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REPORT ON THE SWAN PROPERTY  
SCOTT (VICKERS) CREEK, PITT LAKE, B.C.  
NEW WESTMINSTER MINING DIVISION

LOCATION:

N.T.S. 92G-10E

LATITUDE 49° 31'N

LONGITUDE 122° 34'W

For

Black Swan Gold Mines Ltd.  
1500-1176 West Georgia Street  
Vancouver, British Columbia  
V6E 4A2

By

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V6N 2K9



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,090**

June 14, 1984  
Revised May 6, 1985

TABLE OF CONTENTS

	<u>PAGE</u>
SUMMARY	1
INTRODUCTION	2
LOCATION AND ACCESS	2
PROPERTY	2
TOPOGRAPHY AND VEGETATION	3
HISTORY	3
GENERAL GEOLOGY	4
MINERALIZATION	4
DISCUSSION OF SWAN PROPERTY	5
CONCLUSIONS AND RECOMMENDATIONS	5
COST ESTIMATES	6
REFERENCES	8
CERTIFICATE	9

FIGURE

FIGURE I	Location Map
FIGURE II	Claim Map
FIGURE III	Regional Geology
FIGURE IV	Topographic Map and Prospect Locations
FIGURE V	Pospecting Sketch

SUMMARY

On October 28, 1983, the writer examined the Swan I claim at the request of Mr. Jack R. Jefferson. The claim straddles Scott (Vickers) Creek which flows southwestward into the north end of tidal Pitt Lake. Access is via boat along Pitt Lake or sea plane. The purpose of the examination was to establish the location of the Swan I claim and to outline a program for further exploration, if warranted.

Previous work has defined steep dipping, northwesterly trending mineralized shear zones with pyrite, pyrrhotite, chalcopyrite and minor gold-silver content. Gold assays of up to 1.80 oz. gold per ton have been obtained from select samples by a previous owner. The Swan I claim was acquired to further test the mineralized zone for economically significant auriferous sulphide lenses.

A basic Stage I program of prospecting and geochemical sampling is recommended, and estimated to cost \$15,000. A Stage II program of trenching and/or diamond drilling is contingent on the successful completion of Stage I and an independent engineer's recommendation to proceed.

  
Peter A. Christopher, P. Eng.  


June 14, 1984  
*Revised May 4/85*

## INTRODUCTION

The Swan Property, consisting of the 20 unit Swan 1 claim was examined by the writer with the assistance of the claim staker, Mr. Tim Daly, on October 28, 1983. The claim area was examined for Mr. Jack R. Jefferson of Black Swan Gold Mines Ltd. The claim area is of interest because of precious metal values detected in mineralized shear zones (Sharp, 1967). Values up to 1.80 ounces of gold per ton have been obtained for select samples by Mr. F.W. Johnson, a previous owner. The writer examined claim posts which establish the location of the Swan 1 claim but was unable to reach the areas of previously explored showings because of thick vegetation and severe terrain. Clearing of an access route is suggested as part of the basic Stage I program.

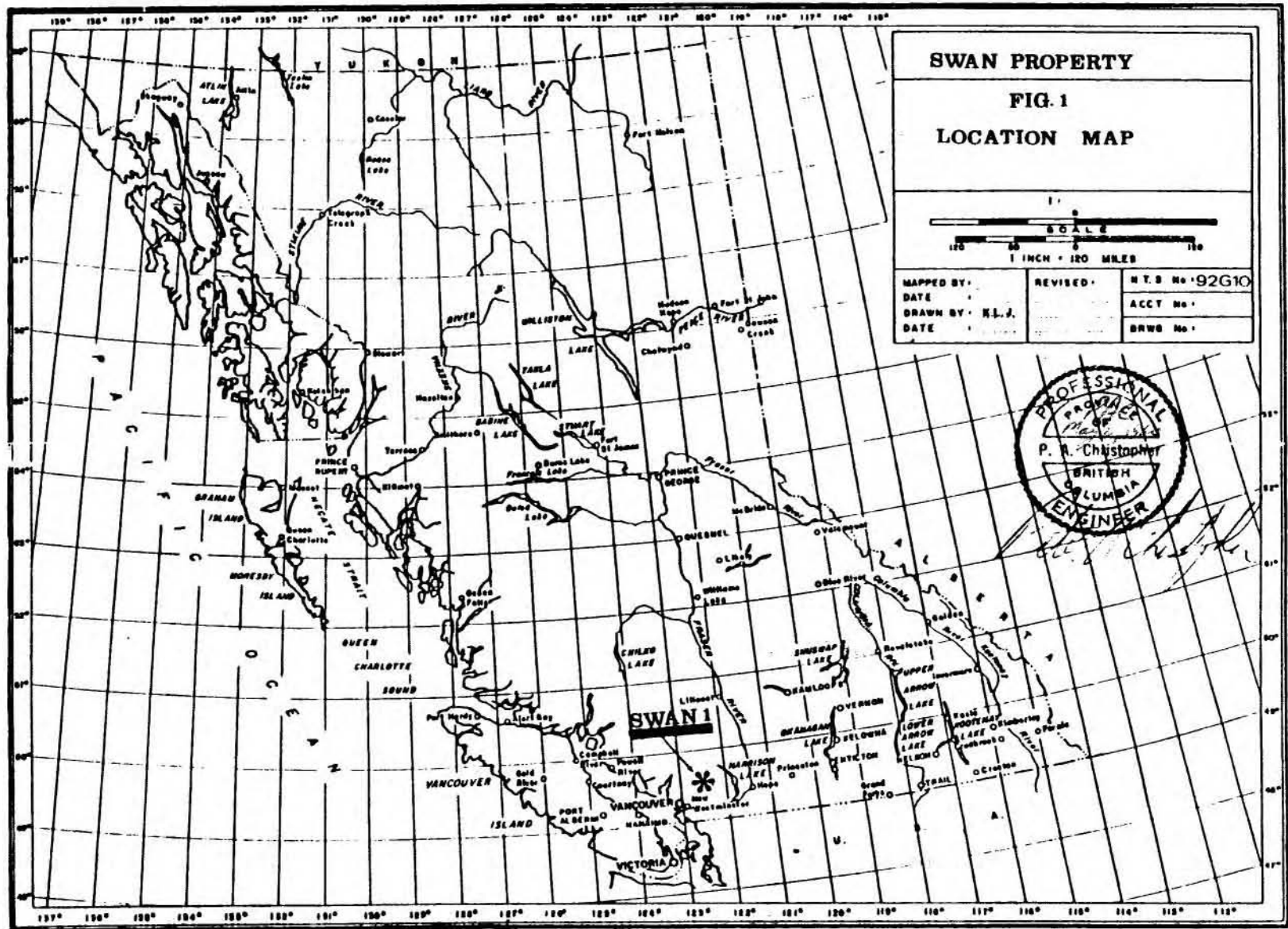
## LOCATION AND ACCESS (Figure 1 and 2)

The Swan Property is situated on the east shore of tidal Pitt Lake and straddles the Scott (Vickers) Creek valley. The claim is about 24 kilometers (15 miles) north of a public wharf used by the Widgeon Creek Lodge. Access to the property required one hour by boat from the public Wharf at the south end of Pitt Lake.

The legal corner post for the Swan 1 claim is situated at coordinates  $49^{\circ} 31' 22''$  N and  $122^{\circ} 34' 36''$  N.

## PROPERTY

The Swan 1 claim was staked by Tim Daly as agent for Richard Somerville on August 24th and 25th, 1983 using the modified grid system. The claim extends 5 units south and four units east from a legal corner post. A total of 500 hectares are covered by the claim. The legal corner post, 1 south identification post and 2 south identification post were examined by the writer. Post 3 south was also placed by Mr. Daly but severe topography prevented placing other posts or completing perimeter marking. Tags for identification posts and corner posts that could not be placed are affixed to the legal corner post. The claim lines and posts examined comply with the staking regulations for British Columbia. Table I summarizes pertinent claim data and Figure 2 shows the claim location.



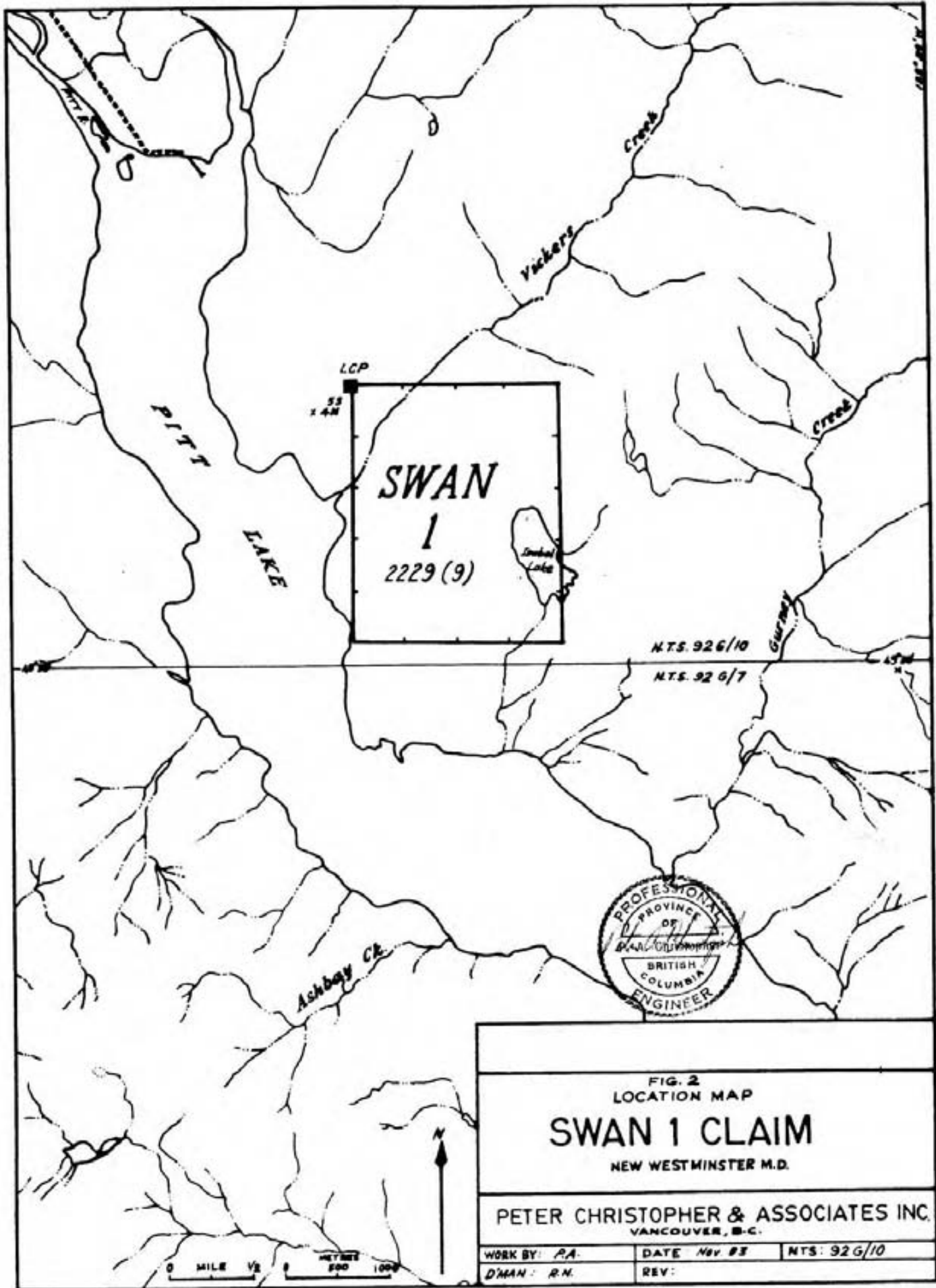


FIG. 2  
 LOCATION MAP  
**SWAN 1 CLAIM**  
 NEW WESTMINSTER M.D.

PETER CHRISTOPHER & ASSOCIATES INC.  
 VANCOUVER, B.C.

WORK BY: PA	DATE: Nov 83	MTS: 92 G/10
DRAWN: RN	REV:	

Table I Pertinent Claim Data

<u>Name</u>	<u>Staker</u>	<u>Date Recorded</u>	<u>Owner</u>	<u>Record Number</u>
Swan 1	Jim Daly	Sept. 8, 1983	Black Swan Gold Mines Ltd.	2229(9)

TOPOGRAPHY AND VEGETATION

The property has rugged topography characteristic of the Coast Mountain physiographic province in which it occurs. Elevations range from sea level to over 945 meters (3,100 feet). Large parts of the property can only be traversed by experienced mountain climbers. Vegetation is typical coast rain forest and variable cover of hemlock-spruce-cedar forests.

HISTORY

The Swan Property has previously been held as the Maple Leaf, Katanga, Bounty-Expo and SS properties. British Columbia Ministry of Mine's records indicated that the property was being worked by the Wagner brothers as the Maple Leaf group in the early 1920's. In 1925 they drove a 67 or 70 foot adit on a "feldspathic vein in granodiorite." The adit exposed a showing of chalcopryrite which has subsequently been referred to as the "120" adit or north prospect zone.

In 1928, Fred W. Johnson acquired the 16 claim "Katanga Group" that included the old Maple Leaf group. Several pyrite and chalcopryrite showings in dikes of fine grained feldspathic rocks were located and a promising showing of chalcopryrite at the 900 foot level was trenched ("929" open cut) to expose about 20 feet described as 18 inches of good chalcopryrite with the remainder milling grade ore. A 52 foot cross-cut tunnel ("880" adit) failed to reach the mineralized zone. A showing was also located at the 1,500 foot elevation along the same lineament.

The property appears to have remained idle from 1930 until the Bounty and Expo claims were located in April, 1967 by Paul W. Johnson and S. Fegan. The Bounty-Expo Property was acquired by Kennedy Silver Mines Ltd. (N.P.L.), and a program of

prospecting, geological mapping, geochemical sampling, geophysical surveys, trenching and 510 feet of diamond drilling was performed between 1967 and 1969. The Bounty and Expo claims were allowed to lapse and the SS 1 staked in March 1979 by S. Fegan for Michael Boyle. No work appears to have been conducted by the owner of the SS claim.

In August 1983 the Swan 1 claim was staked by Tim Daly for Mr. Richard Somerville. The Swan Property was acquired by Black Swan Gold Mines Ltd. in November 1983.

### **GENERAL GEOLOGY (Figure 3)**

The regional geology of the Pitt Lake areas is described by Roddick (1965) in G.S.C. Memoir 335 and accompanying Map 1151A. The Scott Creek section of Roddick's map is generalized in Figure 3 with the boundary of the Swan 1 claim shown for reference. The Pitt Lake area is situated near the southeast margin of the Coast Plutonic Complex. The presence of greenstone pendants in granitic rocks on the Swan Property supports this interpretation.

Plutonic rocks in the area of Vickers Creek are heterogenous but mainly a medium-grained hornblend-quartz diorite with lesser biotite quartz diorite. Inclusion content of the general area has been estimated by Rodick (1965) at about 3%. Dyke rocks vary from feldspathic to dioritic or amphibolitic compositions and are controlled by shears. The principal zones of shearing generally have northwesterly trends. A zone locally referred to as the "South gully" lineament is a northwesterly trending prominent surficial feature that can be traced for over four kilometers. Mineralized shears or fractures parallel the south gully lineament.

### **MINERALIZATION**

The prospect is identified in the British Columbia government mineral inventory as showing 92G NE 009. Veins, lenses and disseminations of chalcopyrite, pyrite, pyrrhotite and sphalerite occur in shear zones in quartz diorite, diorite, granodiorite, greenstone and in fine-grained feldspathic dykes. Generally low but poorly defined values of gold and silver accompany sulphides. Select samples have reported assays of up to 1.80 oz. gold per ton. Arsenopyrite, a common indicator of enhanced precious metal content is reported to be common in the north prospect zone.



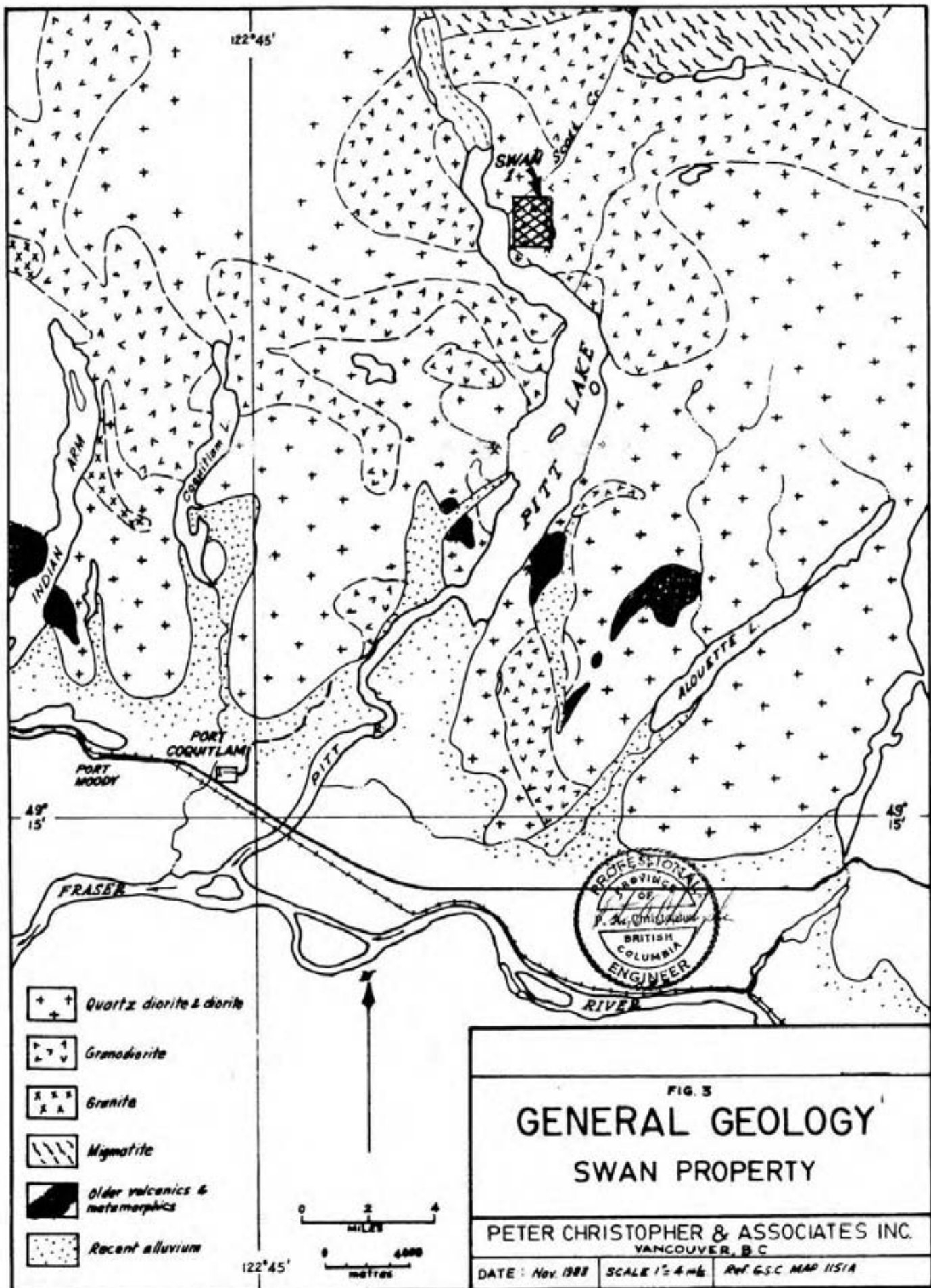


FIG. 3  
**GENERAL GEOLOGY**  
**SWAN PROPERTY**

PETER CHRISTOPHER & ASSOCIATES INC.  
 VANCOUVER, B.C.  
 DATE: Nov. 1988    SCALE 1" = 4 miles    Ref. G.S.C. MAP 1151A

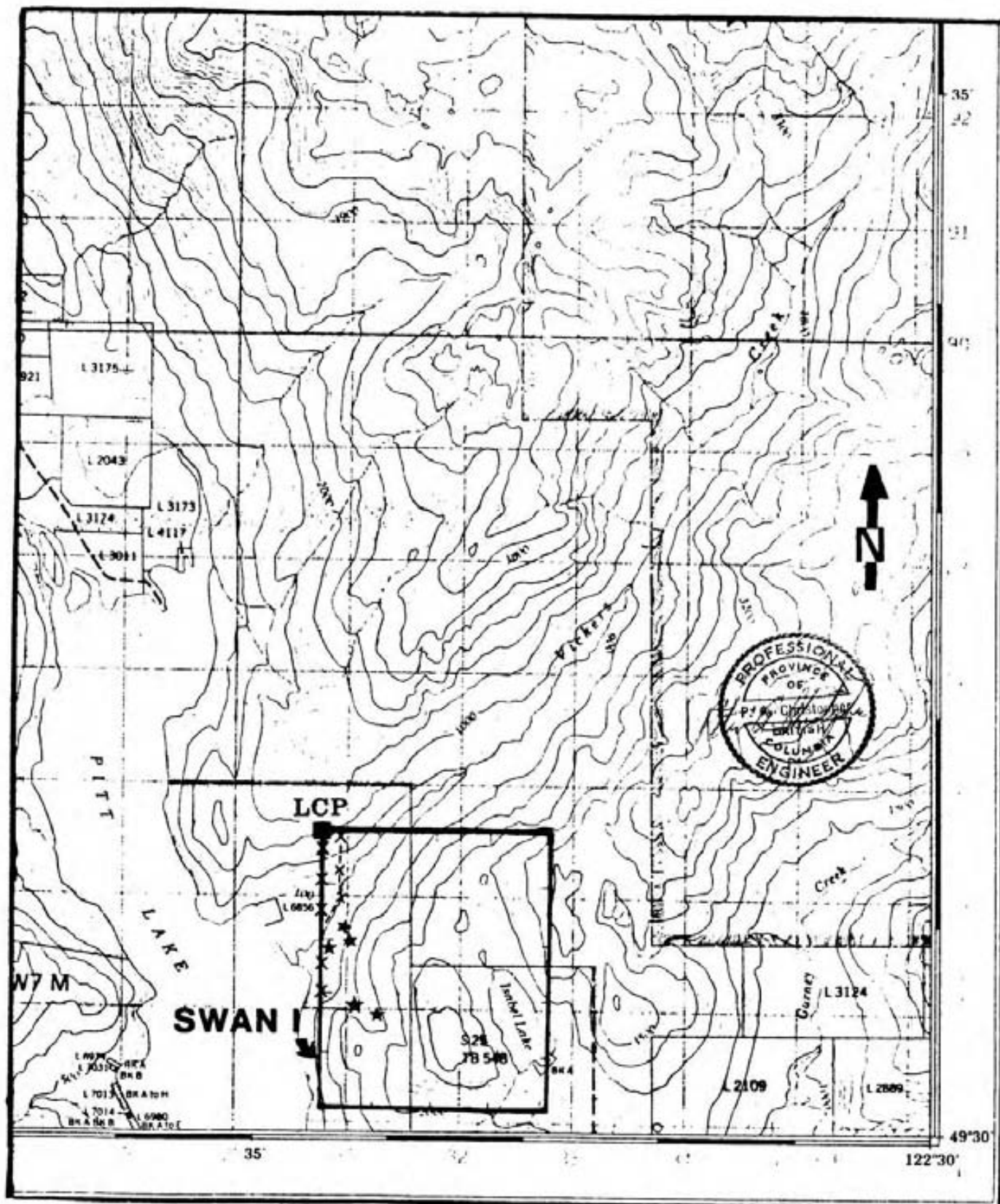


Figure IV. Topographic map of the Swan I claim showing prospect locations (black stars) from Sharp, 1967. Prospecting traverses are indicated by X--X---X. Map is part of 1:50,000 sheet 92 G - 10.

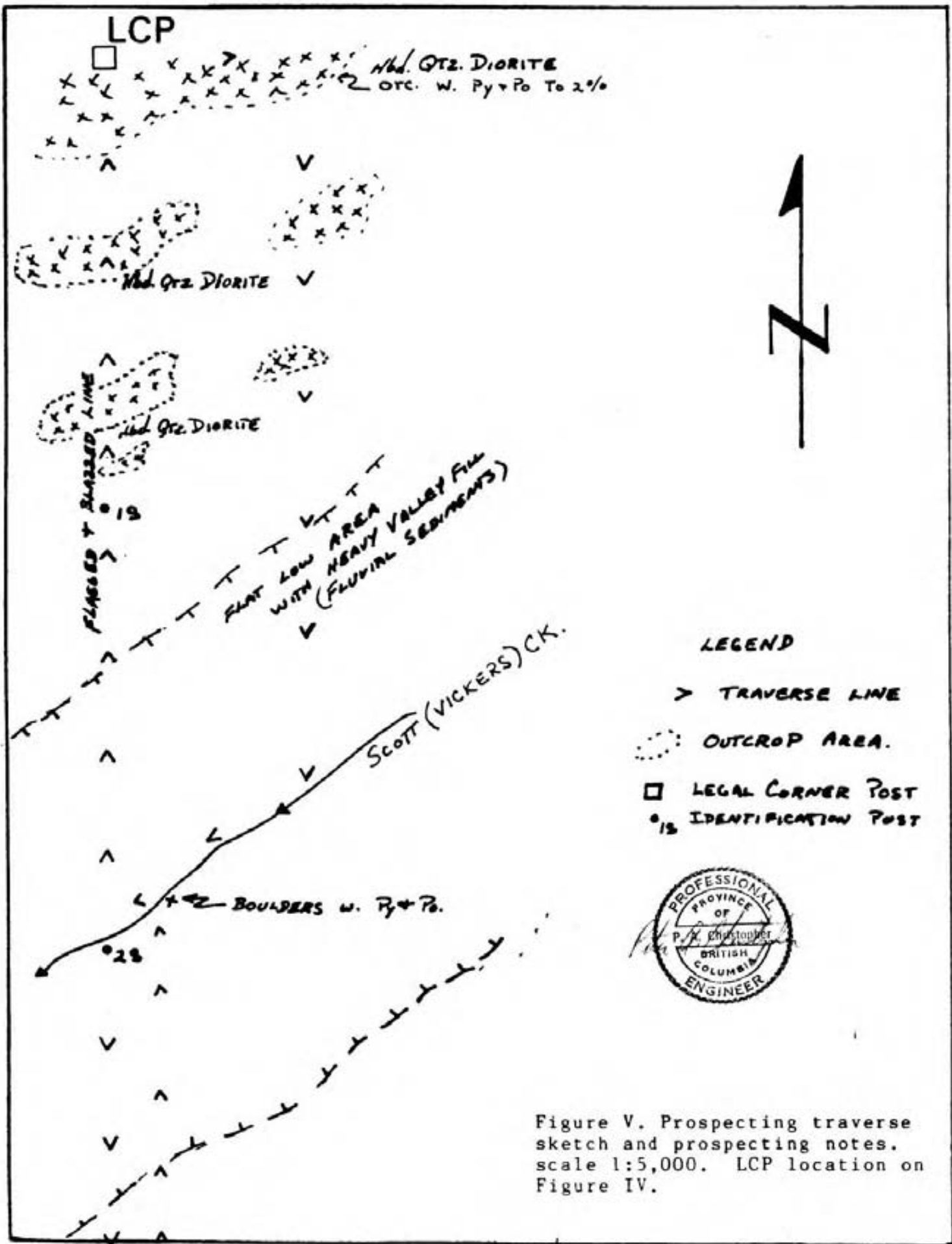


Figure V. Prospecting traverse sketch and prospecting notes. scale 1:5,000. LCP location on Figure IV.

### DISCUSSION OF SWAN PROPERTY

Work conducted between 1967 and 1969 (W.M. Sharp, 1967; R. Caven and J.B. Boniwell, 1969) appears to have tested the bulk tonnage, low grade base metal potential of the property without success, but previous work, since the early 1920's consistently indicated a precious metal association that has not been well defined. Values generally appear to be in the 0.02 to 0.03 oz. gold per ton range but select samples with values up to 1.80 oz. gold per ton have been reported. The mineralized zone containing base and precious metal values extends for over 4 kilometers and a good possibility exists that mineralized shoots with enhanced precious metal content occur. Rain forest vegetation has overgrown old access routes to previously located showings. Old showings should be relocated by prospecting along access paths or lines cut from the western claim boundary, and rock samples collected for precious metal testing. Soil samples should be collected at 25 meter spacings along northwesterly mineralized structures. Samples should be analyzed for Cu, Zn, As and Ag with anomalous samples tested for gold.

Figure IV is a topographic map showing claim and prospecting traverse locations. Figure V is an enlargement of the traversed area with prospecting notes. Pyrite and pyrrhotite were noted in metamorphosed rocks on the north side of Vickers Creek and in boulders in Vickers Creek. An attempt to reach showings at the 648 foot and 880 foot elevations on the south side of Vickers Creek failed because of heavy rain forest vegetation.

### CONCLUSIONS AND RECOMMENDATIONS

The writer has checked the location of the Swan 1 claim and confirmed that it covers the old Bount-Expo copper prospect. Work conducted for Kennedy Silver Mines Ltd. (N.P.L.), between 1967 and 1969 could not be checked because access to old workings is overgrown and the area has severe topographic restrictions. The writer recommends a basic Stage I prospecting and geochemical program to locate old showings, rock sample showings to test for precious metal content and soil sample at 25 meter intervals along mineralized structural zones. Soil samples should be analyzed for Cu, Zn, As and Ag with anomalous samples checked for gold. If the Stage I program locates significant precious metal anomalies, a Stage II trenching and/or diamond drilling program will be warranted. Cost estimates for a recommended Stage I and contingent Stage II program follow.

COST ESTIMATES

Stage I Prospecting, Geochemistry

Personnel

Project Manager	7 days @ \$300 each	\$ 2,100
Prospector	7 days @ \$150 each	1,050
Helper	7 days @ \$125 each	875
Consultant	2 days @ \$400 each	800

<u>Mobilization/Demob</u>		1,000
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Transportation

Truck	7 @ \$75 each	525
Boat	7 @ \$50 each	350

<u>Room and Board</u>	23 @ \$40 each	920
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Geochemistry

Soils	200 @ \$7.00 each	1,400
Rock assay	50 @ \$25.00 each	1,250
Gold assay	50 @ \$5.50 each	275
Statistical analysis		100

Field Consumables		300
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Rentals

Chain Saw	6 days @ \$20 each	120
Radio	6 days @ \$5 each	30

Report Writing	4 days @ \$350 each	1,400
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Report Preparation	Typing, drafting, printing	<u>800</u>
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Total		\$13,295
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Contingency		<u>1,705</u>
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Stage I Total		<u>\$15,000</u>
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**Stage II Trenching, Drilling** (Contingent on Favourable Results During Stage I)

Mobilization/Demob		\$ 3,000
Bulldozer	100 hours @ \$80 each	8,000
Diamond Drilling	500 meters @ \$100 each	50,000
Engineering, consulting and reporting		<u>7,000</u>
	Total	\$68,000
	Contingency	<u>7,000</u>
	Stage II Total	<u>\$75,000</u>
	TOTALS STAGE I & II	<u>\$90,000</u>

*Peter A. Christopher*  
Peter A. Christopher, P. Eng.  
June 14, 1984



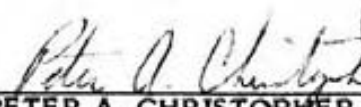
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- Caven, R. and Boniwell, B.J., 1969. Report of IP Survey Bounty-Expo Coper Prospect, Pitt Lake, B.C. for Kennedy Silver Mines Ltd. (N.P.L.) June, 1969.
- Roddick, J.A., 1965. Vancouver North, Coquitlam, and Pitt Lake Map-Area, British Columbia (with special emphasis on the evolution of the plutonic rocks). G.S.C. Memoir 335.
- Sharp, W.M., 1967. Preliminary Exploration of the Bounty-Expo Coper Prospect at Scott Creek, Pitt Lake, B.C. in the New Westminster Mining Division. For Kennedy Silver Mines Ltd. (N.P.L.) December, 1967.

CERTIFICATE

I, Peter A. Christopher, with business address at 3707 West 34th Avenue, Vancouver, British Columbia, do hereby certify that:

- 1) I am a consulting geological engineer registered with the Association of Professional Engineers of British Columbia since 1976.
- 2) I am a Fellow of the Geological Association of Canada and a member of the Society of Economic Geologists.
- 3) I hold a B.Sc. (1966) from the State University of New York at Fredonia, a M.A. (1968) from Dartmouth College and a Ph.D. (1973) from The University of British Columbia.
- 4) I have been practising my profession as a Geologist for over 15 years.
- 5) I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the Swan Property or securities of Black Swan Gold Mines Ltd.
- 6) I have based this report on all available geological data on the property and adjacent mineral deposits, and on an October 28, 1983 examination of the property.
- 7) I consent to the use of the report by Black Swan Gold Mines Ltd. in any Filing Statement, Statement of Material Facts or Prospectus issued by the Company.

  
PETER A. CHRISTOPHER, P. ENG. REG.  
June 14, 1984

