GEOLOGICAL, GEOPHYSICAL, AND GEOCHEMICAL REPORT

ON THE

CHUCHI B GROUP

(KLAW 5, KLAW 6, NORN CLAIMS)

OMINECA MINING DIVISION

N.T.S. 93 N/01, & 02

Latitude: 55° 15'N
Longitude: 124° 30'W

NORANDA EXPLORATION COMPANY, LIMITED
(no personal liability)

BY: TERRY CAMPBELL
LYNDON BRADISH

JANUARY, 1990

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SUMMARY

The Chuchi B group was staked in the fall of 1987 to cover reconn stream geochem anomalies and a roadside soil anomaly detected earlier in the year.

During the 1989 field season geological, geophysical and geochemical programs were completed on the Klaw 5, Klaw 6 and Norn claims situated on the north shore of Chuchi Lake. Magnetometer surveys were completed on the Norn and Tyrone grids. A two kilometre baseline was cut along the Tyrone grid baseline and four reconn soils were sampled and mapped to the north of the baseline.

Soil geochemistry failed to outline any significant anomalous areas. Some rock samples from outcrop contained very small amounts of pyrite and pyrrhotite, but geochem values are very low.

INTRODUCTION

The property was staked in the fall of 1987 to cover reconnaissance pan concentrate and a reconnaissance roadside soil anomaly along the Indata-Germansen logging road on the north side of Chuchi Lake. A flagged grid was established along north-south lines 2.5 km long tied into an east-west cut baseline 2 km long.

LOCATION & ACCESS

The claims are located along the north shore of Chuchi Lake, approximately 180 km northwest of Prince George, B.C.

Access to the property is via the Indata-Germansen logging road which is presently only summer access. The grid can be immediately accessed by road.

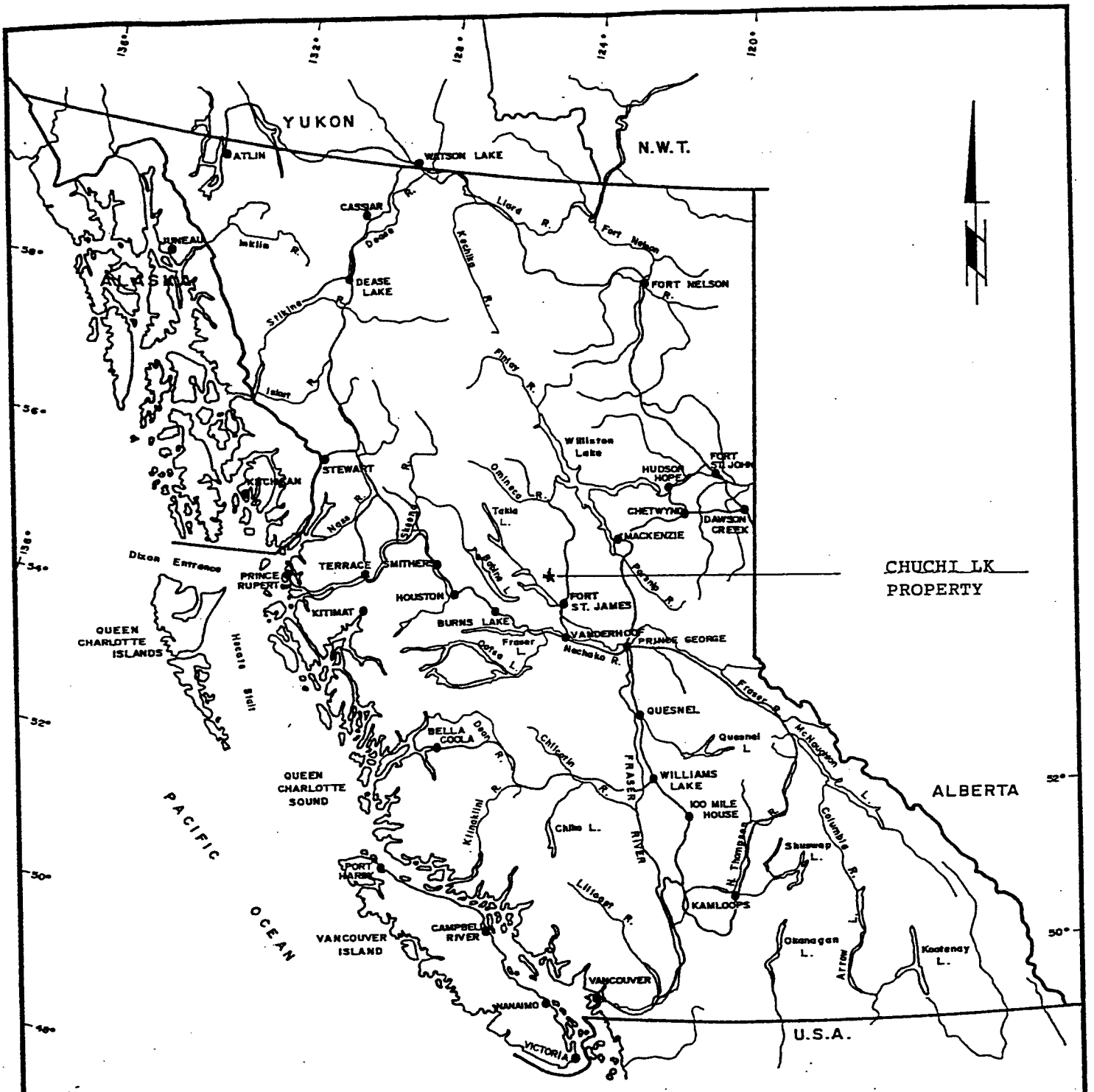
CLAIM STATISTICS

Name	Record #	Units	Record Date	Owner
Norn	9078	20	Oct. 22, 1987	Norex
Klaw 5	9196	18	Nov. 25, 1987	Norex
Klaw 6	9197	12	Nov. 25, 1987	Norex

TOPOGRAPHY & VEGETATION

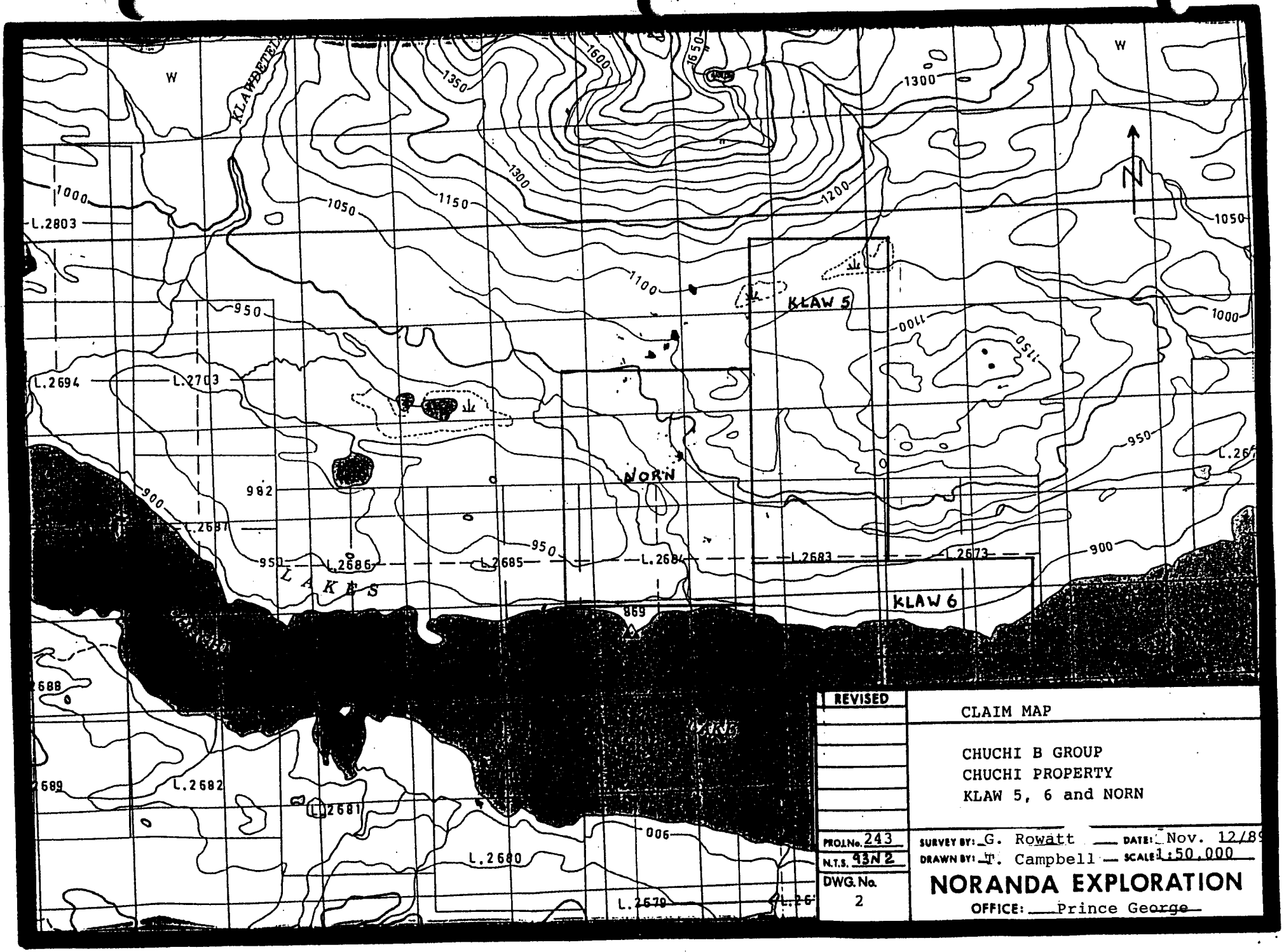
The area is characterized by low rolling glacial topography, including pine flats, outcrop ridges and knobs and low swampy valleys. Elevations range from 868 metres on Chuchi Lake to 1200 metres.

Vegetation consists of mature stands of spruce, pine and balsam, which has been logged off in many areas on the property. Undergrowth is mainly small cedar, alder and devil's club.



REVISED	LOCATION MAP
	CHUCHI LAKE PROPERTY
PROJ No. 243	SURVEY BY: G. Rowatt DATE: Nov. 12/89
N.T.S.	DRAWN BY: S.K.B. SCALE: 1:8,000,000
DWG. No. 1	NORANDA EXPLORATION
	OFFICE: PRINCE GEORGE, B.C.

VANOAL 11927



REVISED	CLAIM MAP
	CHUCHI B GROUP CHUCHI PROPERTY KLAW 5, 6 and NORN
PROJ.No. 243	SURVEY BY: G. Rowatt — DATE: Nov. 12/89
N.T.S. 93N 2	DRAWN BY: T. Campbell — SCALE: 1:50,000
DWG. No. 2	**NORANDA EXPLORATION** OFFICE: Prince George

GRID

During the 1989 field season, a reconn soil grid was established on the Klaw 5 and Klaw 6 claims. Two kilometres of cut baseline and 10 kilometres of flagged grid lines were completed by Noranda personnel. The baseline azimuth is 090 degrees and the flagged lines, 400 m apart, run to the north from the baseline. The grid lines were soil sampled every 50 metres.

REGIONAL GEOLOGY

The Chuchi B claim group lies in a broad northwest trending package of rocks known as the Quesnel Trough. These include Upper Triassic to Lower Jurassic volcanics and sediments which have been intruded by the Hogem Batholith and numerous other felsic to mafic stocks, ranging in age from Triassic to Cretaceous.

The Quesnel Trough is bounded to the west by the Pinchi Fault.

LOCAL GEOLOGY

Outcrop on the reconn grid is sparse, the observed outcrop indicates that the north eastern end of the grid is underlain by a stock composed of dark green diorite. The south western portion of the grid is underlain by andesites. The position of the contact between the two units can only be assumed because of the abundant overburden.

The andesites are typically medium to dark green in color, with some silicification and minor amount of epidote alteration. Also found are feldspar porphyry andesites with phenocrysts up to 7 mm long. Some of the andesites have a trace amount of pyrite.

The diorite is typically dark to very dark green in color. Crystal size ranges from 1 to 8 mm. Some samples have a small amount of pyrrhotite. (See figure 3 in pocket file)

GEOCHEMISTRY

Soils - Method

A total of 155 soil samples were collected. The samples were taken from the B-horizon, 15-35 cm below the surface. The samples were placed in Kraft paper bags, dried and sent to the Noranda Laboratory at 1050 Davie Street, Vancouver, B.C. Each sample was analyzed for copper and gold. The results are plotted on Figures 4 and 5 located in the pocket file.

- Observations

Copper - Six single station copper anomalies have been identified by the reconn soil grid located on Klaw 5 and 6. The values range from 128 to 204 ppm Cu.

Gold - Five single station and one double station gold anomalies have been identified by the reconn soil grid. The values range from 25 to 180 ppb Au.

Rocks - Method

Ten rock samples were collected from outcrops found on the reconn soil grid. The samples were placed in plastic bags and shipped to the Noranda Laboratory at 1050 Davie St., Vancouver, B.C. The samples were analyzed for Au and Cu by geochemistry. The rock sample locations are plotted on Figure 3 located in the pocket file.

- Observations

Sample	Cu (ppm)	Au (ppb)
109010	88	5
109011	258	50
109012	206	30
109013	118	5
109014	258	5
108340	136	5
108341	50	5
108342	140	170
108343	92	5
108344	42	5

GEOPHYSICS

Magnetic surveys were completed on the Tyron and Norn grids during July, 1989. the survey was completed by Noranda personnel using the Omni Plus magnetometer system.

The Tyron grid shows a regional magnetic gradient which increases eastward. Superimposed on the regional gradient is the local gradient which is dominated by the intense feature found in the north central portion of the grid. The two peaks of this feature at L.7000E/60162.5N, L.7200E/60112.5N, represent an E-W trend. There is perhaps a break between the two peaks at L.7000E/60200N. The contact between the intense magnetics and the quieter, more linear magnetic signature could be considered as the 57000 nT contour.

The Norn grid exhibits moderate magnetic relief. Prominent SW-NE elongated features are found within quiet magnetic areas. There appears to be a break between the two linear features found in the middle of the grid. An area of increasing magnetic activity lies at the south end of the grid.

CONCLUSIONS

The property appears to be underlain by a diorite stock in contact with andesite and porphyry feldspar andestie. Some of the rocks collected from outcrops contain very small amounts of pyrite and pyrrhotite. The highest copper value from the rocks is 258 ppm, the highest gold value is 170 ppb.

The reconn soil grid has scattered copper and gold anomalies throughout the grid. The copper anomalies have values between 128 and 204 ppm copper. The gold anomalies have values between 25 and 180 ppb gold. None of the gold and copper anomalies are coincident.

The magnetometer survey indicates a possible stock to the east of L7200E on the Tyrone grid. The results on the Norn grid are inconclusive.

RECOMMENDATIONS

Further expansion of the reconn soil grid to the east on the Klaw 5 and Klaw 6 claims is recommended, as well as expansion of the Tyrone magnetometer grid to the east to confirm the position of an intrusive stock.

APPENDIX I

STATEMENT OF COSTS

1)	WAGES:		
	Geology	4 days @ $120/day	$ 480.00
	Linecutting	10 days @ $100/day	$ 1,000.00
	Soil Sampling	8 days @ $100/day	$ 800.00
	Magnetometer Survey	2 days @ $150/day	$ 300.00
			$ 2,580.00
2)	FOOD, ACCOMMODATIONS & TRANSPORTATION:		
	23 days @ $50/day		$ 1,150.00
3)	COST OF ANALYSIS:		
	155 samples		$ 1,240.00
	10 samples		$ 100.00
			$ 1,340.00
4)	COST OF REPORT PREPARATION:		
	Author		$ 400.00
	Drafting		$ 200.00
	Typing		$ 50.00
			$ 650.00
	TOTAL COST:		$ 5,720.00

STATEMENT OF COSTS

COST BREAKDOWN

a)	GEOLOGY:	
	Wages	$ 480.00
	Food, Accommodation & Transportation	$ 200.00
	Report Preparation	$ 200.00
		$ 880.00
b)	GEOPHYSICS:	
	Wages	$ 300.00
	Food, Accommodation & Transportation	$ 50.00
	Report Preparation	$ 200.00
		$ 550.00
c)	SOIL GEOCHEMISTRY:	
	Wages	$ 800.00
	Food, Accommodation & Transportation	$ 400.00
	Cost of Analysis	$ 1,340.00
	Report Preparation	$ 250.00
		$ 2,790.00
d)	LINECUTTING:	
	Wages	$ 1,000.00
	Food, Accommodation & Transportation	$ 500.00
		$ 1,500.00

APPENDIX II

STATEMENT OF QUALIFICATIONS

APPENDIX II

STATEMENT OF QUALIFICATIONS

I, Terrence Campbell, of Prince George, Province of British Columbia, do hereby certify that:

1. I am a geologist residing at 6634 Essex Crescent, Prince George, British Columbia.

2. I am a 1985 graduate of the University of British Columbia, B.Sc. (Geology).

3. I am a member in good standing of the British Columbia Yukon Chamber of Mines.

4. I presently hold the position of Field Geologist with Noranda Exploration Company, Limited (no personnal liability) and have been in their employ since 1986.

Terrence Campbell

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, B.C.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing in the Society of Exploration Geophysicists, European Association of Exploration Geophysicists and the Prospector's and Developer's Association.

4. I presently hold the position of Regional Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

L. Bradish.

APPENDIX III

ANALYTICAL PROCEDURE

APPENDIX III

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

Revised:01/8E

. The methods listed are presently applied to analyse geological material by the Noranda Geochemical Laboratory at Vancouver. (March, 1984)

Preparation of Samples

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples) are analysed in its entirety, when it is to be determined for gold without further sample preparation. See addendum.

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 0.2 g or less depending on the matrix of the rock, and twice as much acid is used for decomposition than that is used for silt or soil.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn (all the group A elements of the fee schedule) can be determined directly from the digest (dissolution) with an atomic absorption spectrometer (AA). A Varian-Techtron Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements 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° C. Sb is determined directly from the aci solution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.4 g sample is digested with 1.5 mL of 70 % perchlori acid and 0.5 mL of conc. nitric acid. A Varian AA-475 equipped with an As-ED measures the arsenic concentration of the digest.

Barium – Ba: 0.1 g sample is decomposed with conc. perchloric, nitric and hydrofluoric acid. 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 into the flame of the AA instrument c/w EDL.

Gold – Au: 10.0 g sample (Pan-concentrates see below) is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with Methyl iso-Butyl ketone (MIBK) from the aqueous solution. Gold is determined from the MIBK solution with flame AA.

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 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, taken from a perchloric–nitric (3:1) decomposition, usually from the multi-element digestion, is diluted with water and a phosphate buffer. This solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

<u>LOWEST VALUES REPORTED IN PPM</u>

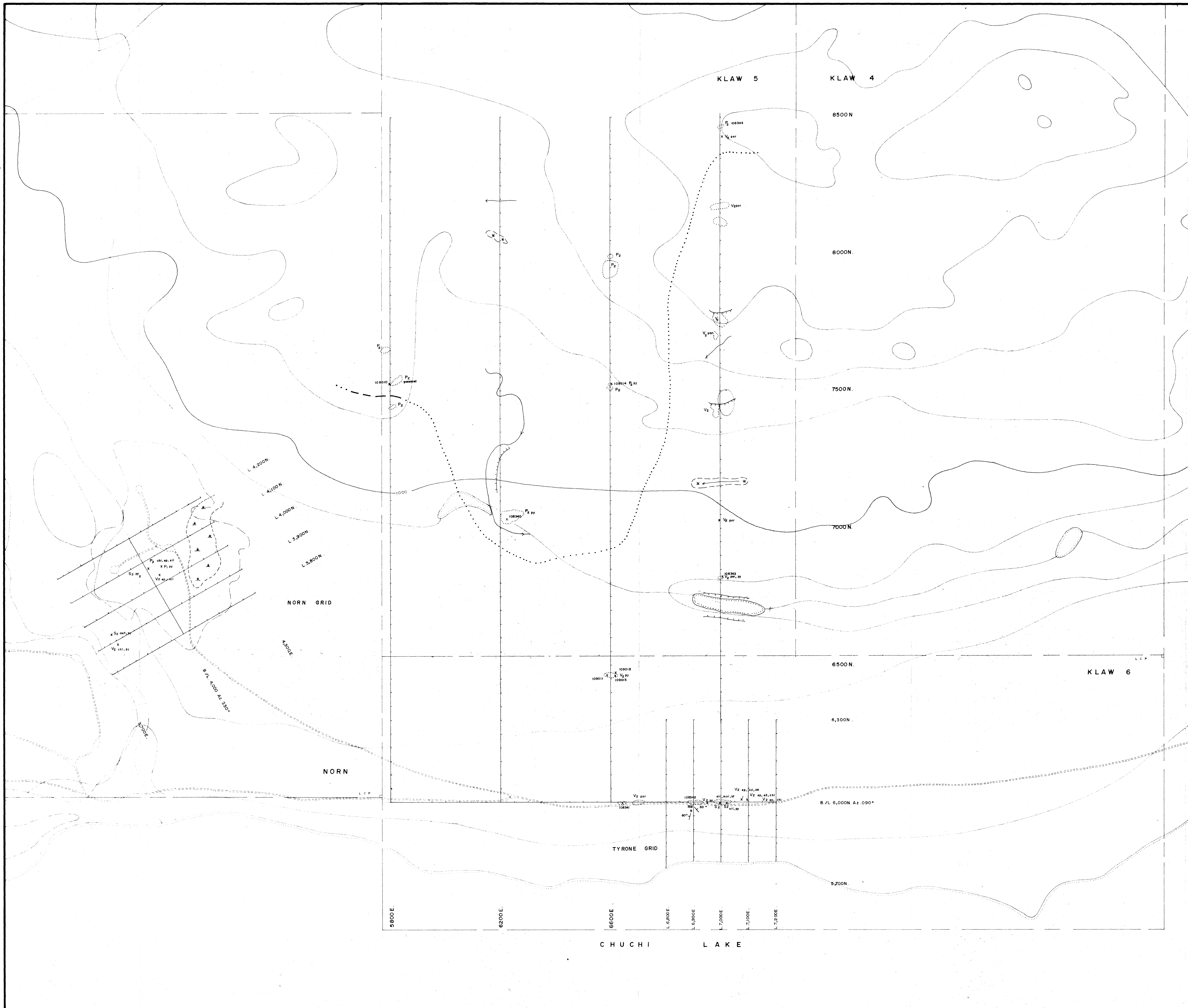
Ag – 0.2	Mn – 20	Zn – 1	Au – 0.01 (10PPB)
Cd – 0.2	Mo – 1	Sb – 1	W – 2
Co – 1	Ni – 1	As – 1	U – 0.1
Cu – 1	Pb – 1	Ba – 10	
Fe – 100	V – 10	Bi – 1	

APPENDIX IV

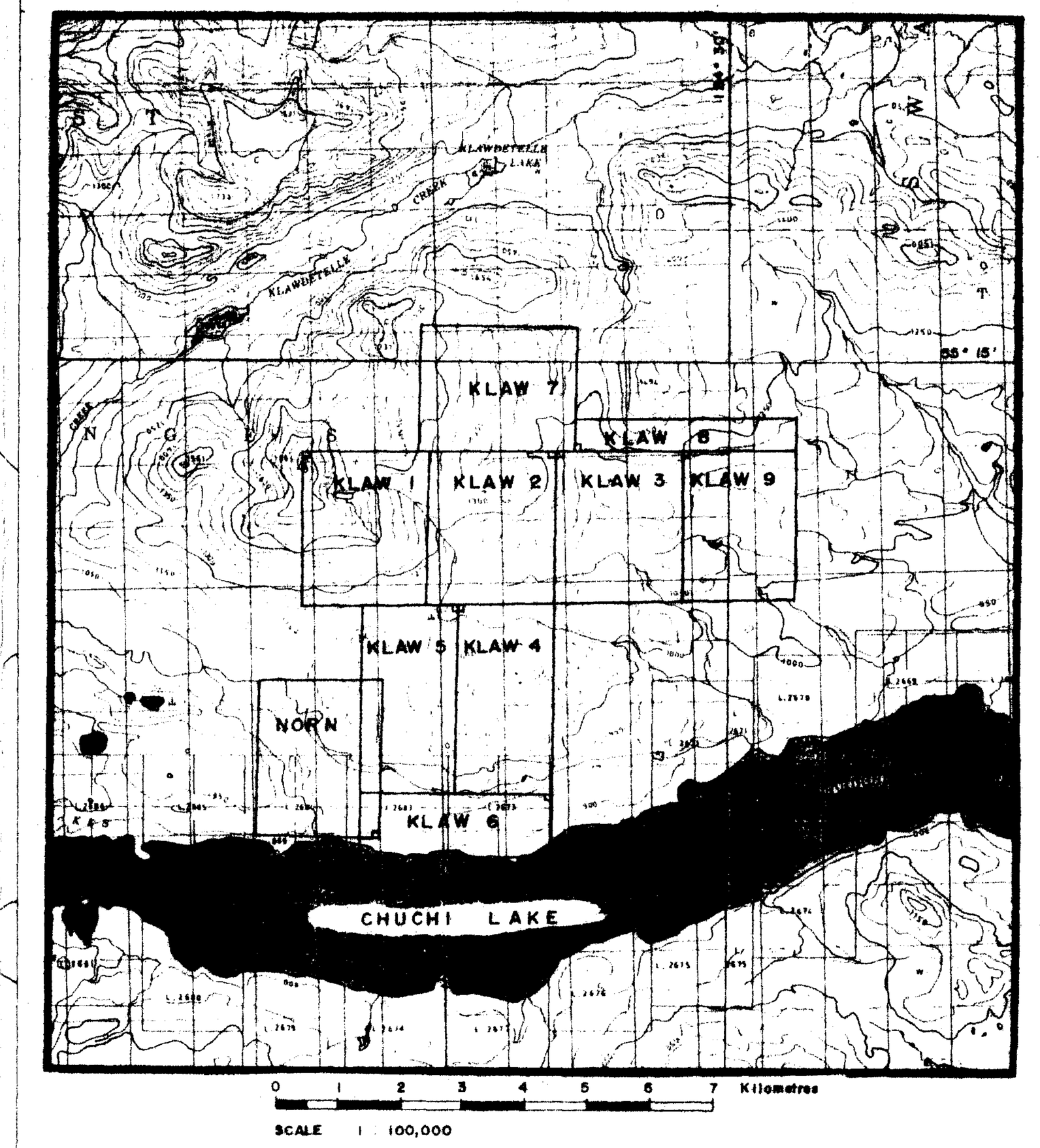
MAGNETOMETER INSTRUMENTATION
EDA

The magnetometer field system is comprised of three OMNI-PLUS units (formerly) manufactured by EDA Instruments of Toronto, Ontario. The instruments record the Total Magnetic Field with a measuring accuracy of 0.1 nanoTeslas and are generally configured as one recording base station (30 second sampling rate) and two portable field measuring units.

The two field units record the line and station coordinates along with the total Magnetic Field which is later corrected by the recording Base Station unit, for the diurnal and day to day drift of the magnetic field. All units are controlled by its own internal microprocessor and real time clock which allows for a realistic and useable field accuracy of 1 to 2 nanoTeslas.



LOCATION MAP



LEGEND

ROCK TYPES

- V_2 ANDESITE
- S_2 SILTSTONE
- P_1 GABBRO
- P_2 DIORITE

- ep epidote
- chl chlorite
- sil silicified
- py pyrite
- mot mottled
- hf hornfelsed

SYMBOLS

- Lake
- Float sample location
- Rock sample location
- Outcrop large, small
- Clear-cut
- Logging roads
- Swamp area
- Geological contact (definite, inferred, assumed)
- 30° 69° Strike and dip of bedding

ROCK GEOCHEM RESULTS

		Cu (ppm)	Au (ppb)
109010	ROCK	88	5
109011		258	50
109012		206	30
109013		118	5
109014		258	5
108340		136	5
108341		50	5
108342		140	170
108343		92	5
108344	ROCK	42	5

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,582

Map Sheet Index

9	8	7
4	5	6
3	2	1

0 100 200 300 400 500 m
SCALE 1 : 5,000

REVISED	CHUCHI LAKE
T.C. Jan, 1990	KLAW CLAIMS GEOLOGY MAP TYRONE AND NORN GRIDS
PROJ. No. 243	SURVEY BY: T.C., B.C. DATE: Sept., 1988, July, 89
N.T.S. 93 N/2	DRAWN BY: S.K.B. SCALE: 1 : 5,000
DWG. No. FIG. 3	NORANDA EXPLORATION OFFICE: PRINCE GEORGE, B.C.

KLAW 5

KLAW 4

8500N.

8000N.

7500N.

7000 N.

6500N.

KLAW 6

6,300N.

B/L 6,000N.

5,800 N.

L 4,200N

L 4,100 N

L 4,000N

L 3,900N.

L 3,800 N.

NORN GRID

4,300 E

B/L 4,000E Az 330°

3,400E

NORN

L C P

TYRONE GRID

5800E.

6200E.

6600E.

L 6,800E

L 6,900E

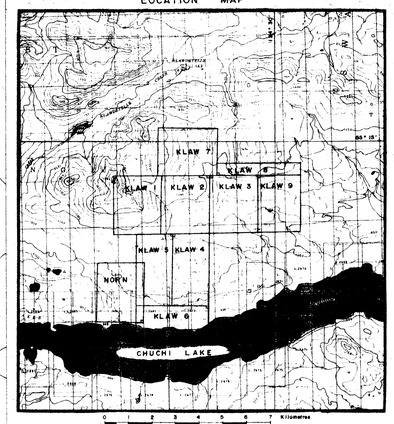
L 7,000E

L 7,100E

L 7,200E.

CHUCHI LAKE

LOCATION MAP



LEGEND

10 Soil Geochem Survey Au(ppb)

Map Sheet Index

9	8	7
4	5	6
3	2	1

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,582

0 100 200 300 400 500m
SCALE 1 5,000

REVISED	CHUCHI LAKE
T.C. Jan, 1990	TYRONE AND NORN GRID
	SOIL GEOCHEM SURVEY
	Au (ppb)
PROJ. No. 243	SURVEY BY T.C., B.C. DATE Sept., 1988, Oct, 1989
N.T.S. 93 N/2	DRAWN BY S.K.B. SCALE 1:5,000
DWG. No. FIG. 4	NORANDA EXPLORATION
	OFFICE PRINCE GEORGE, B.C.

KLAW 5

KLAW 4

8500 N.

8000N.

7500 N.

7000N.

6500N.

KLAW 6

6,300N.

8.L. 6,000N Az. 090°

5,800N.

L 4,200N.

L 4,100 N

L 4,000N.

L 3,900N.

L 3,800 N.

NORN GRID

4,200E.

B.L. 4,000E Az. 330°

5,800E

NORN

TYRONE GRID

5800 E.

6200E.

6600E.

L 6,800E.

L 6,900E

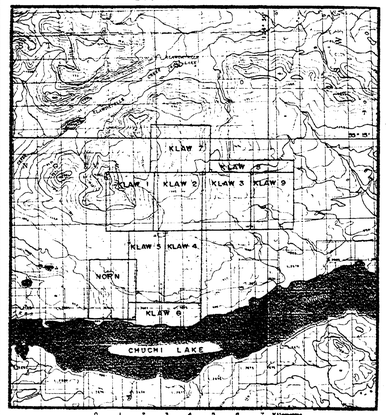
L 7,000E.

L 7,100E.

L 7200E.

CHUCHI LAKE

LOCATION MAP



LEGEND

20 Soil Geochem Survey Cu (ppm)

Map Sheet Index

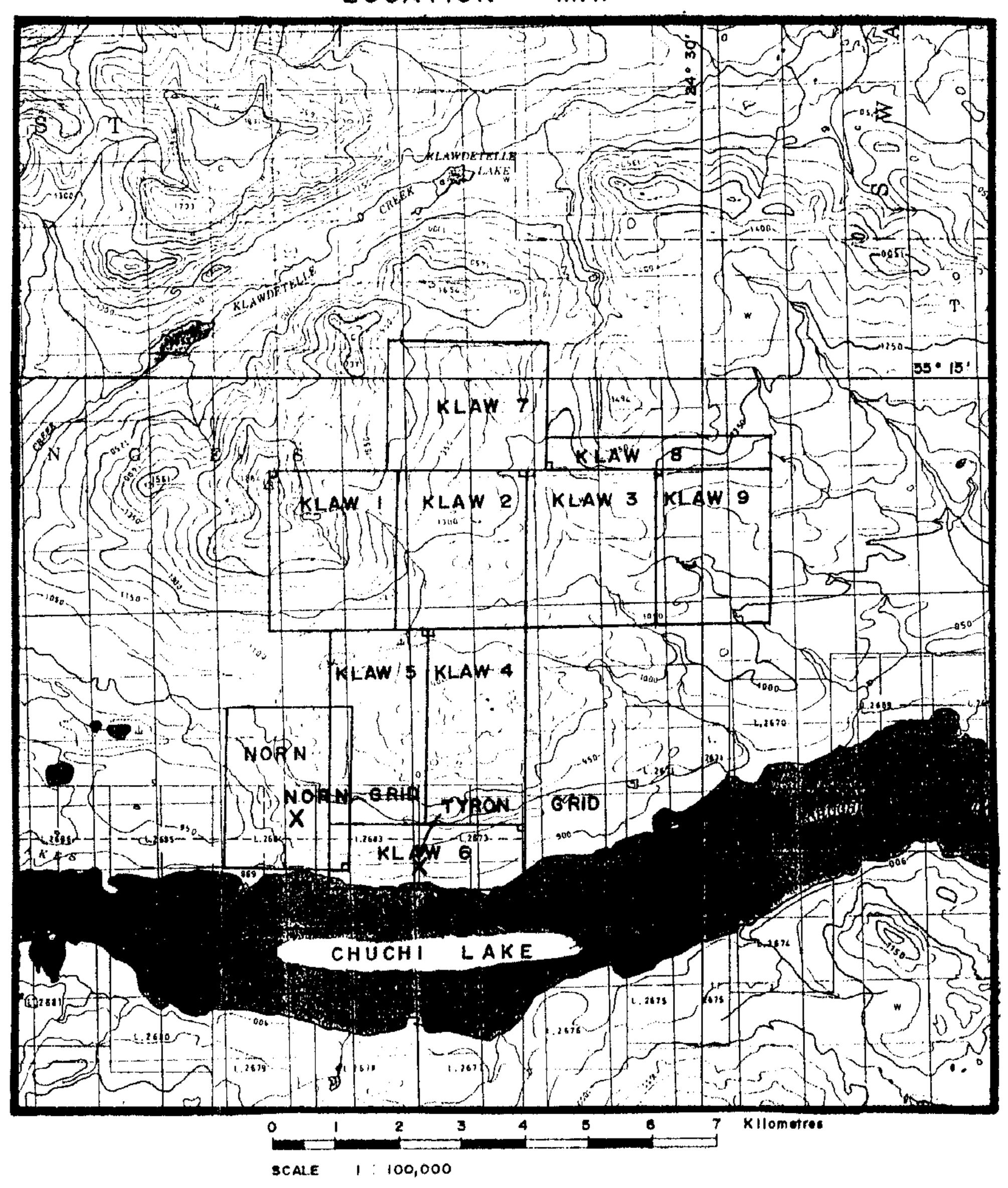
9	8	7
4	5	6
3	2	1

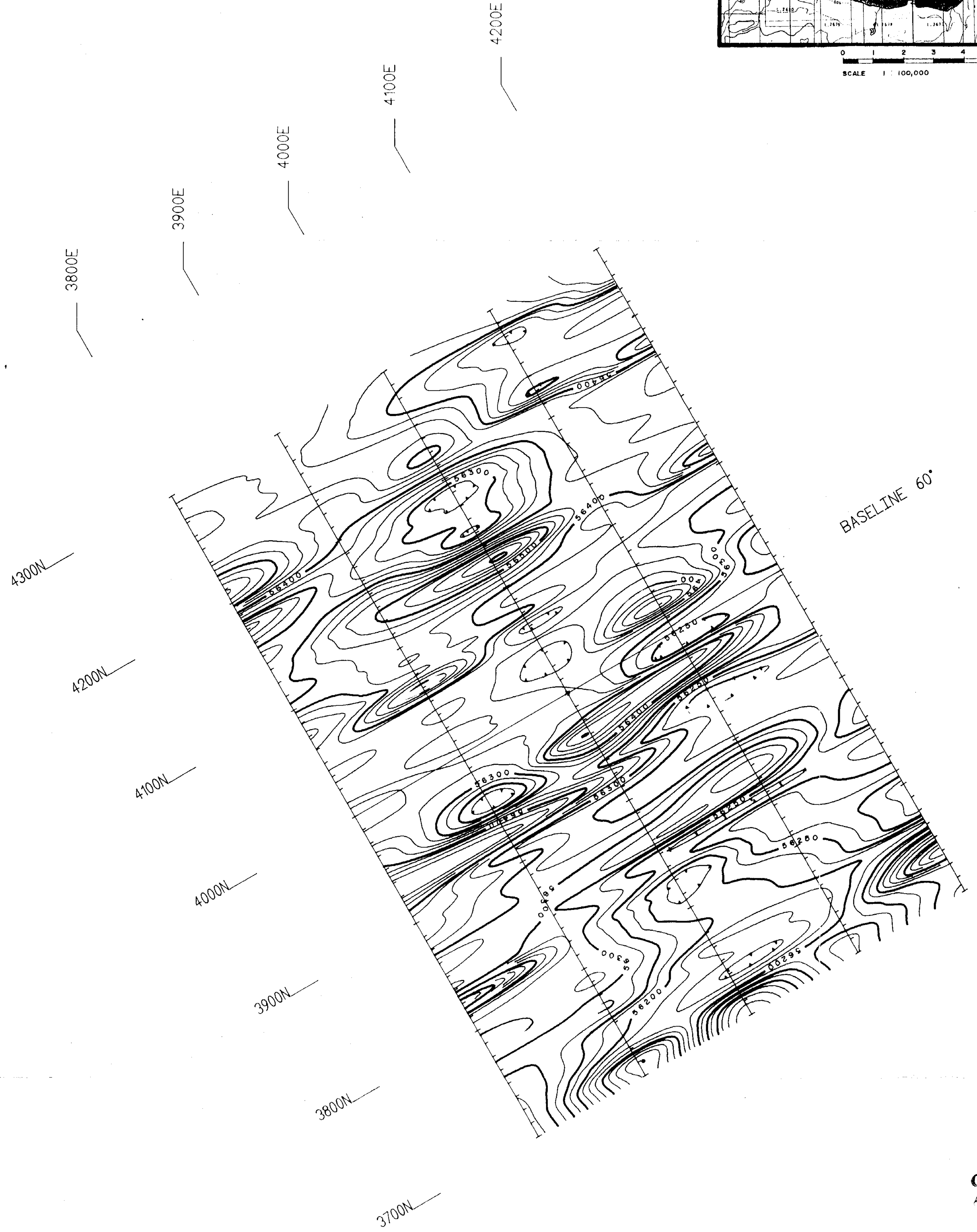
0 100 200 300 400 500 m
SCALE 1 5,000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,582

REVISED	CHUCHI LAKE
T.C. Jan., 1990	TYRONE AND NORN GRID
	SOIL GEOCHEM SURVEY
	Cu (ppm)
PROJ. No. 243	SURVEY BY: T.C., B.C. DATE: Sept., 1988, Oct., 1989
N.T.S. 93 N/2	DRAWN BY: S.K.B. SCALE: 1:5,000
DWG. No. FIG. 5	NORANDA EXPLORATION
	OFFICE: PRINCE GEORGE, B.C.





GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,582

Instrument	:	OMNI +
Field	:	TOTAL
Datum	:	0.0 nT
Contour Interval	:	25 nT
Conductor Axis	:	

50m 25m 0m 50m 100m

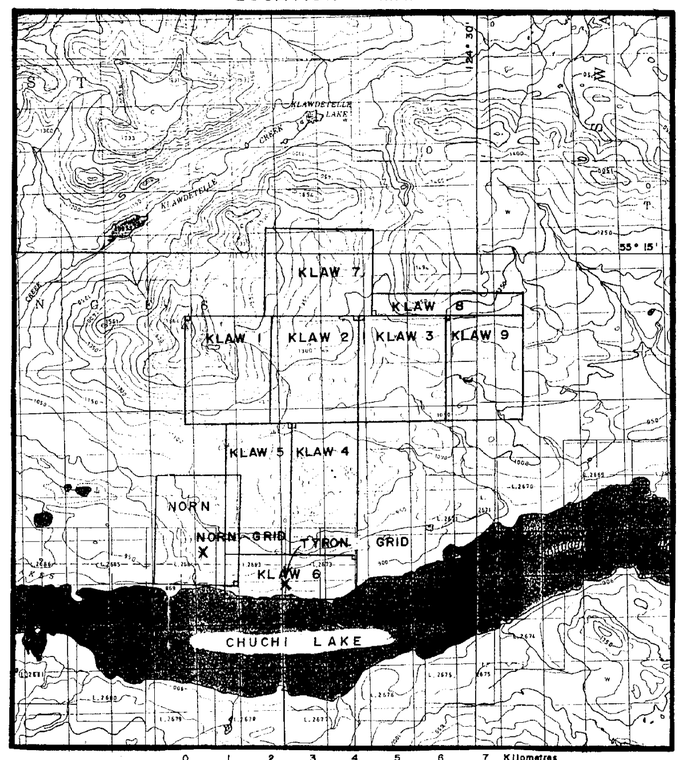
NORN GRID

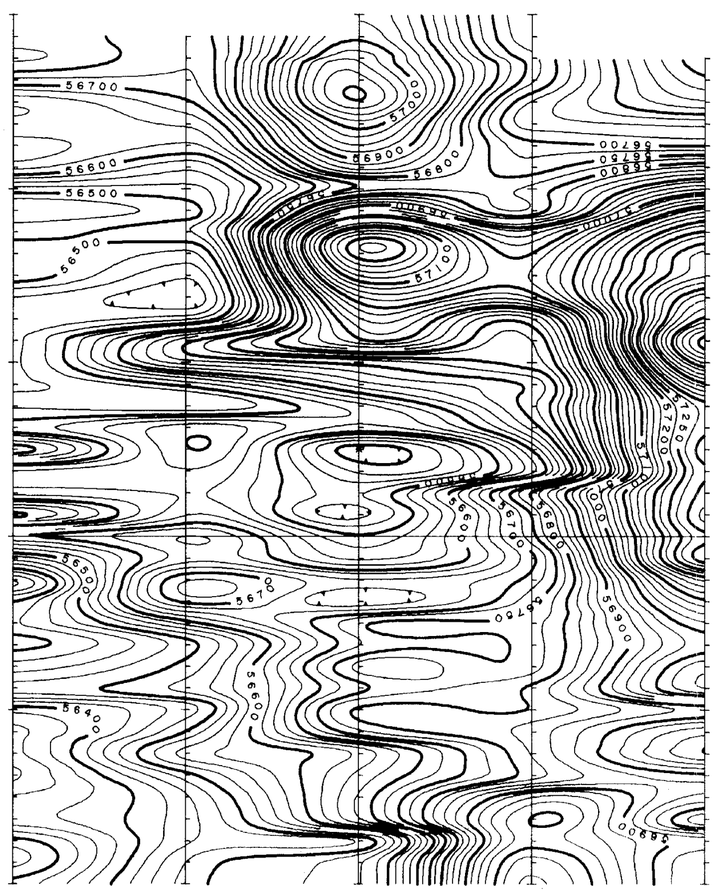
MAGNETOMETER SURVEY

PROJECT: NORN PROJECT # : 283
BASELINE AZIMUTH : 60 Deg.

SCALE = 1 : 2500 DATE : 7/25/89
SURVEY BY : WK NTS : 93N/1,2
FILE: Mnorn89
FIG. 6 NORANDA EXPLORATION

LOCATION MAP





GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,582

Instrument : OMNI +
Field : TOTAL
Datum : 0.0 nT

Contour Interval : 25 nT

Conductor Axis :

50m 25m 0m 50m 100m

TYRON GRID

MAGNETOMETER SURVEY

PROJECT: TYRON PROJECT # : 283
BASELINE AZIMUTH : 90 Deg.

SCALE = 1 : 2500 DATE : 7/25/89
SURVEY BY : WK NTS : 93N/1,2
FILE: MTY89

FIG. 7 NORANDA EXPLORATION