

# 5098

ASSESSMENT REPORT

I.P. SURVEY

on the

SMOKE MOUNTAIN PROPERTY

93E/14W

53°53'N 127°15'W

Omineca Mining Division

93E/14W

by

J.T.Walker

Noranda Exploration Company, Limited  
(No Personal Liability)

July 11 - July 15, 1974

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. <b>5098</b> MAP.....
---

Mining Recorder's Office RECORDED AUG 16 1974 AT..... SMITHERS, B.C.
--

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
LOCATION AND ACCESSIBILITY	1
CLAIMS AND OWNERSHIP	1
GENERAL GEOLOGY	2
INDUCED POLARIZATION AND RESISTIVITY SURVEY	3
Method	3
Presentation of Results	4
Discussion of Results	5
MAGNETOMETER SURVEY	5
Presentation of Results	6
Discussion of Results	6
RECOMMENDATIONS AND CONCLUSIONS	7
STATEMENT OF QUALIFICATION	
COST STATEMENT	

LIST OF ILLUSTRATIONS

#1 Location Map	Following page 1
#2 Claim Map	in pocket
#3 Filtered Mag	in pocket
#4 Magnetometer Survey	in pocket
#5 I.P. Survey - P.F.E.	in pocket
#6 I.P. Survey - Resistivity	in pocket

GEOPHYSICAL REPORT  
ON THE  
SMOKE MOUNTAIN PROPERTY

INTRODUCTION

The Smoke Mountain property, consisting of 49 mineral claims, covers an area geologically similar to that of 'porphyry deposits' occurring within an area referred to as the Skeena Arch.

In order to facilitate exploration, a program of geophysics was conducted on certain of these claims.

LOCATION AND ACCESSIBILITY

The Smoke Mountain mineral claims are located within the Whitesail Lake Map, British Columbia, on the south slope of Smoke Mountain. The town of Smithers is about 60 miles to the north.

Access to the property from Smithers is by helicopter. A gravel road, used mainly for access to the Berg copper-moly prospect, passes within 4 miles of the property.

CLAIMS AND OWNERSHIP

<u>Claim Name</u>	<u>Owner</u>	<u>Record Number</u>
Smoke 1 - 3	Norwich Resources Limited	90042 - 90044
Smoke 1 Fr.	" " "	90045
CS 1 - 2	" " "	113581 -113582
NS 1 - 24	Noranda Exploration Company, Limited	127058 -127081
NS 25 - 34	" " " "	130086 -130095
NS 1 - 9 Fr.	" " " "	127082 -127090

1:250,000

DEPARTMENT OF LANDS, FORE

BRITISH C

HONOURABLE R. G. WI

E. W. BASSETT, DEPUTY MINISTER OF LANDS G. S.

NATIONAL TOPOGRAPHIC SYSTEM

128°00'

45'

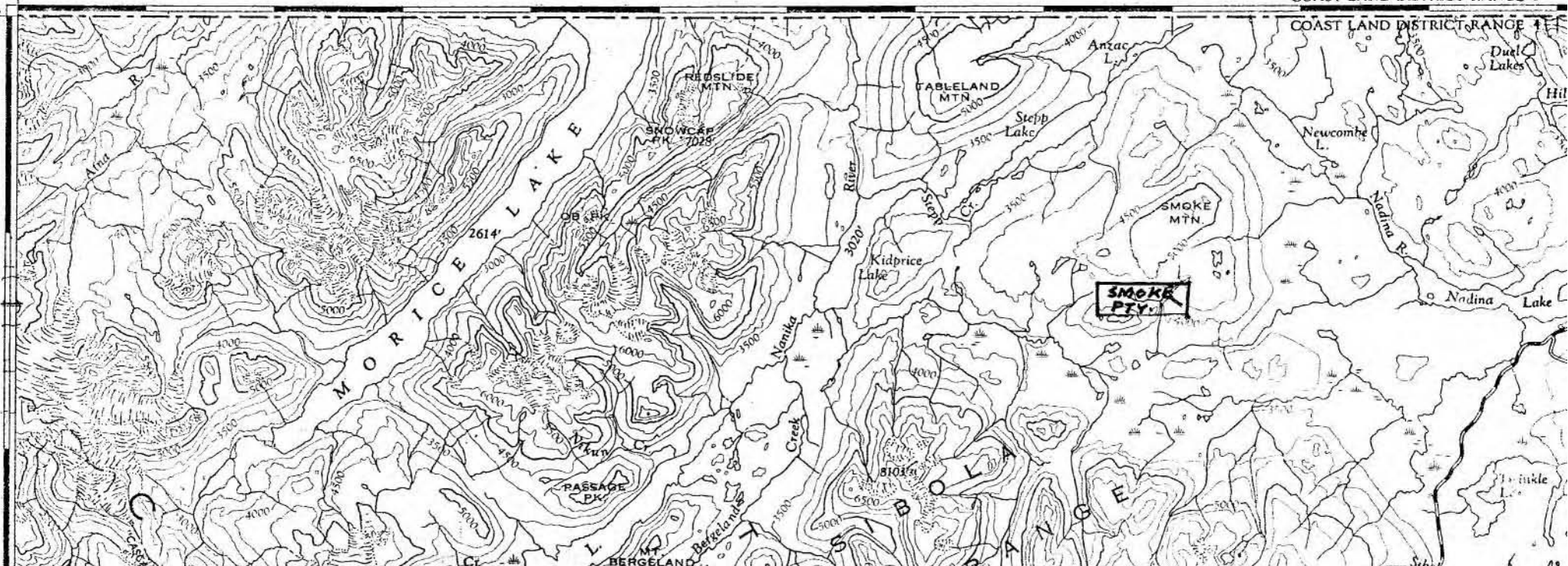
30'

15'

127°

COAST LAND DISTRICT RANGE 5

54°00'



SMOKE MOUNTAIN PROPERTY

53053'N 127°15'W

Omineca Mining Division

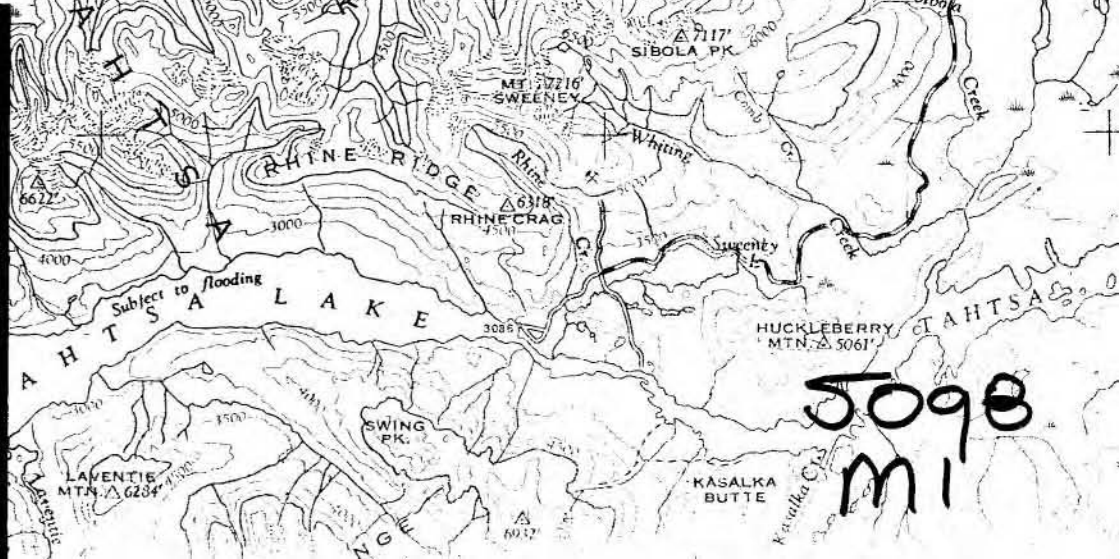
by

J.T. Walker

*J. T. Walker*

Noranda Exploration Company, Limited  
(No Personal Liability)

July 11 - July 15, 1974



5098  
mi

GENERAL GEOLOGY

The Smoke Mountain property is largely underlain by volcanic and sedimentary rocks of the Jurassic Hazelton Group. A stock of quartz diorite, of uncertain size, occurs near the center of the property.

Mineralization in the quartz diorite consists of pyrite, chalcopyrite with minor molybdenite and bornite as fracture fillings and disseminations. Pyrite generally is abundant near the contact and has weathered to form a conspicuous gossan near the Smoke 1 Fr. mineral claim.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

The Induced Polarization and Resistivity Survey was carried out using variable frequency I.P. equipment owned by Noranda Exploration Company, Limited and manufactured by Sabre Electronic Instruments Limited, Burnaby, B.C. A crew of four Noranda employees conducted the survey under party chief Lyndon Bradish, Geophysicist, during the period July 11 - July 15, 1974.

The purpose of the survey was to extend southward, westward and eastward, an I.P. survey carried out by Noranda Exploration Company, Limited, during 1973. Nine lines, spaced at 800 feet, and 400 feet, were surveyed, for a total of 5.8 miles.

Method

Throughout the survey, a dipole,-dipole electrode configuration was employed. The dipole length was 400 feet and the dipole spacing was 400 feet ( $x=400$ ;  $n=1$ ). The electrode array and instruments were moved along the survey lines with readings being taken at 400 foot intervals. At each station "set-up" the following measurements are made and recorded:

- (1) Current intensity applied to the ground at the current electrodes (measured in milliamperes).
- (2) Potential developed between potential electrodes (measured in milliamperes).
- (3) Percent Frequency Effect, (measured as a percent voltage change with change in frequency of applied current).

The two frequencies employed for this survey were 0.3 Hz and 5 Hz.

In addition to the standard electrode configuration, the area beneath the small pond was investigated using an expanded square array on three set-ups, with the current dipole and potential dipole located on each side of the pond, and spaced approximately 800 feet.

The apparent resistivity at each station is calculated from the current and potential measurements, dipole length in feet and the electrode array constant. The apparent resistivity is expressed on ohm feet divided by 2

#### Presentation of Results

The results of the induced polarization and resistivity survey are plotted on two plan maps, each at a scale of 1 inch equals 400 feet. Drawing No. I.P.-1 shows the I.P. response measured in Percent Frequency Effect and Drawing No. I.P.-2 shows the Apparent Resistivity values. The readings for each survey are plotted at the mid-point between the survey grid location of the current and potential dipoles.

In addition to the results of this survey, the results of the Noranda (1973) I.P. survey are also shown on both plan maps.

The results of both surveys are contoured with contour intervals of 3.0, 5.0, 7.5, 10, 12.5 and 15% Frequency Effect and Resistivity at 100 ohm feet.



### Discussion of Results

Results of the induced polarization survey have partially delimited the anomalous zone discovered during the 1973 I.P. survey. Four anomalous zones are indicated, surrounding a moderately anomalous area centred on the small pond.

Background reading of less than 2% F.E. were measured on the west and south of the grid area surveyed. The broad anomalous area remains open to the north and east.

Three square array readings indicate the I.P. response to continue beneath the centrally located pond.

Resistivity results range from less than 100 ohm feet to greater than 1700 ohm feet. The broad resistivity "low" coincides with the central area of modest I.P. response centred around the small pond.

### MAGNETOMETER SURVEY

The magnetometer survey was carried out utilizing a Fluxgate Magnetometer (Model M-700) manufactured by McPhar Geophysics Company, Don Mills, Ontario. The instrument measures the vertical component of the earth's magnetic field.

The survey was carried out by a Noranda employee during the period July 11-July 15, 1974. Six grid lines, spaced 800 and 400 feet were surveyed, with readings taken along the lines at 200 foot intervals. A total of 5.2 line miles were

surveyed. Prior to surveying, the latitude control was adjusted to ensure that the instrument was reading on the most sensitive scale setting.

During the course of the survey, normal field procedures were followed, recording the magnetic field intensity in gammas and time of reading as well as guide line and station. A base station reading was made twice daily and since the diurnal change was minimal no correction for this change was made.

#### Presentation of Results

Upon completion of the survey the arbitrary datum was adjusted to ensure correlation with the results of the 1973 magnetometer survey.

The adjusted values are plotted on a plan map at a scale of 1"=400 feet (Drawing No. M-1).

The results were then averaged using a 2 point averaging filter to smooth the high-frequency variations and plotted on Drawing No. M-2, also at a scale of 1"=400 feet. This filtered data has been contoured using a contour interval of 100 gammas.

Results of the 1973 magnetometer survey are also plotted and contained on Drawing No. M-2.

#### Discussion of Results

Results of the magnetometer survey indicate a magnetic relief ranging from less than 700 gammas (line 116E at 118N) to more than 1900 gammas (line 92E at 112N).

The magnetic values show a moderate variation over the grid area east of line 100E with stronger short period variation

to the west.

This change in the magnetic pattern occurs in the area of greatest I.P. response.

One significant feature is the broad magnetic low north of the 100N base line extending from the area of the pond to the northeast.

#### RECOMMENDATIONS AND CONCLUSIONS

The I.P. surveys 1974 and 1973 have indicated an area of significant I.P. response. If geological and geochemical surveys provide equally significant responses, further investigation by drilling is warranted.

Respectfully submitted,

*J. T. Walker*

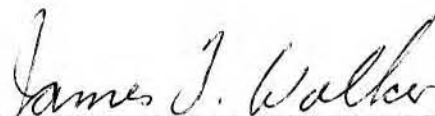
---

J.T.Walker  
Geophysicist

STATEMENT OF QUALIFICATION

I, James T. Walker of the City of Vancouver, Province of British Columbia do certify that:

1. I have been an employee of Noranda Exploration Company, Limited since May 1958.
2. I am a member of the Canadian Institute of Mining and Metallurgy, the British Columbia Geophysical Society, and the Canadian Exploration Geophysical Society.
3. I have held the position of Geophysicist for Noranda Exploration Company, Limited, British Columbia since June 1965.



---

James T. Walker  
Geophysicist  
NORANDA EXPLORATION COMPANY,  
LIMITED  
(No Personal Liability)

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

PROJECT: SMOKE MTN.

TYPE OF REPORT: Line Preparation

- (a) Employees: G. Belik, G. Holland, D. Kroeger  
Number of days: 24  
Dates worked: Between June 27 and July 17, 1974
- (b) Average cost per day \$ 27.96  
Total cost \$27.96 x 24 \$ 671.04
- (c) Cost of food & accomodation \$ 309.37
- (d) Cost of transportation  
i. During work period  
type:  
cost:
- ii. To and from Claims from  
within B.C.  
cost:
- (e) Cost of aircraft  
i. Fixed wing:  
ii. Helicopter: 301.45 301.45
- (f) Cost of instruments  
i. Rental:  
ii. Supplies
- (g) Cost of geochem analysis  
(details attached ):
- (h) Cost of report preparation:
- (i) Other:

TOTAL

\$1,281.86

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

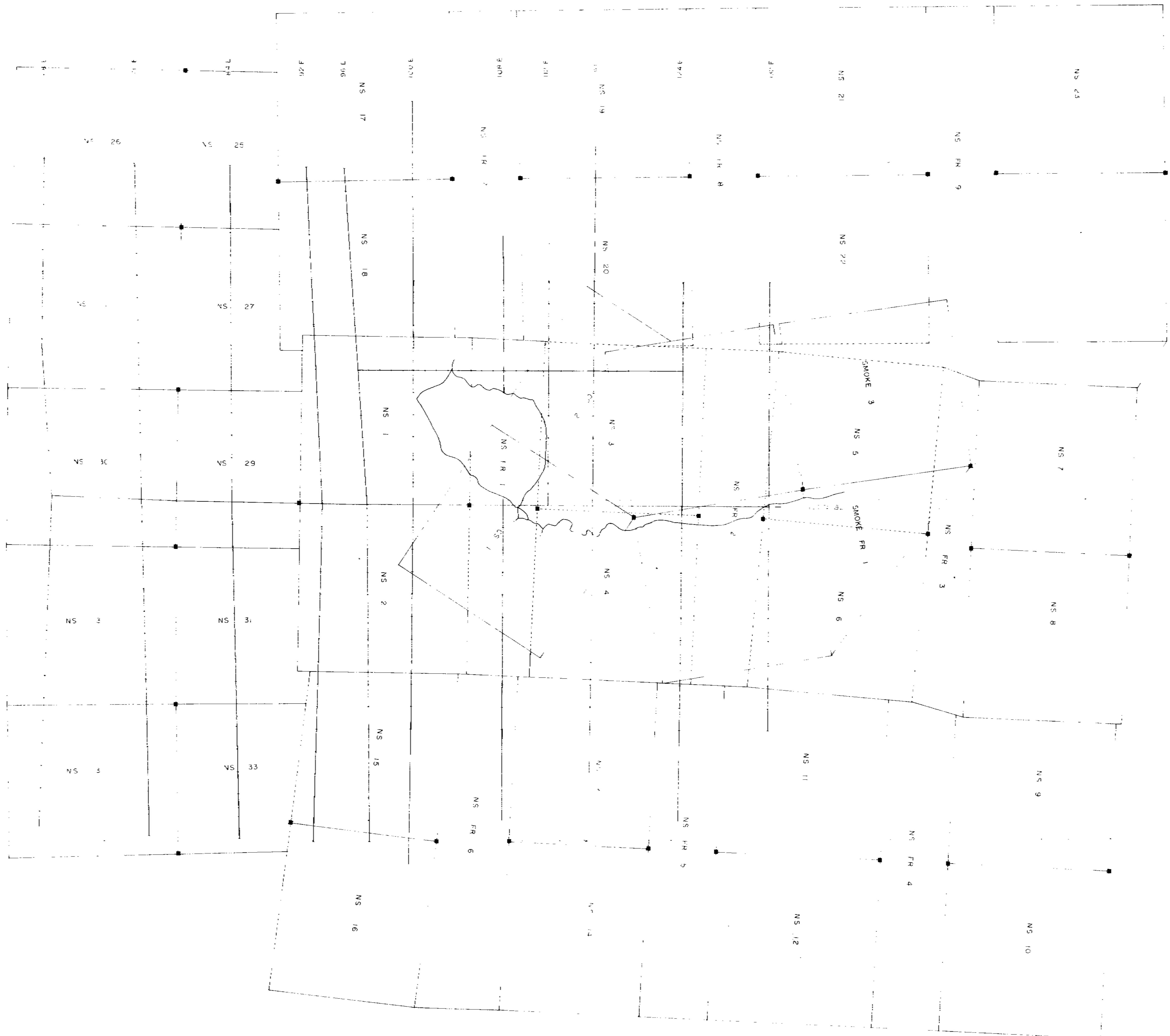
PROJECT: SMOKE MTN.

TYPE OF REPORT: Geophysical Survey

- (a) Employees: L. Bradish, G. Fenton, J. Fraser, G. Holland, D. Kroeger  
Number of days: 33  
Dates worked: Between July 7 and July 18, 1974
- (b) Average cost per day \$ 31.42  
Total cost \$ 31.42 X 33 \$ 1,036.86
- (c) Cost of food & accomodation \$ 235.00
- (d) Cost of transportation  
i. During work period  
type: truck  
cost: 428.75
- ii. To and from Claims from  
within B.C.  
cost: 318.00 746.75
- (e) Cost of aircraft  
i. Fixed wing:  
ii. Helicopter: 1,418.47 1,418.47
- (f) Cost of instruments  
i. Rental: 80.00  
ii. Supplies 65.57 145.57
- (g) Cost of geochem analysis  
(details attached ):
- (h) Cost of report preparation: 200.00
- (i) Other:

TOTAL

\$3,782.85



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 5098 MAP #2

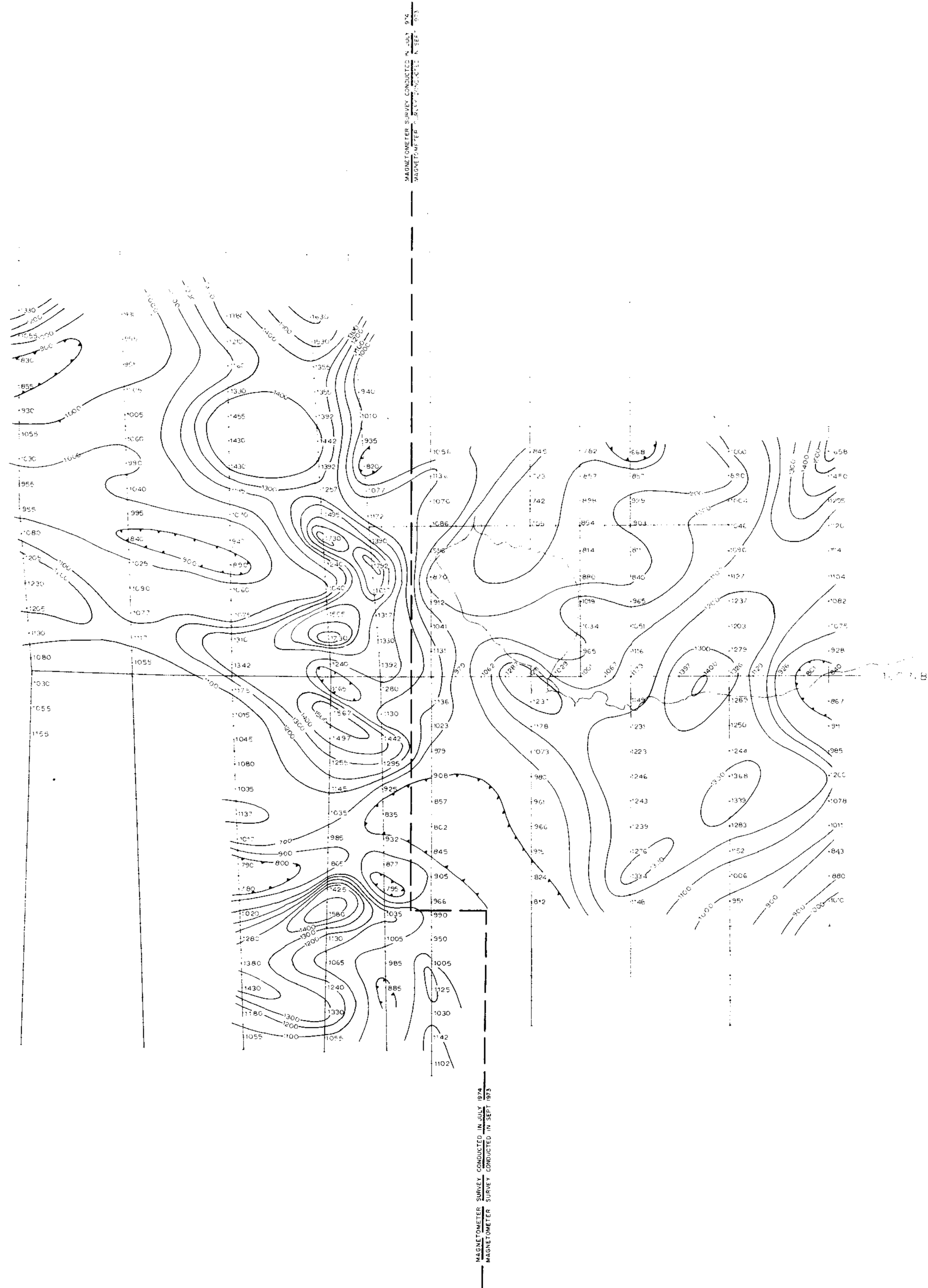
TO ACCOMPANY GEOPHYSICAL REPORT BY J.T. WALKER GEOPHYSICISTS ON  
 NS 12 INCLUSIVE, NS 15-18 INCLUSIVE, NS 25-33 INCLUSIVE  
 MINERAL CLAIMS

OMINECA MINING DIVISION JULY 24, 1974

*J. J. Walker*

SMOKE MTN	
Expl. Lic.	
NORANDA EXPLORATION	





5098  
M3

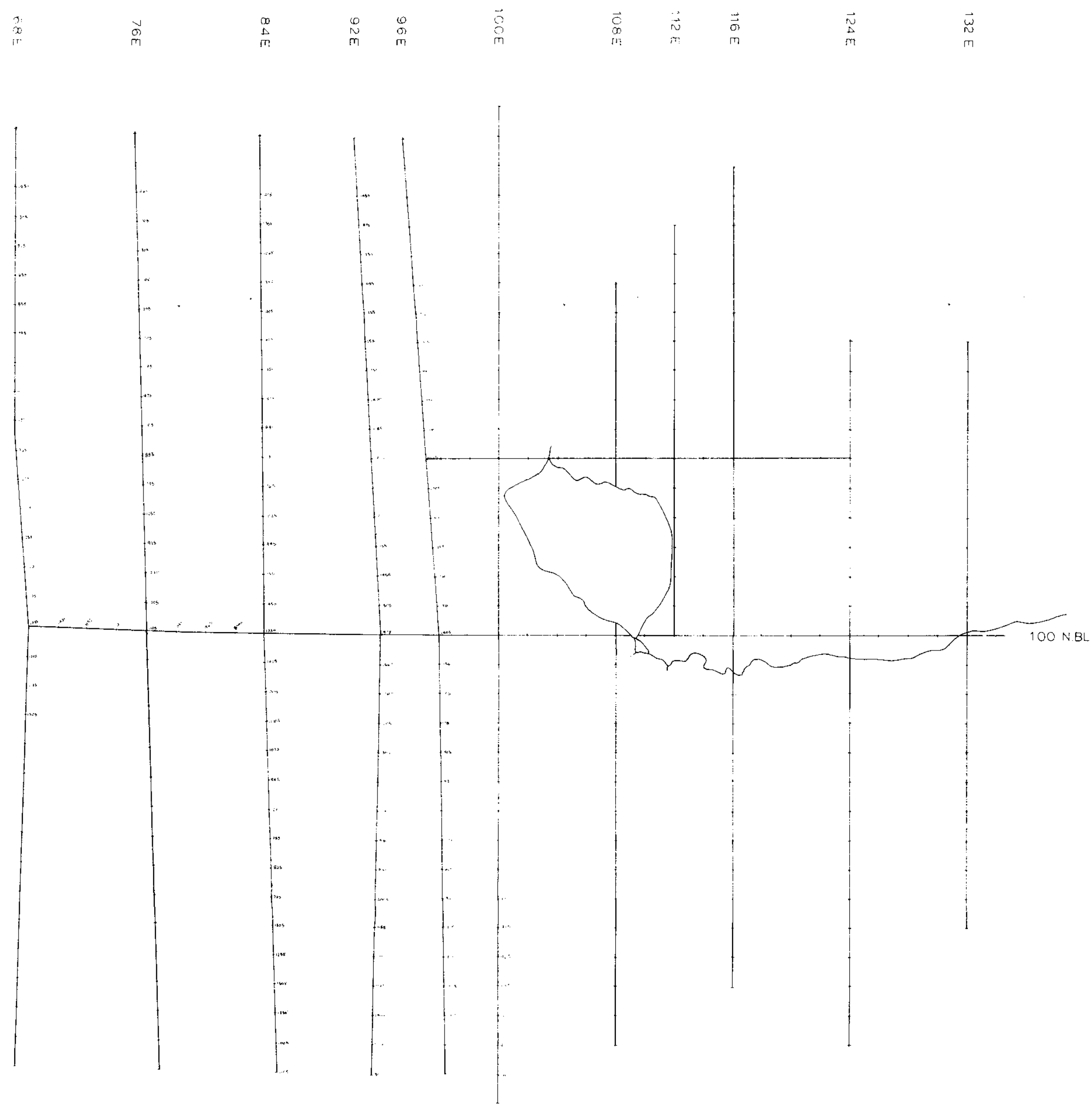
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO 5098 MAP #3

TO ACCOMPANY GEOPHYSICAL REPORT BY J.T. WALKER GEOPHYSICIST ON  
N.S. 1-2 INCLUSIVE, N.S. 15-18 INCLUSIVE, N.S. 25-33 INCLUSIVE  
MINERAL CLAIMS

OMINECA MINING DIVISION JULY 24, 1974

*J. J. Walker*

REVISED	SMOKE MOUNTAIN	
	FILTERED MAG	
	FILTER - TWO POINT AVERAGE INSTRUMENT - MIPHAR M-700	
	PROJECT - N.S. CLAIMS	
PROJ. NO.	SURVEYED BY: L. BRADISH	DATE: JULY 1974
N.T.S. 93E/14W	DRAWN BY: J.C.B.	SCALE: 1" = 400'
DWG. NO. M-2	NORANDA EXPLORATION CO. LTD. OFFICE:	



5098  
M 4

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5098 MAP #4

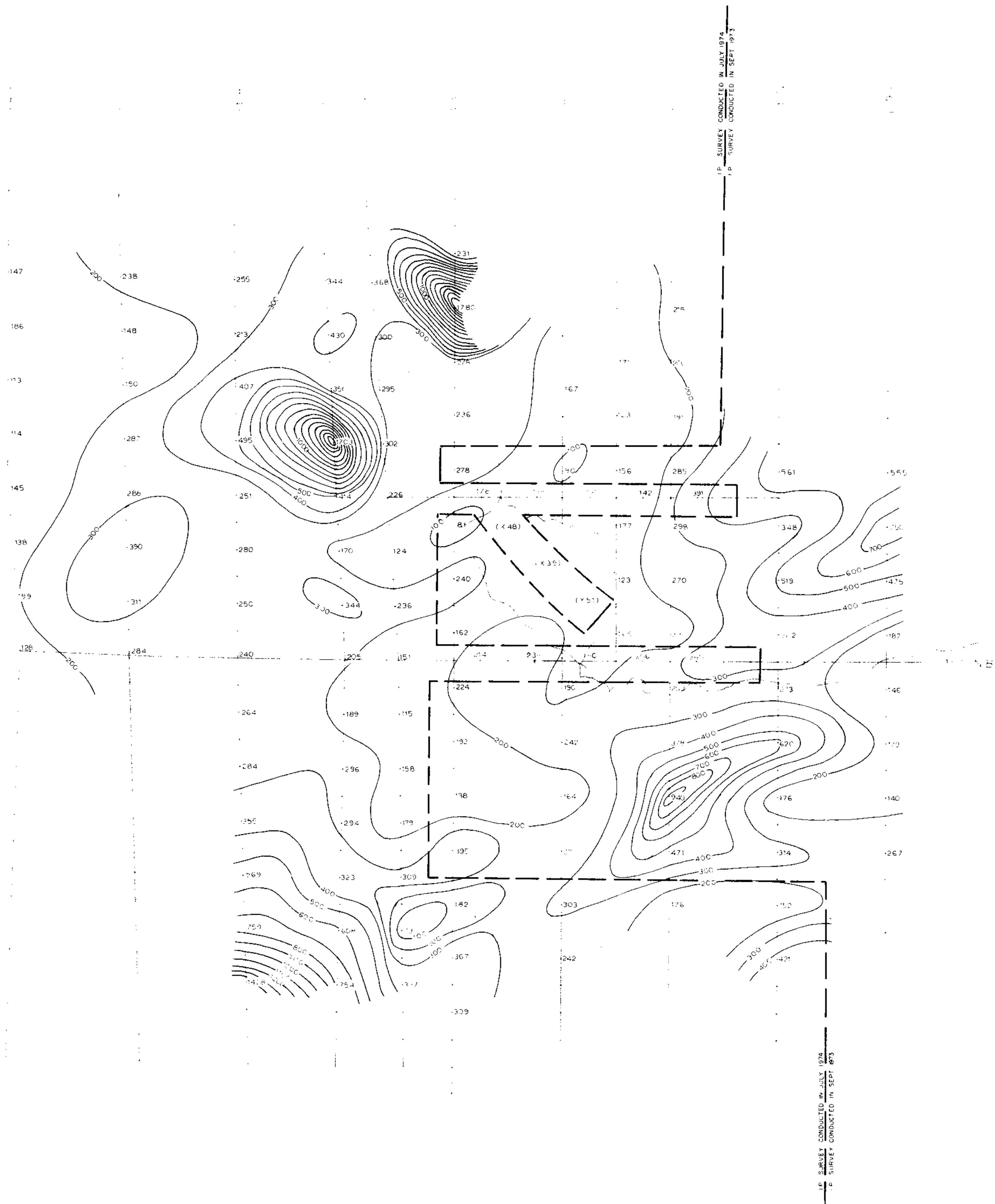
TO ACCOMPANY GEOPHYSICAL REPORT BY J. J. WALKER, GEOPHYSICIST ON  
N.S. 100 INCLUSIVE, N.S. 108 INCLUSIVE, S.S. 25-30 INCLUSIVE  
MINERAL CLAIMS

MINES AND PETROLEUM DIVISION JULY 24 1974

*J. J. Walker*

REVISED	SMOKE MOUNTAIN	
	MAGNETOMETER SURVEY	
	INSTRUMENT: MIPHAR M 700	
	PROJECT: N.S. CLAIMS	
PROJ. NO.	SURVEYED BY: J. J. WALKER	DATE: JULY 24 1974
N.T.S. 93E/14W	DRAWN BY: J. J. B.	SCALE: 1" = 400'
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
M-1	OFFICE:	





5098  
m 6

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO 5098 MAP #6

Values obtained from square array

THIS COMPANY'S GEOPHYSICAL REPORT IS THE PROPERTY OF NORANDA EXPLORATION CO. LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF NORANDA EXPLORATION CO. LTD.

MINES AND PETROLEUM RESOURCES  
JULY 1974

PROJECT	SMOKE MOUNTAIN	
	IP SURVEY	
	RESISTIVITY $\rho_a/2\pi$ n=1	
	PROJECT NO. 5098	
DRAWN BY	DATE	1974
DWG. NO.	IP-2	
NORANDA EXPLORATION CO. LTD. OFFICE		