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8/85

GEOCHEMICAL ASSESSMENT REPORT  
ON THE  
SHASTA 5 CLAIM, OMINECA M.D.

N.T.S. 94E/3E

Latitude 57°14'N Longitude 127°05'W

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**12,979**

OWNER: Newmont Exploration of Canada Limited  
OPERATOR: Newmont Exploration of Canada Limited

By: B. W. Downing  
August, 1984

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## 1. INTRODUCTION

A reconnaissance soil geochemical and geological survey was conducted July 1, 1984 around the perimeter of the Shasta 5 mineral claim to test for areas of gold and silver mineralization. A total of 80 soil and one rock chip samples were collected. The program was supervised by B. W. Downing for Newmont Exploration of Canada. Personnel stayed at Newmont's Shasta base camp on Jock Creek and were set out and picked up by helicopter.

### 1.1 Location

The Shasta 5 mineral claim is located approximately 290 km north of Smithers in the Omineca Mining Division, N.T.S. map 94E/3E, Figure 1.

### 1.2 Topography/Access

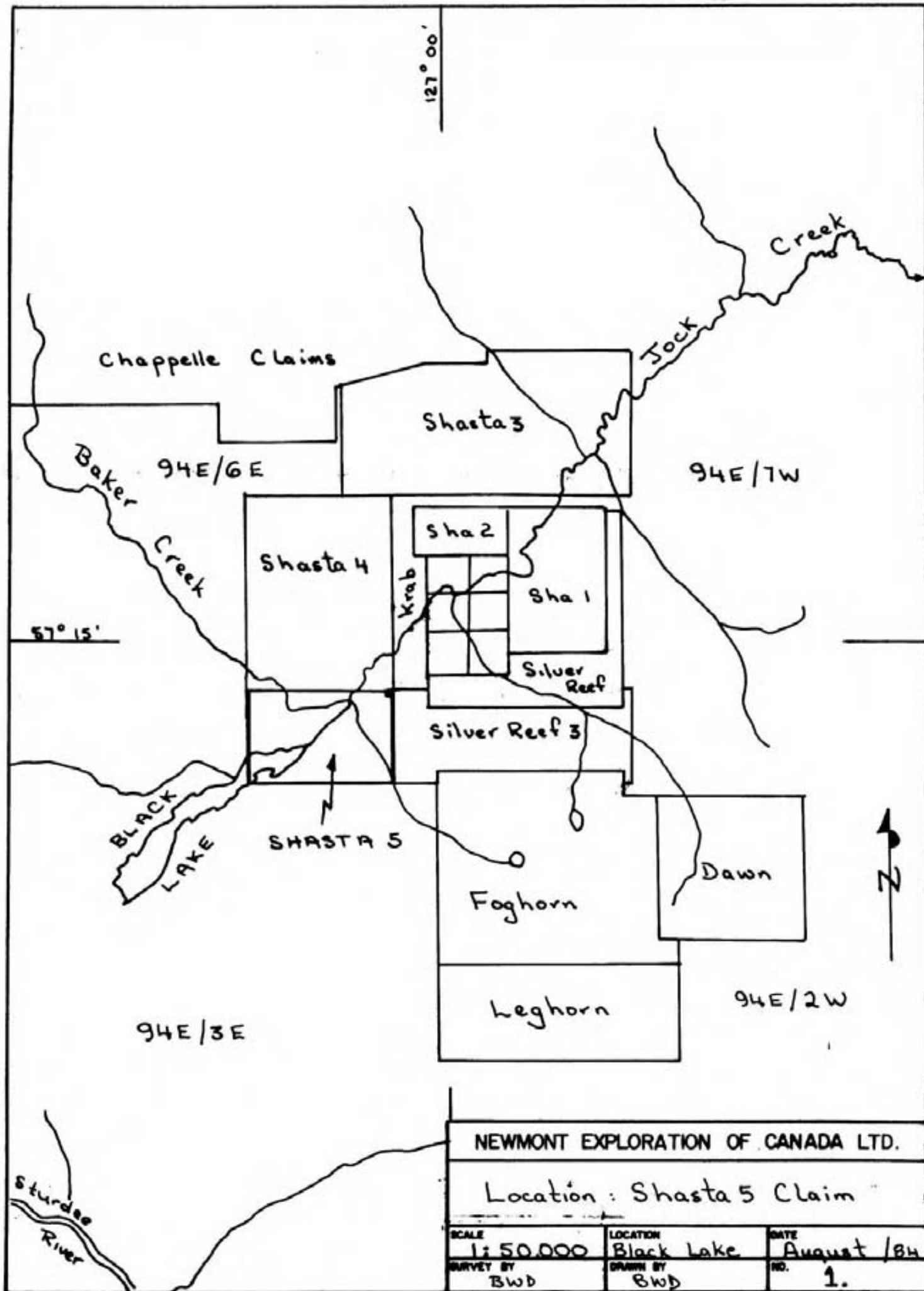
The property occurs in the moderately rugged Toodoggone area of B.C. between the 1240 and 1260 metre elevations and is drained by Jock Creek. It is located at the north end of Black Lake and encompasses the old Black Lake airstrip which can be accessible by float and wheel plane.

Access to the property is by fixed wing aircraft from Smithers to the Sturdee River all weather airstrip (1600 metres in length) located about five kilometres to the southwest; followed by a five minute helicopter trip.

## 2. GEOLOGY

### 2.1 Regional Geology

The Shasta 5 claim occurs near the eastern margin of the Intermontane Belt in the Cassiar-Omineca Mountains. The oldest rock exposed are wedges of crystalline limestone correlatable with Asitka Group (Permian) in thrust fault contact with



NEWMONT EXPLORATION OF CANADA LTD.

Location: Shasta 5 Claim

SCALE 1:50,000	LOCATION Black Lake	DATE August /84
SURVEY BY BWB	DRAWN BY BWB	NO. 1.

the Takla Group (middle Triassic age). The Takla Group consists of andesitic flows and pyroclastic rocks including augite-tremolite andesite porphyries and crystal and lapilli tuffs. The Takla is intruded by the Black Lake intrusive, a relatively unaltered granodiorite to quartz monzonite and part of the Omineca Intrusions. Takla rocks are overlain by the Toodoggone volcanics (lower Jurassic age) in which part of the Shasta 5 claim occurs. The Toodoggone volcanics consist of tuff, flow and pyroclastic breccias, volcanic sediments, andesitic flows and grey dacite, the latter being the most widespread and continuous rock type in the area.

The Toodoggone Group rocks are unconformably overlain by relatively flat lying Sustut Group sediments of Upper Cretaceous to Tertiary age which outcrop along the eastern margin of the Spatzizi Plateau, several kilometres to the west.

Structurally, the Toodoggone area has undergone several periods of faulting, (thrust, normal, strike-slip) and folding. In the northwest portion of the area (Claw Mtn.), the Toodoggone rocks are apparently in fault contact (northwest trending) with Takla. Many of the valleys display block faulting, associated with graben structures.

## 2.2 Property Geology

The northwestern part of the Shasta 5 claim is comprised of the Black Lake intrusive. It is a massive medium to coarse-grained equigranular granodiorite with weak chloritic alteration of mafics (hornblende, biotite). The intrusive is transected by numerous northerly trending faults, the most prominent one being Baker Creek (creek which drains the former Dupont Baker gold-silver mine). A small plug of reddish coloured quartz monzonite intrudes the granodiorite at sample site number 21585.

A small outcrop of Toodoggone quartz-eye feldspar crystal tuff occurs in the southeast section of the claim.

No mineralization of economic importance was observed in outcrop.

### 3. GEOCHEMISTRY

Soil samples were taken at chained 50 metre intervals (where possible) along the perimeter of the Shasta 5 claim, figure 2. The B horizon was sampled at a depth of 10 to 15 cm using a mattock and placed in a kraft envelope. A total of 80 samples were sent to Chemex Labs, North Vancouver, for copper, lead, zinc, gold and silver analysis. All samples were dried and sieved to -35 mesh screen, then ring grind to approximately -100 mesh. For analysis of copper, lead, zinc and silver, 1 g of each sample was digested for 2 hours using hot 70% perchloric acid (3 ml) and concentrated nitric acid (2 ml), then the mixture diluted to 25 ml with demineralized water, allowed to settle, and the metal content determined by atomic absorption. For gold, 5 g samples were ashed at 800°C for one hour, digested with aqua regia (twice to dryness), taken up in 25% hydrochloric acid, then the gold extracted as the bromide complex into MIBK and determined by atomic absorption. The results are shown in Figures 2 to 4.

An outcrop of Toodoggone quartz feldspar crystal tuff containing a few narrow quartz veins was sampled and also analyzed (Cu, Pb, Zn, Au & Ag) at the Chemex Labs. Rock samples are crushed and ring grind to approximately -100 mesh and analyzed using the standard method for atomic absorption analysis (see above).

### 4. CONCLUSIONS

Parent material (colluvium and alluvium) for 80% of the soil samples is a heterogeneous glacial till composed of Takla and

Toodoggone volcanics, granodiorite and Sustut volcanic-sediments. No mineralized glacial material was observed. Residual soil derived from the granodiorite accounts for the remaining 20%. The average depth of glacial material is not known.

The results indicate the presence of possibly two weakly anomalous samples (#21761 and 71) in Cu, Zn and Ag, however, both samples were taken in areas of wet, poorly drained soil with high organic content along faults which would account for the accumulation of these metals. On average, the values for Cu, Pb, and Zn are higher in soils over the granodiorite than glacial material.

The rock geochemical results are low and of no significant importance.

No further work is recommended on the Shasta 5 claim.

APPENDIX I

STATEMENT OF EXPENSES

LABOUR

B. W. Downing (geologist)	1 day @ \$186.88/day	\$186.88
I. Casidy (assistant)	1 day @ \$114.34/day	\$114.34
P. Gill (assistant)	1 day @ \$ 94.55/day	\$ 94.55
A. Forsyth (assistant)	1 day @ \$ 94.55/day	\$ 94.55
		<hr/>
		\$490.32

TRANSPORTATION

Helicopter ALC Hughes 500-D .5 hr. @ \$500/hr	\$250.00
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ROOM & BOARD (camp costs)

4 men @ \$40.00/manday	\$160.00
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ANALYSES

80 soil samples @ \$11.70 = \$936.00	
1 rock sample @ \$18.05 = \$ 18.05	\$954.05

REPORT PREPARATION

writing, typing, drafting, reproduction	\$500.00
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TOTAL	<hr/> <hr/>
	\$2,354.37



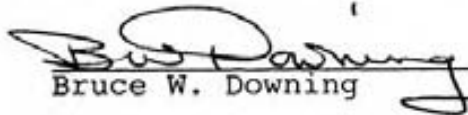
APPENDIX II

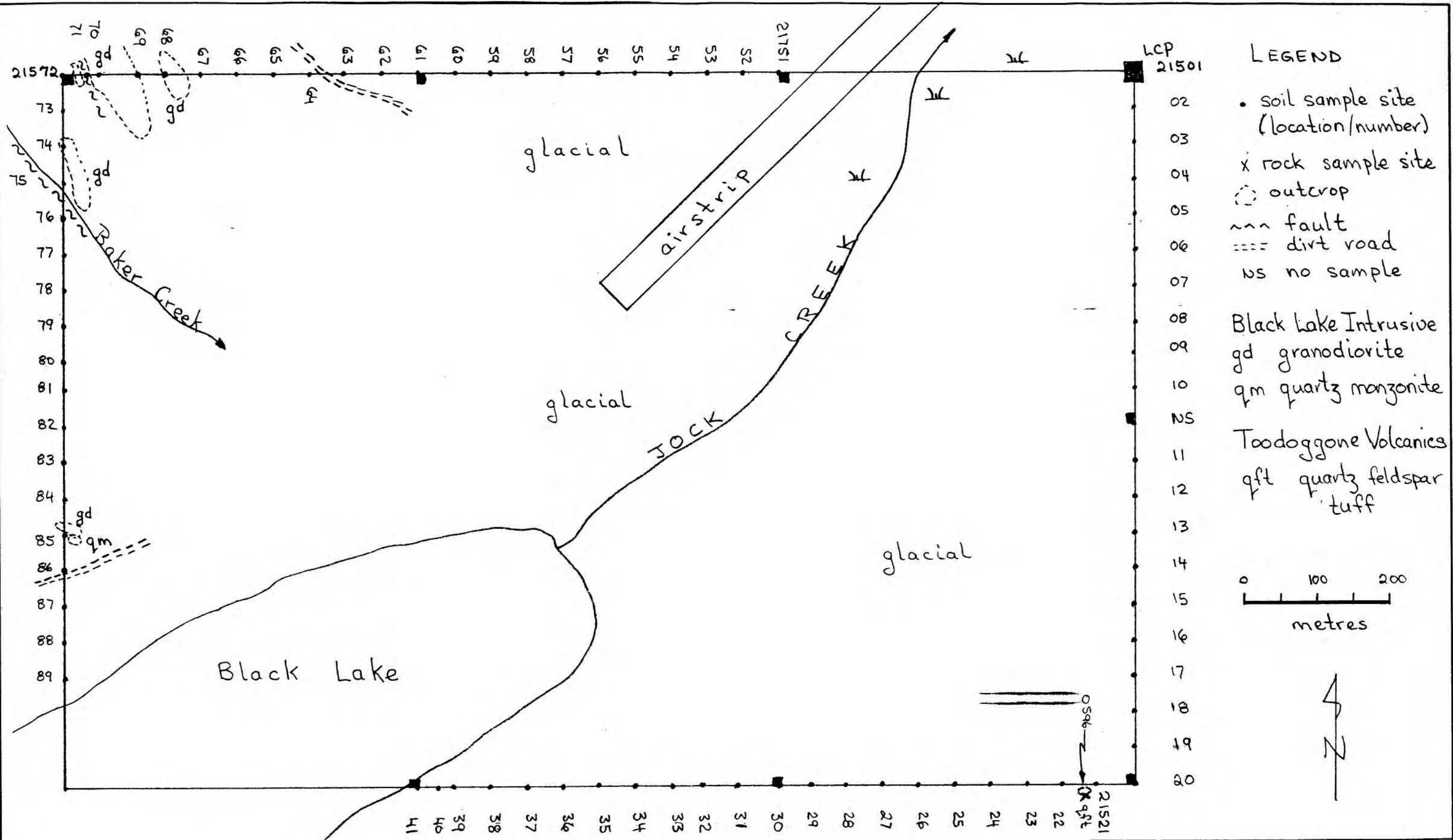
STATEMENT OF QUALIFICATIONS

I, B. W. Downing, am a graduate of Queen's University with an honours B.Sc. in geology (1970) and a M.Sc. in geology (1973) from the University of Toronto.

I am a fellow of the Geological Association of Canada since 1978 and a member in good standing with the Canadian Institute of Mining and Metallurgy.

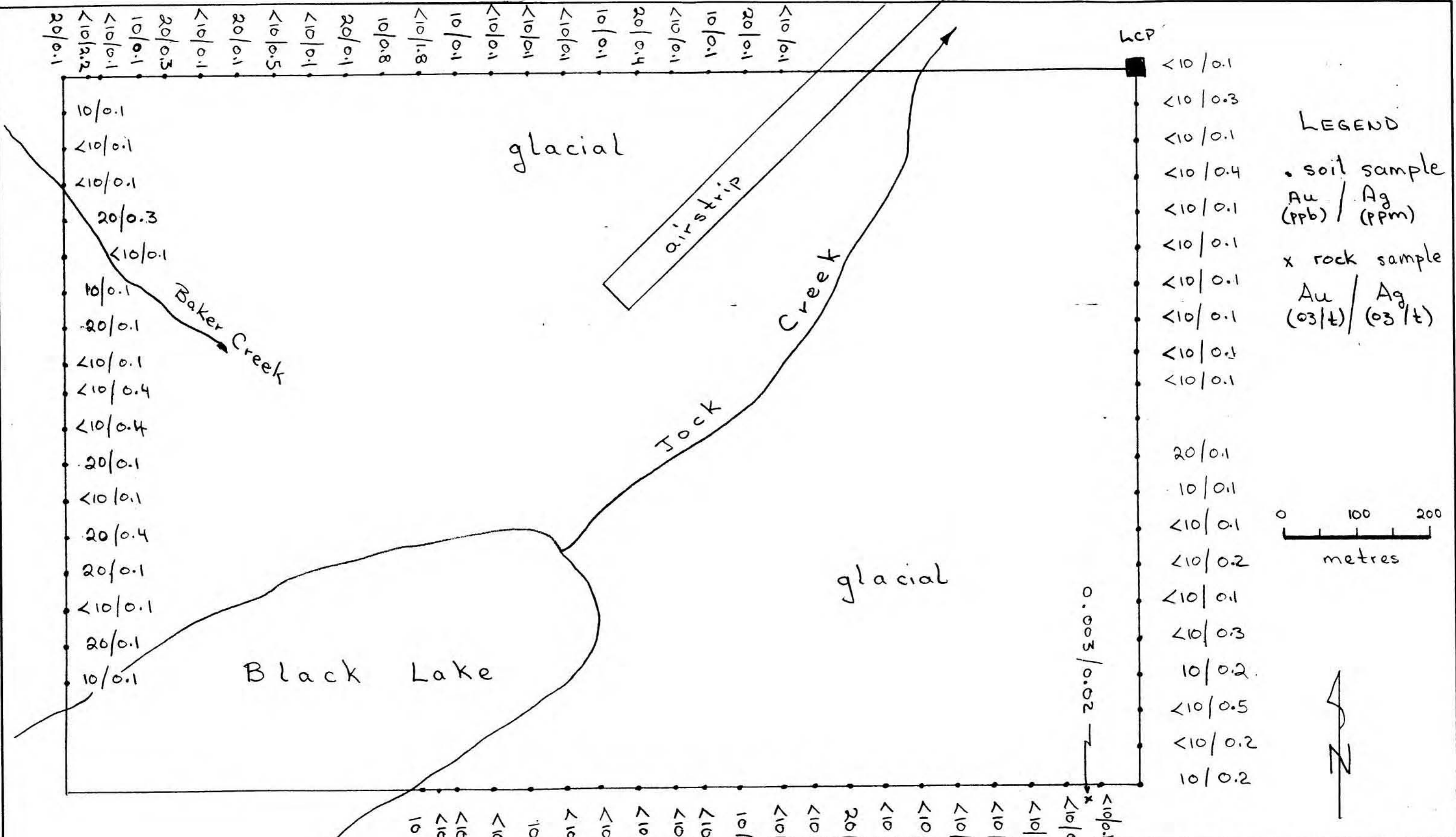
I have been continuously employed in mining exploration work since 1974.

  
Bruce W. Downing



NEWMONT EXPLORATION OF CANADA LTD.		
Sample Location Map		
SCALE 1:5000	LOCATION Shasta 5	DATE Aug 184
SURVEY BY BWD	DRAWN BY BWD	NO. 2.

NCI 242 - N.E.C.



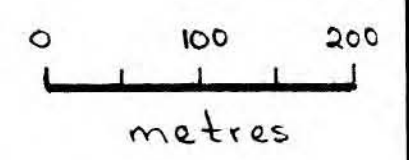
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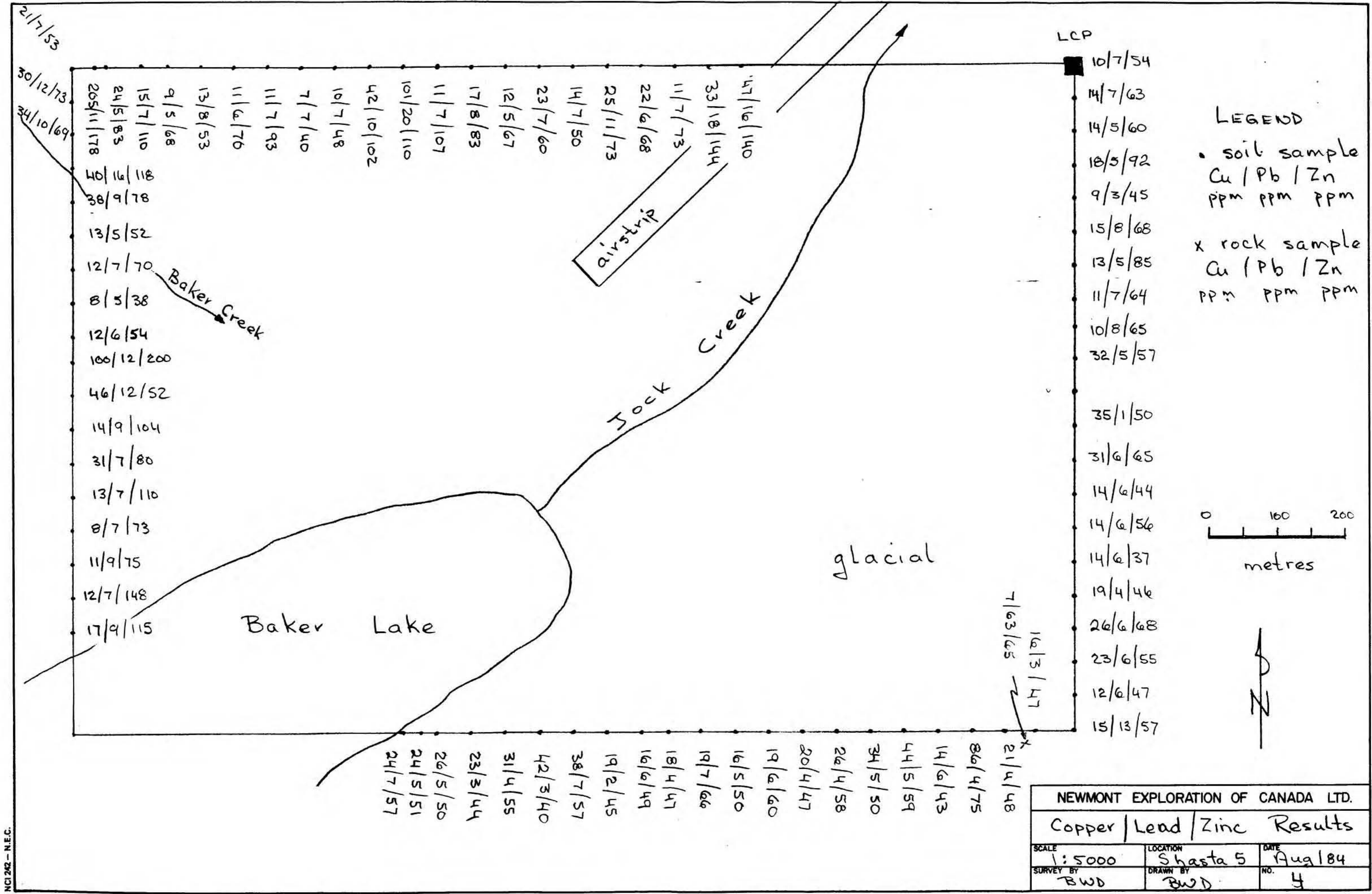
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LEGEND  
• soil sample  
Au / Ag (ppb) / (ppm)  
x rock sample  
Au / Ag (oz/t) / (oz/t)



0.003 / 0.02

NEWMONT EXPLORATION OF CANADA LTD.		
Gold / Silver Results		
SCALE	LOCATION	DATE
1:5000	Shasta 5	Aug/84
SURVEY BY	DRAWN BY	NO.
BWD	BWD	3



LCP

10/7/54

14/7/63

14/5/60

18/5/92

9/3/45

15/8/68

13/5/85

11/7/64

10/8/65

32/5/57

35/1/50

31/6/65

14/6/44

14/6/56

14/6/37

19/4/46

26/6/68

23/6/55

12/6/47

15/13/57

21/7/53

30/12/73

34/10/69

265/11/178

24/5/83

15/7/110

9/5/68

13/8/53

11/6/76

11/7/93

7/7/40

10/7/48

42/10/102

101/20/110

11/7/107

17/8/83

12/5/67

23/7/60

14/7/50

25/11/73

22/6/68

11/7/73

33/18/144

47/16/140

40/6/118

38/9/78

13/5/52

12/7/70

8/5/38

12/6/54

100/12/200

46/12/52

14/9/104

31/7/80

13/7/110

8/7/73

11/9/75

12/7/148

17/9/115

24/7/57

24/5/51

26/5/50

23/3/44

31/4/55

42/3/40

38/7/57

19/2/45

16/6/49

18/4/47

19/7/66

16/5/50

19/6/60

20/4/47

26/4/58

34/5/50

44/5/59

14/6/43

86/4/75

21/4/48

airstrip

Jock Creek

glacial

Baker Creek

Baker Lake