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10/86

GEOLOGY AND SOIL GEOCHEMISTRY  
BETHEL MINERAL CLAIM  
NELSON MINING DIVISION  
HALL SIDING AREA, YMIR, B.C.  
NTS 82 F/6 E & 6 W  
LATITUDE 49°23'N, LONGITUDE 117°15'W

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**14,028**

Locke B. Goldsmith, P.Eng.  
Consulting Geologist

October 25, 1985

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GEOLOGY AND SOIL GEOCHEMISTRY: GOLD, SILVER	
(Pocket inside back cover)	

**GEOLOGY AND SOIL GEOCHEMISTRY****BETHEL MINERAL CLAIM****NELSON MINING DIVISION****HALL SIDING AREA, YMIR, B.C.****NTS 82 F/6 E & 6 W****SUMMARY**

Values of gold in soils increase towards the northwest corner of the claim where andesitic flows of the Lower Jurassic Elise Formation are exposed in cliffs. The area on the hill to the north of the claim should be prospected carefully, both visually and by geochemical techniques. A cost of \$5000 is estimated for the next Phase of exploration.

## INTRODUCTION

The Bethel claim, L 10222, Record Number 3903(10), is located in the Nelson Mining Division, immediately west of Highway 6 at the former village of Hall Siding. The town of Nelson, where most services can be obtained, is approximately 17 km to the north. Hall Creek flows adjacent to the south boundary. A road which departs from Highway 6 westerly follows the Hall Creek valley. Elevations rise from 885 m (2900') in the southeast corner of the claim to 1070 m (3500') in the northwest.

Nothing is recorded concerning the early history of the property. Cockfield (1936) notes a prospect known as the Three Friends Group which is situated on the south side of Hall Creek "about three-quarters of a mile from the Nelson-Ymir highway"; quartz veins carry a little tetrahedrite and pyrite, with values of gold.

One kilometre of grid was prepared. Lines are 100 m apart with stations at 50-m intervals.

## GEOLOGY

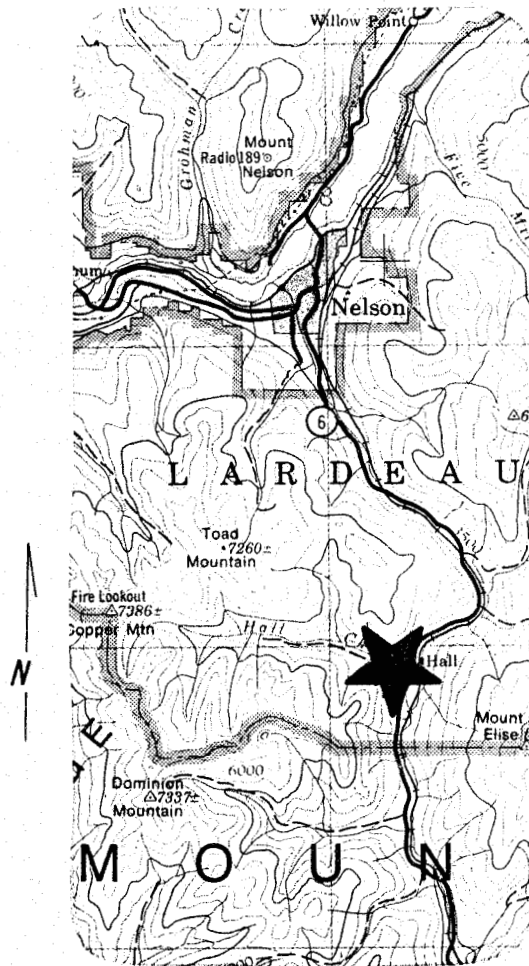
Rocks exposed in cliffs at the north end of line 00 are andesitic volcanics, presumably of the Elise Formation as mapped by Little (1963). No mineralization or quartz veining was observed within the claim.

## SOIL GEOCHEMISTRY

Sixteen soil samples were collected with a narrow, elongate spade at depths of 30 to 45 cm below organic debris. Analyses for gold and silver were preformed by Chemex Labs Ltd. of North Vancouver, B.C.

Gold content increases in the northwest corner of the claim to highs of 65 ppb (parts per billion) at 1+00W 4+00N and 50 ppb at 0+00 4+00N. These values may be migrating downslope from areas to the northwest of the property, and may reflect only the background quantity of gold in the volcanics.

# BETHEL CLAIM



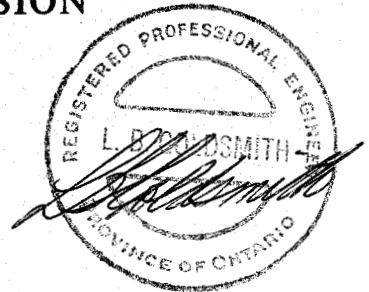
Hall, B.C. NTS 82F/6

NELSON MINING DIVISION

## Location Map

0 2500 5000  
 METRES

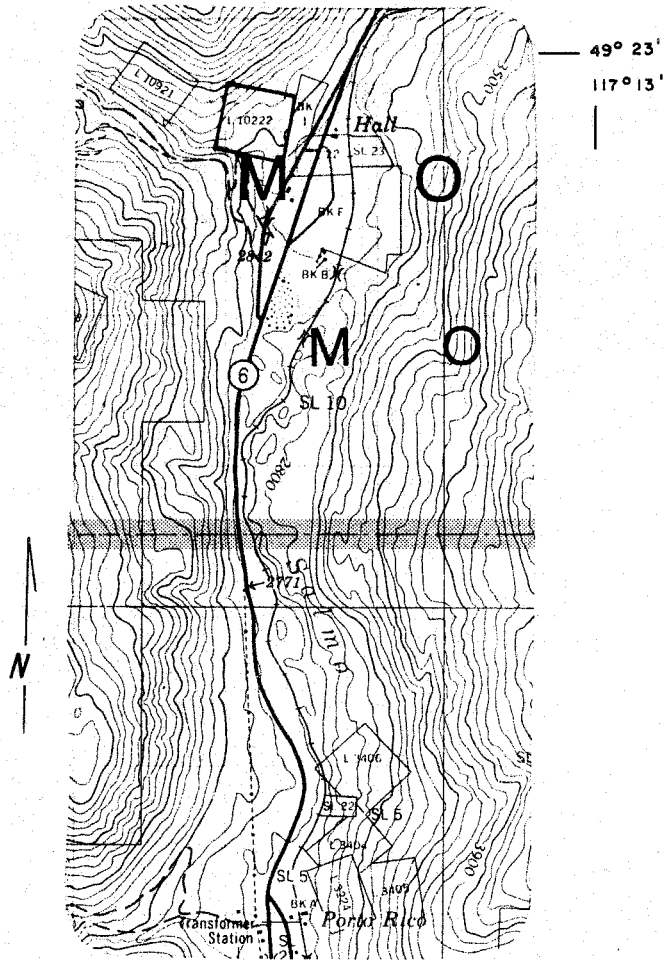
1: 250,000



To accompany OCTOBER 1985 report by  
 LOCKE B. GOLDSMITH, P.Eng.

L10222 / 3903(10)

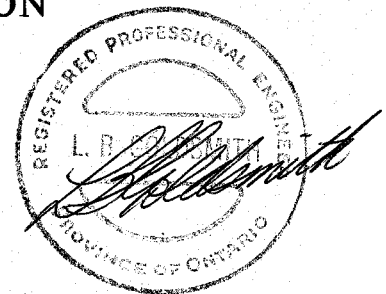
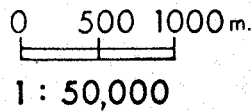
# BETHEL CLAIM



Hall, B.C. NTS 82F/6

NELSON MINING DIVISION

## Claim Map



To accompany OCTOBER 1985 report by  
LOCKE B. GOLDSMITH, P.Eng.

## CONCLUSIONS

Several values of gold above background levels were obtained from the north-west corner of the Bethel claim. While not indicative of underlying mineralization, the source may be located upslope in the near vicinity. It cannot as yet be determined if the gold quantities are derived from a normal background population of the Elise volcanics or are from a mineralized zone.

## RECOMMENDATIONS

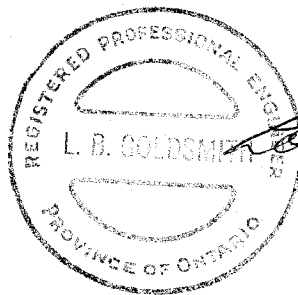
The hill to the north and northwest of the claim should be carefully prospected, both visually and by soil and rock geochemistry.

## COST ESTIMATE

A budget of \$5000 for prospecting, analyses, and interpretation should be available in the next Phase.

Results of each Phase should be compiled into an engineering report; continuance to the subsequent Phase should be contingent upon receiving favourable conclusions and recommendations from an Engineer.

Respectfully submitted,



*Locke B. Goldsmith*  
Locke B. Goldsmith, P.Eng.

Vancouver, B.C.

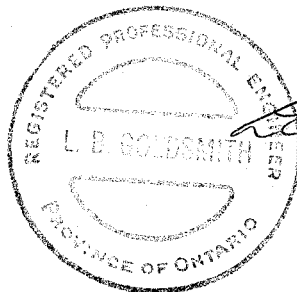
October 25, 1985

## ENGINEER'S CERTIFICATE

LOCKE B. GOLDSMITH

1. I, Locke B. Goldsmith, am a Registered Professional Engineer in the Province of Ontario and the Northwest Territories, and a Registered Professional Geologist in the State of Oregon. My address is 301, 1855 Balsam Street, Vancouver, B.C.
2. I have a B.Sc. (Honours) degree in Geology from Michigan Technological University, a M.Sc. degree in Geology from the University of British Columbia, and have done postgraduate study in Geology at Michigan Tech and the University of Nevada. I am a graduate of the Haileybury School of Mines, and am a Certified Mining Technician. I am a Member of the Society of Economic Geologists, the AIME, and the Australasian Institute of Mining and Metallurgy, and a Fellow of the Geological Association of Canada.
3. I have been engaged in mining exploration for the past 27 years.
4. I have authored the report entitled, "Geology and Soil Geochemistry, Bethel Mineral Claim, Nelson Mining Division, Hall Siding Area, Ymir, B.C." dated October 25, 1985. The report is based upon fieldwork and research supervised by the author.
5. I control, with associates, 100% ownership in the property.
6. I consent to the use of this report in a prospectus, or in a statement of material facts related to the raising of funds.

Respectfully submitted,

Locke B. Goldsmith, P.Eng.  
Consulting Geologist

Vancouver, B.C.

October 25, 1985



**REFERENCES**

Cockfield, W.E. 1936. Lode gold deposits of Ymir-Nelson Area, B.C. G.S.C. Memoir 191, pp. 52-53.

Little, H.W. 1963. Geology, Ymir. G.S.C. Map 1144A, scale 1"=1 mile (1:63,360).

## COST STATEMENT, 1985 PROGRAMME

## 1. Personnel

L.B. Goldsmith, Oct. 12, $\frac{1}{4}$ 24, $\frac{1}{4}$ 25, total $1\frac{1}{2}$ days @ \$400/day	\$600.00	
G. Bennett, Oct. 12, total 1 day @ \$220/day	<u>220.00</u>	
	820.00	\$ 820.00

## 2. Accommodation, Food

\$68.80 $\div$ 2 man days = \$34.40/man/day		68.80
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## 3. Transportation

4x4 vehicle, 1 day @ \$45/day	\$ 45.00	
240 km @ \$0.30/km	72.00	
Gas	<u>14.40</u>	
	131.40	131.40

## 4. Analyses

16 samples cost \$124.50 = \$7.78/sample		124.50
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## 5. Report

Drafting, typing, prints, photocopies, materials		<u>291.40</u>
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TOTAL		\$ 1,436.10
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APPENDIX

Gold F.A.-A.A. Combo Method ppb:

For low grade samples and geochemical materials, 10 gram samples are fused in litharge, carbonate and siliceous flux with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO<sub>3</sub> and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer.

Detection limit: 5 ppb

Copper, Lead, Zinc, Silver ppm:

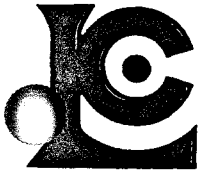
1.0 gm sample is digested with perchloric-nitric acid (HClO<sub>4</sub>-HNO<sub>3</sub>) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper, lead, zinc and silver are determined by atomic absorption techniques. Silver and lead are corrected for background absorption.

Detection limit: Copper, Zinc - 1 ppm  
Silver - 0.2 ppm  
Lead - 2 ppm

Arsenic ppm:

A 1.0 gm sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with NaBH<sub>4</sub> and the arsenic content determined using flameless atomic absorption.

Detection limit: 1 ppm



# Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 Brooksbank Ave.  
North Vancouver, B.C.  
Canada V7J 2C1  
Telephone: (604) 984-0221  
Telex: 043-52597

## CERTIFICATE OF ANALYSIS

TO : GOLDSMITH, MR. L. B.

#301-1855 BALSAM STREET  
VANCOUVER, B.C.  
V6K 3M3

CERT. # : A8517454-001-A  
INVOICE # : I8517454  
DATE : 22-OCT-85  
P.O. # : NONE  
BETHEL

Sample description	Prep code	Ag ppm Aqua R	Au ppb FA+AA				
HALL 00+00	201	0.3	25	--	--	--	--
HALL 0+50N	201	0.1	15	--	--	--	--
HALL 1N	201	0.3	10	--	--	--	--
HALL 1+50N	201	0.1	5	--	--	--	--
HALL 2N	201	0.3	5	--	--	--	--
HALL 2+50N	201	0.7	45	--	--	--	--
HALL 3N	201	0.7	25	--	--	--	--
HALL 4N	201	1.4	50	--	--	--	--
HALL 1W 0+50N	201	0.4	5	--	--	--	--
HALL 1W 1N	201	0.7	5	--	--	--	--
HALL 1W 1+50N	201	0.2	10	--	--	--	--
HALL 1W 2N	201	0.5	<5	--	--	--	--
HALL 1W 2+50N	201	0.6	5	--	--	--	--
HALL 1W 3N	201	0.6	<5	--	--	--	--
HALL 1W 3+50N	201	0.3	5	--	--	--	--
HALL 1W 4N	201	0.5	65	--	--	--	--



Certified by Hart Bichler

117° 15'

49° 23'

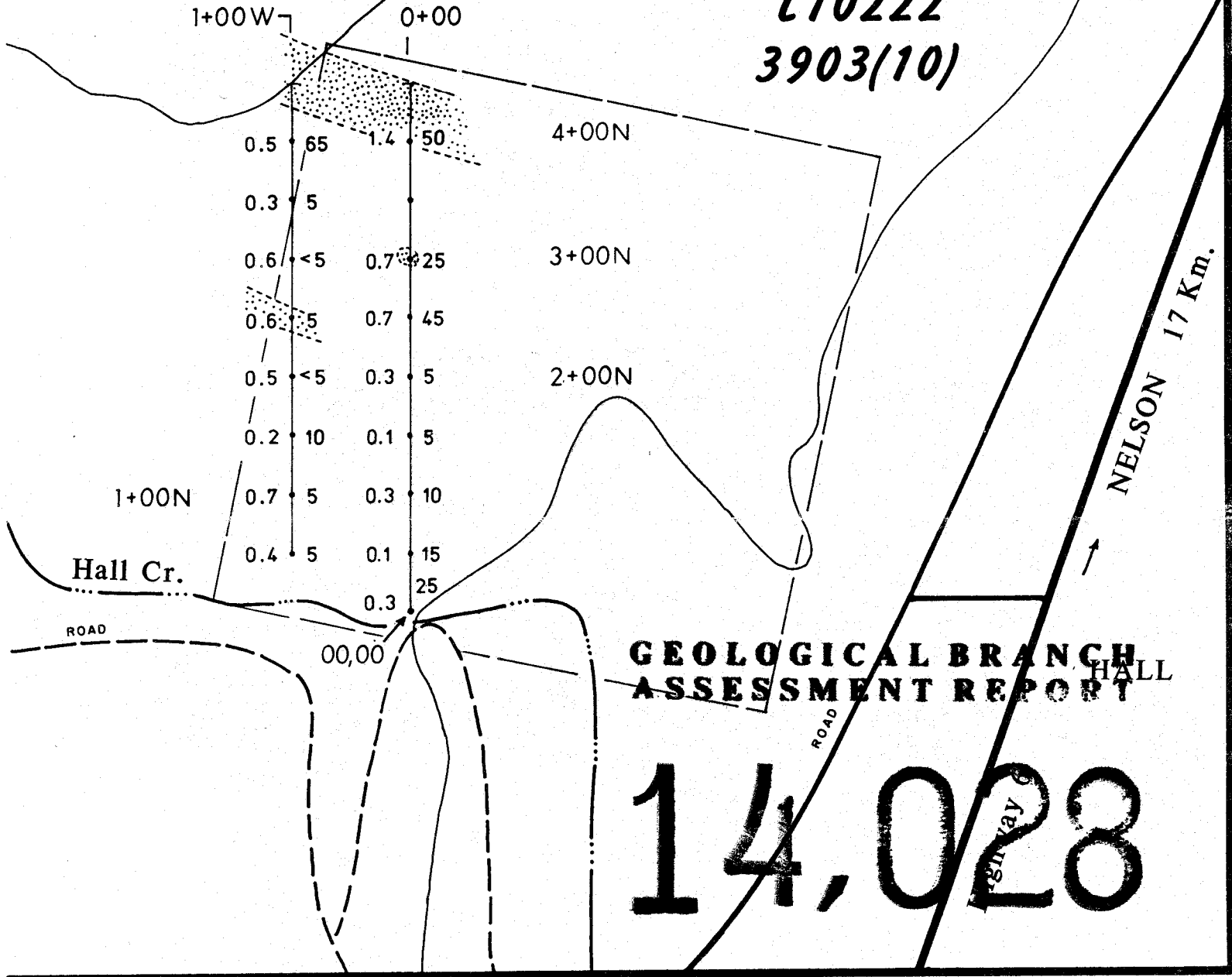
Rock exposures observed are  
Lower Jurassic ELISE FORMATION:

andesite and basalt flows and  
flow breccia, agglomerate,  
augite porphyry.

Outcrop



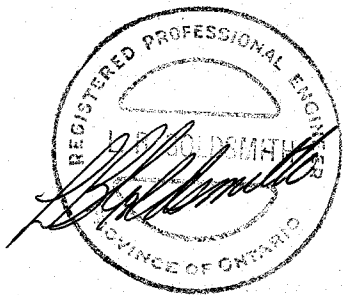
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**GEOLOGY & GEOCHEMISTRY  
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Hall, B.C. NTS 82F/6

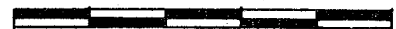
NELSON-MINING DIVISION



1:5000

METRES

0 50 100 250



To accompany report by Locke B. Goldsmith, P.Eng.

October 1985