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ASSESSMENT REPORT
1987 FIELD SEASON

B J GROUP

SULPHURETS PROJECT

BRUCEJACK LAKE AREA

SKEENA MINING DIVISION

NTS MAP SHEET 104B/8,9

LATITUDE: 56 DEGREES 30 MINUTES NORTH

LONGITUDE: 130 DEGREES 13 MINUTES WEST

for

SULPHURETS JOINT VENTURE
NEWHAWK GOLD MINES LTD. (Operator)
GRANDUC MINES LTD.
860 - 625 Howe Street
Vancouver, British Columbia
V6C 2T6

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,166

Part 1 of 2

K. E. HICKS
FEBRUARY 1988

TABLE OF CONTENTS

	<u>Page</u>
I INTRODUCTION	1
II SUMMARY	1
III LOCATION ACCESS and CLIMATE	2
IV CLAIMS	5
V HISTORY	7
VI REGIONAL GEOLOGY	7
VII GEOLOGY OF THE WEST ZONE	9
VII.1 General Geology	9
VII.2 Lithologies	9
VII.3 Structure	10
VII.4 Alteration	10
VII.5 Mineralization	11
VIII DRILLING	12
IX SAMPLING AND ASSAYING	13
X CONCLUSIONS	14
XI COST SUMMARY	15
XII STATEMENT OF QUALIFICATIONS	16

LIST OF FIGURES

	<u>Page</u>
FIGURE 1. LOCATION MAP	4
FIGURE 2. CLAIM MAP	6
DRILL HOLE LOCATION MAP	(pocket)

LIST OF APPENDICES

- APPENDIX I - DIAMOND DRILL HOLE LOGS VOLUME II
APPENDIX II - GEOLOGICAL CORE LOGGING ROCK DESCRIPTIONS VOLUME II

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I. INTRODUCTION

The purpose of this report is to provide a record of work done on the BJ Group mineral claims which will be applied as assessment work as required under the Mineral Act. The report is contained in two volumes; the first containing the report text and maps and the second containing drill logs.

II. SUMMARY

The Sulphurets property is located 65 km northwest of Stewart, B.C, with access by helicopter out of Stewart or the Tide Lake airstrip

as well as a winter tote road up the Bowser Valley and across the Knipple Glacier.

The BJ Group is located in the southeast corner of the Sulphurets property.

The BJ Group consists of 99 claim units covering a large zone of alteration and mineralization worked periodically from about 1958.

The 1987 field season began in July and lasted to the end of November, work consisted of 7884.5 m of surface diamond drilling on the West Zone and the Gossan Hill area which fall within the BJ Group.

Approximately 7000 fire assays were run for gold and silver on drill core at our Stewart Assay laboratory.

The 1987 drilling program was targeted at expanding and defining the three directions in the West zone that mineralization remained completely open.

- 1) The extension of mineralization from the 1350 m level to surface was defined using a series of fan holes;
- 2) The zone was extended to the south approximately 110 m and still remains open in that direction;
- 3) Additional drilling to approximately 1000 ft below surface confirmed results along strike similar to those in 1986, leaving the zone still open to depth.

III. LOCATION ACCESS and CLIMATE

The property is located approximately 65 km north-west of Stewart, B.C., and approximately 950 km north-north-west of Vancouver, B.C.. Brucejack Lake is centered approximately 56 degrees 30 minutes north latitude, 130

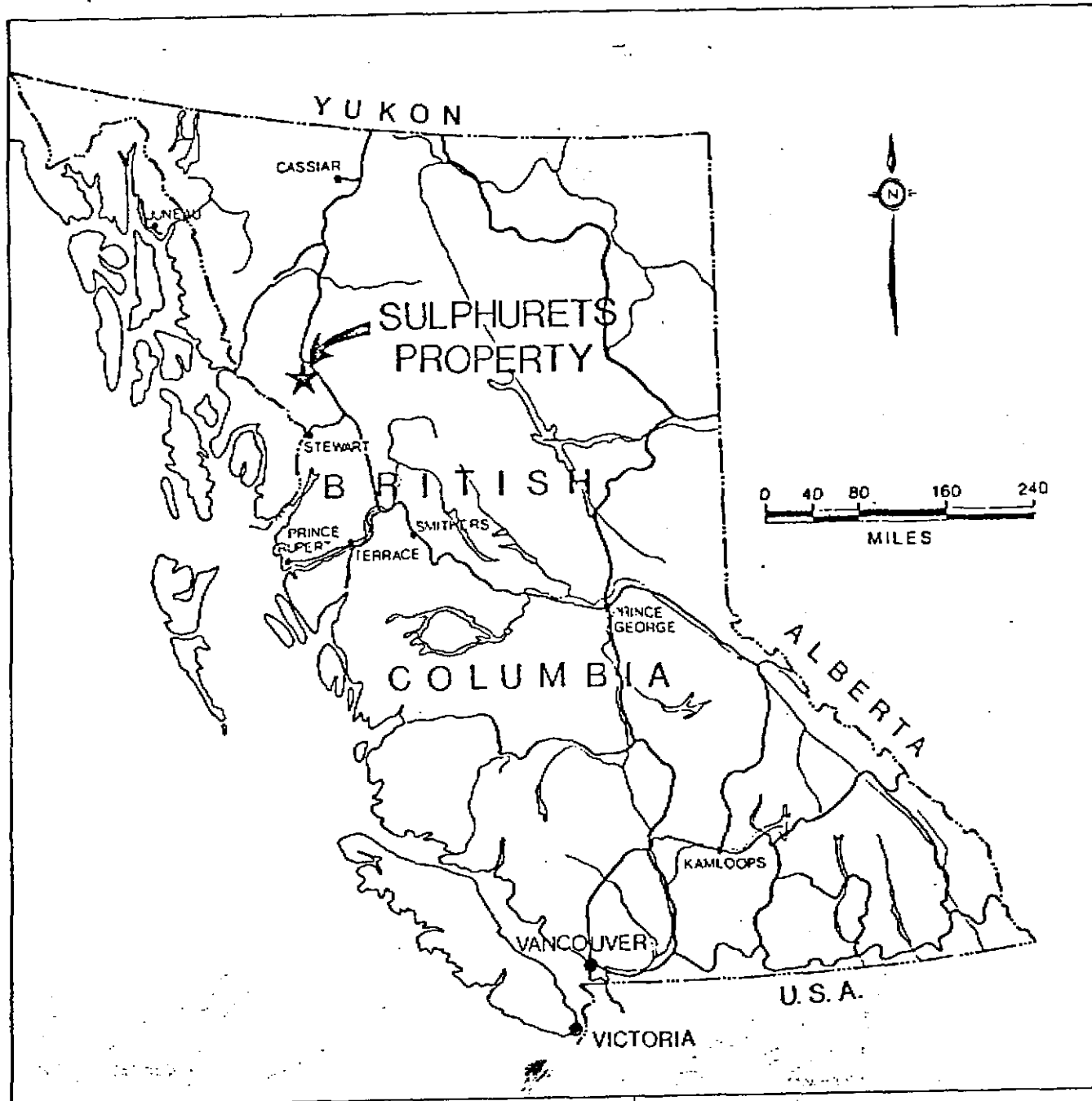
degrees 13 minutes west longitude on NIS map sheet 104B/8 east and 104B/8 west.

Access to the property at the present time is by tote road using tracked vehicles and by helicopter from Stewart. Equipment and accomodation in the form of an all weather trailer camp has been transported in from the road.

The summer season starts mid to late July with about 50-60% of the outcrop free of the snow by mid-July. Snow continues to recede until around October 1st when freezing conditions set in again for the winter. Light snowfalls and strong winds (up to 100 km/hr) can be expected from October 1st until Mid-February, with temperatures varying widely between 0 degrees and -40 degrees centigrade. Mid-February until Mid-April appears to be the period when most of the snow falls. The nearest government snow stations are on Hanna Ridge and Meziadin about 50 km (30 miles) to the east near Highway 37.

Temperatures by Mid-May are warm enough to cause the snow to begin to melt with serious melting not taking place until mid June. Total snowpack in the Brucejack area is less than 3 meters, but the high winds which prevail around the equinoxes can drift snow into the sheltered areas to the west of the ridges to a depth of up to 10 m.

Drifted snow to this depth can cause serious damage to buildings and other structures unless bracing is designed to carry these loads.

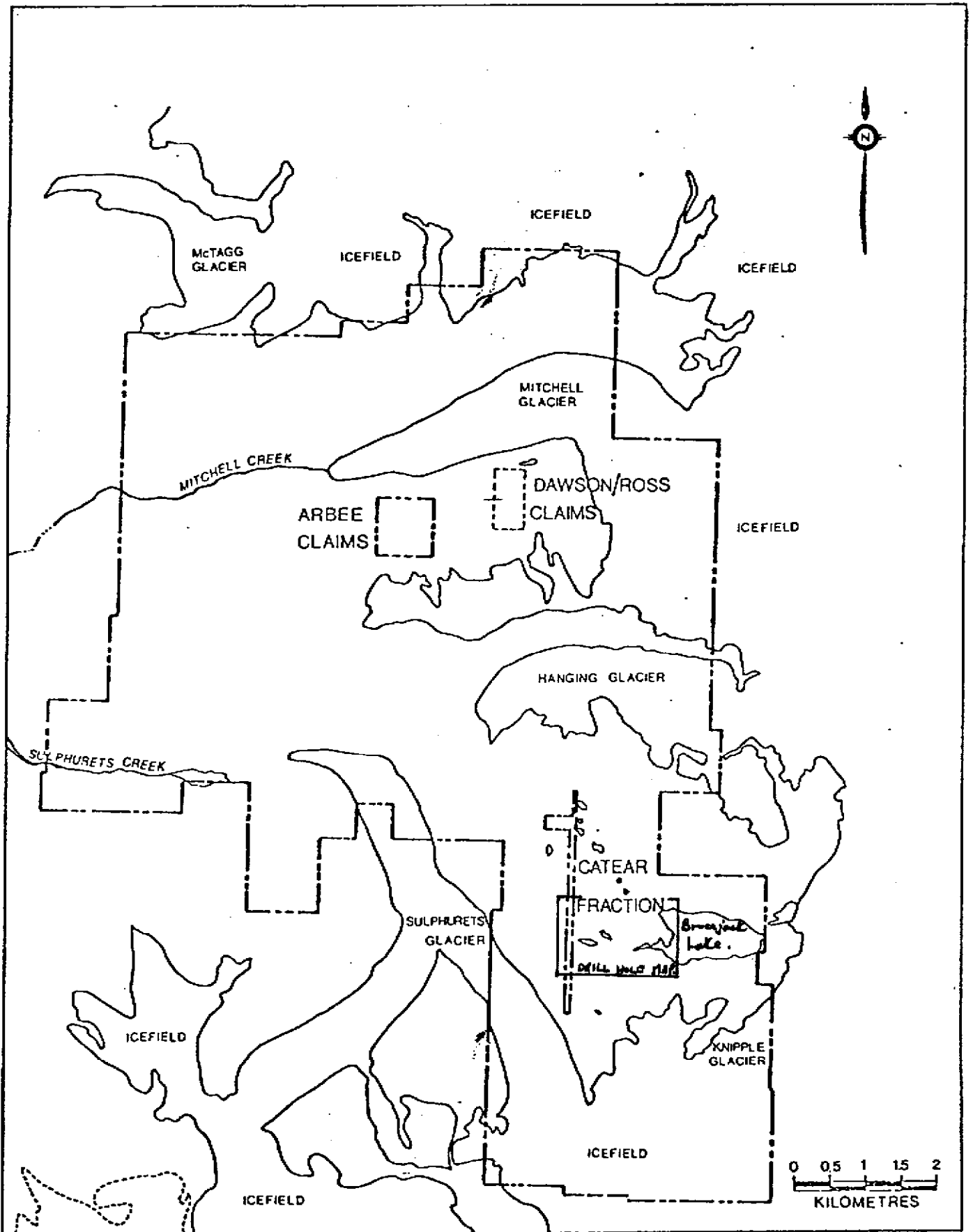


NEWHAWK GOLD MINES LTD.
SULPHURETS PROJECT
LOCATION MAP

FIGURE 1.

IV. CLAIMS

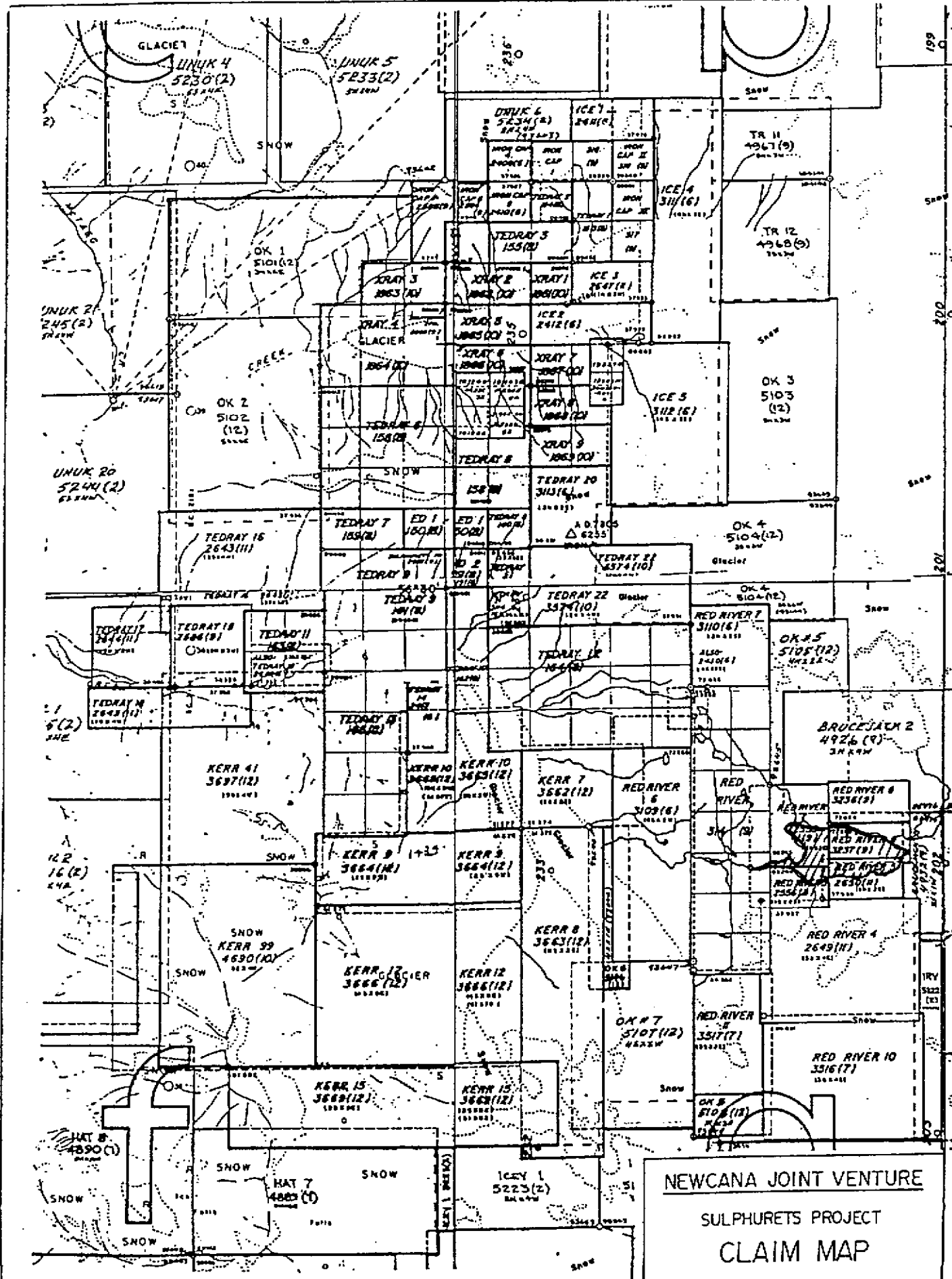
Claim / Record No.	Recorded/Expiry	Units/Yrs	Credit/Rate	Applied Total
	D/M/Yr Yr		Unit	
OK 3 5103(12)	10/12/85 1992	15 4	200	12000
OK 4 5104(12)	10/12/85 1992	18 4	200	14400
OK 5 5105(12)	10/12/85 1992	8 4	200	6400
OK 6 5106(12)	10/12/85 1992	4 4	200	3200
OK 7 5107(12)	10/12/85 1992	12 4	200	9600
OK 8 5108(12)	10/12/85 1992	2 4	200	1600
RED RIVER 314(9)	15/09/76 1993	14 5	200	14000
RED RIVER6 3109(6)	30/06/81 1993	12 5	200	12000
RED RIVER7 3110(6)	30/06/81 1993	4 5	200	4000
TEDRAY 20 3113(6)	30/06/81 1994	4 4	200	3200
XRAY 7 1867(6)	30/06/81 1994	2 4	200	1600
XRAY 8 1868(6)	30/06/81 1994	2 4	200	1600
XRAY 9 1869(6)	30/06/81 1994	2 4	200	1600
TOTAL				\$85200



NEWHAWK GOLD MINES LTD.

SULPHURETS PROJECT

CLAIM MAP



**NEWCANA JOINT VENTURE
SULPHURETS PROJECT
CLAIM MAP**

Drawn	By	FIG. No.
Scale: 1:100,000	Date:	2

V. HISTORY

Early work in the area probably saw prospectors on the Fedray 20 claim as early as 1910. Claims were staked just to the north of the Mitchell Sulphurets Ridge in the 1930's and Newmont was conducting exploration for copper deposits in the late 1950's. Gold mineralization on the Peninsula at the west end of Brucejack Lake was discovered by Esso Minerals in 1981. This area was mapped and numerous trenches cut across the stock work vein system now referred to as the Shore Zone. Drilling was commenced on the Shore Zone in 1982. The West Zone was discovered, mapped, trenched and drilled in 1982 and 1983. The West Zone is also a quartz stock work structure which contains some spectacular silver minerals.

VI. REGIONAL GEOLOGY

The geology of the Stewart area is typified by moderately folded, intermediate volcanics and sediments intruded by a succession of plutons. Those areas around many of the deposits are washed by a distinctive red iron alteration forming a broad band in which the numerous showings occur.

The lowermost formation within the Sulphurets claims is the Unuk River Formation of dark green volcanoclastic rocks. The Unuk River Formation is composed of medium-grained matrix-supported lapilli tuffs of andesite composition. This andesite lapilli tuff forms the host for most of the vein deposits in the Stewart area and appears to be the favored host

rock at Sulphurets. The Unuk River Formation is believed to be as much as 10,000 feet thick. Above the Unuk River Formation is the Salmon River Formation of siltstone, greywackes and other fine to medium-grained epiclastic and pyroclastic rocks. Both these formations are similarly iron-stained with pervasive pyrite-sericite alteration over most of the property. In the Sulphurets area these two formations are cut by two elongate sub-parallel northerly-trending zones of intrusive rocks which are probably Middle Jurassic in age. These intrusive rocks range from diorite to granite or syenite in compositions and appear to be sub-alkaline. The intrusive rocks roughly enclose a northerly-trending 10 km. lineal zone of intense alteration. Sericite and pyrite are the most abundant alteration minerals with other assemblages locally dominated by K-feldspar, chlorite and propylitic minerals. Porphyry copper-molybdenum mineralization occurs in the north and north-west portions of the property and is often associated with K-feldspar and sericite alteration.

The gold mineralization is structurally controlled and is usually in the volcanic rocks, near the sedimentary contact, adjacent to intrusive rocks and within a wide zone of intense quartz-sericite-dominated alteration. The veins consist of quartz +/- carbonate with up to 20 per cent sulphides ranging from simple veins to complex vein zones and stockworks. Pyrite, sphalerite, galena, tetrahedrite, electrum, argentite, pyrrargyrite, chalcopyrite, barite and molybdenite have been

identified in these veins.

VII. GEOLOGY OF THE WEST ZONE

VII.1 General Geology

Geology of the West Zone is characterized by quartz and quartz-sericite altered volcanic rocks within a northerly trending steeply dipping shear zone.

Within this 30 m wide shear zone rocks consist of volcanic tuffs and flows of andesitic to dacitic composition. Tuffs range from fine grained, thinly laminated monolithic rocks to coarse heterolithic tuffs or agglomerates.

The trend of the volcanic rocks are dominantly north-south with steep dips.

At depth and west of the main zone coarsely crystalline feldspar porphyries occur. These show aspects of intrusive and extrusive rocks.

Occasional chert horizons or lenses have been observed but are minor in volume and erratic in occurrence.

Mafic dykes occur frequently cutting all lithologies. These are mostly found toward the northerly end of West Zone.

VII.2 Lithologies

Lithologies as recorded on drill logs are summarized in Appendix II with their shortened code names.

VII.3 Structure

Structure of the West Zone is dominated by northerly trending, steeply dipping shears or faults which define a linear zone approximately 30-40 m wide and at least 600 m long. Within this zone are subsidiary tension fractures of varying widths trending roughly 30 degrees to the main structures. These tension fractures occur as subparallel structures at somewhat regular intervals resulting in a ladder type arrangement within the main structural zone.

The dips of the tensional structures are mostly steep to the west or east. Their lateral extent at this time is unknown. Depth continuity is likely great as they have been traced in excess of 240 m.

Cross cutting structures do not appear to be significant with only minor right/left lateral offsets observed. Numerous small scale tension fractures are observed indicating multistages of shearing with conjugate fracture sets.

VII.4 Alteration

General widespread alteration of original mineral assemblages occurs in the Brucejack area. The type and scale of alteration is governed by a number of factors such as proximity to major structures and hydrothermal zones. Other factors controlling alteration are the extent and degree of pre alteration fracturing and the proximity to intrusives.

Variations in the original chemistry of the stratigraphy also play an important part.

A number of alteration haloes occur in the vicinity of the West Zone quartz stockwork-fracture zone. These form a pattern which is complicated by variations in the chemistry of the rocks being altered and by later overprinting by intrusives and late cross cutting, quartz veins.

VII.5 Mineralization

Mineralization in the West Zone consists of quartz filled tension fractures containing significant amounts of pyrargyrite, polybasite, tetrahedrite, acanthite, sphalerite, pyrite, galena, stephanite and electrum. Mineralization occurs in massive type quartz veins as well as quartz stockworks and quartz breccias. All gold-silver mineralization is associated with silica in one environment or another.

Electrum according to the G.S.C. contains approximately equal amounts of gold and silver. Minor native silver has been observed.

On section 5130S, the 1987 drilling program showed continuity of gold mineralization to depth. On this section several significant gold-silver bearing intercepts were encountered but the most encouraging averaged 0.261 oz Au/ton, 31.86 oz Ag/ton over 35.14 m. The strike length of the West Zone was extended 100 m along strike to the south.

Drilling on the Gossan Hill zone confirmed previous exotically high gold values and extended them at depth and along strike. Gold values similar to the following were encountered: 0.739 oz Au/ton, 1.64 oz Ag/ton over

2.13 m and 10.741 oz Au/ton, 9.80 oz Ag/ton over 1.15 m. Extremely favourable targets for future reserves exist on the Gossan Hill.

VIII. DRILLING

A total of 7884.5 m of surface drilling was completed on the West Zone in 71 holes in 1987. 11 holes for 1235 meters was drilled on Gossan Hill. Total surface drilling on the BJ Group mineral claims was 9120 m.

The holes were logged by Leo Lindinger and Dave Handel and these logs are included in Appendix I. On completion of the logging, the sections of vein material were marked and those sections split in a mechanical splitter. The split off portion of the cores was put into bags and transported to our laboratory in Stewart for gold and silver fire assay. The other half of the core was returned to the box and stacked in the yard for future reference.

Both drills were J. K. Smit 300 machines provided by F. Boisvenu Drilling Ltd., of Richmond, B.C. These machines seem ideal for this work as they are easily taken down and moved to a new set-up. With the use of the Hughes 500D helicopter it was possible to reassemble this drill and be ready again within a single shift.

The total cost of the drilling portion of the 1987 surface program was \$793,394 or \$65.36/meters (\$26.52 per foot) including all support, mobilization, pre-season, auxiliary field work, and demobilizing the drills.

IX. SAMPLING AND ASSAYING

After the core was logged it was sampled according to the following procedure: The core was marked in sections corresponding to lithologic boundaries, vein boundaries or mineralization changes with a maximum length of 3 meters (9.8 feet). The core was then taken piece by piece from the box and split in a mechanical splitter, half bagged and tagged the other half returned to the box in its original position. The bagged sample weighing about 5-8 kg. was transported to the laboratory on the first helicopter that went to town.

Upon arriving at the laboratory the samples were put into pans and dried in the drying oven usually for a couple of hours. When the sample was dry it was crushed in a jaw crusher to $\sim 1/2$ " and split in the Jones type riffle splitter until the sample was reduced to between 250 gm. and 500 gm.

The remainder of the sample ("reject") was rebagged and stored in a storage area in the laboratory.

The sample was then pulverized to 80% - 100 mesh. This grind was about the limited of the capabilities of the disk pulverizer on site. The pulverized sample was then shaken in a cocktail shaker and poured out onto a sheet of rubberized canvas. A one assay ton sample was then dipped with a spatula, weighed and put into crucibles for fire assaying.

X. CONCLUSIONS

The drilling on the West Zone was successful in defining more accurately the ore shoots that were known previously.

The drilling on the West Zone has shown indications that the zone may be widening or dispersing to the south and perhaps swinging to the east.

The drilling on Section 51+00S has indicated that the mineralization exists to a depth of at least 300 m. (1000 ft) and judging from the seven deep holes the mineralization does not decrease in width or grade with increase in depth.

XI. COST STATEMENT - BJ GROUP

Covering the period from July 1 to November 3, 1987

Personnel

NAME	POSITION	RATE	PERIOD	MAN-DAYS	TOTAL
L. Lindinger	Geologist	\$170/day	July-Nov 3	110	\$18,700.00
K. Kraft	Core Splitter	\$160/day	July-Nov 3	110	\$17,600.00
					\$36,300.00
Diamond Drilling					
	9120 m BQ drilling @ \$65.36/m inclusive				\$596,057.95
Camp Lodging for 8 Drillers + Supervisor					
	9 men x 100 days @ \$40/man-day				\$36,000.00
Fuel					
	100 gals/day x 100 days x \$8/gal				\$80,000.00
Assaying					
	9120 m (29912 ft) x \$1.00/ft				\$29,912.00
Air Travel					
	Helicopter (Hughes 500d) 27.5 hrs @ \$550/hr + oil				\$15,125.00
TOTAL ASSESSMENT CREDIT FOR BJ GROUP					\$793,394.95
					=====

XII. STATEMENT OF QUALIFICATIONS

I, Kenneth, E. Hicks, of Vancouver, B.C., do hereby certify that:

1. I am a geologist with residence at 115 - 1741 West 10th Avenue, Vancouver, B.C., V6J 2A5.
2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree (Honours, 1982).
3. I have practised in the field of mineral exploration and mining geology since 1978.
4. I am an associate of the Geological Association of Canada in good standing.
5. I am familiar with the Sulphurets Property having worked on the West Zone, Shore Zone and other areas in the Property as a Field Project Geologist for Newhawk Gold Mines in 1986 and spring 1987.
6. The conclusions in the accompanying report were drawn from information provided to me by Newhawk Gold Mines Geologists working on the 1987 drilling program.
7. I have no financial or legal interest in the mineral properties herein described, nor do I intend to receive such interest.
8. I am currently employed as Project Geologist by Northair Mines Ltd.

Respectfully Submitted,

Ken Hicks

Ken Hicks, B.Sc.


STATEMENT OF QUALIFICATIONS

I, Fred G. Hewett, with business address in the City of Vancouver, and residential address in the District of Coquitlam, in the Province of British Columbia,

DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Geology.
2. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.
3. I am a member of the Canadian Institute of Mining & Metallurgy, a fellow of the Geological Association of Canada, and a member of the Society of Economic Geologists.
4. I have practiced various levels of my profession in Canada for approximately twenty years.
5. I am presently employed by Newhawk Gold Mines Ltd.
6. I am aware of the qualifications of Leo Joseph Lindinger who was responsible for logging diamond drill core at Sulphurets during the 1987 field season.

7. Leo Joseph Lindinger's qualifications are as follows:
- a graduate of the University of Waterloo with a B.Sc. in 1980.
 - approximately 10 years experience directly related to the mining industry.
8. The described diamond drilling was done on the Red River claims adjacent to Brucejack Lake.
9. The described core is stored at the Sulphurets camp at Brucejack Lake.



Fred G. Hewett, P.Eng.

Dated at the City of Vancouver,
In the Province of British Columbia,
This 14th day of September, 1988.

STATEMENT OF QUALIFICATIONS

I, Thomas J. Drown, of Port Moody, B.C., do hereby certify that:

1. I am a geologist with residence at 819 Ioco Road, Port Moody, B.C., V3M 2W7.
2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree (Honours, 1973).
3. I have practiced in the field of mineral exploration and mining geology since 1970.
4. I am a fellow of the Geological Association of Canada in good standing.
5. I am familiar with the Sulphurets Property having worked on the West Zone, Shore Zone and other areas of the Property as Senior Geologist since spring 1987.
6. I have no financial or legal interest in the mineral properties herein described, nor do I intend to receive such interest.
7. I am currently employed a Senior Geologist by Newhawk Gold Mines Ltd.

Respectfully Submitted,


Thomas J. Drown

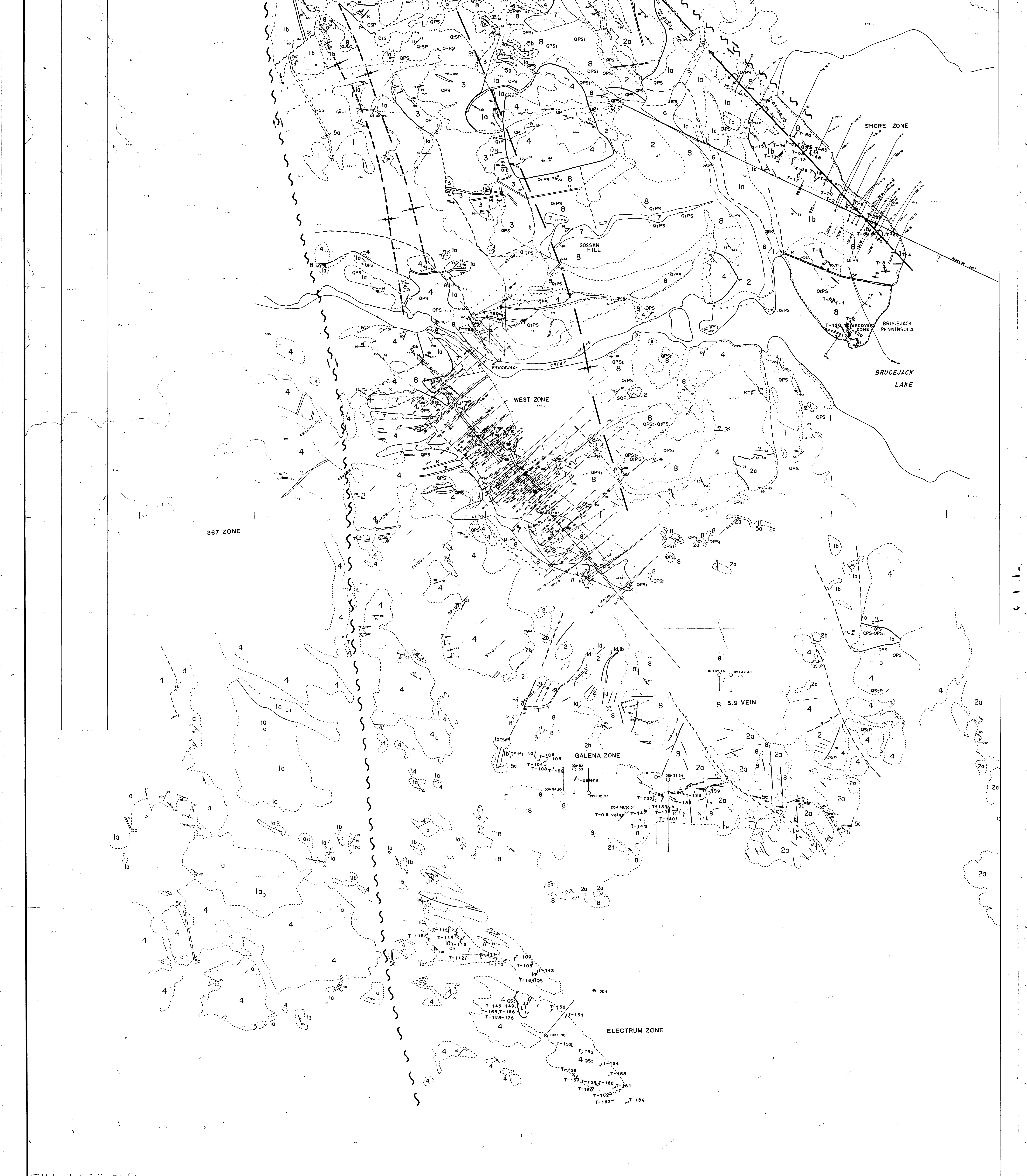
STATEMENT OF QUALIFICATIONS

I, Dave Handel, of Comox, B.C., do hereby certify that:

1. I am a geologist with a residence at 395 Rodello Ave.,
Comox, B.C., V9N 5A5.
2. I am a graduate of the University of British Columbia with
a B.Sc. (General 1986).
3. I have practiced in the field of mineral exploration and
mining geology since 1984.
4. I am familiar with the Sulphurets Property having worked on
the West Zone, Shore Zone and other areas in the property as
an assistant to the Project Geologist for Newhawk Gold Mines
Ltd., since 1987.
5. I have no financial or legal interest in the mineral
properties herein described nor do I intend to receive such
interest.
6. I am currently employed by Newhawk Gold Mines Ltd.

Respectfully Submitted,


Dave Handel





- LITHOLOGY**
- Alteration, age relationships of alteration not known.
- 8** Intense alteration, original lithology not known.
 - Q Quartz veining or silicification
 - S Sericitization
 - P Pyritization
 - I Intense development of above three alteration types
 - 7** Quartz veins, greater than 50% vein quartz, quartz veins undifferentiated
 - 6** Intense pervasive silicification of black quartz
- Dikes, age relationships of dikes not known
- 5a** Equigranular hornblende syenite dike.
 - 5b** Hornblende-feldspar porphyry dike.
 - 5c** Dark green banded "andesite" dikes.
 - 5d** Lamprophyre
- Intrusive rocks, age relationship based on a cross cutting hornblende-porphry syenite dike.
- 4** Hornblende-feldspar porphyry syenite, undifferentiated
 - 3** Alkali feldspar porphyry syenite.
- Sediments and volcanic fragmental rocks
- 2** Volcanic fragmental formation, undifferentiated due to cleavage and/or alteration.
 - 2a** Low matrix, tuff-breccia to minor lapilli-tuff, monolithic
 - 2b** High matrix member, up to 10% chloritic lapilli and blocks, monolithic, probably an ash flow, marker horizon
 - 2c** Low matrix with interbedded heterolithic conglomerate sequences.
- Sandstone formation; arkose, arkosic wacke, lithic arkose and wacke, shale, pebble conglomerate and arenite
- 1a** Lithic arkose, shales, wackes and conglomerate.
 - 1b** Arenite member, mainly quartz rich arkose, arenite conglomerate
 - 1c** Hornfels derived from sandstone formation
 - 1d** Slate

- SYMBOLS**
- Top known, load structures, cross bedding
 - Cleavage, strike and dip
 - Bedding, strike and dip
 - Jointing, strike and dip
 - Hornblende or feldspar foliation, strike and dip
 - Lineation, cleavage bedding intersection, trend plunge
 - Dike, strike and dip
 - Quartz vein, strike and dip
 - Anticline, known, overturned, inferred direction of plunge
 - Syncline, known, inferred, direction of plunge
 - Fault, known strike and dip
 - Outcrop
 - Alteration contact, known, inferred.
 - Geologic contact, known, inferred

0 50 100 200 METRES

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

17,166

Part 1 of 2

CONTOUR INTERVAL: 5 METRES

NEWHAWK GOLD MINES LTD.
 SULPHURETS JOINT VENTURE
**GEOLOGY &
 DRILL HOLE MAP**

N.T.S. 104 B 8, 9		Revised	Plate No.
Drawn by CHONG	Date: JAN. 1988	Drawing No.	
Scale: 1: 2000			

17166 1 of 2 -01 (b)