

860290

SUMMARY REPORT  
1989 EXPLORATION PROGRAM

ROCHER DEBOULE PROPERTY

Omineca Mining Division  
Latitude 55 9.8'N Longitude 127 35.6'W  
NTS Map Sheet 93M/4E

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November 1989

## SUMMARY

The 1988 field season successfully drill tested a portion of the #2 vein in the old Rocher Deboule workings. That drill testing and additional drift sampling of other parts of the #2 vein allowed some preliminary resource estimates to be made, indicating a potential 55,000 tons averaging 2.69% copper, 6.05 oz/ton silver and 0.102 oz/ton gold (equivalent to 0.347 oz/ton Au at metal prices prevalent at the time of the estimates). A further 70,000 tons may remain to be discovered in the vicinity of these resources. With the development available from previous operations, such a resource figure makes continued reserve exploration of the #2 vein the main priority on the property.

A brief examination of the #4 vein in 1988 indicated significant reserve potential may remain in this vein. Only the uppermost level was accessible, due to collapse of the 300 level cross cut to surface and resulting flooding. During 1989 the 300 level was reopened and the #4 vein sampled with encouraging results.

Rediscovery and preliminary sampling of the #2A vein had yielded some very encouraging results in 1988. Work in 1989 was limited by the unstable nature of the slide in the vicinity of the outcrop. However, hand trenching continued to expose ferricrete with very high values in copper, silver and some gold. The #2A vein remains a high priority target for future exploration. All 1989 work was conducted under contract by J.M. Hutter, a geologist and mining contractor, except for a three day visit by the author once the 300 level was opened up. Hence all sampling and descriptions of the vein was undertaken jointly by the author and Hutter.

The strong geophysical/geochemical anomaly associated with a possible easterly extension of the #1 vein delineated in 1987 remains untested while the source of the strong geochemical anomalies in the talus of upper Juniper Creek has not been located.

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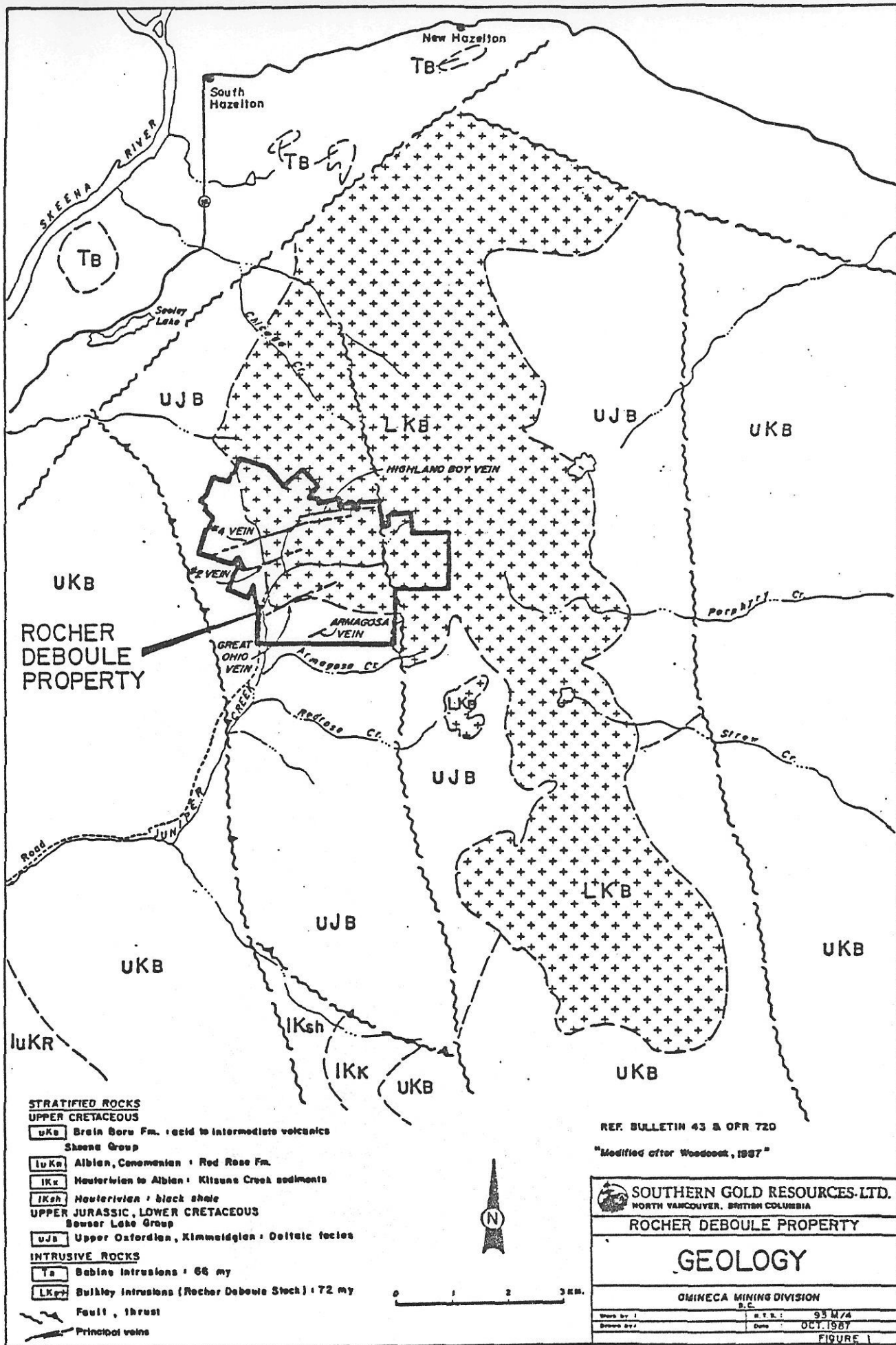
## 1. INTRODUCTION

The Rocher Debole property consists of approximately 9 km<sup>2</sup> of reverted crown grants and located mineral claims 8 km south of Hazelton in central British Columbia. An option on the property was acquired by Southern Gold Resources early in 1987.

The history, geology, mineralization and previous work, including the 1987 and 1988 programs, are fully described in prior reports by the writer and will not be repeated. These texts are fully referenced at the end of this report. In brief, the Rocher Debole property lies on the northwest margin of a granodiorite pluton and hosts a series of persistent shear hosted hornblende - quartz veins with locally significant values of copper, silver and gold occurring as chalcopyrite, tetrahedrite +/- pyrrhotite, arsenopyrite and rarely cobalt - nickel sulpharsenides (see Figure 1). Previous production, mostly in the 1910's and 1950's, totalled 52,700 tons averaging 5.88% Cu, 1.6 oz/ton Ag and 0.085 oz/ton Au, principally from the #4 vein, with minor quantities from the #2 vein.

Southern Gold Resources conducted an extensive surface exploration program in the vicinity of the #2 and #4 veins in 1987 and, in 1988, rehabilitated some of the #2 vein workings. This gave access to drill a portion of the #2 vein and more extensive sampling of the workings. This program resulted in a drill indicated resource of 55,000 tons averaging 2.7% Cu, 6.05 oz/ton Ag and 0.102 oz/ton Au. A further potential resource of 70,000 tons is indicated by drift and raise sampling.

The 1989 program described herein comprised of rehabilitating the 300 level on the #4 vein, allowing a detailed examination of this vein, including sampling. Some limited trenching and sampling took place on the #2A vein.



CHONS

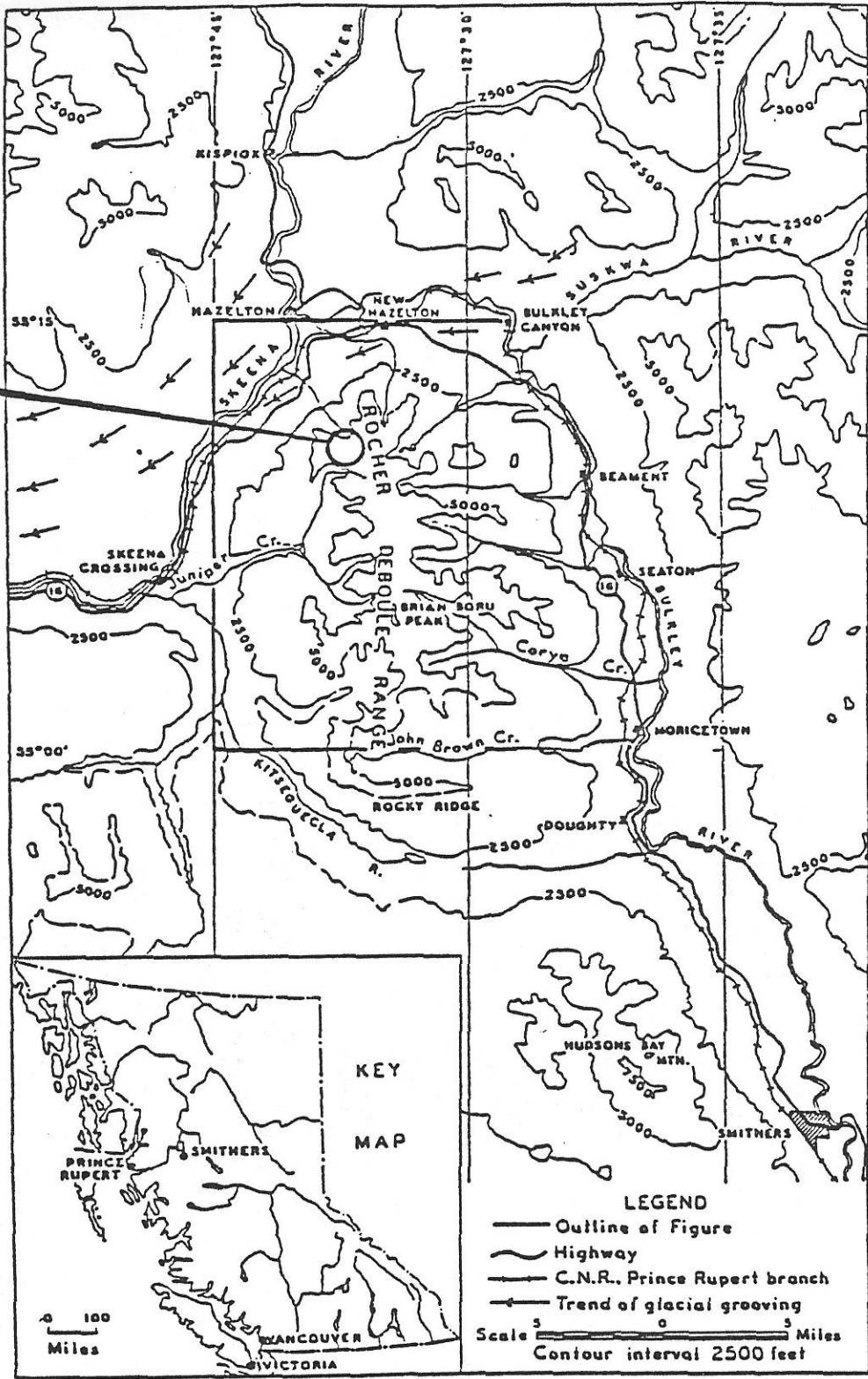
## 2. LOCATION & ACCESS


The Rocher Debole property lies at the north end of the Rocher Debole Range in central British Columbia at a Latitude of 55 9.8'N and a Longitude of 127 35.6'W on NTS Map Sheet 93M/4E. Most of the property lies in a basin within the range formed by glacial action and now drained by Juniper Creek (Figure 2).

The majority of the property is reached via a 4-wheel drive road that leaves Highway 16 at Skeena Crossing, 19 km southwest of Hazelton. This access road is a maintained logging road for 1 km and then branches off to follow Juniper Creek to the old Rocher Debole mine site, a distance of approximately 14.5 km. The Juniper Creek road was improved using a D6 Cat bulldozer to a good 4-wheel drive standard during 1987, and further upgraded during 1988. Approximately 1 km needs the addition of gravel fill to improve the road overall to a two-wheel drive standard. However, the lower part of the valley is being opened up by a logging company and a road may well be put part way to the mine site by this logging company during early 1989.

The Victoria area of the claim block is best reached from the west via an unmaintained 4-wheel drive road that leaves Highway 16 just southwest of Seeley Lake Provincial Park and climbs up the western slopes of the Rocher Debole Range, to approximately 400 m below the lowest adit on the Victoria Vein. There are no roads to any of the other workings, although some cleared foot trails improve access.

ROCHER  
DEBOULE  
PROPERTY



 <b>SOUTHERN GOLD RESOURCES LTD.</b> NORTH VANCOUVER, BRITISH COLUMBIA	
<b>ROCHER DEBOULE PROPERTY</b>	
<h1>INDEX MAP</h1>	
<b>OMINECA MINING DIVISION, B.C.</b>	
Work by :	N.T.S. : 93 M/4
Drawn by :	Date : October 1987
<b>FIGURE 2</b>	



### 3. TOPOGRAPHY & CLIMATE & VEGETATION

The Rocher Deboule Range of mountains are extremely rugged and slopes are steep to precipitous, with large areas covered in talus. The terrain impedes access to many areas and the talus obliterates all outcrop at the lower elevations. Within the range, elevations rise from 450m to over 2300m in a horizontal distance of 2 km. Within the property boundaries elevations vary from 975m to over 2200m. The majority of the areas below an elevation 1600 m are covered in coarse talus while the areas above 1800m are difficult to access due to precipitous bluffs.

Due to its position at the eastern edge of the Coast Mountain Range, the Rocher Deboule Range gets a mix of coastal and interior weather patterns. As a result, winter commences in late October with heavy snow falls persisting into April or May. With the onset of summer, melting is quick and by July most of the property is snow free, apart from isolated areas of permanent snowfield at the higher elevations. The summer months tend to be dry and hot, though coastal storms occasionally reach this far east. For example, on September 29, 1988 110 mm of rain fell over a 24 hour period.

Vegetation on the property is sparse. The only area with any significant amount of vegetation is the area immediately south and west of the Rocher Deboule mine site and on the lower slopes of Armagosa Creek. This principally consists of scrubby Pine and Juniper. The rest of the property is largely barren, either comprising of bare rock or talus covered slopes. Wildlife is rare, with the occasional black bear passing through the area and mountain goat reported at the higher elevations.

#### 4. PROPERTY & OWNERSHIP

The property consists of 41 reverted crown grants, two located fractional claims, four 2-post claims and one 20-unit located modified grid claim. All the reverted Crown Grants have been surveyed and the data is available in Victoria. Several of the old claim posts were also located in the field. The claims are listed following. The claims, except for the Serk 1-4, are grouped as the Rocher Deboule Group (See Figure 3). The claims are listed in Table 2 overleaf. All the Craig claims expire in 1996.

Southern Gold Resources acquired interest in the property from W.B. Craig in an acquisition agreement dated 5 February 1987. Under the terms of the agreement, Southern Gold is required to make a series of cash payments to Craig on the 31st January of each year, as long as it keeps the property. This gives Southern Gold a 100% working interest in the property, subject to the conditions of the agreement. However, that portion of the Victoria vein and Cross Vein on the Victoria (Lot 3303) and Belle (Lot 3304) above an elevation of 1575m is subject to a prior lease to J.M. Hutter of Telkwa, B.C.

Under a separate agreement with J.M. Hutter, dated 1st June 1988, Southern Gold Resources optioned an additional 12 Reverted Crown Grants adjoining the above claims for a period of three years. Southern Gold is required to maintain the property in good standing and can purchase the claims outright for a fixed price. The claims are listed below. All the Hutter claims expire in 1993.

As noted in the introduction, Southern Gold Resources granted a sub-option to CanaMin Resources Ltd., whereby CanaMin can earn a 50% interest in Southern's interest for expenditures of \$200,000. After CanaMin's expenditures reach \$200,000, further expenditures are shared equally by CanaMin and Southern Gold.

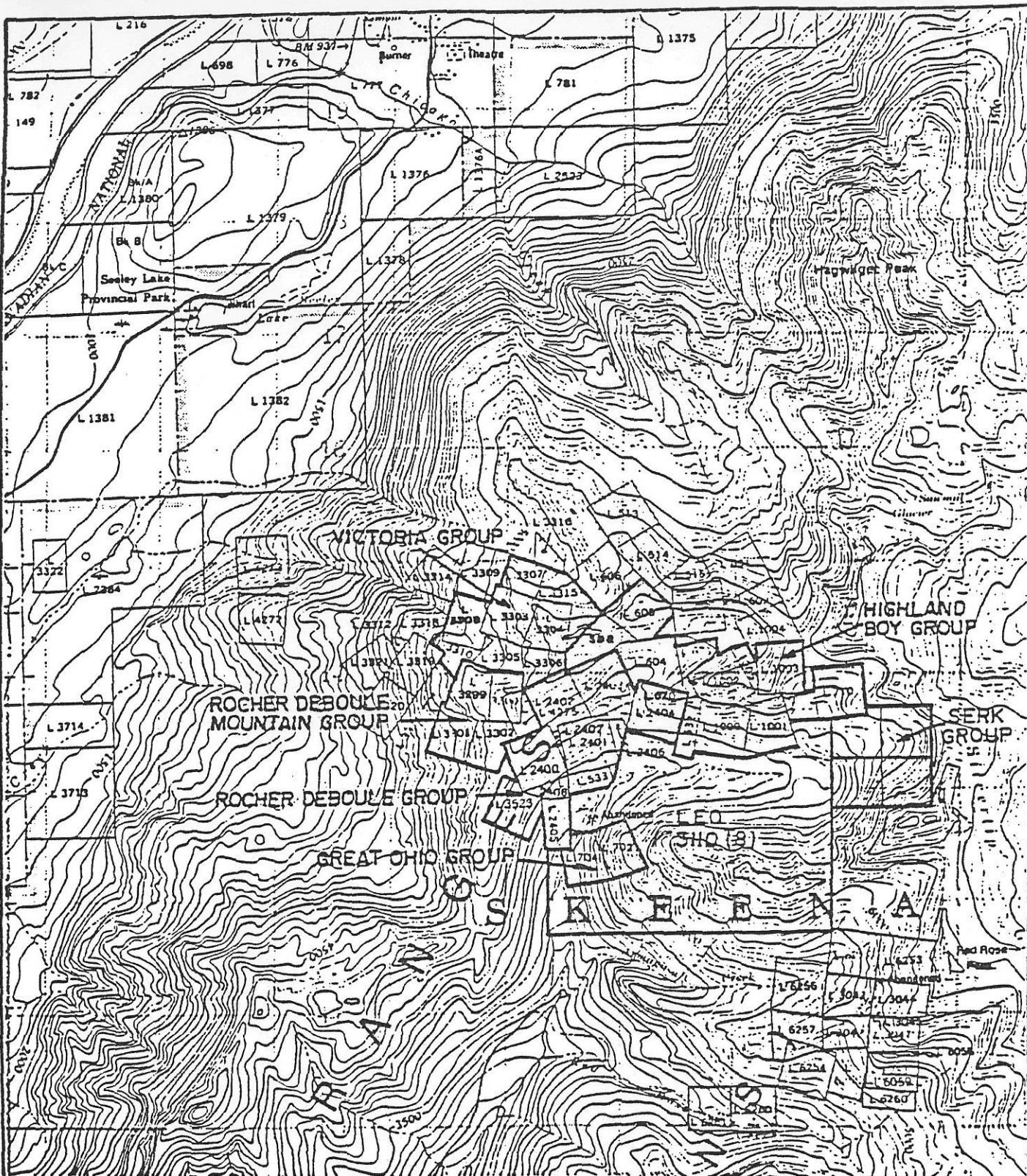
TABLE 1: LIST OF HUTTER CLAIMS

<u>Claim Name</u>	<u>*Type</u>	<u>Record #</u>	<u>Lot #</u>	<u>Record Date</u>
Monoplane	RCG	324	3313	10 6 1976
Mascot	RCG	325	3314	10 6 1976
Homestake	RCG	326	3309	28 7 1981
Silver Tip	RCG	4407	1004	28 7 1981
Delta	RCG	4408	600	28 7 1981
Summit	RCG	4409	601	28 7 1981
Crooked Fr.	RCG	4410	602	28 7 1981
Skeena	RCG	4411	606	28 7 1981
Cork Fr	RCG	4412	3316	28 7 1981
Calco	RCG	4414	514	28 7 1981
Chicago	RCG	4415	513	28 7 1981
Lakeview	RCG	4416	515	28 7 1981

TABLE 2: LIST OF CRAIG CLAIMS


<u>Claim Name</u>	<u>*Type</u>	<u>Record #</u>	<u>Lot #</u>	<u>Record Date</u>
Hazelton View	RCG	401	3299	25 8 1976
Lead Pick	RCG	402	3300	25 8 1976
Moose	RCG	403	3301	25 8 1976
Elk	RCG	404	3302	25 8 1976
Delta Fr	RCG	455	604	26 10 1976
Joe Fr	RCG	456	533	26 10 1976
Juniper	RCG	457	2400	26 10 1976
Balsam	RCG	458	2401	26 10 1976
Jack Pine	RCG	459	2402	26 10 1976
Timber Line	RCG	460	2403	26 10 1976
Iowa	RCG	461	2404	26 10 1976
Log Cabin	RCG	462	2405	26 10 1976
Balsam Fr	RCG	463	2406	26 10 1976
Pie Fr	RCG	464	2407	26 10 1976
Third Fr	RCG	465	2408	26 10 1976
Victoria	RCG	466	3303	26 10 1976
Belle	RCG	467	3304	26 10 1976
View Fr	RCG	468	3305	26 10 1976
Belle	RCG	469	3306	26 10 1976
Mamouth	RCG	470	3307	26 10 1976
Tiger	RCG	471	3308	26 10 1976
Bowl Fr	RCG	472	3309	26 10 1976
Summit	RCG	555	605	5 4 1977
Great Ohio	RCG	556	702	5 4 1977
Pilot	RCG	557	704	5 4 1977
Summit Fr	Fr	582	NA	6 4 1977
Waterfall Fr	Fr	583	NA	22 4 1977
Coral Queen	RCG	616	532	21 6 1977
Lucky Jack	RCG	617	603	21 6 1977
Islander	RCG	618	610	21 6 1977
Golden Fleece	RCG	619	1001	21 6 1977
Happy Jack	RCG	620	1003	21 6 1977
Zig Zag	RCG	621	1005	21 6 1977
Balmoral	RCG	622	1002	21 6 1977
Highland Boy	RCG	623	1000	21 6 1977
Independence Fr	RCG	687	4275	25 7 1978
Red Cross	RCG	1372	3310	13 9 1978
Last Chance	RCG	7609	3523	16 5 1986
Leo	MG	3110	NA	20 8 1980
Serk 1-4	2P	8820-8823	NA	3 9 1987
Little Hellen	RCG	9311	3319	29 3 1988
Patriotic	RCG	9311	3311	29 3 1988
Aeroplane	RCG	9311	3312	29 3 1988
Copper Hill	RCG	9312	3320	29 3 1988
Skeena	RCG	9313	3321	29 3 1988

\*Claims Types: RCG = Reverted Crown Grant    2P = Two Post  
 MG = Modified Grid                                Fr = Located Fractional Claims



SCALE 1:50,000



 <b>SOUTHERN GOLD RESOURCES LTD.</b> NORTH VANCOUVER, BRITISH COLUMBIA	
<b>ROCHER DEBOULE PROPERTY</b>	
<h1>CLAIM MAP</h1>	
<b>OMINECA MINING DIVISION, B.C.</b>	
Work by :	N.T.S. : 95 M/4
Drawn by : R.M.G.	Date : OCT. 1987
<b>FIGURE 3</b>	

## 5. 1989 EXPLORATION PROGRAM

The 1989 exploration program comprised principally of rehabilitating the 300 level cross-cut. This work provided access to the #4 vein, which was the principal source of ore for the Rocher Deboule Mine during its operating period. It was hoped that examination of the vein would provide information on the size and nature of the #4 vein ore chutes and give some indication of the potential for additional reserves both along strike and down dip.

### 5.1 300 Foot Level Rehabilitation

J. Hutter commenced work on August 27, 1989 by flying equipment to the portal of the 300 level cross cut by helicopter (See Figure 4). Old track was relaid to the cave in on the Juniper fault, approximately 300 feet from the portal. The caved section was then hand mucked and retimbered. This work was completed by September 23, 1989. The author flew to Smithers and attended at the property with J. Hutter on September 26 and 27, 1989. During that time the #4 vein was examined in some detail on the 300 foot level and part of the 200 level, gaining access via old raises.

The vein comprised principally of a massive hornblende-quartz vein, hosted in a shear zone, with the principal sulphide being chalcopyrite. Locally, a later phase quartz vein with pyrite and tetrahedrite mineralization, was developed on the hanging wall side of the hornblende vein. The mineralization varied in width from 35-150cm. The author and J. Hutter collected a total of 24 samples, 22 from the 300 foot level, stopes and raises and 2 from the 200 foot level (See Figure 5 for locations). No access was possible to deeper levels because of flooding. The average of all samples collected was 0.063 oz/ton Au, 2.56 oz/ton Ag and 4.12% Cu, over an average width of 78cm. At current metal prices, that is equivalent to 0.337 oz/ton Au.



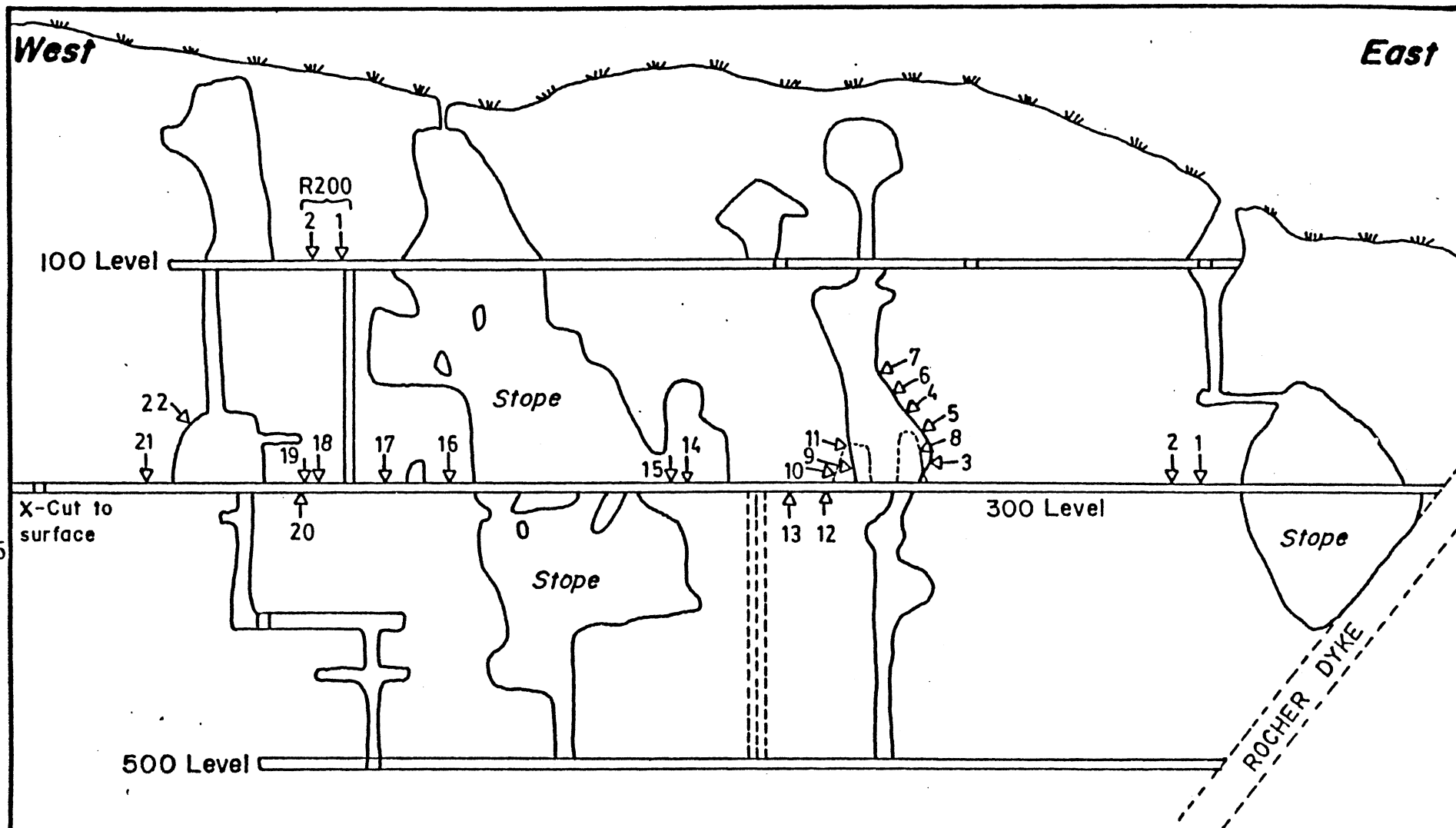
TABLE 3: 1989 ASSAY RESULTS - #4 VEIN

<u>Sample #</u>	<u>Level</u>	<u>Width</u> (cm)	<u>Gold</u> (oz/ton)	<u>Silver</u> (oz/ton)	<u>Copper</u> (%)	<u>Au Equiv.</u> (oz/ton)*
R3001	300	70	0.005	0.12	0.51	0.036
R3002	300	126	0.005	0.41	1.08	0.073
R3003	300	100	0.012	0.69	7.56	0.459
R3004	300	60	0.445	2.46	8.04	0.944
R3005	300	90	0.048	0.44	3.87	0.278
R3006	300	90	0.115	0.51	3.73	0.338
R3007	300	90	0.024	0.25	1.81	0.132
R3008	300	75	0.018	0.47	3.46	0.225
R3009	300	60	0.038	6.42	7.00	0.531
R3010	300	80	0.047	0.71	6.02	0.405
R3011	300	45	0.012	0.71	3.75	0.239
R3012	300	50	0.081	2.81	3.80	0.339
R3013	300	40	0.006	1.58	8.62	0.527
R3014	300	100	0.119	0.55	1.38	0.206
R3015	300	120	0.257	0.70	3.32	0.459
R3016	300	75	0.052	35.58	12.50	1.263
R3017	300	67	0.011	8.31	5.52	0.444
R3018	300	60	0.001	0.48	0.10	0.013
R3019	300	110	0.005	0.29	0.05	0.012
R3020	300	150	0.003	0.71	1.09	0.076
R3021	300	40	0.061	1.10	7.40	0.504
R3022	300	45	0.012	0.67	6.90	0.421
R2001	200	90	0.092	0.81	8.82	0.614
R2002	200	35	0.001	0.41	4.68	0.278
1989 Average:		<u>78</u>	<u>0.063</u>	<u>2.56</u>	<u>4.12</u>	<u>0.337</u>


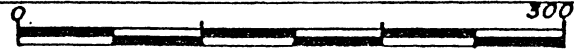
Assumptions

Gold: 380.00 US\$/oz  
 Silver: 5.20 US\$/oz  
 Copper: 1.10 US\$/lb

It should be noted that this sampling is only of remnant pillars left between stopes from earlier mining activities. Most of the stopes are 150 - 200cm in width, perhaps indicating the ore chutes were of that kind of width. It is also possible that previous operators extracted the higher grade portions of the vein since production records show an average grade of 7.5% copper (Quin, June 1989), although the ore could have been hand sorted prior to shipment.



**Note:** Workings below 300 foot level flooded  
 Stope outlines from Jasper (1952), modified by Quin. (1989)  
 All sample numbers on 300 foot level prefixed by "R300"

 <b>SOUTHERN GOLD RESOURCES LTD.</b> NORTH VANCOUVER, BRITISH COLUMBIA	
<b>ROCHER DEBOULE PROPERTY</b>	
<b>LONGITUDINAL SECTION</b> <b>#4 VEIN</b>	
	
Work by : <i>S.P. Quin</i> Drawn by : <i>S.P.O.</i>	N.T.S. : 93M/4E Date : Nov. 1989
<i>Fig. 5</i>	



## 5.2 #2A Vein Exploration

During 1988 some very encouraging results had been obtained from surface exposures of the #2A vein. Unfortunately, the outcrop is in the middle of a major landslide, preventing any significant surface work. However, Hutter was able to excavate deeper than had been possible in 1988, exposing an extensive ferricrete capping. It was determined that the samples collected in 1988 were actually from boulders embedded in the ferricrete, not from outcrop.

The author and Hutter collected two additional representative grab samples from the abundant material uncovered in the trench. This comprised principally silicified and hornblende altered granodiorite with locally abundant chalcopyrite and tetrahedrite. The results of the two 1989 samples, plus those for the earlier sampling are presented in Table 4 (See Figure 6 for locations).

**TABLE 4: ASSAY RESULTS - #2A VEIN**

<u>Sample #</u>	<u>Year</u>	<u>Width</u> <u>(cm)</u>	<u>Gold</u> <u>(oz/ton)</u>	<u>Silver</u> <u>(oz/ton)</u>	<u>Copper</u> <u>(%)</u>	<u>Au Equiv.</u> <u>(oz/ton)*</u>
R2A1	1989	Grab	0.069	6.18	11.30	0.808
R2A2	1989	Grab	<u>0.064</u>	<u>9.98</u>	<u>8.83</u>	<u>0.760</u>
	1989 Average	N/A	0.067	8.08	10.06	0.760
RD88-1R	1988	Float	0.165	17.14	4.51	0.661
RD88-2R	1988	49	0.028	16.19	2.15	0.374
R88-2A-1	1988	Grab	1.168	0.44	3.91	1.400
R88-2A-2	1988	Grab	0.322	16.55	7.90	1.006
R88-2A-3	1988	Grab	0.198	39.83	12.92	1.491
R88-2A-4	1988	Grab	<u>0.128</u>	<u>1.96</u>	<u>9.67</u>	<u>0.715</u>
	1988/89 Average	N/A	<u>0.268</u>	<u>13.53</u>	<u>7.65</u>	<u>0.896</u>

### Assumptions

Gold: 380.00 US\$/oz  
 Silver: 5.20 US\$/oz  
 Copper: 1.10 US\$/lb

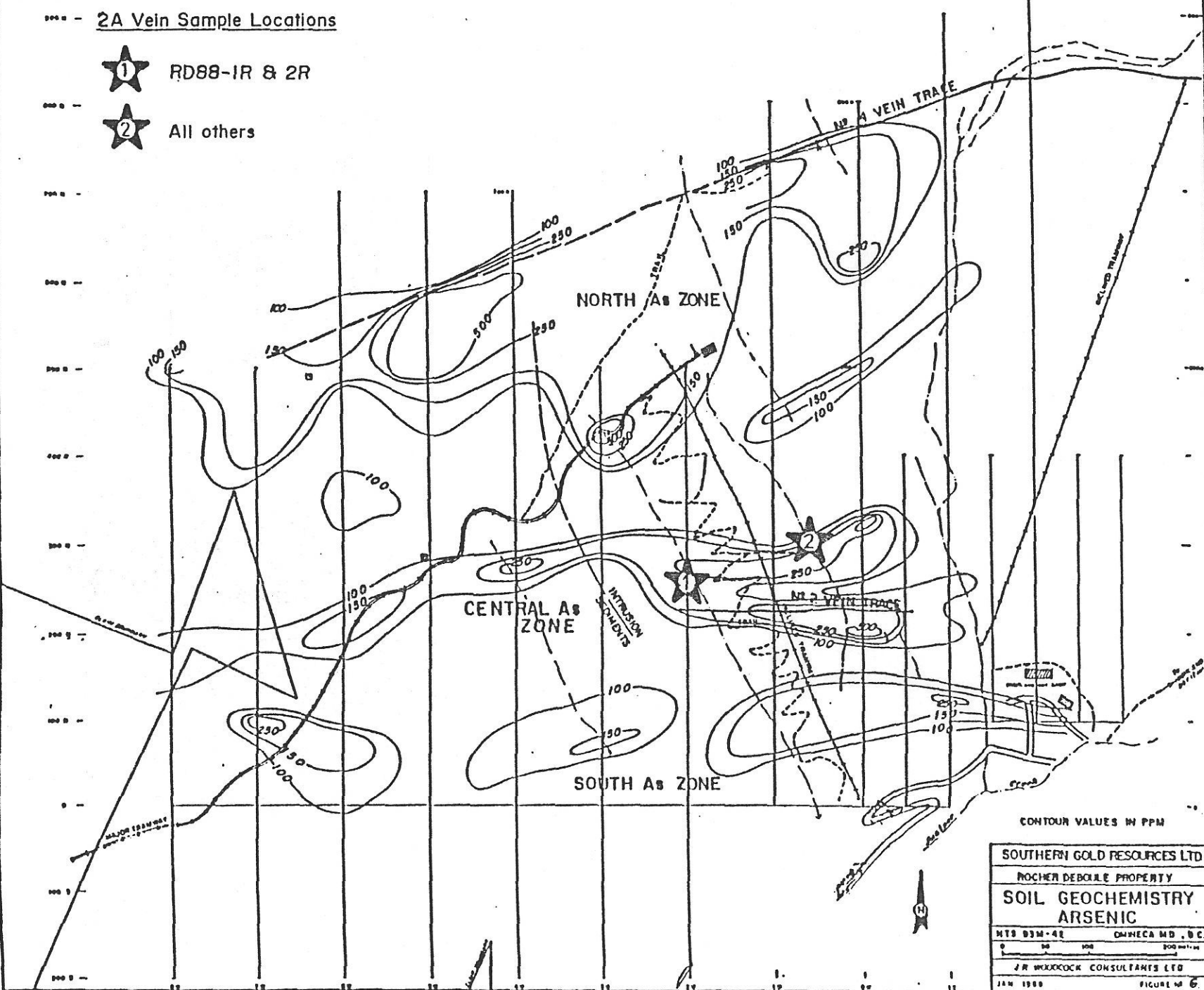
The two representative samples collected in 1989 match very closely. The 1988 results were generally higher in precious metals but generally lower in copper. Results from the #2A vein continue to be very encouraging. Combined with the results of the 1987 geophysics / geochemistry program which indicated significant lateral extent (250 - 300m), the #2A vein is a highly prospective target.

71

--- - 2A Vein Sample Locations

★ 1 RD88-1R & 2R

★ 2 All others



CONTOUR VALUES IN PPM

SOUTHERN GOLD RESOURCES LTD	
ROCHER DEBOILE PROPERTY	
SOIL GEOCHEMISTRY	
ARSENIC	
MTS 83M-42	OMNECA MD., B.C.
0 50 100 200 METERS	
J.R. WOODCOCK CONSULTANTS LTD	
JAN 1988	FIGURE NO. 6

## 6. CONCLUSIONS AND RECOMMENDATIONS

Work on the #4 vein indicated it hosts ore chutes of massive copper mineralization averaging 4-8% Cu, but generally lower in precious metal values than the #2 vein. Gold values were generally less than 0.05 oz/ton Au, though occasionally as high as 0.445 oz/ton. Silver was much lower than expected, generally assaying less than 1 oz/ton Ag, occasionally 1-3 oz/ton, with one anomalous sample returning 35 oz/ton Ag. These values are very similar to the 1915 and 1916 production reports, which all came from the #4 vein. However, these samples represent what was left behind during mining operations, so while the grade is probably consistent in the veins, stope widths indicate the previous operators extracted the wider sections of the #4 vein. These ore chutes appear to have strike extents of 200-400 feet but apparent dip extents in excess of 600 feet. These represent attractive exploration targets with potential for 50,000 - 100,000 tons per chute. Clearly there is unexplored potential for additional ore chutes along strike and possibly also down dip of the mined areas. The on strike potential can probably be most easily determined by extending the 1987 VLF-EM and Mag surveys to cover the strike extensions in detail. A 25 metre line spacing and 10m station interval is recommended.

The #2A vein is fairly well delineated, however, since the geophysical equipment will be available from the #4 vein survey, further definition work may as well be conducted.

The proposed program would be in addition to, or an alternative to, that outlined in last year's report (Quin, June 1989) which focuses entirely on the #2 vein. For the #2A and #4 vein, a surface program of extending and filling in the surface grid, running VLF-EM and Magnetometer surveys and prospecting is recommended. The estimated grid work would require up to 10,000 metres of grid to delineate 1000 metres of strike on the #4 vein and 300 metres of strike on the #2A vein (with 200 metre long lines spaced 25 metres apart). If similar productivity to the 1987 surveys can be obtained (2-3km per day, on already established grid lines), the surface program should be completed in one to two weeks. The timing would be largely dependent on the availability of soils for geochemical sampling. The budget for such a program is as set out below.

### Proposed Budget: #4 and #2A Veins

Labour (2 men, 7 days @ \$150/day)	\$2,100
Geophysical Equipment Rental	1,500
Geochemistry (500 samples @ \$10 each)	5,000
Camp (7 days @ \$200/day)	1,400
Transportation	500
Report	500
	<u>\$11,000</u>
Contingency	<u>\$1,000</u>
TOTAL BUDGET	<u>\$12,000</u>

7. STATEMENT OF EXPENDITURES

Labour:		
S.P. Quin (3 days @ \$300/day)		900.00
J. Hutter (29 days @ \$300/day)		8,700.00
D. North (76 hours @ \$18/hour		
29 hours @ \$27/hour)		<u>2,151.00</u>
		<u>\$11,751.00</u>
Supplies:		
Rail, ties, fuel, etc.		2,237.22
Mine car		<u>700.00</u>
		<u>\$2,937.22</u>
Transportation:		
Airline ticket (S.P. Quin)		452.80
Freight/Towing		177.65
Vehicle Rental		795.00
Helicopter		<u>1,150.92</u>
		<u>2,576.37</u>
Camp:		
Trailer Rental		318.00
Generator Rental		265.00
Groceries		642.86
Motel		44.28
Meals		<u>57.55</u>
		<u>1,327.69</u>
Assaying:		
24 Samples and bags		<u>664.50</u>
		<u>664.50</u>
Hutter's 5% Overhead		892.32
TOTAL EXPENDITURES		<u>\$20,149.10</u>

## 8. REFERENCES

- Annual Reports of the Minister of Mines, 1911 - 1928.
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9. STATEMENT OF QUALIFICATIONS

I, Stephen P. Quin, do hereby certify that:

1. I am a mining geologist with business address at #304 - 255 West 1st Street, North Vancouver, B.C., V7M 3K1.
2. I have a Bachelor of Science (Honours) Degree in Mining Geology from the Royal School of Mines in London, England. I am a member of several geological associations.
3. I have worked in mineral exploration since 1981. I have worked in various parts of British Columbia, Europe and the western United States of America.
4. I have based my report on an extensive study of the published data available on the property and on approximately three months spent on the property as detailed in this and other reports referenced herein.
5. Since August 1986 I have been a Director, Vice-President and Corporate Secretary and a major shareholder of Southern Gold Resources Ltd., a public company listed on the Vancouver Stock Exchange and a Director of CanaMin Resources Ltd., a public company also listed on the Vancouver Stock Exchange.
6. Between 1981 and 1986 I was a project geologist with Imperial Metals Corporation of Vancouver, British Columbia.

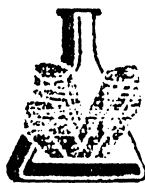
Signed in North Vancouver this            day of November 1989.

Stephen P. Quin, B.Sc., A.R.S.M.

APPENDIX #1 - ASSAY CERTIFICATES

OFFICE AND LABORATORIES:  
705 WEST FIFTEENTH STREET, NORTH VANCOUVER, B.C.  
CANADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524  
TELEX: VIA USA 7601067  
FAX: (604) 980-9621



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• EN  
LABORATORIES**

SPECIALISTS IN MINERAL ENVIRONMENTS  
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VANCOUVER OFFICE:  
705 WEST 15TH STREET  
NORTH VANCOUVER, B.C. CANADA V7M 1T2  
TELEPHONE (604) 980-5814 OR (604) 988-4524  
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:  
33 EAST IROQUOIS ROAD  
P.O. BOX 807  
TIMMINS ONTARIO CANADA P4N 7G7  
TELEPHONE: (705) 264-9995

Assay Certificate

9S-0258-RA1

Company: J.M.HUTTER  
Project: RDB  
Attn: J.M.HUTTER

Date: OCT-04-89  
Copy 1. J.M.HUTTER, TELKWA, B.C.  
2. J.K.HUTTER, C/O MIN-EN LABS.

We hereby certify the following Assay of 26 ROCK samples  
submitted SEP-28-89 by J.M.HUTTER.

Sample Number	AU G/TONNE	AU OZ/TON	AG G/TONNE	AG OZ/TON	CU %
R3001	.17	.005	4.2	.12	.507
R3002	.16	.005	14.2	.41	1.080
R3003	.42	.012	23.7	.69	7.560
R3004	15.24	.445	84.3	2.46	8.040
R3005	1.63	.048	15.0	.44	3.870
R3006	3.94	.115	17.4	.51	3.730
R3007	.82	.024	8.7	.25	1.810
R3008	.60	.018	16.0	.47	3.460
R3009	1.30	.038	220.0	6.42	7.000
R3010	1.62	.047	24.3	.71	6.020
R3011	.41	.012	24.2	.71	3.750
R3012	2.76	.081	96.2	2.81	3.800
R3013	.19	.006	54.3	1.58	8.620
R3014	4.09	.119	18.8	.55	1.380
R3015	8.82	.257	23.9	.70	3.320
R3016	1.79	.052	1220.0	35.58	12.500
R3017	.36	.011	285.0	8.31	5.520
R3018	.04	.001	16.3	.48	.098
R3019	.18	.005	10.0	.29	.054
R3020	.11	.003	24.3	.71	1.090
R3021	2.09	.061	37.7	1.10	7.400
R3022	.42	.012	22.9	.67	6.900
R2001	3.14	.092	27.8	.81	8.820
R2002	.03	.001	14.0	.41	4.680
R2A1	2.37	.069	212.0	6.18	11.300
R2A2	2.19	.064	342.0	9.98	8.830

Certified by *Benjamin*  
MIN-EN LABORATORIES



APPENDIX #2 - SAMPLE DESCRIPTIONS

Abbreviations

Qtz - Quartz  
Hb - Hornblende  
HW - Hanging Wall  
FW - Footwall  
Py - Pyrite  
Cpy - Chalcopyrite  
Tet - Tetrahedrite

#2 VEIN, 1002W DRIFT

<u>Sample #</u>	<u>Description</u>	<u>Au</u> <u>OPT</u>	<u>Ag</u> <u>OPT</u>	<u>Cu</u> <u>%</u>
<u>LOCATION: #4 VEIN, 300 FT. LEVEL</u>				
R300-1	@ 160ft Chip across 70cm including: 30cm of altered Granodiorite HW, minor Cpy plus 40cm sheared and oxidised Qtz-Hb-Cpy vein	0.005	0.12	0.507
R300-2	@ 173ft Chip across 126cm including: 36cm (HW) sheared Grd, minor Cpy 25cm Qtz-Hb vein, locally massive Cpy 65cm (FW) Grd., minor Cpy on fractures	0.005	0.41	1.080
R300-3	@ 390ft on FW Splay, 30ft up stope Chip across 100cm, including: 80cm (HW) massive Hb-Qtz vein, locally massive Cpy 20cm (FW) Granodiorite, minor Cpy	0.012	0.69	7.560
R300-4	@ 450ft on FW Splay, 65ft above drift Chip across 60cm Hb-Cpy vein	0.445	2.46	8.040
R300-5	@ 440ft on FW Splay, 50' above drift Chip across 90cm, including: 30cm (HW) rusty altered granodiorite 60cm (FW) Hb-Qtz-Cpy vein	0.048	0.44	3.870
R300-6	@ 455ft on FW Splay, 95ft above drift Chip across 90cm, including: 40cm (HW) Hb-Cpy vein 40cm rusty granodiorite with malachite stain 10cm (FW) Hb vein, minor Cpy	0.115	0.51	3.730
R300-7	@ 455ft on FW Splay, 115ft above drift Chip across 90cm, including: 50cm (HW) Granodiorite, minor Cpy 40cm (FW) Hb vein, disseminated Cpy, malachite stain	0.024	0.25	1.810
R300-8	@ 390ft on HW Splay, 40ft above drift Chip across 75cm of massive Hb vein, disseminated Cpy, including 15cm (HW) sheared, rusty Grd.	0.018	0.47	3.460

R300-9	@ 420ft on FW Splay Chip across 60cm, including: 30cm (HW) Py + Tet Quartz vein 30cm (FW) Cpy in Hb-Qtz vein	0.038	6.42	7.000
R300-10	@ 425ft on HW Splay Chip across 80cm, including: 10cm (HW) sheared Grd. 30cm Massive Hb altered, silicified Grd, minor Cpy 40cm Massive Hb-Cpy vein	0.047	0.71	6.020
R300-11	@ 420ft, 15ft above #9 in raise Chip across 45cm, including: 10cm (HW) Altered Granodiorite 20cm Hb-Cpy-Tet vein 15cm (FW) Altered Granodiorite	0.012	0.71	3.750
R300-12	@ ft, on FW Splay Chip across 50cm, including: 30cm (HW) Sheared Granodiorite 20cm (FW) Hb-Cpy-Qtz vein	0.081	2.81	3.800
R300-13	@ 486ft Chip across 40cm of rusty decomposed Hb-Cpy-Tet vein	0.006	1.58	8.620
R300-14	@ 530ft Chip across 100cm, including: 10cm (HW) sheared Grd. 90cm (FW) Massive Hb-Qtz vein, minor Cpy	0.119	0.55	1.380
R300-15	@ 550ft Chip across 120cm (FW not exposed) including: 20cm (HW) Sheared Grd. 100cm (FW) Hb-Qtz-Cpy vein	0.257	0.70	3.320
R300-16	@ 654ft Chip across 75cm (FW not exposed) of Hb-Qtz-Cpy-Tet vein, minor Galena	0.052	35.58	12.50
R300-17	@ 675ft Chip across 67cm, including: 5cm (HW) Sheared Granodiorite 2cm Massive Tetrahedrite vein 10cm Hb-Qtz vein, disseminated Cpy 50cm (FW) Silicified, Qtz veined Granodiorite	0.011	8.31	5.520

R300-18	@ 720ft Chip across 60cm (FW not exposed) Qtz-Py vein, late phase, friable Qtz-calcite-siderite	0.001	0.48	0.098
R300-19	@ 725ft Chip across 110cm, including: 30cm (HW) Hb-Qtz vein, NVM 80cm (FW) Qtz-siderite vein with coarsely disseminated Py	0.005	0.29	0.054
R300-20	@ 735ft Chip across 150cm, including: 120cm (HW) Qtz-siderite-calcite vein, friable, coarsely disseminated Py, minor Cpy + Tet. 30cm (FW) Massive Cherty Qtz + Hb vein	0.003	0.71	1.090
R300-21	@ 857ft Chip across 40cm massive, cherty Qtz-Hb vein with blebs of massive Cpy. FW not exposed	0.061	1.10	7.400
R300-22	@ 836ft, 75 feet up raise Chip across 45cm Hb-Cpy vein	0.012	0.67	6.900

LOCATION:     #4 VEIN, 200 FT. LEVEL

R200-1	@ Top of raise @ 707 feet Chip across 90cm of massive to semi-massive Cpy in Grd, Hb-Qtz vein	0.092	0.81	8.820
R200-2	@ 30ft east of R200-1 Chip across 35cm, including: 15cm (HW) Massive Cpy-Hb-Qtz vein 20cm (FW) Sheared & Qtz veined granodiorite	0.001	0.41	4.680

LOCATION:     #2A VEIN, SURFACE

R2A-1	Grab of capping Qtz-Hb altered Granodiorite, locally massive Cpy, bands of Tet	0.069	6.18	11.300
R2A-2	Grab as R2A-1	0.064	9.98	8.830