35-970-14148

# Geological, Geophysical and Geochemical Report

on the

## TL\_1\_Claim

Located at Coordinates: 55 deg. 31 min. N, 125 deg. 54 min. W

Omineca Mining Division, B.C.

by: Gordon Maxwell & Lyndon Bradish

NORANDA EXPLORATION COMPANY, LIMITED (No Personal Liability)

# GEOLOGICAL BRANCH ASSESSMENT REPORT

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# SUMMARY

The TL 1 claim is situated approximately 5.0 kilometers northeast of the village of TAKLA LANDING. The property is underlain by volcanic stratigraphy of the Sitlika Assemblage which appears to be very similar to that of the Kutcho formation which hosts the Kutcho volcanogenic massive sulphide deposit.

In September of 1984, reconn soil sampling was performed by R. Baerg, with a total of 48 samples being taken. In early September of 1985, a detail grid consisting of 5.35 kilometers of line controlled by 1.2 kilometers of baseline was established by Norex personnel. Geologic mapping and geophysical surveys were performed under the direction of Gordon Maxwell and Rod Swire.



#### INTRODUCTION:

The TL 1 claim was staked by R. Baerg, an employee of Noranda Exploration Company, Limited, in September of 1984. The ground was acquired to cover airborne EM anomalies detected on a survey contracted by McIntyre Mines in 1977. The work described within the report was carried out by Noranda Exploration personnel during the period September 1984 and September 1985.

#### LOCATION AND ACCESS:

The property is situated approximately 5.0 km northeast of the village of Takla Landing on Takla Lake. Access to the property is via the Takla Landing access road which lies immediately south of the claim. An unmaintained logging road provides direct access to the grid and property (Figure 2).

#### CLAIM\_STATISTICS:

The claim consists of 20 units staked using the modified grid system and lies within the Omineca Mining Division.

CLAIM NAME	UNITS	RECORD #	DATE	
	· · · · · ·			,
TL 1	20	6944	Sept. 28,	1984

#### **REGIONAL GEOLOGY:**

The area is underlain by Upper Triassic to Lower Jurassic volcanic and sedimentary rocks of the Sitlika Assemblage which have been regionally metamorphosed to greenschist facies (Paterson, 1974). This assemblage is composed mainly of well foliated andesitic to rhyolitic pyroclastics and flows with lesser amounts of greywacke, siltstone and phyllite. The Sitlika volcanics are characterized by local development of sericite, quartz-sericite and chlorite schists. The Takla Fault separates the Sitlika rocks from the Tertiary Sustat Group to the west. The Permian Cache Creek rocks to the east are separated from the Sitlika by the Vital Fault and a serpentinite melange. The Cache Creek Group is bounded to the east by the Pinchi Fault and the Jurassic Hogem Batholith (Figure 3).

#### LOCAL GEOLOGY:

The property is underlain mainly by pale-green chloritic schists and weakly schistose andesitic flows which trend southsoutheast and dip steeply to the east. The only other rock unit observed on the property is a dark grey to black weakly graphitic phyllite horizon within chloritic schists. The claim lies in a fairly flat lowland area where outcrop exposures are quite sparse





except along road cuts on the logging road. No outcrop or explanation was observed along the one conductive horizon located on the grid. The geology is plotted on a 1:5000 scale map in the back pocket.

#### PREVIOUS\_WORK:

The property had previously been covered by helicopter-borne electromagnetic and magnetic surveys contracted by McIntyre Mines in 1977. An airborne EM response with an associated magnetic response was detected in the area of the TL 1 claim. No further work has been recorded on the property to date.

#### GRID:

The grid was established to cover the previous outlined ABEM response and consists of 5.35 kilometers of line controlled by 1.2 kilometers of baseline. The grid was flagged with stations marked at 25 meter intervals along winglines running at an azimuth of 070 degrees. The grid intersects the logging road at several locations.

#### SOIL GEOCHEMISTRY:

Introduction

Soil samples were taken from the "B" horizon using a grub hoe from depths ranging from 25 to 38 cm. The samples were placed in Kraft wet strength paper bags, dried, then shipped to Noranda Labs in Vancouver, B.C. for analysis (for analytical procedure see Appendix III).

Soil geochem sampling was performed on a reconn basis with lines running east-west from a claim line immediately north of the LCP. Lines were spaced at 500 meter intervals and samples were taken every 100 meters along each line. A total of 48 samples were taken and analyzed for Cu, Zn, Au, Ag, Pb, Mo and As. The results are plotted on a 1:5000 scale map (in pocket).

#### <u>Observations</u>

COPPER The copper values range from 6 ppm to 90 ppm. No highly anomalous values were detected but a weak trend of above threshold values was outlined in the area of L10,500N/9800E.

ZINC The zinc values range from 12 ppm to 150 ppm. Again no highly anomalous values were detected. A trend of above threshold values appears coincident with that found with the copper geochem.

GOLD Gold values range from the detection limit of 10 ppb

to 40 ppb. None of the values obtained are considered anomalous.

SILVER Silver values range from the detection limit of 0.2 ppm to 0.8 ppm. Again none of the values are considered anomalous.

LEAD No lead values above the detection limit were obtained.

MOLYBDEBUM No molybdenum values above the detection limit were obtained.

ARSENIC No arsenic values above the detection limit were obtained.

#### GEOPHYSICS:

#### Instrumentation

SE-88 E.M. SYSTEM The SE-88 unit differs from the normal HLEM systems such as the MaxMin II above in that it measures without regard to phase, the ratio of signal amplitude between two frequencies which are transmitted and received simultaneously. A low frequency of 112 Hz is used as a reference frequency. The signal difference is integrated or averaged over a period of time in order to improve the signal to noise ratio.

The survey parameters employed on the programme are as follows:

Coil separation	: 1	00 meters
Frequencies	: 3	037, 1012, 337 Hz
Reference frequency	:: 1	12 Hz
Integration period	: 1	6 seconds
Reading interval	: 2	5 meters
Measurement	: r	atio of amplitude between eference and signal
	f	requencies (%).

MP-3 MAGNETOMETER SYSTEM Magnetometers manufactured by Scintrex Ltd. of Concord, Ontario were employed for these surveys. The MP-3 Total Field Magnetometer System consists of one or more field units and a base station. Diurnal and day to day variations are automatically corrected at the end of the survey by the built in microprocessor giving the data a useable accuracy of 1 gamma.

Discussion of Results

The ground E.M. survey defined a linear zone of conductivity extending across the long axis of the grid. The width of this zone varies from "narrow" to a maximum of 50 meters and the depth to the current axis is believed to be less than 20 meters along the known strike length of the zone. Conductivities are high reaching a maximum of 48 Siemens on Line 5900N.

The magnetometer survey defined several narrow zones of high susceptibility, none of which are coincident with the detected zone of conductivity. Subtle increase in susceptibility is noted coincident with the conductor on Lines 6150N and 5550N but there is no evidence that the conductivity and susceptibility sources are one and the same. Results are plotted on 1:5000 scale maps in rear pockets.

#### CONCLUSIONS:

Geologic mapping has outlined favourable volcanic stratigraphy of the Sitlika Assemblage underlying the TL 1 claim. This stratigraphy appears to have potential for hosting volcanogenic massive sulphide deposits. Although the reconn geochem survey proved somewhat disappointing, it is believed the area, in general, is covered by thick accumulations of glacial debris, which render soil geochem ineffective. The HLEM survey outlined one continuous zone of high conductivity with a variable width and subtle magnetic susceptibility.

#### RECOMMENDATIONS:

- 1. Continuation of the HLEM and Magnetic surveys to determine the strike extent of the conductive horizon.
- Further detailed geology or hand trenching in the area of the conductor axis to determine the source of the conductivity.
- 3. Possibly more extensive mechanical trenching or a shallow drill hole to test the conductor axis.

# REFERENCES:

- Crosly, R.O. <u>Airborne Geophysical Surveys, Ruth Mineral Claims,</u> <u>TAKLA LAKE Area, B.C.</u>, Assessment Report for McIntyre Mines Limited, 1977.
- Francoer, D. <u>Geological, Geophysical and Geochemical Report on</u> <u>TAKLA Project for McIntyre Mines Limited</u>, 1977.
- Monger, J.W.H. Lower Mesozoic Rocks in McConnell Creek Map Area, (94E), British Columbia. Geological Survey of Canada, Paper 76-1A.

Paterson, I.A. <u>Geology of Cache Creek Group and Mesozoic Rocks at</u> the Northern end of the Stuart Lake Belt, Central B.C., Geol. Survey of Canada, Paper 74-1, Part B, 1974.

#### APPENDIX I

## STATEMENT OF QUALIFICATIONS

I, Gordon Maxwell of Prince George, Province of British Columbia, do hereby certify that:

- 1. I am a Geologist residing at 6162 Caledonia Crescent, Prince George, British Columbia.
- I am a graduate of the University of Manitoba with an Hons. B. Sc. (geology).
- 3. I am a member in good standing of the Canadian Institute of Mining and the Prospector's and Developer's Association.
- 4. I presently hold the position of Project Geologist with Noranda Exploration Company, Limited and have been in their employ since 1980.

m Mafwell V. Maxwell

#### APPENDIX I

# STATEMENT OF QUALIFICATIONS

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

- 1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver British Columbia.
- 2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).
- 3. I am a member in good standing of the Society of Exploration Geophysicists, Canadian Institute of Mining and the Prospector's and Developer's Association.
- 4. I presently hold the position of Division Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

mallie

L. Bradish.

# APPENDIX II

## NORANDA EXPLORATION COMPANY, LIMITED

### STATEMENT OF COST

#### DATE: December, 1985

PROJECT - TL 1 Claim TYPE OF REPORT - Geological, Geochemical & Geophysical

a) Wages:

		·		
Geophysics	8 mandays 6	\$125.00/day	\$	1000.00
Geology	2 mandays 6	\$130.00/day	\$	260.00
Soil Geochem	2 mandays 0	\$125.00/day	·\$	250.00
Linecutting	6 mandays 6	\$125.00/day	\$	750.00
			. — <del>—</del>	
	$(x_i,y_i) \in \{x_i\}$	•	\$	2260.00

b) Food and Accommodation:

18 mandays @ \$50.00/day

c) Analysis:

48 samples 0 \$9.00/sample \$ 432.00

e) Cost of Preparation of Report:

			and the second
Authors		\$	260.00
Drafting			230.00
Typing			110.00
		4	600.00

TOTAL COST

\$ 4192.00

900.00

\$

#### APPENDIX III

#### ANALYTICAL METHOD DESCRIPTIONS FOR CEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

#### Preparation of Samples

Sediments and soils are dried at approximately  $80^{\circ}$ C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples \* from constant volume), are analysed in its <u>entirety</u>, when it is to be determined for gold without further sample preparation.

#### Analysis of Samples

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5  $\sigma\Gamma$  Model AA-475 is used to measure elemental concentrations.

**Blements Requiring Specific Decomposition Method:** 

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at  $95^{\circ}$ C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

**Bismuth - Bi:** 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

**Cold - Au:** 10.0 g sample is digested with aqua regia( 1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the

range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium - U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

\* N.B. If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPH

Ag - 0.2	Mn - 20	Zn - 1	Au = 0.01
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	N1 - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe = 100	V - 10	Bi - 1	di da ser esta de la composición de la

EJvL/ie March 14, 1984









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