTS 92K/IW

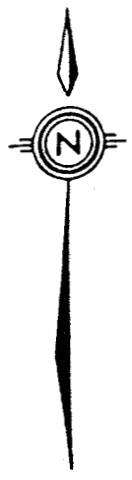
Scale 1:7500000	Date: APRIL, 1988
Drawn: J. S.	Figure 1

Ashworth Explorations Limited



POWELL LAKE

50°06'
124°25'



4815A

2298 (12)

CLOVER II
5N x 4E

CLOVER III
4N x 2E

CLOVER I
5N x 3E

Clover Lake

Frogpond Lake

GOAT ISLAND

POWELL LAKE

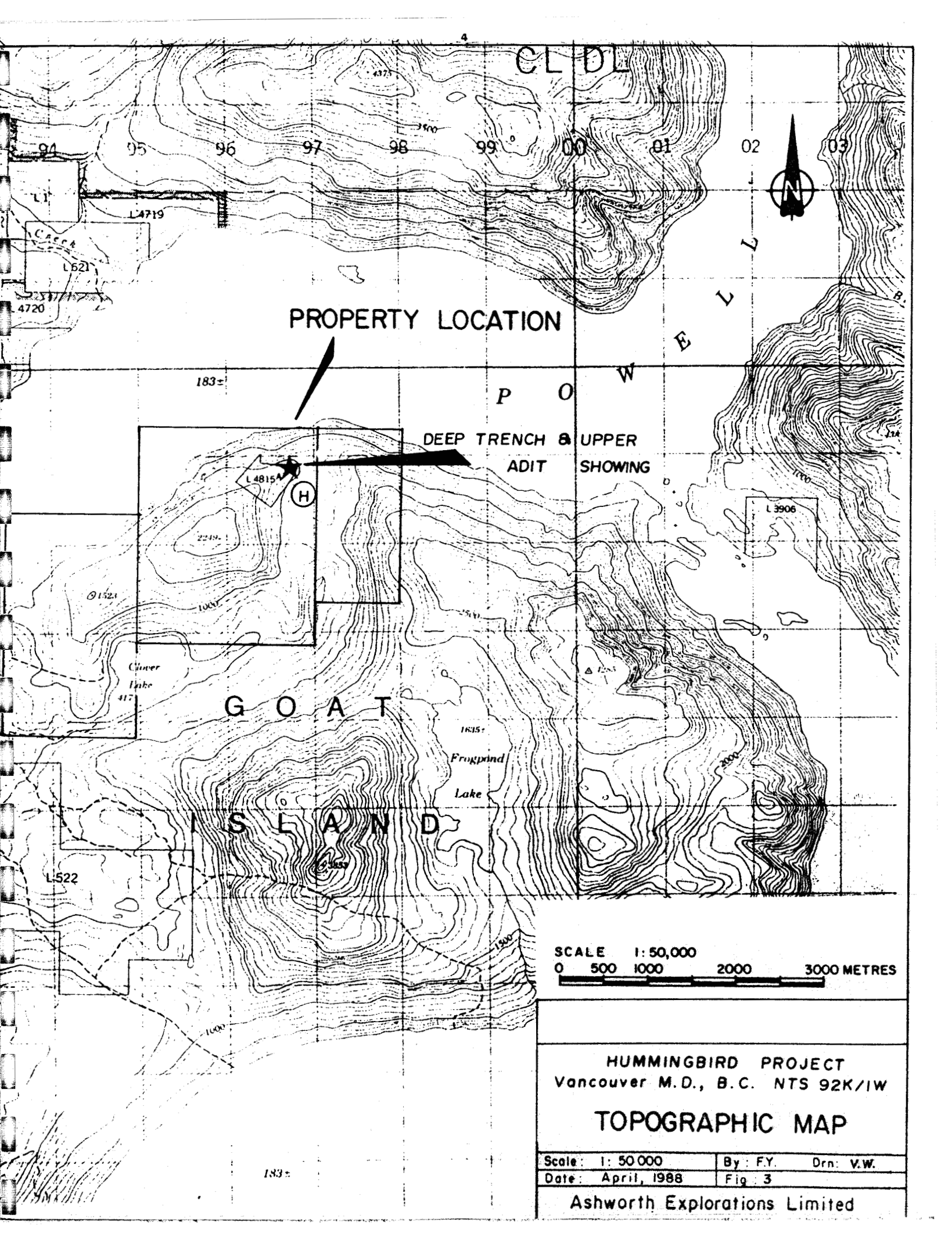
SCALE 1:50,000
0 500 1000 2000 3000 METRES

HUMMINGBIRD PROJECT
Vancouver M.D., B.C. NTS 92K/1W

CLAIM MAP

Scale: 1:50 000	By: F.Y.	Drn: VW
Date: APRIL, 1988	Fig: 2	

Ashworth Explorations Limited



PROPERTY LOCATION

DEEP TRENCH & UPPER ADIT SHOWING

SCALE 1: 50,000
0 500 1000 2000 3000 METRES

HUMMINGBIRD PROJECT
Vancouver M.D., B.C. NTS 92K/1W

TOPOGRAPHIC MAP

Scale: 1: 50 000 By: F.Y. Drn: V.W.
Date: April, 1988 Fig: 3

Ashworth Explorations Limited

Hummingbird Showing (three kilometres) as a haulage road for advanced exploration and development purposes.

A northeast-trending ridge occupies the central part of the property. The northwest slopes dip steeply into Powell Lake. The southeast slopes are moderate to steep, leading into a U-shaped valley. Clover Lake (approximate area 28 hectares) is within the U-shaped valley in the southwest part of the claims. Elevations vary from 183 feet (60 metres) at Powell Lake to 2249 feet (738 metres) on the main ridge, giving a total relief of 2066 feet (678 metres).

3. PROPERTY STATUS (Figure 2)

The Hummingbird Claim Group consists of three contiguous mineral claims and one reverted crown grant, totalling 44 units within the Vancouver Mining Division. The claims were grouped on November 30, 1988 and are owned by John Fleishman, of North Vancouver.

Pertinent claim data follows:

CLAIM NAME	UNITS	RECORD NO.	RECORD DATE	EXPIRY DATE
Clover I	15	2281	April 18/88	April 18/90
Clover II	20	2282	April 18/88	April 18/90
Clover III	8	2283	April 18/88	April 18/90
Hummingbird (LotNo.4815A)	$\frac{1}{44}$	2238	Dec. 9/87	Dec. 9/89
Total				

The total area covered by the claim group is 1075 hectares (2653 acres).

4. PREVIOUS WORK

Prior to 1928 (BCMM Report, 1928), all previous work focused on the Hummingbird claim. In 1920, three open cuts and one deep trench were blasted

within a 30 metres wide contact metamorphic belt containing lenses, veins and lenticular bodies of pyrite, chalcopyrite and magnetite carrying copper and silver. Approximately 140 tons of ore were mined, grading 8 to 11% copper, 7 to 20 oz/ton silver and 0.03 oz/ton gold.

Romano Copper Mines Ltd. acquired nine mineral claims in 1928 to 1929, seven of which were surveyed and one (Hummingbird) was crown granted (BCMM Report, 1929).

In 1928, a single cable tramway was constructed from Powell Lake to the top of the rock bluff (approximately 305 metres)(BCMM Report, 1928).

In 1929, a tunnel was driven into a rock bluff for 40 metres, approximately 25 vertical metres below the surface exposures. Three short crosscuts were made, two of which intersected vein material mineralized with chalcopyrite. Assays were not given (BCMM Report, 1929).

In 1930, a second tunnel was driven, 116 vertical metres below the first. The tunnel was driven 122 metres, an estimated 15 metres west of the down dip extension of the surface vein. Work was suspended before the vein was intersected (BCMM Report, 1930).

The property lay dormant until 1983 when Corinth Resources Ltd. performed rock-soil geochemical and magnetometer surveys. Rock sampling from the upper adit and surface trenches yielded values up to 17.4% copper, 9.38 oz/ton silver and .012 oz/ton gold. The soil survey (copper and silver) outlined several spot

highs. The magnetometer survey delineated a zone, 50 metres long, with values 1000 to 4000 gammas above background (Elwell, 1983).

5. REGIONAL AND PROPERTY GEOLOGY

The regional geology map (GSC Open File 480, 1976) by Roddick and Woodsworth shows the property and general area to be underlain by diorite and quartz diorite belonging to the Jurassic Coast Plutonic Complex. The Coast Plutonic Complex is a heterogeneous assemblage ranging in composition from granite to gabbro. It has been an area of positive uplift, intermittently, from Paleozoic to possibly as late as Eocene time. The intrusives from this uplift have caused wide spread areas metamorphism and in local areas copper and sulphide mineralization has been found. Recent surface and underground geology carried out on the area of Hummingbird Crown grant in March, 1988 by Mr. Yacoub, has indicated that the area is underlain by intrusive rocks of diorite to quartz diorite in composition. They are medium-grained, K feldspar rich rocks with an average colour index of 30, consisting of 50% to 60% potash feldspars, 30% mafic minerals; most of the mafic minerals are chlorite and dark green biotite; much of the biotite has been chloritized. The quartz content is about 5% to 10%; much of the rock is moderately altered with secondary minerals include epidote, chlorite displaying a spectrum between fine and coarse-grained with three to five mm range.

Elwell (1983) and Yacoub (1988) have observed a belt of metavolcanic-metasedimentary rocks in contact with the Coast Plutonic Complex on the Hummingbird Crown Grant. The belt is approximately 100 metres wide and strikes at 220 degrees. Within the belt is a 30 metre wide contact metamorphic

zone containing skarn minerals such as garnet and epidote. The intrusive rocks at the contact are moderately to heavily altered with strong epidote, fine-grained disseminated pyrite and copper staining. Along the contact are numerous quartz veinlets and silica filled fractures. Sericite occurs associated with these silicified filled fractures.

This zone contains also lenses of malachite and 2-3% fine-grained disseminated pyrite and chalcopyrite. The mineralization of economic significance within the area of interest is primarily peripheral to metavolcanic-metasedimentary belt on the Hummingbird Crown Grant.

6. 1988 FIELD PROGRAM

6.1 SCOPE AND PURPOSE

On March 21 and 22, 1988, Fayz Yacoub (geologist) and an assistant carried out geochemical rock sampling on the Hummingbird claim.

The purpose of the program was to:

- a) resample the known showings on the property to evaluate their economic potential, and
- b) determine an exploration approach.

6.2 METHODS AND PROCEDURES

The Hummingbird showing was located using topographic features and observation from a helicopter. It is easily identifiable from the air.

The surface workings and upper adit were surveyed using a compass, altimeter and hipchain. A total of ten rock samples were collected and analyzed for gold, silver (fire assay), copper (assay) and multi-element ICP by Vangeochem Lab Limited. See Appendix A for analytical reports and techniques.

6.3 PROPERTY GEOCHEMISTRY

The 1988 program encompassed stream sediment and rock sampling. A total of 2 stream sediment samples and 10 rock samples were collected. The rock samples were graded as chip and dump. All of the samples were submitted to Vangeochem lab Limited, Vancouver, British Columbia. The rock samples collected on the Hummingbird claim group during march, 1988 yielded values of up to 80 ppb Au, 3.95 oz/ton Ag and 11.34% Cu. Rock sampling the deep trench above the upper adit produced values of up to .008 oz/ton Au., 1.54 oz/ton Ag and 3.08% Cu., over a width of 100 centimetres of malachite zone hosted by altered epidorized volcanic and sedimentary rocks (Fig 4). This zone has been sampled once again in the upper adit, R-6 was taken across 30 centimetres of the zone returned the highest copper value, the highest silver value obtained from R-9 across 30 centimetres of malachite and sulphide zone collected from the second crosscut (Fig 5). Assay results for gold are not significant. Two stream sediments samples were collected at 300 metres intervals along a tributary creek flowing north at the north-west corner of Clover III, the results from these samples are not significant.

6.4 DISCUSSION

Previous work and 1988 rock sampling has confirmed that potential economic grade values in copper-silver and accessory gold over significant widths occur on the subject claims. The 1988 rock chip and select dump sampling program yielded assays up to 11.34% copper, 3.95 oz/ton silver and .006 oz/ton gold.

The continuity of the mineralized structures in terms of width, strike length, and down dip extensions is yet to be tested. Both writers believe that the 30 metre wide skarn belt is a good target for hosting more mineralized horizons.

7. CONCLUSIONS

Both writers conclude that the Hummingbird Claim Group has the potential to host a copper-silver(-gold) deposit for the following reasons:

- The claims lie in a favourable geological environment with metavolcanic and sedimentary rocks in contact with an intrusive pluton.
- Previous and recent work on the Hummingbird Showing has located potential economic grade values from surface and underground workings.
- The mineralized zones are open along strike and at depth.

For these reasons further work is recommended.

8. RECOMMENDATIONS

Phase I

Phase I is designed to test the mineralized structure along strike and to evaluate the potential of the remainder of the property.

- 1) Layout approximately 15 kilometres of grid over the Hummingbird Showing and metamorphic belt. Line spacings should be 50 metres with station intervals at 25 metres.
- 2) Soil sample the grid.
- 3) Geologically map the grid. Systematically rock sample the surface and underground workings.
- 4) Perform magnetometer and VLF-EM surveys on the grid.
- 5) Handtrench and blast the mineralized structure along strike.
- 6) Prospect and rock sample on the Clover I, II and III claims.

Phase II is contingent upon drill targets being established from Phase I. It would consist of further trenching and diamond drilling to test the down dip continuity of mineralization.

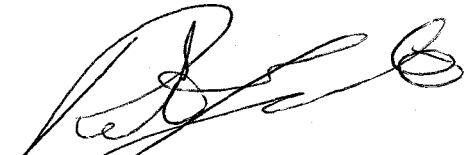
9. PROPOSED BUDGET

Phase I

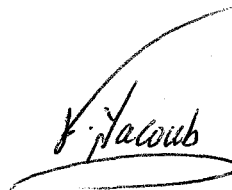
(Project Geologist, Prospector, Blaster, Geophysical Operator, 3 Geotechnicians; 10 field days)

Project Preparation		\$	1,100
Mob/Demob (includes transportation, freight and wages)			4,100
Field Crew			14,550
Field Costs (includes Helicopter Support, Food & Accommodation, Communications, Plugger, Freight, Supplies-including Blasting, 2 4X4 Trucks)			22,000
Geophysics \$375/km x 15 km			5,625
<u>Lab Analysis</u>			
Say 600 soil samples @ \$16/sample	\$	9,600	
Say 100 rock samples @ \$20/sample		<u>2,000</u>	11,600
Supervision and Report			<u>6,830</u>
Sub-total	\$		65,805
Administration 15%			<u>9,870</u>
Total	\$		<u>75,675</u>
	(Say	\$	<u>76,000</u>)

Respectfully submitted,



Peter D. Leriche, B.Sc., F.G.A.C.



Fayz F. Yacoub, B.Sc.

Dated February 25, 1989

LIST OF PERSONNEL

The following personnel were employed during the 1988 Field Program on the Hummingbird Claim Group:

Fayz F. Yacoub

Geologist

Vince G. Warwick

Geotechnician

REFERENCES

- Bacon, W.R., 1957. Geology of Lower Jervis Inlet, British Columbia, GSC Bulletin No. 39.
- B.C. Minister of Mines Reports, 1928.
1929.
1930.
- Elwell, J.P., 1983. Report on the Flamingo and Hummingbird Claims, Powell River Area, B.C., Assessment Report 11,884.
- Lerliche, P.L., 1988. Summary Report on the Hummingbird Claim, Powell River Area, B.C., Private Report for Clive Ashworth.
- Roddick, J.A. and Woodsworth, G.J., 1976. GSC Open File Map 480.
- Roddick, J.A., 1984. Vancouver North, Coquitlam and Pitt Lake Map Areas, British Columbia, GSC Memoir 335.

CERTIFICATE

I, PETER D. LERICHE, of 3126 West 12th Avenue, Vancouver, B.C., V6K 2R7, do hereby state that:

1. I am a graduate of McMaster University, Hamilton, Ontario, with a Bachelor of Science Degree in Geology, 1980.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I have actively pursued my career as a geologist for ten years in British Columbia, Ontario, Yukon and Northwest Territories, Arizona, Nevada and California.
4. The information, opinions, and recommendations in this report are based on fieldwork carried out under my direction, and on published and unpublished literature.
5. I have no interest, direct or indirect, in the subject claims.
6. I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of private or public financing.



Peter D. Leriche, B.Sc., F.G.A.C.

Dated at Vancouver, February 25, 1989

CERTIFICATE

I, FAYZ F. YACOUB, of 13031 - 64th Avenue, Surrey, British Columbia, V3W 1X8, do hereby declare:

1. That I am a graduate in geology and chemistry from Assuit University, Egypt (B.Sc. 1967), and Mining Exploration Geology of the International Institute for Aerial Survey and Earth Sciences (I.T.C.), Holland (Diploma 1978).
2. I have actively pursued my career as a geologist for the past fifteen years.
3. The information, opinions, and recommendations in this report are based on fieldwork carried out by myself, and on published and unpublished literature. I was present on the subject property on March 21 and 22, 1988.
4. I have no interest, direct or indirect, in the subject claims.
5. I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of private or public financing.



Fayz F. Yacoub, B.Sc.

Dated at Vancouver, February 25, 1989

ITEMIZED COST STATEMENT

(Geologist, Geotechnician: March 21-22/88, 2 field days)

Project Preparation		\$	300.00
Mob/Demob (includes transportation, freight and wages)			1,035.00
<u>Field Crew</u>			
Field Geologist \$275/day x 2 days	\$	550.00	
Geotechnician \$210/day x 2 days		<u>420.00</u>	970.00
<u>Field Costs</u>			
Helicopter Support \$650/hr x 2 hrs	\$	1,300.00	
Food and Accommodations \$70/day x 4 mandays		280.00	
Communications \$25/day x 2 days		50.00	
Supplies		50.00	
4X4 Truck \$110/day x 2 days		<u>220.00</u>	1,900.00
<u>Lab Analysis</u>			
2 silt samples @ \$24.35/sample (Au,Ag by FA, Cu and Multi-element ICP)	\$	48.70	
12 rock samples @ \$26.50/sample (Au,Ag by FA, Cu and Multi-element ICP)		<u>292.50</u>	341.20
<u>Supervision and Report</u>			
Supervision	\$	225.00	
Report Writing		550.00	
Map Plotting and Drafting		250.00	
Word Processing, Copying, Binding		<u>240.00</u>	1,265.00
Sub-total			\$ 5,811.20
Administration 15%			<u>871.68</u>
Total			\$ <u>6,682.88</u>

APPENDIX A

ROCK SAMPLE DESCRIPTIONS

ROCK SAMPLE DESCRIPTIONS

HUMMINGBIRD CLAIM GROUP

SAMPLE NO.	SAMPLE TYPE AND DESCRIPTION	ASSAY RESULTS	WIDTH CM
CL88-R1	Chip; light grey to green, fine grained metavolcanic rocks, 2-3% epidote, 1-2% fine-grained pyrite.	oz/Cu <.01oz/ton Ag	100
CL88-R2	Chip; malachite zone within light grey metavolcanic rocks, highly altered; strong epidote, no visible texture. Strike 160 /90	3.08% Cu 1.54oz/ton Ag .008oz/ton Au	100
CL88-R3	Dump Sample of rusty light to dark brown metavolcanic with 5% disseminated pyrite, trace of chalcopyrite and green malachite	2.95% Cu 3.51oz/ton Au .006oz/ton Au	---
CL88-R4	Dump; dark brown rusty metavolcanic rocks minor malachite, trace of fine grained pyrite dissemination, strong oxidation	.68% Cu .90oz/ton Ag <.005oz/ton Au	---
CL88-R5	Chip; epicotized, altered light grey volcanic with strong green malachite stain, 2-3% pyrite	.71% Cu .05oz/ton Ag <.005oz/ton Au	100
CL88-R6	Chip; well defined malachite zone strike 68 degrees and vertical, disseminated to semimassive pyrite and minor chalcopyrite hosted by highly altered fine-grained epidotized volcanics.	11.34% Cu 1.33oz/ton Ag <.005oz/ton Au	30
CL88-R7	Dump sample of altered light grey epidotized volcanic material, considerable amount of sulphide, mainly pyrite 10% and minor copper staining. No visible texture.	6.04% Cu .76oz/ton Ag .006oz/ton Au	---

SAMPLE NO.	SAMPLE TYPE AND DESCRIPTION	ASSAY RESULTS	WIDTH CM
CL88-R8	Chip; rusty zone of altered, epidotized volcanic rocks, hosting sulphide pod of 5-6% disseminated pyrite, high concentration of malachite, minor chalcopyrite.	6.11% Cu .96oz/ton Ag .005oz/ton Au	30
CL88-R9	Chip; light to dark green malachite zone hosted by altered, crumbly epidotized volcanic rocks, 2-3% fine grained pyrite, minor chalcopyrite.	3.38% Cu 3.95oz/ton Ag <.005oz/ton Au	30
CL88-10	Chip; epidotized, light grey altered silicified volcanic, quartz veinlets with 2-3% pyrite dissemination, green malachite in vuggs.	2.91% Cu 1.01oz/ton Ag <.005oz/ton Au	30

APPENDIX B

ANALYTICAL REPORTS AND TECHNIQUES



VANGEOCHEM LAB LIMITED

MAIN OFFICE
1521 PEMBERTON AVE.
NORTH VANCOUVER, B.C. V7P 2S3
(604)986-5211 TELEX: 04-352578

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

=====

ASSAY ANALYTICAL REPORT

=====

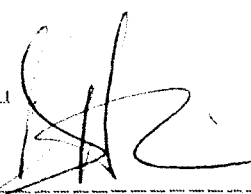
CLIENT: ASHWORTH EXPLORATION LTD. DATE: Mar 29 1988
ADDRESS: Mez. Floor, 744 W. Hastings St.
 : Vancouver, B.C. REPORT#: 880341 AA
 : V6C 1A5 JOB#: 880341

PROJECT#: 185 INVOICE#: 880341 NA
SAMPLES ARRIVED: Mar 23 1988 TOTAL SAMPLES: 12
REPORT COMPLETED: Mar 29 1988 REJECTS/FULPS: 90 DAYS/1 YR
ANALYSED FOR: Cu Ag Au ICP SAMPLE TYPE: 10 Rock 2 Silt

SAMPLES FROM: Submitted by Mr. P. Leriche.
COPY SENT TO: All copies sent to Vancouver office.

PREPARED FOR: Mr. Peter Leriche

ANALYSED BY: David Chiu

SIGNED: 

Registered Provincial Assayer

GENERAL REMARK: Invoice sent to Vancouver office.



VANGEOCHEM LAB LIMITED

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(604) 251-5656

REPORT NUMBER: 880341 AA

JOB NUMBER: 880341

ASHWORTH EXPLORATION LTD.

PAGE 1 OF 1

SAMPLE #	Cu %	Ag oz/st	Au oz/st
CL 88-R 1	.02	<.01	<.005
CL 88-R 2	3.08	1.54	.008
CL 88-R 3	2.95	3.51	.006
CL 88-R 4	.68	.90	<.005
CL 88-R 5	.71	.05	<.005
CL 88-R 6	11.34	1.33	<.005
CL 88-R 7	6.04	.76	.006
CL 88-R 8	6.11	.96	<.005
CL 88-R 9	3.38	3.95	<.005
CL 88-R 10	2.91	1.01	<.005
CL 1 3 - 0+00E (Silt)	.01	<.01	<.005
CL 2 3 - 1+25E (Silt)	.01	<.01	<.005

DETECTION LIMIT

1 Troy oz/short ton = 34.28 ppm

.01 .01 .005
1 ppm = 0.0001% ppm = parts per million

< = less than

signed: _____

VANGEOCHEM LAB LIMITED

MAIN OFFICE: 1521 PEMBERTON AVE. N. VANCOUVER B.C. V7P 2S3 PH: (604)986-5211 TELEX: 04-352578
 BRANCH OFFICE: 1630 PANDORA ST. VANCOUVER B.C. V5L 1L6 PH: (604)251-5656

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:2 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
 THIS LEACH IS PARTIAL FOR SN, MN, FE, CA, P, CR, MG, BA, PD, AL, NA, K, N, PT AND SR. AU AND PD DETECTION IS 3 PPM.
 IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -- NOT ANALYZED

COMPANY: ASHWORTH EXPL
 ATTENTION:
 PROJECT: 185

REPORT#: 880341 PA
 JOB#: 880341
 INVOICE#: 880341 NA

DATE RECEIVED: 88/03/24
 DATE COMPLETED: 88/03/25
 COPY SENT TO: P LERICHE

ANALYST *W. J.*

PAGE 1 OF 1

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 88-R 1	.3	2.08	6	ND	197	3	.38	.4	14	27	90	3.03	.12	2.24	140	3	.01	22	.12	6	ND	ND	ND	ND	10	ND	ND	42
CL 88-R 2	51.4	.99	14	ND	3	ND	4.33	3.2	47	38	35318	4.04	.11	.04	1076	4	.01	56	.03	88	ND	ND	ND	ND	11	ND	4	56
CL 88-R 3	>100	.91	15	ND	2	ND	4.01	6.1	54	59	34935	3.69	.10	.07	910	5	.01	66	.03	98	ND	ND	ND	ND	24	ND	3	187
CL 88-R 4	29.2	1.09	9	ND	2	ND	6.34	1.2	30	43	7168	4.47	.13	.03	1515	1	.01	28	.03	25	ND	ND	ND	ND	2	ND	5	42
CL 88-R 5	2.2	.77	19	ND	3	ND	2.59	1.7	19	55	7036	1.52	.08	.08	419	2	.01	26	.09	21	ND	ND	ND	ND	42	ND	ND	124
CL 88-R 6	33.5	.25	ND	ND	1	ND	1.72	15.1	557	39	>10%	18.30	.16	.06	314	5	.01	1024	.01	197	ND	ND	ND	ND	25	ND	ND	907
CL 88-R 7	19.1	.54	ND	ND	2	ND	2.61	9.3	181	49	82936	11.19	.13	.13	604	4	.01	392	.01	117	ND	ND	ND	ND	40	ND	ND	818
CL 88-R 8	10.8	.54	ND	ND	3	ND	3.38	5.3	143	37	86544	8.21	.11	.05	404	3	.01	249	.01	113	ND	ND	ND	ND	42	ND	ND	352
CL 88-R 9	>100	.55	16	ND	11	ND	3.27	5.1	75	46	39097	3.08	.08	.07	477	3	.01	91	.05	109	ND	ND	ND	ND	21	ND	ND	290
CL 88-R 10	30.3	.84	9	ND	16	ND	2.79	4.9	80	36	31474	3.38	.08	.03	468	2	.01	94	.05	70	ND	ND	ND	ND	25	ND	ND	290
CL1 3-0+00E	.3	1.65	15	ND	27	ND	.22	.1	7	7	232	1.25	.02	.28	199	3	.01	12	.02	6	ND	ND	ND	ND	12	ND	ND	30
CL2 3-1+25E	.3	3.28	9	ND	61	ND	.63	1.2	15	17	121	2.61	.04	.78	441	1	.01	28	.06	7	ND	ND	ND	ND	37	ND	ND	110
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1



VANGEOCHEM LAB LIMITED

MAIN OFFICE
1521 PEMBERTON AVE.
NORTH VANCOUVER, B.C. V7P 2S3
(604) 986-5211 TELEX: 04-352578

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

=====

GEOCHEMICAL ANALYTICAL REPORT

=====

CLIENT: ASHWORTH EXPLORATION LTD. DATE: March 31 1988
ADDRESS: Mez. Floor, 744 W. Hastings St.
 : Vancouver, B.C. REPORT#: 880341 GA
 : V6C 1A5 JOB#: 880341

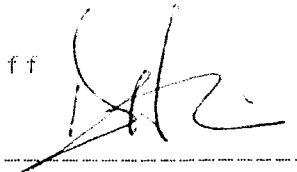
PROJECT#: 185 INVOICE#: 880341 NB
SAMPLES ARRIVED: March 23 1988 TOTAL SAMPLES: 3
REPORT COMPLETED: March 31 1988 SAMPLE TYPE: 3 Rock
ANALYSED FOR: Au (FA/AAS) REJECTS: SAVED

SAMPLES FROM: Submitted by Mr. P. Leriche.
COPY SENT TO: All copies sent to Vancouver office.

PREPARED FOR: Mr. Peter Leriche

ANALYSED BY: VGC Staff

SIGNED: _____



GENERAL REMARK: Invoice sent to Vancouver office.



VANGEOCHEM LAB LIMITED

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NORTH VANCOUVER, B.C. V7P 2S3
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REPORT NUMBER: 880341 GA

JOB NUMBER: 880341

ASHWORTH EXPLORATION LTD.

PAGE 1 OF 1

SAMPLE #	Au
CL 88-R 2	ppb 80
CL 88-R 3	nd
CL 88-R 7	80

DETECTION LIMIT

5

nd = none detected

-- = not analysed

is = insufficient sample

January 16 1989

TO: Peter Leriche
ASHWORTH EXPLORATION LTD.
718 - 789 West Pender St.
Vancouver, B.C. V6C 1H2

FROM: Vangeochem Lab Limited
1988 Triumph Street
Vancouver, British Columbia
V5L 1K5

SUBJECT: Analytical procedure used to determine gold and silver by fire assay method and detect by gravimetry in geological samples.

1. Method of Sample Preparation

- (a) Geochemical soil, silt or rock samples were received at the laboratory in high wet-strength, 4" x 6", Kraft paper bags. Rock samples would be received in poly ore bags.
- (b) Dried soil and silt samples were sifted by hand using an 8" diameter, 80-mesh, stainless steel sieve. The plus 80-mesh fraction was rejected. The minus 80-mesh fraction was transferred into a new bag for subsequent analyses.
- (c) Dried rock samples were crushed using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for subsequent analyses.

2. Method of Extraction

- (a) 1/4 to 1 assay tonne of the pulp samples were used. Samples were weighed out using a top-loading balance and deposited into individual fusion pots.
- (b) A flux of litharge, soda ash, silica, borax, and, either flour or potassium nitrite is added. The samples are thoroughly mixed, then fused at 1900 degrees Farenhiet to form a lead "button".
- (c) The gold and silver is extracted by cupellation and weighed as a dore bead. The gold is then parted with

diluted nitric acid.

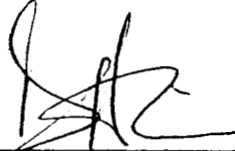
(d) The gold bead is retained for subsequent measurement.

3. Method of Detection

The gold bead is weighed using a Sartorius micro-balance. The weight lost from the original bead is the silver content. Both the silver and the gold are reported in Ounces per short tonne.

4. Analysts

The analyses were supervised or determined by Mr. Conway Chun or Mr. David Chiu and his laboratory staff.



David Chiu
VANGEOCHEM LAB LIMITED

January 16 1989

TO: Peter Leriche
ASHWORTH EXPLORATION LTD.
718 - 789 West Pender St.
Vancouver, B.C. V6C 1H2

FROM: Vangeochem Lab Limited
1988 Triumph Street
Vancouver, British Columbia
V5L 1K5

SUBJECT: Analytical procedure used to determine hot acid soluble for 28 element scan by Inductively Coupled Plasma Spectrophotometry in geochemical silt and soil samples.

1. Method of Sample Preparation

- (a) Geochemical soil, silt or rock samples were received at the laboratory in high wet-strength, 4" x 6", Kraft paper bags. Rock samples would be received in poly ore bags.
- (b) Dried soil and silt samples were sifted by hand using an 8" diameter, 80-mesh, stainless steel sieve. The plus 80-mesh fraction was rejected. The minus 80-mesh fraction was transferred into a new bag for subsequent analyses.
- (c) Dried rock samples were crushed using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for subsequent analyses.

2. Method of Digestion

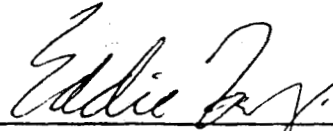
- (a) 0.50 gram portions of the minus 80-mesh samples were used. Samples were weighed out using an electronic balance.
- (b) Samples were digested with a 5 ml solution of HCL:HNO₃:H₂O in the ratio of 3:1:2 in a 95 degree Celsius water bath for 90 minutes.
- (c) The digested samples are then removed from the bath and bulked up to 10 ml total volume with dimineralized water and thoroughly mixed.

3. Method of Analyses

The ICP analyses elements were determined by using a Jarrel-Ash ICAP model 9000 directly reading the spectrophotometric emissions. All major matrix and trace elements are interelement corrected. All data are subsequently stored onto disk.





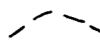



4. Analysts

The analyses were supervised or determined by either Mr. Eddie Tang, and, the laboratory staff.



Eddie Tang
VANGEOCHEM LAB LIMITED

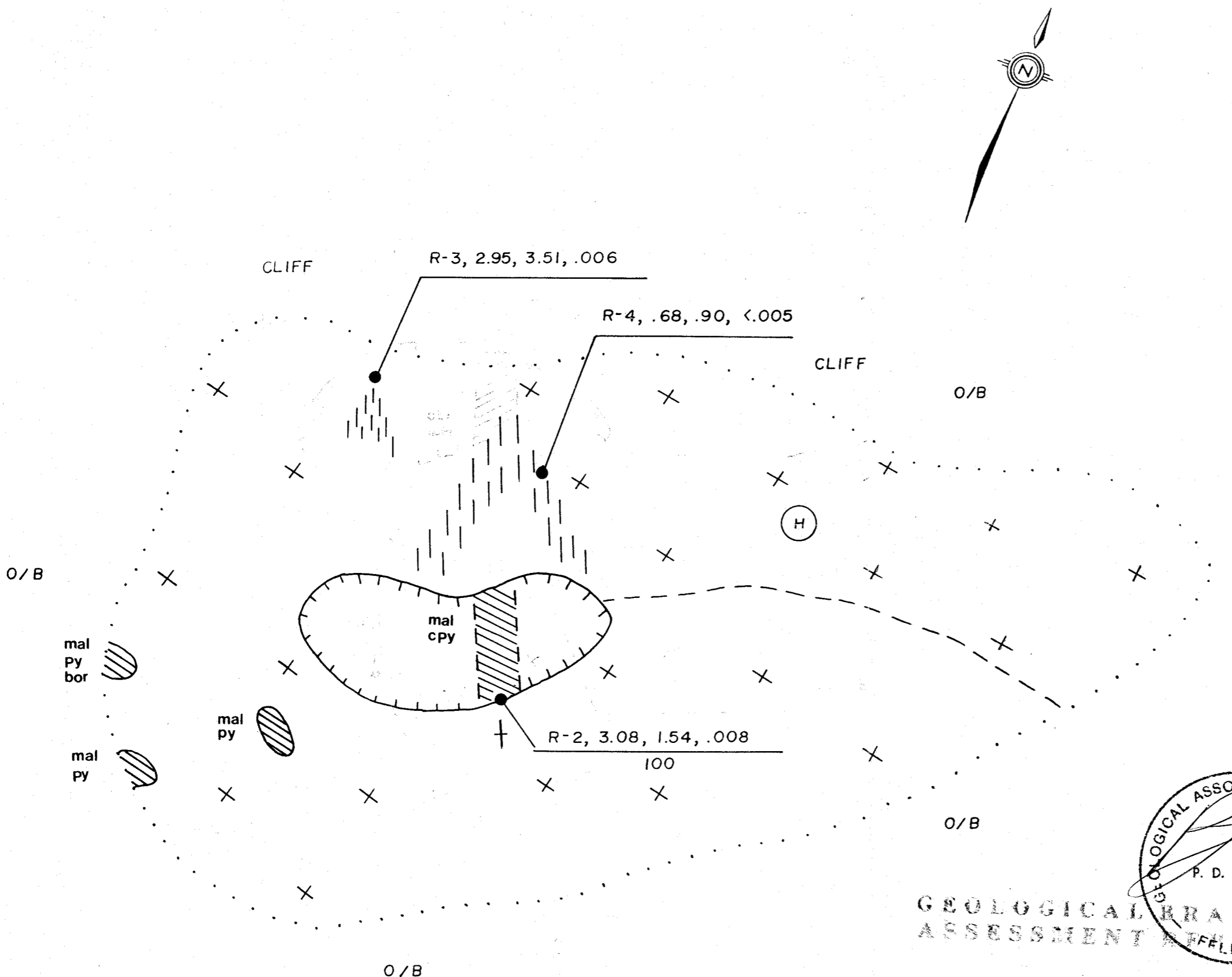
LEGEND

-  Disseminated to Massive Sulphide and Malachite Zone
-  Altered Volcanic and Sedimentary Rocks
-  Dump Rocks
-  Strike and Dip
-  Trail
-  Deep Trench (full of water)
-  Helicopter Pad
-  R-2 Rock Sample Location and Number

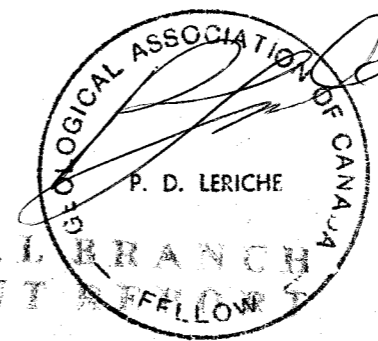
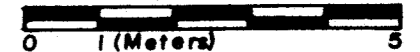
ABBREVIATIONS

mal malachite
py pyrite
bor bornite
cpy chalcopyrite

$\frac{R-2, 3.08, 1.54, .008}{100} =$
 Sample Number, Cu%, Ag(oz/ton), Au(oz/ton)
 Sample Width in Cm



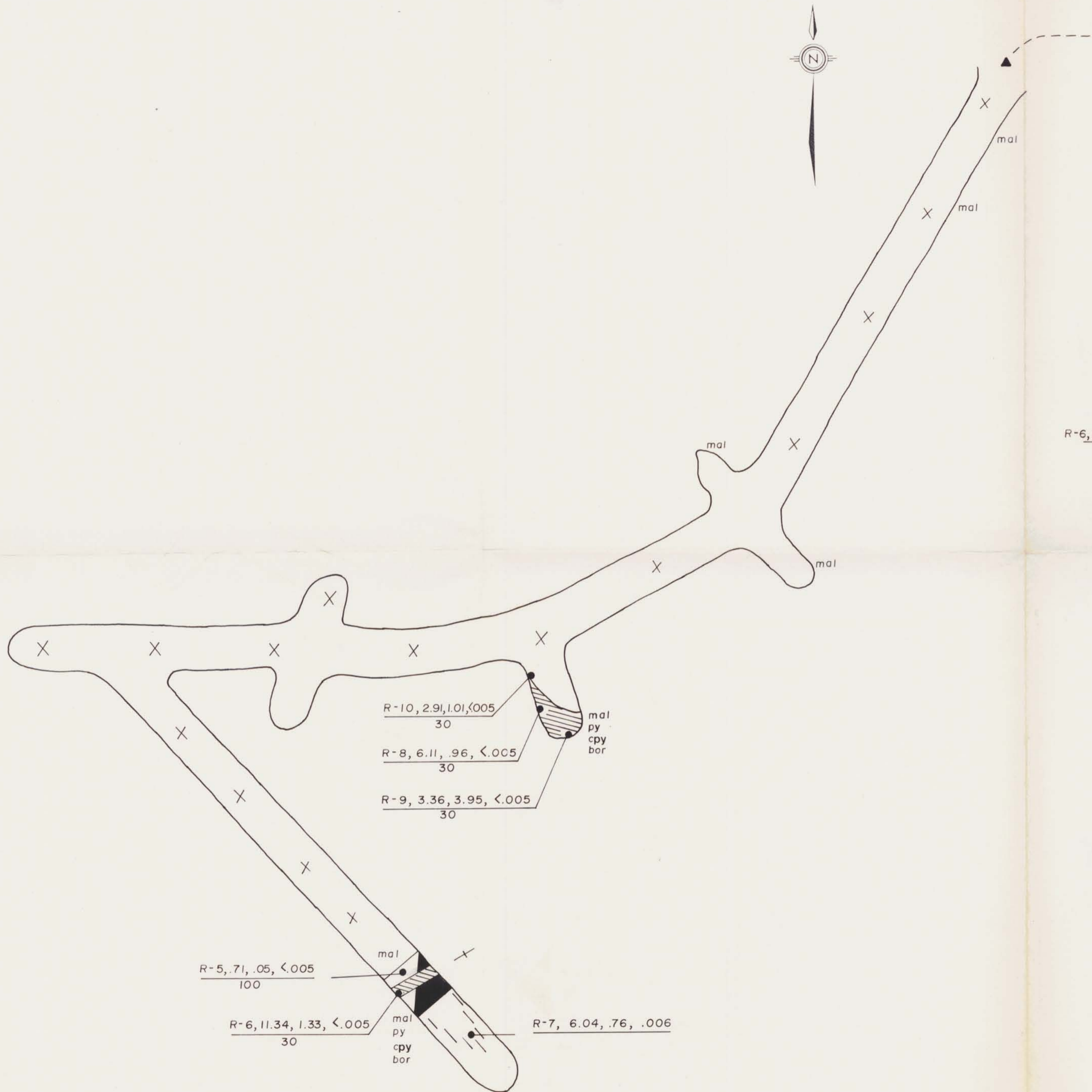
SCALE 1:100





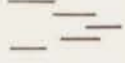


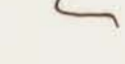
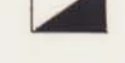
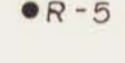
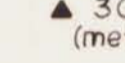
GEOLOGICAL BRANCH
ASSESSMENT FELLOW

18,531

HUMMINGBIRD PROJECT Vancouver M.D., B.C. NTS 92K/1W		
DEEP TRENCH SHOWING		
Scale 1: 100	By: F.Y.	Drn: V.W.
Date: APRIL, 1988	Fig. 4	
Ashworth Explorations Limited		



LEGEND

-  Disseminated to Massive Sulphide and Malachite Zone
-  Altered Volcanic and Sedimentary Rocks
-  Dump Rocks
-  Strike and Dip
-  Trail
-  Adit
-  Winze
-  Rock Sample Location and Number
-  300 (meter) Spot Elevation (approx.)

R-6, 11.34, 1.33, .005 = $\frac{\text{SAMPLE NUMBER, Cu(\%), Ag(oz/ton), Au(oz/ton)}}{\text{SAMPLE WIDTH (cm)}}$

ABBREVIATIONS

- mal malachite
- py pyrite
- bor bornite
- cpy chalcopyrite

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

18,531



SCALE 1:100
0 1 (Meters) 5

<p>HUMMINGBIRD PROJECT Vancouver M.D., B.C. NTS 92K/1W</p> <p>UPPER ADIT SHOWING PLAN AND ASSAY RESULTS</p>		
Scale: 1:100	By: F.Y.	Drn: VW
Date: March, 1988	Figure: 5	
Ashworth Explorations Limited		