

GEOPHYSICAL AND GEOCHEMICAL REPORT  
on  
DISCON Claim Group  
Alta Lake - Callaghan Creek Area,  
Vancouver Mining District, British Columbia, Canada

---

Location: 50 05'N, 123 05'W  
4 Km S.W. of Whistler Municipality  
100 Km N. of Vancouver, B.C.

Claim Map: 92J/3E

Claim Record: #725, recorded July 22, 1980

Claim Area: 15 Units, 3N~~3~~SW, 2.5Km X 1.5Km

Survey Dates: Fall 1979, Spring 1980, July 1980

Report by: John B. Davies, B.Sc., M.S., Ph.D.  
Consultant Geoscientist,  
Boulder, Colo., U.S.A.

Report for: Crack Resources Ltd. (N.P.L.)  
14247 72A Avenue  
Surrey, B.C.

Date: September, 1980

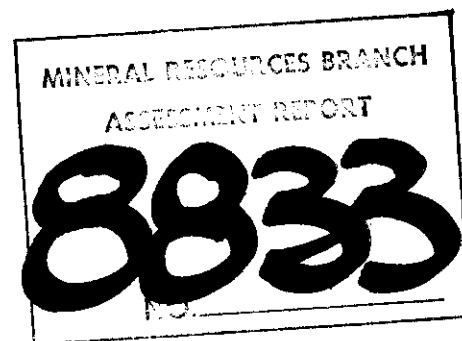


TABLE OF CONTENTS

Summary	1
Introduction.....	1
Geography of Property.....	2
Property and Ownership.....	2
Physiography.....	2
Geology.....	2
Grid Data.....	3
Geochemical Survey.....	4
Geophysical Survey.....	5
Integrated Interpretation.	6
Geophysicist's Certificate	7
Maps.....	

## SUMMARY

Geophysical and geochemical surveys were carried out over the Discon claim group located approximately 4 km south of Northair Mine and 4 Km southwest of Whistler Municipality, British Columbia, Canada. Access to the property is by bush-road off the main Vancouver - Whistler highway.

The object of the surveys was to locate prospective sulphide and precious metal deposits such as found at Northair Mine in a similar geology. Soil sampling and some stream sediments were used for the geochemical information. A VLF electromagnetic survey yielded conductivity data.

The basic rock types, similar to Northair, are meta-volcanics consisting mainly of greenstone, argillite, limestone and rhyodacites. These are cut by abundant quartz/carbonate veins. Visible copper and zinc minerals are readily observable over a wide distribution of outcrops on the Discon property.

The geochemical survey and assays indicate two zones of mineralisation, composed of anomalous values of Copper, Zinc, Silver. They are both of order two hundred (200) metres wide, striking south and the VLF electromagnetic system confirms and outlines these anomalous zones. Both surveys show these zones to be at least 300 metres long and open at the north end.

GEOPHYSICAL AND GEOCHEMICAL REPORT

on

VLF ELECTROMAGNETIC SURVEY

and

SOIL SAMPLING SURVEY

on the

DISCON CLAIM GROUP

Whistler,

Vancouver Mining District,

British Columbia,

Canada

---

Introduction

This report discusses the procedure, compilation and interpretation of a combined VLF electromagnetic and geochemical survey carried out over the Discon claim group during the Fall 1979, and Spring 1980. The surveys were carried out by Dr. J.B. Davies and qualified assistants.

The object of the surveys was to search for economic sulphide and precious metal deposits. The purpose of the geochemical survey was to locate areas of anomalous Silver, Copper and Zinc values. The VLF electromagnetic survey is designed to search for and locate high conductivity zones as are associated with the deposits of Northair type, (personal communication from Glen White, P. Eng.)

The basic property and survey data will be first presented below together with the interpretation and these results and their implications. The property was restaked in July, 1980, after payment of assessment dues and submission of this report. It was extended by 3 units on the west, renamed the DISCON claim group and now comprises 15 units covering 2.5 Km by 1.5 Km.

### GEOGRAPHY OF PROPERTY

The property is located geographically 4 Km southwest of the ski-resort of Whistler, which is approximately 100 Km north of Vancouver, British Columbia. The northerly boundary of the property is adjacent to the Northair Mine, which is presently producing Gold, Silver, Lead, Copper and Zinc. The Northair ores lie in quartz-carbonate veins which strike southerly and are thus projected to intersect the Discon property.

In July 1980, a bulldozer was used to upgrade a recent logging road leading from the main highway onto and through the property yielding easy access for equipment and personnel. High tension B.C. Hydro lines pass to the immediate south of the Discon group.

### PROPERTY AND OWNERSHIP

The property is comprised of 15 units, 500m x 500m each, of the Discon claim group. They were located July 1st, 1979 in the Vancouver Mining District, comprise an area of 2.5 Km by 1.5 Km, and are wholly owned by Crack Resources Ltd. (N.P.L.) of Surrey, B.C., Canada.

### PHYSIOGRAPHY

The property covers a steeply sloping terrain rising in elevation about 700 metres from the main highway; the lower portion of the claim has been recently logged allowing easy access. Numerous streams and a few major creeks intersect the property with year round water supply.

### GEOLOGY

The basic rock types are the metavolcanics of the Alta Lake Pendant composed mainly of greenstone, phyllites, argillites and limestones. These have a strike along due south with steep dips; abundant quartz and quartz-carbonate veins intersect these units. 4 Km to the north on strike, Northair Mine, an important Gold, Silver and base metal producer is of similar geological character, with a mainly south - striking quartz-carbonate vein deposit. The ore occurs around the 3000 ft. elevation which is the same general location as the main mineralisation on the Discon claim.

Copper minerals have been found in a number of outcrops of different character, these consisting of Chalcopyrite and leached salts. Grab sampling of the copper mineralisation has yielded assays of about 1% Cu, 1 oz/ton Ag, and 0.04 oz/ton Au. Zinc salts such as Smithsonite and Hydrozincite are exposed over large areas.

Reference is given to the geological report on the property by D.A. Reuben, B.S., for complete details.

#### GRID DATA

A grid has been laid out over the southern part of the Discon property with a baseline running due North. Four lines, 100 metres apart and each 1 Km long, have been surveyed, blazed and flagged.

GEOCHEMICAL SURVEY

The initial geochemical sampling of the property took place in July, 1979. Twenty six (26) soil samples were collected over two lines which roughly correspond to lines 0+00 and 2+00 N of the present grid. The stream sediments sampled the main East creek at the three locations.

These also had large anomalous values in Silver especially. These geochemical results outlined two zones, striking north, with anomalous values in Cu, Zn, Ag.

This initial survey was sufficiently promising that a grid and geochemical survey were created on the Disc property in April/May of 1980 by Dr. J.B.Davies and qualified assistants, who performed the soil-sampling.

In all sampling locations, the B horizon was sampled whenever possible. Over the anomalous zones, 25 metre sampling intervals were used with 50 metre interval in the other regions. The original data, consists of some 120 samples analysed by General Testing Lab of Vancouver, is profile plotted in Figures 1,2,3 for Silver, Copper and Zinc.

It can be readily seen that the two anomolous zones, initially found by the first geochemical survey, are confirmed and outlined in all three metals by this geochemical survey. The high zones appear to strike about NW as expected from the geology, and appears to continue to the North where future geochemical surveys are anticipated.

### GEOPHYSICAL SURVEY

The geophysical survey of April, 1980 used a VLF electromagnetic system to examine the conductivity of the Disc property. The instrument used was a SCOPAS VLF-EM receiver manufactured and rented by Scintrex Ltd. This instrument is designed to measure the current induced in a coil by the primary and secondary fields of the VLF electromagnetic field transmitted at 15-25 khz. The vertical dip angle and field strength are measured as well as the horizontal amplitudes and azimuth of the magnetic field. The station used for this survey was Cutler, Maine.

In Figure 4 , we profile plot the vertical readings for the lines of the grid. Vertical field amplitudes of about 10 indicate conductive zones which correlate well with the geochemical anomalies. Figure 5 shows the dip angle profiles and the cross-overs which occur in these anomalous zones. The horizontal field gain, which is the inverse of the horizontal field amplitude is profile plotted in Figure 6 which shows again the correlation of the VLF anomalies and the geochemical anomalies.



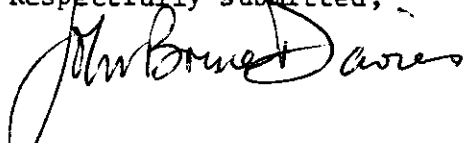
INTEGRATED INTERPRETATION

It has been noted above that both the geochemical survey and VLF-EM survey indicate two anomalous zones. These have a strike of northwest to north and are separated by a distance of about 800 metres.

The East zone lies along a major creek, has visible sulphides, and a surface exposure extending about 200 m, to the west of the creek (see Geologist's Report) Because of the steep banks, the VLF-EM survey was extended only within 100 metres of the creek, though the geochemical survey was pushed as far as possible. The Figures show how well these anomalies correlate. Extending the grid and survey to the North can thus be expected to follow this conductor/anomaly.

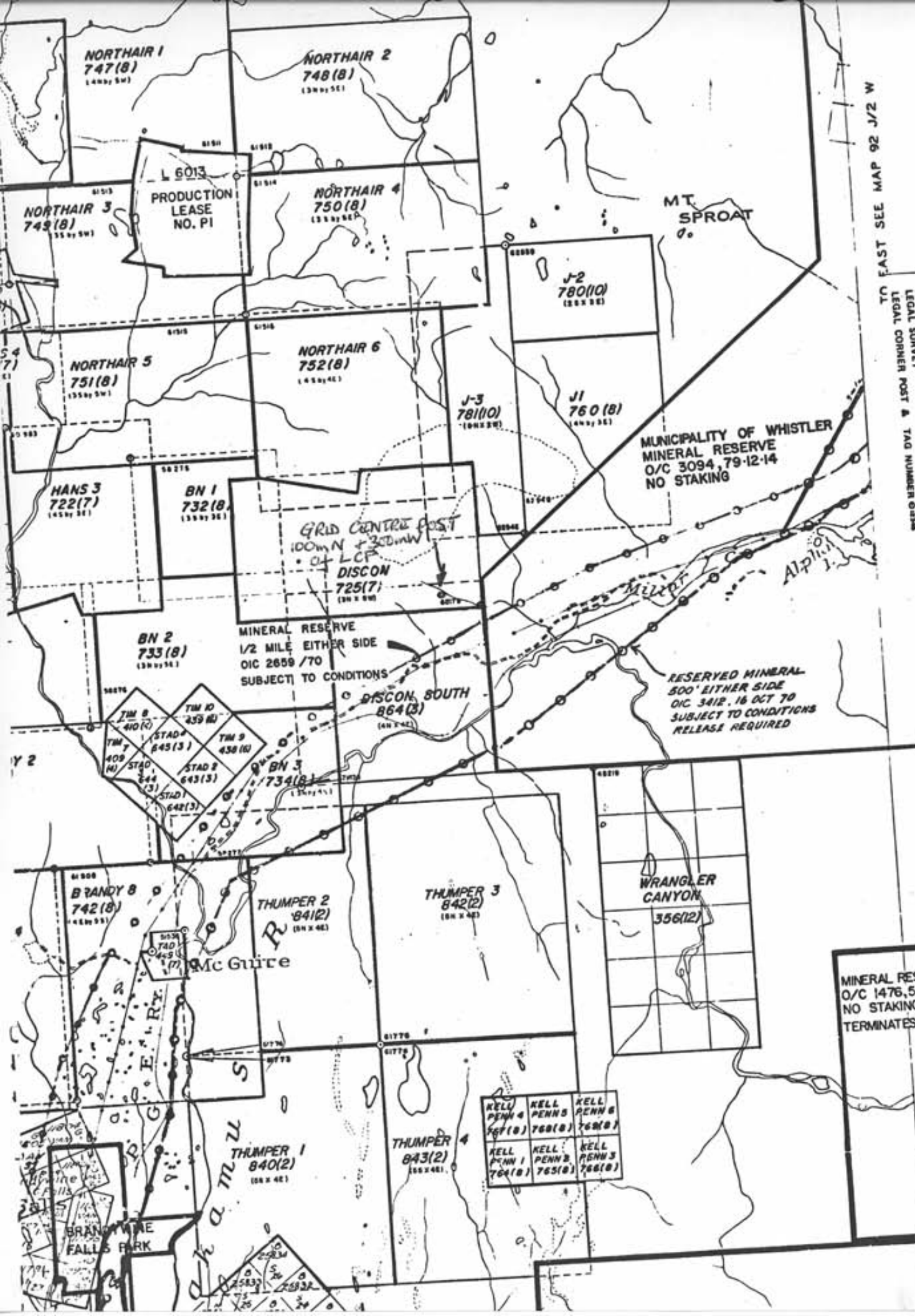
The West anomalous zone also has visible sulphides in a quartz-carbonate and metavolcanic geology, striking north, and with a surface exposure of about 200 metres in width (see Geologist's Report). Both the VLF-EM and geochemical surveys have anomalies that correlate well with this geology. Survey extension to the North can thus be expected to outline further this conductor/anomaly.

Respectfully submitted,



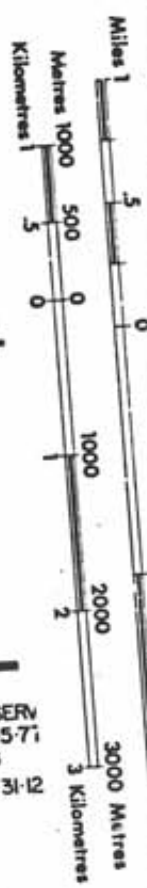
John Bruce Davies, Ph.D.  
Geophysicist

June 8th, 1980



EAST SEE MAP 92 J/2 W

- LEGEND
- CRUM-GRANTED MINERAL CLAIM
  - REVERTED C.G. MINERAL CLAIM
  - FORFEITED MINERAL CLAIM
  - VERIFIED LEGAL CORNER POST
  - LEGAL SURVEY
  - LEGAL CORNER POST & TAG NUMBER OTHER



MINERAL RESERVE  
O/C 1476, 5-5-71  
NO STAKING  
TERMINATES 31-12

KELL PENN 4 757(8)	KELL PENN 5 760(8)	KELL PENN 6 762(8)
KELL PENN 1 764(8)	KELL PENN 2 765(8)	KELL PENN 3 766(8)

DATE OF MICROFILM: 81-06-  
THEIR IMPORTANCE CONCERNED.

GEOPHYSICIST'S CERTIFICATE

I, John Bruce Davies, Ph.D., do hereby certify:

- 1: That I am a Consulting Geophysicist and have been active in Exploration Geophysics for the past seventeen (17) years.
- 2: That I am a graduate of the following Universities with the particular degree in Geophysics.
  - a. M.S. 1968 California Institute of Technology.
  - b. Ph.D. 1980 University of British Columbia.
- 3. This report is compiled from data obtained by myself and qualified assistants under my supervision.

*John Bruce Davies*  
*John Bruce Davies*  
 \_\_\_\_\_

JOHN BRUCE DAVIES, Ph.D.

June 8th, 1980

CRACK Resources Ltd. (NPL),  
#84, 13880 74th Ave.,  
Surrey, B.C.

PPM Ag  
- 2.0  
- 1.5  
- 1.0  
- 0.5  
- 0

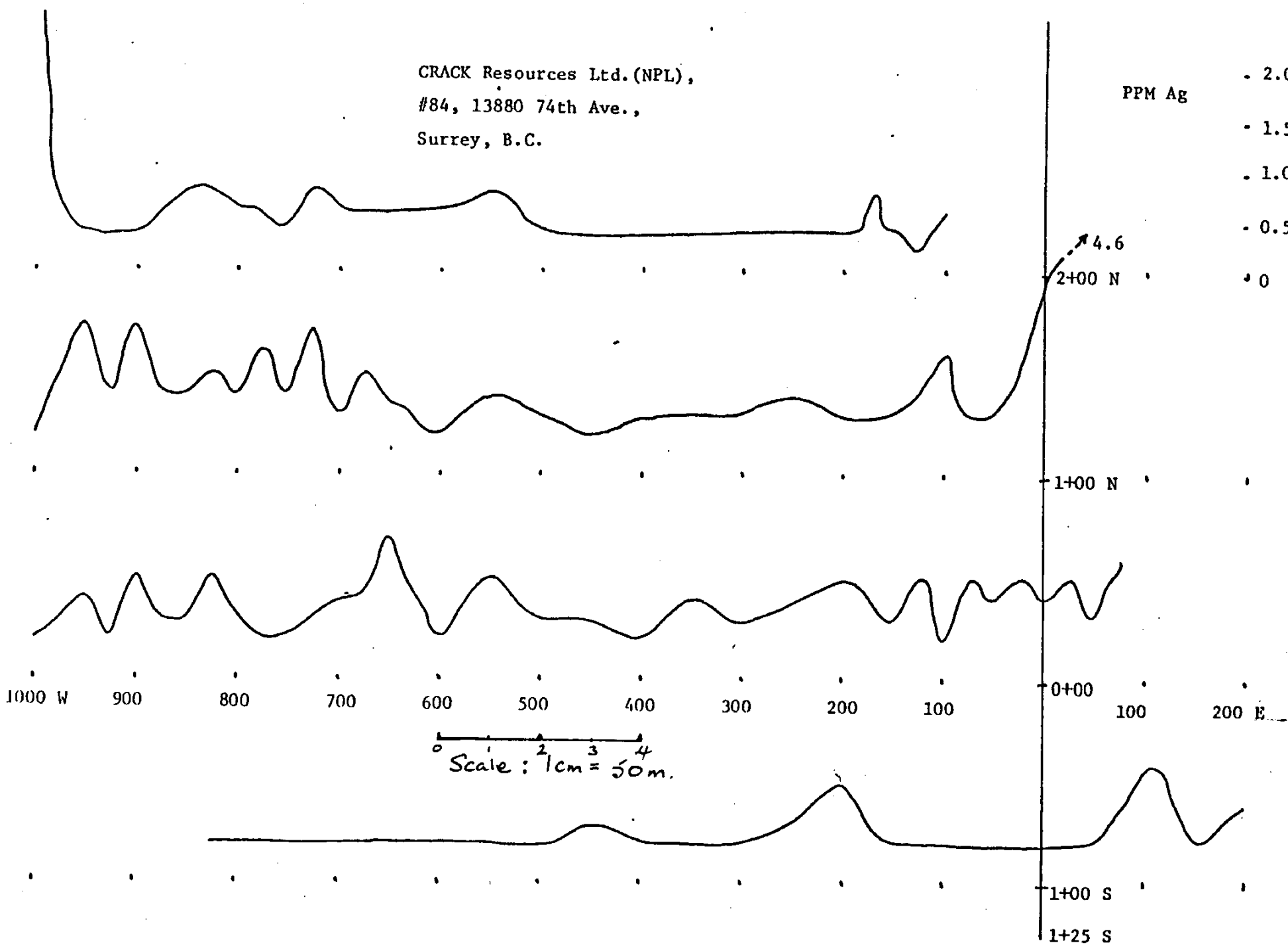


Figure 1: Soil values for Silver, Geochemical Survey, DISC claims, April 1980

BASELINE

CRACK Resources Ltd (NPL),  
#84, 13880 74th Ave.,  
Surrey, B.C.

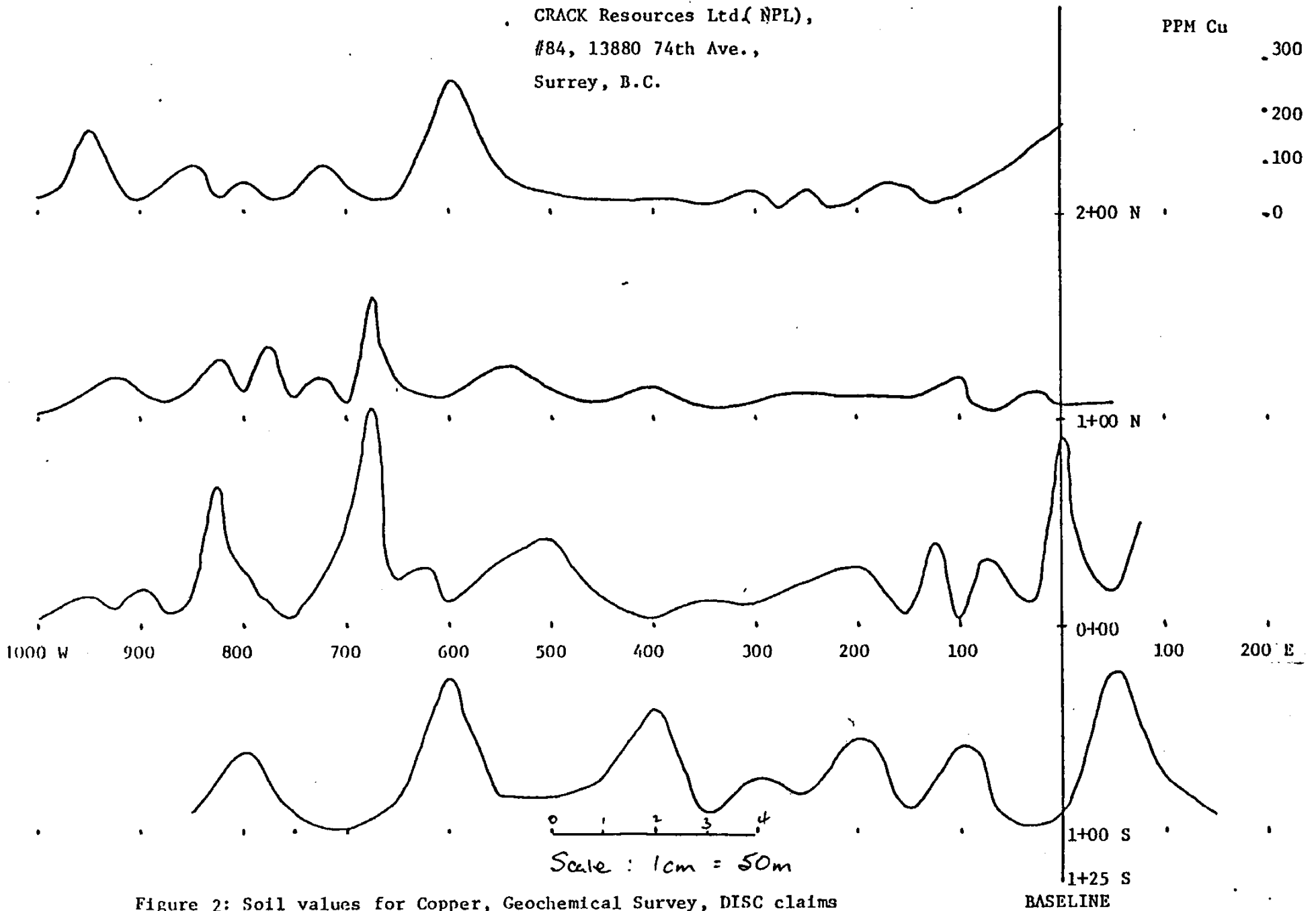


Figure 2: Soil values for Copper, Geochemical Survey, DISC claims

CRACK Resources Ltd. (NPL),  
#84, 13880 74th Ave.,  
Surrey, B.C.

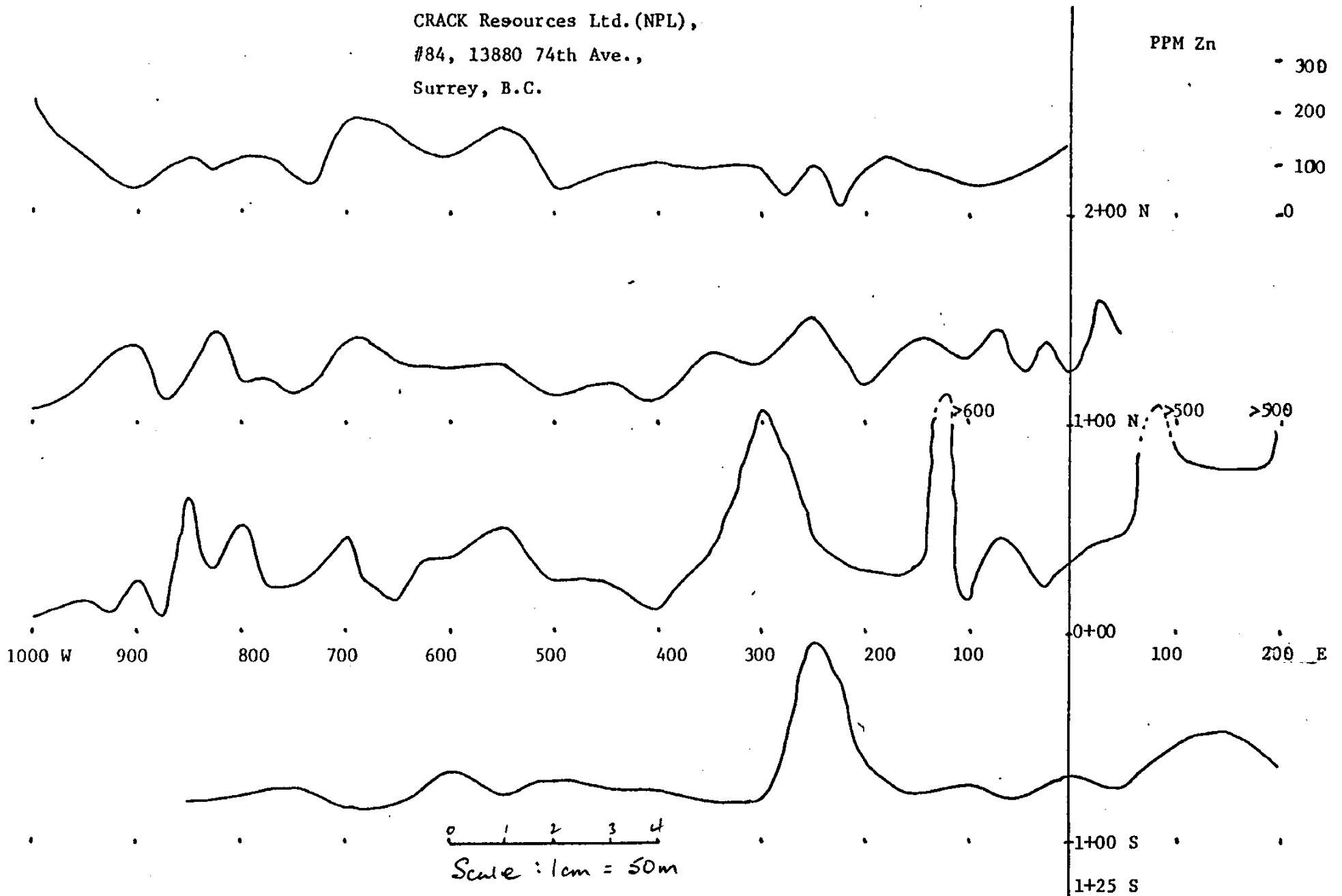


Figure 3 : Soil values for Zinc, Geochemical Survey, DISC claims, April 1980

BASELINE

CRACK Resources Ltd. (NPL),  
#84, 13880 74th Ave.,  
Surrey, B.C.

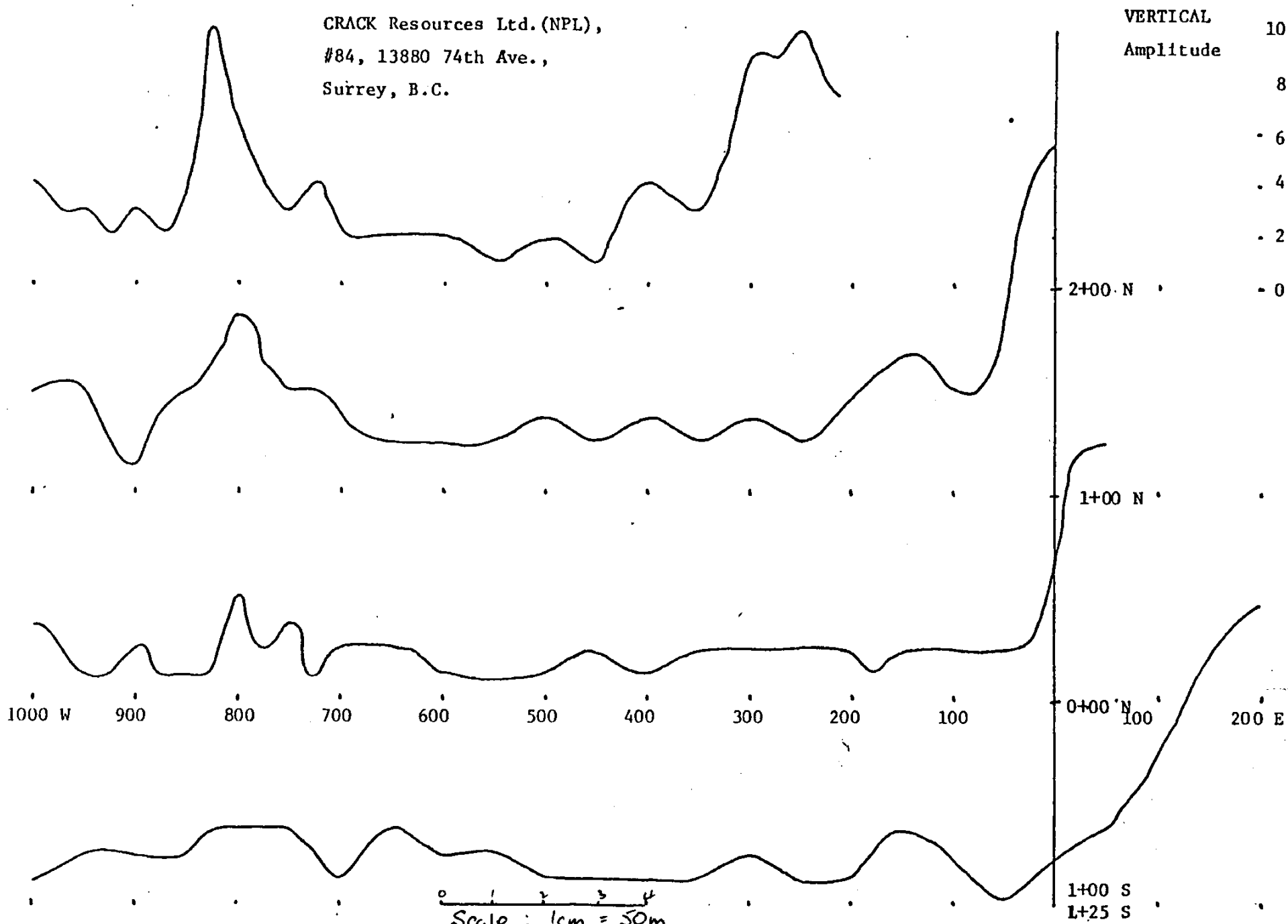


Figure 4 • Amplitude of Vertical field, VLF-EM Survey, DISC property

BASELINE

CRACK Resources Ltd.(NPL),  
 #84, 13880 74th Ave.,  
 Surrey, B.C.

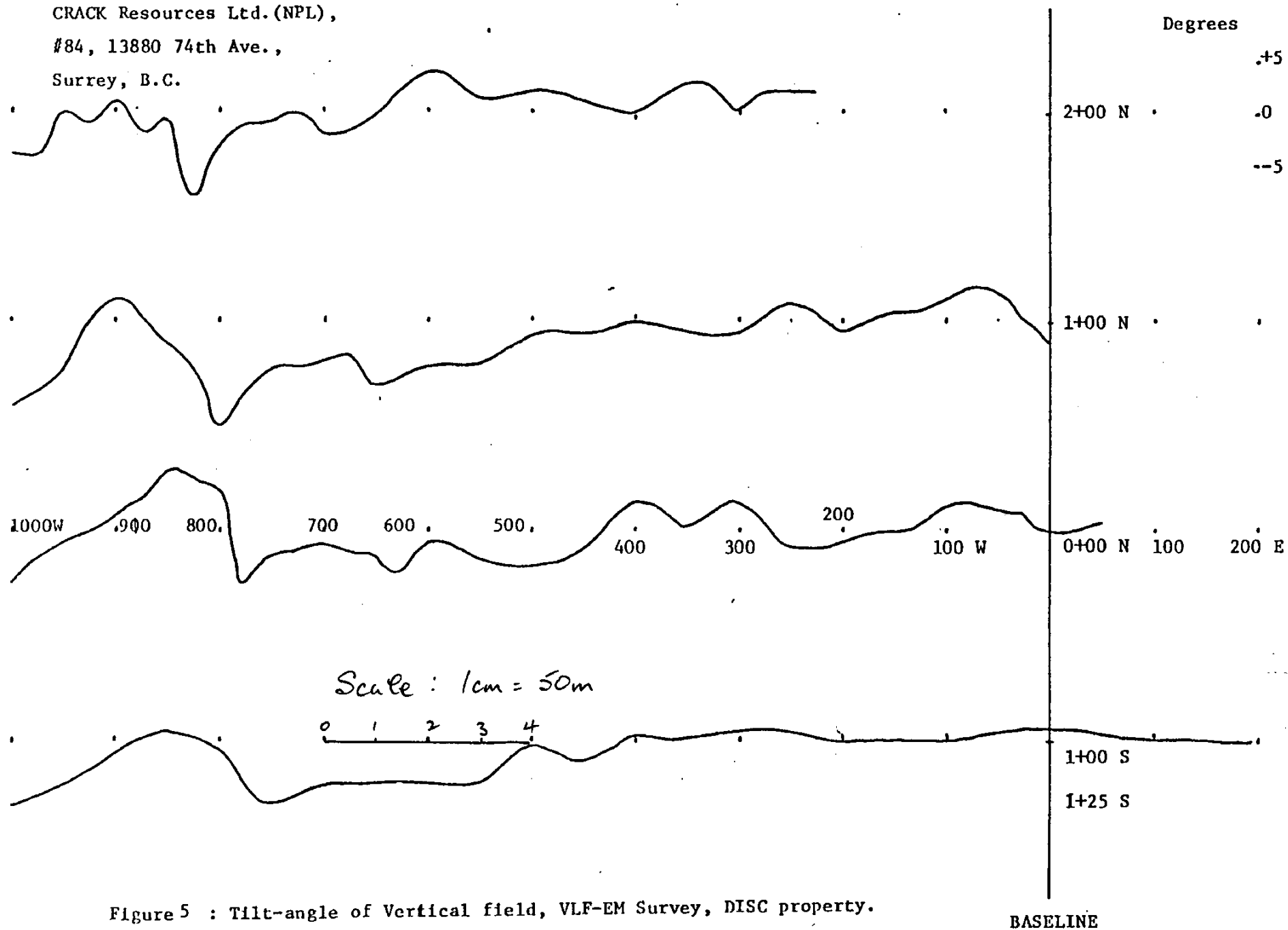


Figure 5 : Tilt-angle of Vertical field, VLF-EM Survey, DISC property.  
 April, 1980. Anomaly indicated by Cross-over



CRACK Resources Ltd. (NPL),  
#84, 13880 74th Ave.,  
Surrey, B.C.

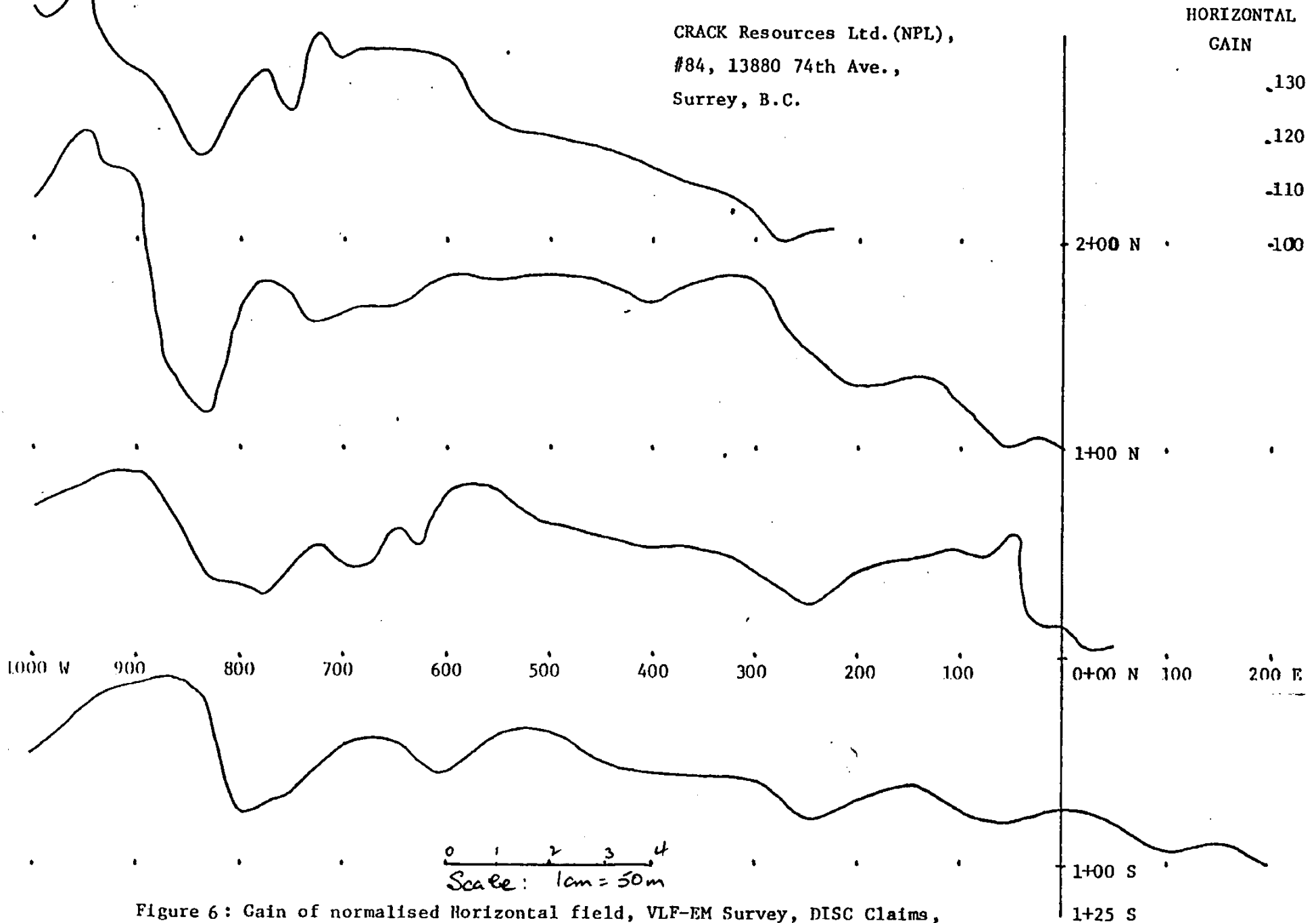


Figure 6: Gain of normalised Horizontal field, VLF-EM Survey, DISC Claims,

April 1980,. Conductivity anomalous high indicated by minimum.

CRACK Resource Ltd. (NPL)

#84, 13880 74th Ave.,  
Surrey, B.C.

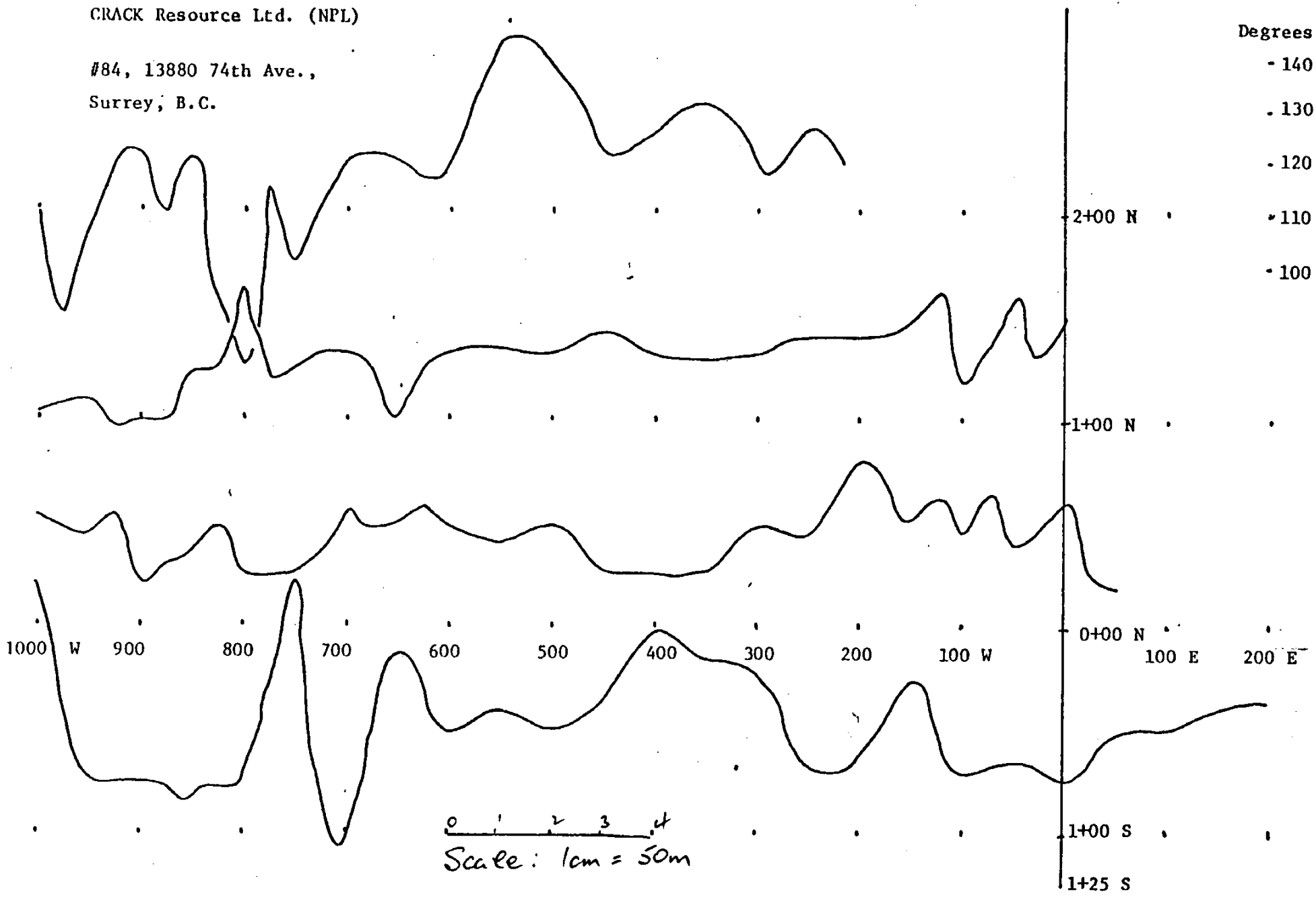


Figure 7: Azimuth of Horizontal field, VLF-EM Survey, DISC property, April 1980.

Geological Report on  
DISC CLAIM GROUP  
Alta Lake - Callaghan Creek Area  
Vancouver Mining District, British Columbia

Location: 50 05 N, 123 05 W  
4km SW of Whistler Municipality  
100km N of Vancouver, B.C.  
Map 92J/3E  
Tag #38440  
12 Units, 4N \* 3W, 2km \* 1.5km

Survey Data: 1980 Season

Report by: Debra A. Reuben, B.S.  
Consultant Geologist  
946 University Avenue  
Boulder, Colorado 80302

Date: June 1980

The Disk Claim Group is part of the Alta Lake - Callaghan Creek Area of the Coast Plutonic Complex. Strata of the Alta Lake Pendant form a Northwest trending belt of metamorphic rocks bounded by quartz-diorite and diorite. The pendant rocks are dominately intermediate volcanics, volcanic breccias, tuffs, and sandstones with minor amounts of argillite and limestone. The rocks are of Cretaceous age and have been metamorphosed to greenschist facies with assemblages characterized by actinolite, epidote, zoisite, chlorite, biotite, and albite. The cleavage strikes north-northwest and dips steeply, parallel to bedding of the pendant and the overall Coast Plutonic Complex. Numerous Quartz-Carbonate veins intersect the phillites and greenstones at steep dips.

The Callaghan Creek Basalts occurred in four episodes of late Pleistocene volcanism marking the final stages of volcanism. Individual flow-units of olivine-augite basalts erupted approximately 34,200 years ago within the glacially scoured Callaghan Creek and Cheakamus River Valleys with extremely restricted lateral extent, braided and meandering flow patterns in fanned columns with one to two metre zones of platy, vesiculated lava tranverse to the columnar basalts.

The Northair Gold Mine lies four km to the North of the Disk Claim Group and approximately six km north of the Callaghan Creek Basalts. The mine is hosted by Cretaceous rocks of the Alta Lake Pendant Strata with the greatest mineralization occurring in the steeply dipping quartz-carbonate veins. Galena, sphalerite, chalcopyrite, pyrite, gold, and argentite exist in these vein zones. Core samples containing large, irregular crystals of sphalerite, galena, and chalcopyrite may indicate that the ore deposit is of hydrothermal origin.

The Disk Claim Group is located approximately four km down the strike of the Northair auriferous veins in similar rock type and structure. A brief geological reconnaissance survey conducted in late April of 1980 revealed the following evidence for the potential of significant mineralization in the Disk Claim Group. Various types of wall-rock alteration associated with epigenetic gold deposits were observed near two fracture zones illustrated in Figure A. Chloritization is laterally extensive, occurring most prominently near the fracture zones on quartz veins, Sericitization, a gradational bleaching of the phillites towards the fractures was observed, indicating the development of sericite or hydromuscovite, as a result of the hydration of feldspars within intensely altered wall rocks. Carbonization, the formation of secondary carbonates, takes place in the phillites and extends for several meters on the west fracture zone. This is especially interesting because it lies along the approximate strike of the gold bearing quartz-carbonate veins only four km to the North. Pyrite is ubiquitous throughout this area. Although some of the pyrite appears to have formed during regional metamorphism, regions near the fracture zones have undergone pyritization marked by cross-cutting veins of pyrite and leuconite into the schistosity of the phillites instead of being evenly distributed as in other areas.

Copper and Iron staining, often indicative of gold is abundant in the shear zones. Hydrozincite exposed on a large area adjacent to the east fracture zone may be an altered product of sphalerite.

Chalcopyrite, Argentite, and gold exist on surface outcrops near the fracture zones. Grab samples of these rocks yielded .66 ounces Ag/ton, .04 ounces Au/ton, and up to 1-2% Cu.











Soil and stream sediment samples taken in October of 1979 and April of 1980 show consistently high values for copper, silver, and gold in the two areas (see geochemical figure). A Vlf instrument recorded anomolous values, again in the same vicinity (see geophysical figure).

The apparent wall-rock alteration, Cu and iron oxide staining, abundant minerals on surface outcrops, large surface extent of quartz-carbonate vein on strike only 4km south of the Northair veins, along with the geochemical and geophysical results establish a promising foundation of evidence for potentially significant mineralization in the Disk Claim.

However, this report is based on a preliminary study of the area. Note that these type of veins typically pinch and swell, may be discontinuous, and further geological, geochemical, and geophysical investigations should be made. In particular, a closer look at the mode of mineralization, character of country rock, and presence of alteration at the Northair Mine is strongly suggested in order to more accurately determine any similarities that may exist between these areas.






# GEOLOGIC MAP OF DISC CLAIMS

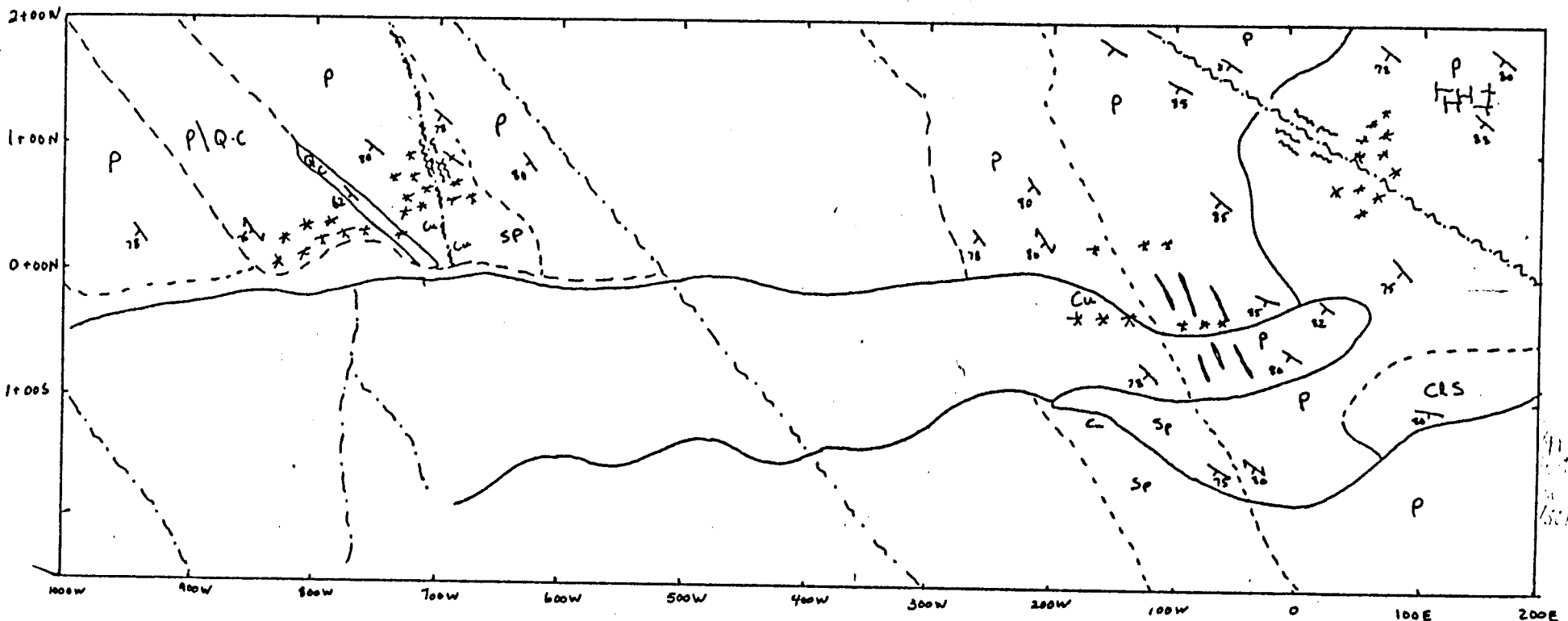
## MAP SYMBOLS:

- Geologic Boundary 
- Bedding 
- Foliation, schistosity 
- Stream 
- Fault with stream 
- Shear zone 
- Copper staining 
- \*\*\* mineralization 
- Zinc staining 
- Quartz Veins 



## LEGEND:

- Lower Cretaceous  
Gambier Group:
-  Phyllite
  -  Sericitized Phyllite
  -  Quartz-Carbonate
  -  Phyllite interbedded with Q-C
  -  Chloritic Schist



Scale 1cm = 100m = 1:5000