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INDUCED POLARISATION REPORT

on the

GRAFTER and BEST CHANCE DEPOSITS, WHITEHORSE COPPER BELT

Whitehorse Area,
Yukon Territory

NTS 105D/11

Prepared for:

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INTRODUCTION

The Grafter and Best Chance deposits are two of a number of prospects and old mines which cover the area known as the Whitehorse Copper Belt.

Previous exploration, dating from 1898, has successfully delineated a number of copper ore deposits, many of which have been mined by underground and open pit methods. Aurora Gold Ltd. optioned part of the Belt from Hudson Bay Mining and Smelting and has concentrated work in the area of the Grafter and Best Chance deposits.

The present survey was carried out at the request of Mr. G. Nolin of Aurora in order to determine if the method could help extend and/or establish a trend for the ore which has been intersected in the drilling carried out over both deposits.

LOCATION and ACCESS

The Grafter and Best Chance deposits are located approximately 8 kilometers south-west of the centre of the city of Whitehorse but still within the city limits. The general area with topography is shown in Figure 1.

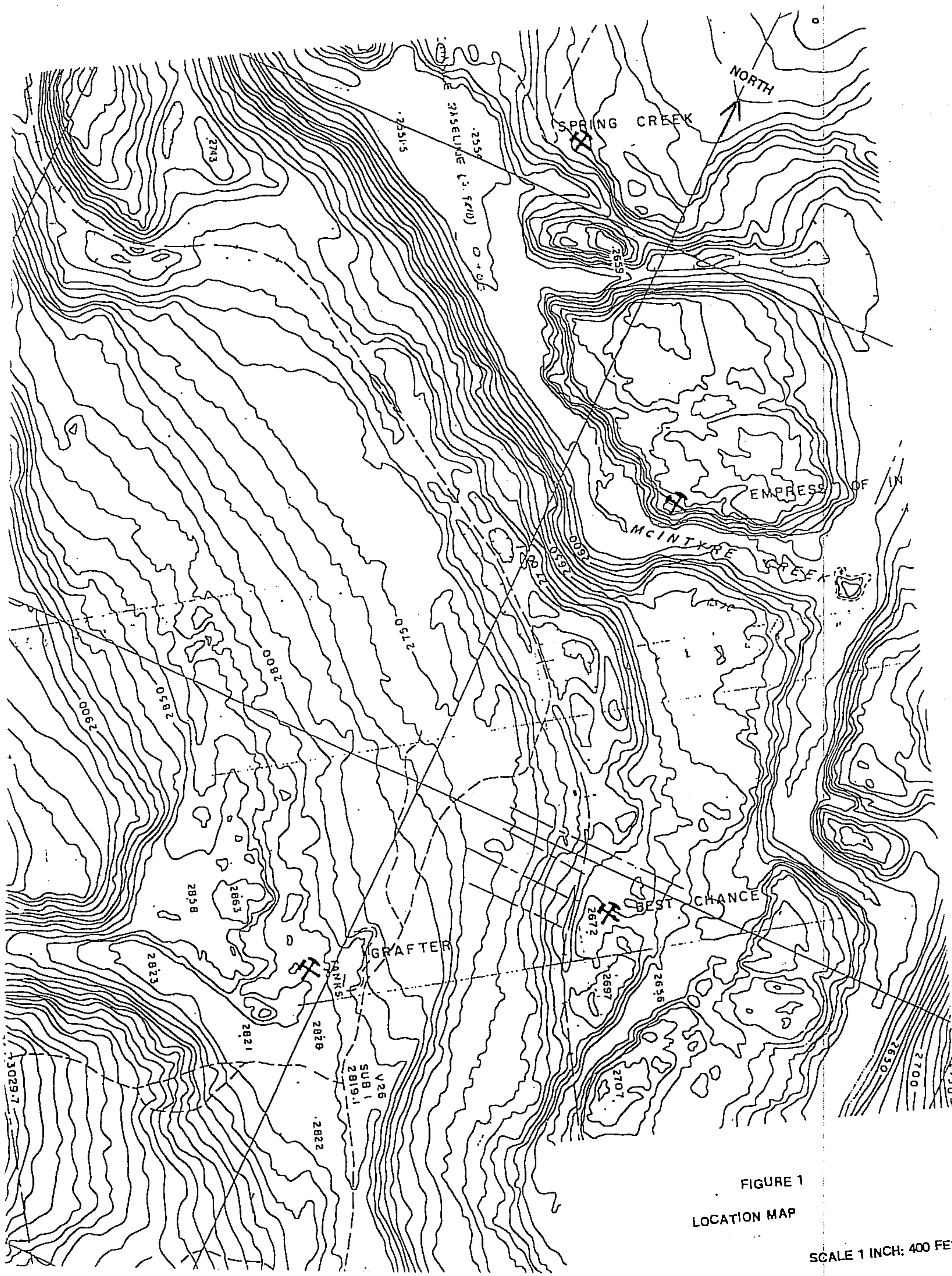


FIGURE 1

LOCATION MAP

SCALE 1 INCH: 400 FEET

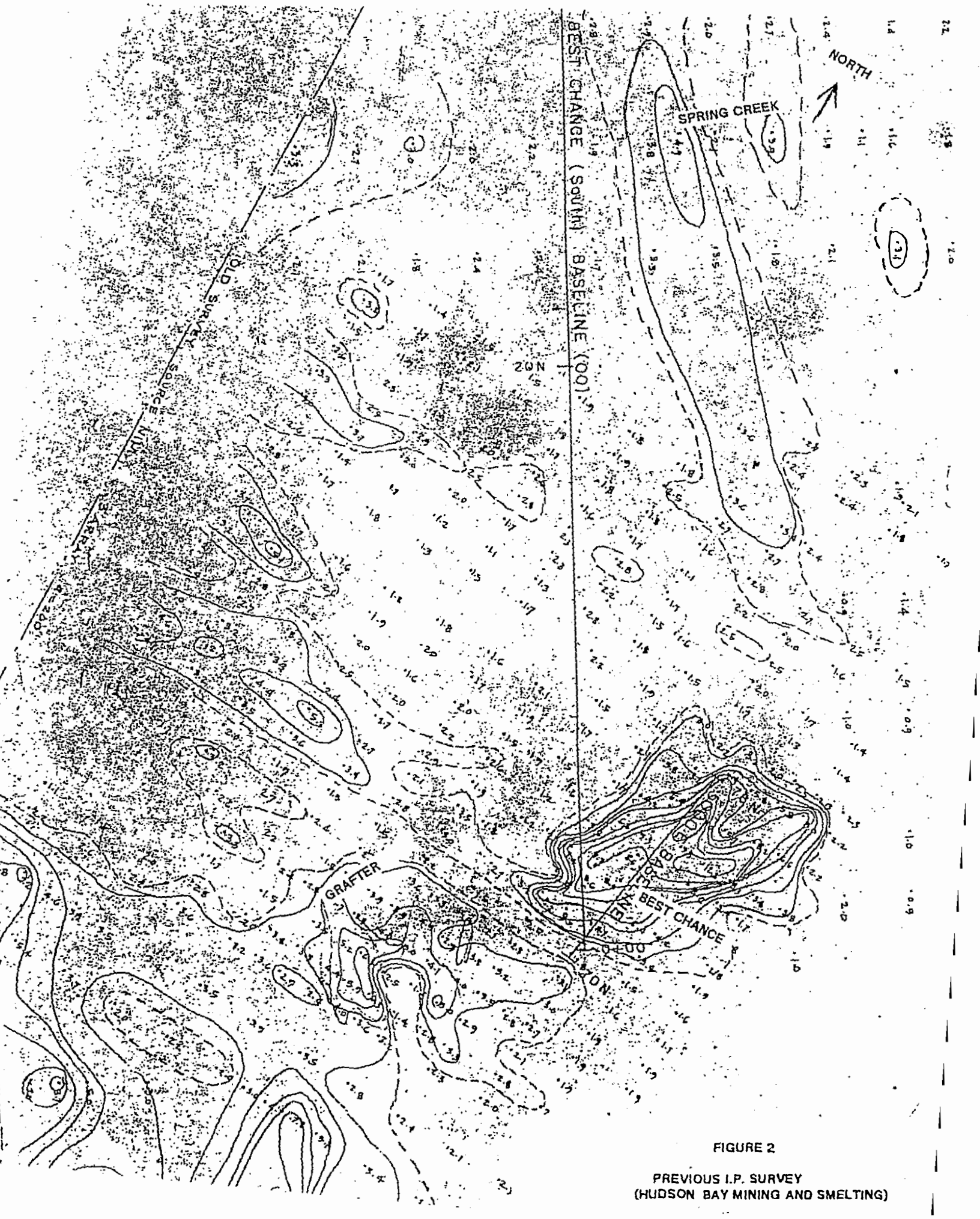


FIGURE 2

PREVIOUS I.P. SURVEY
(HUDSON BAY MINING AND SMELTING)

EXPLORATION HISTORY

As this report is concerned with the Induced Polarisation survey over the Grafter and Best Chance deposits, only previous exploration that is related to this report has been considered.

Regional Induced Polarisation, airborne magnetic, ground magnetic and ground VLF surveys were conducted by Hudson bay Mining and Smelting or previous owners, the results of which were made available to Aurora. The were supplemented by a ground magnetic survey in the vicinity of the Grafter and Best Chance by Aurora in 1990, the results of which are described in a separate report. The results of a previous regional Induced Polarisation survey showed significant anomalies which suggested larger areas of mineralisation around both deposits. The origin of the data is unknown and as no resistivity values were provided a definitive interpretation of the data could not be made.

INDUCED POLARISATION SURVEY

The field survey was carried out in the period July 18 - August 8, 1991 by the author accompanied by Mr. G Nolin of Aurora Gold Ltd.

The Induced Polarisation survey was carried out over three selected profiles - Line 0, Line 200N and Line 300N using the dipole - dipole array. Detail was conducted over parts of the area using the gradient array.

Equipment:

The survey equipment consisted of a Phoenix IPT-1 transmitter powered by a 3Kva generator with aluminum foil used as the ground electrodes. The survey was started using time domain but later this was changed to frequecy domain to assist the operations and provide better signal to noise ratio.

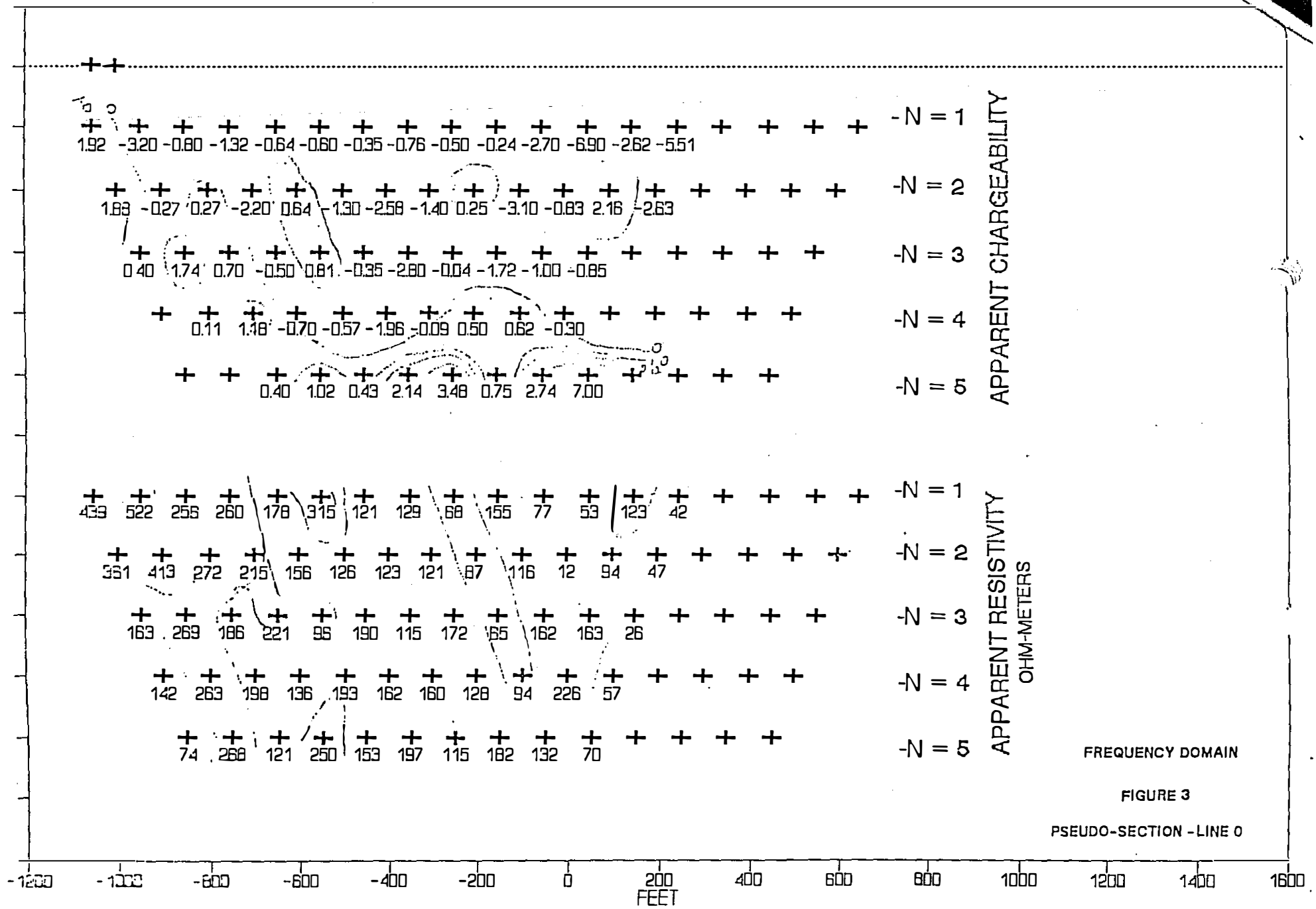
(A) Time Domain:- 2 second on, 2 second off standard time cycle with reversed polarity on alternate cycles. Due to the high ground resistance the maximum current used was 0.2 amps. The receiver used was a Huntec Mk IV s/n 1069 in time domain mode with a time delay of 160 milliseconds and an integration time of 65 milliseconds for each of 10 windows. The total value over the 10 windows provided by the instrument was used for plotting the data.

(B) Frequency Domain:- Low Frequency at 0.25 Hz., High frequency at 2 Hz.

Specifications:

The dipole-dipole array with an 'a' value of 100 feet and with multiple separations of n=1 to 5 was used throughout the survey and the results are presented as standard pseudo-sections of apparent chargeability and apparent resistivity for each line.

The gradient array used a potential electrode separation of 50 feet. The position of the current electrodes was adjusted to give maximum ground contact.



FREQUENCY DOMAIN

FIGURE 3

PSEUDO-SECTION - LINE 0

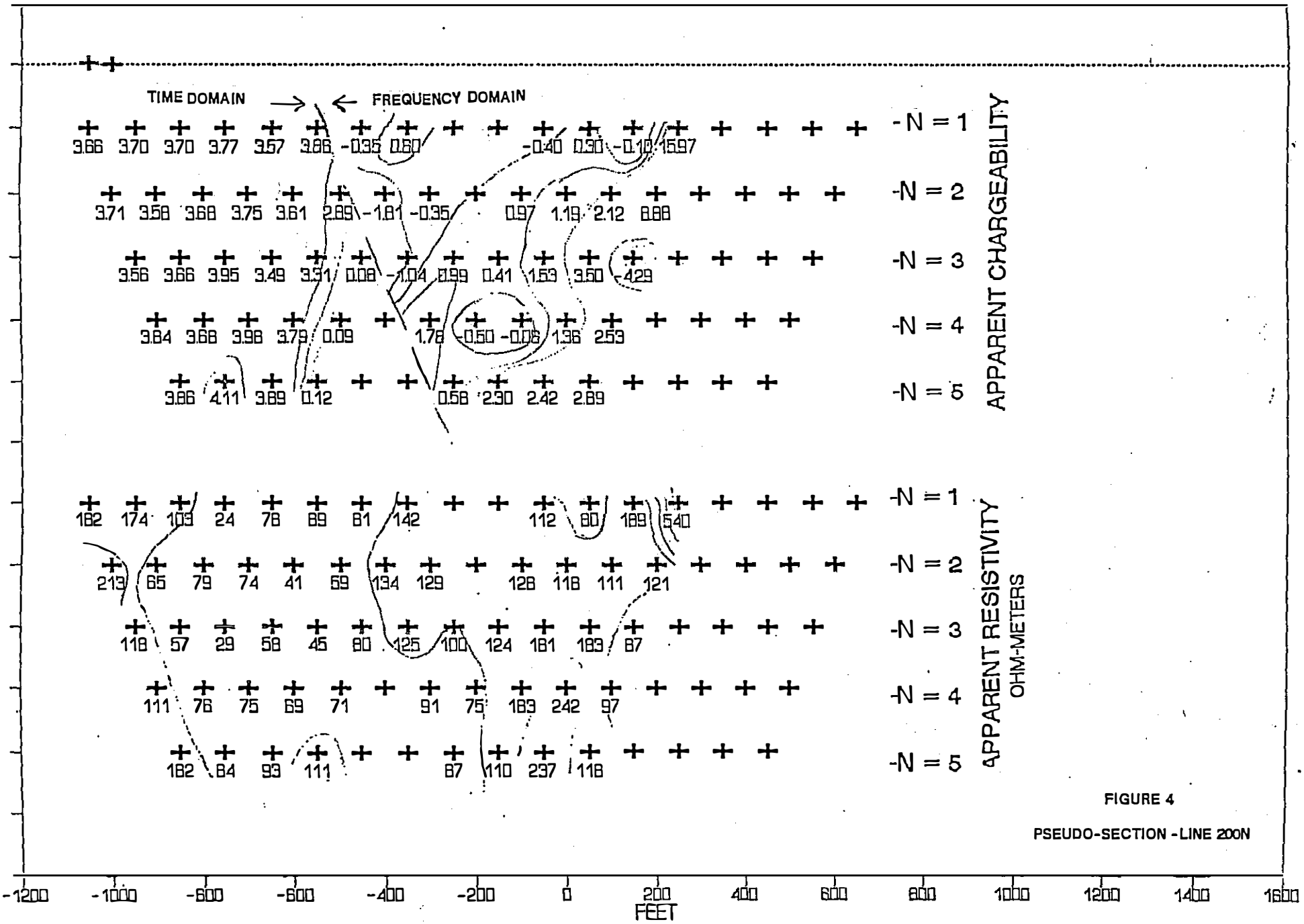


FIGURE 4

PSEUDO-SECTION - LINE 200N

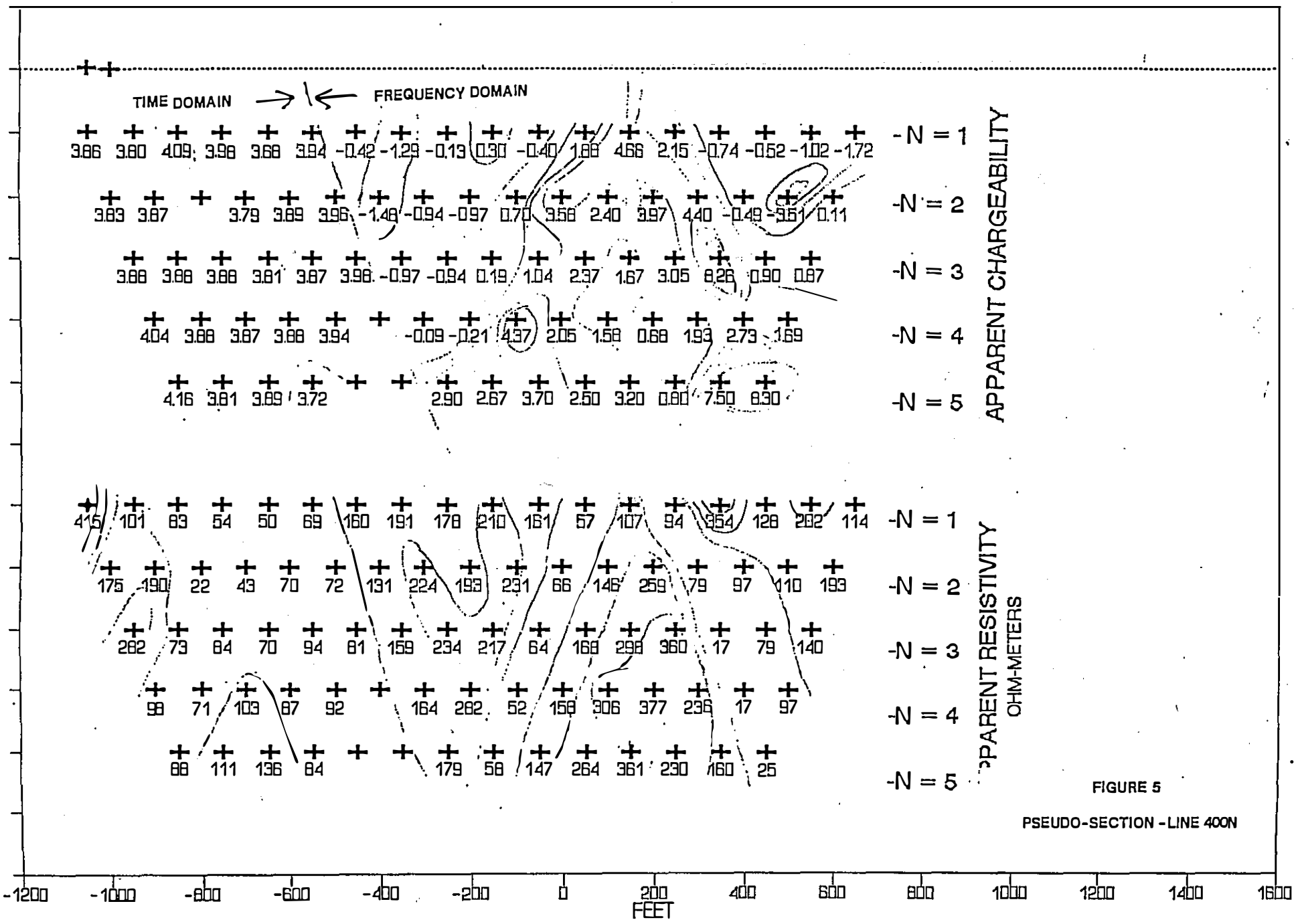


FIGURE 5

PSEUDO-SECTION - LINE 400N

INTERPRETATION

The results are provided as pseudo-sections, (Figures 3-5).

All of the profiles cross both the Grafter and Best Chance deposits with Line 200N crossing close to the location of the Grafter shaft. Line 400N crosses over the main part of the Best Chance deposit.

DIPOLE-DIPOLE ARRAY

LINE 0 - Figure 3

The apparent chargeability results show an increase in chargeability to the west and also a marked increase with depth.

LINE 200N - Figure 4

The results show an area of low chargeability in the area of the Grafter shaft (800W). There is a broad area of low resistivity which may correspond to the area of mineralisation. The lack of I.P. reponse may be due to extensive oxidation which will not produce an I.P. effect.

An increase in chargeability occurs at the east end of the profile where a major gully is located. This anomaly has yet to be explained geologically but could be caused by faulting and/or associated mineralisation.

LINE 400N - Figure 5

The chargeability values show a distinct increase over the Best Chance deposit and is characteristic of a near vertical narrow zone. There are indications that there is further increase in chargeability with depth which is probably deeper than the mineralisation defined by drilling.

A composite interpretation is presented on the gradient plan map, Figure 6.

Lower resistivity values on Line 200N at 550W and on Line 400N at 700W are similar and do exhibit a trend which crosses surface trenching and another shaft to the west. This is probably a structural trend which has mineral located along its length.

GRADIENT ARRAY

The gradient results over the Grafter show generally higher values in the area of the shaft. A major peak occurs on Line 700W at 75N and directly over a ore intersection drilled at depth.

Higher values occur to the south which are directly related to a narrow magnetic zone exposed by trenching at surface. This zone was crossed by the ground magnetic survey, (Carlyle 1990) and shows this to be reversely magnetised.

Gradient values over the Best Chance were run in both east-west and north-south directions to try and confirm anomalies obtained on the original survey. Each direction has to considered as

a separate entity and doen not show any anomalous trends in this area.

CONCLUSIONS

The results of the Induced Polarisation survey have shown that there is no large anomaly over the Grafter deposit but that the detail gradient survey did produce anomalies over the deeper ore sections located in the drill holes. The Best Chance has a distinctive anomaly but does show high values at depth and is possibly below the present drilling. Higher values to the east on Line 200N have not been explained.

RECOMMENDATIONS

The Induced Polarisation results do show that the method can be used in the area to define the mineralisation. The results are affected by the deep oxidation in the area on the non-magnetic Grafter deposit but when detailed with the gradient array do produce anomalies directly related to drill intersections. The gradient array has proved capable of good horizontal defination and greater depths could be obtained by using more powerful equipment.

The magnetic survey carried out at 25 foot intervals produced results that show reverse magnetisation on some of the magnetic veins. Further magnetic work should use this station interval and a line spacing of 50 feet is recommended.

Respectfully submitted,

Trevor R. B. Dundas, P.Geoph.

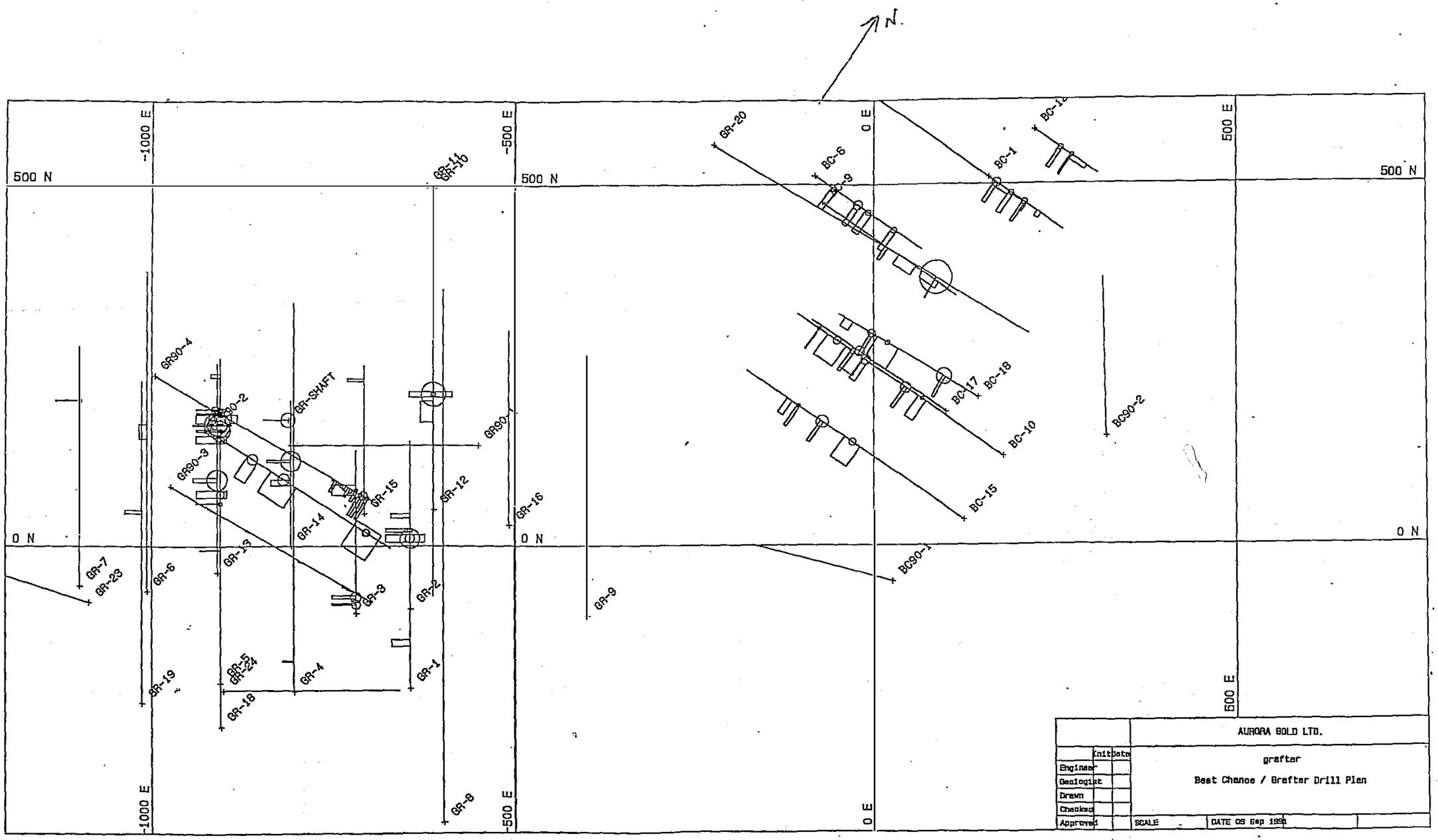


FIGURE 8

DRILLHOLE PLAN MAP

SCALE 1:1740

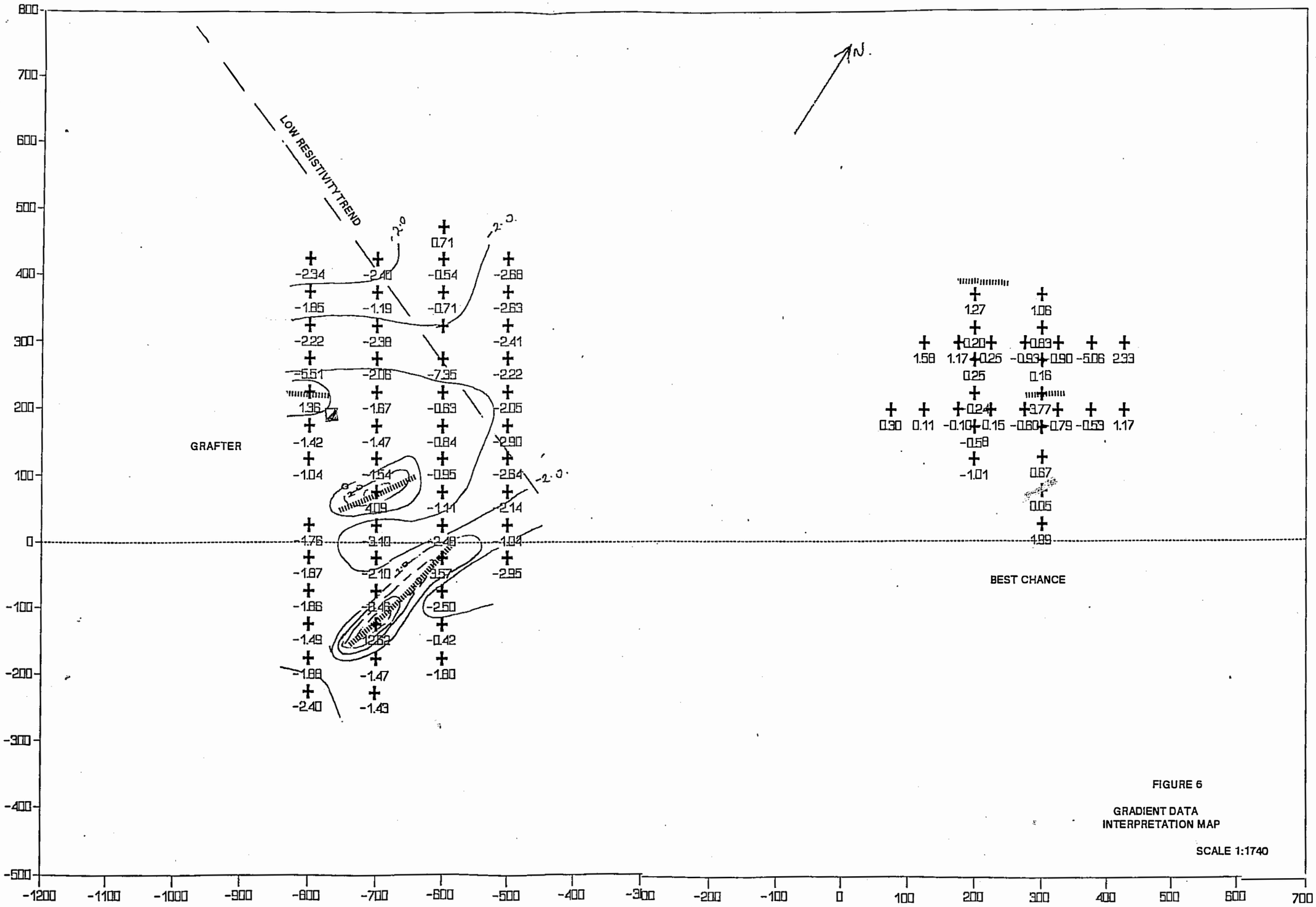


FIGURE 6

GRADIENT DATA
INTERPRETATION MAP

SCALE 1:1740

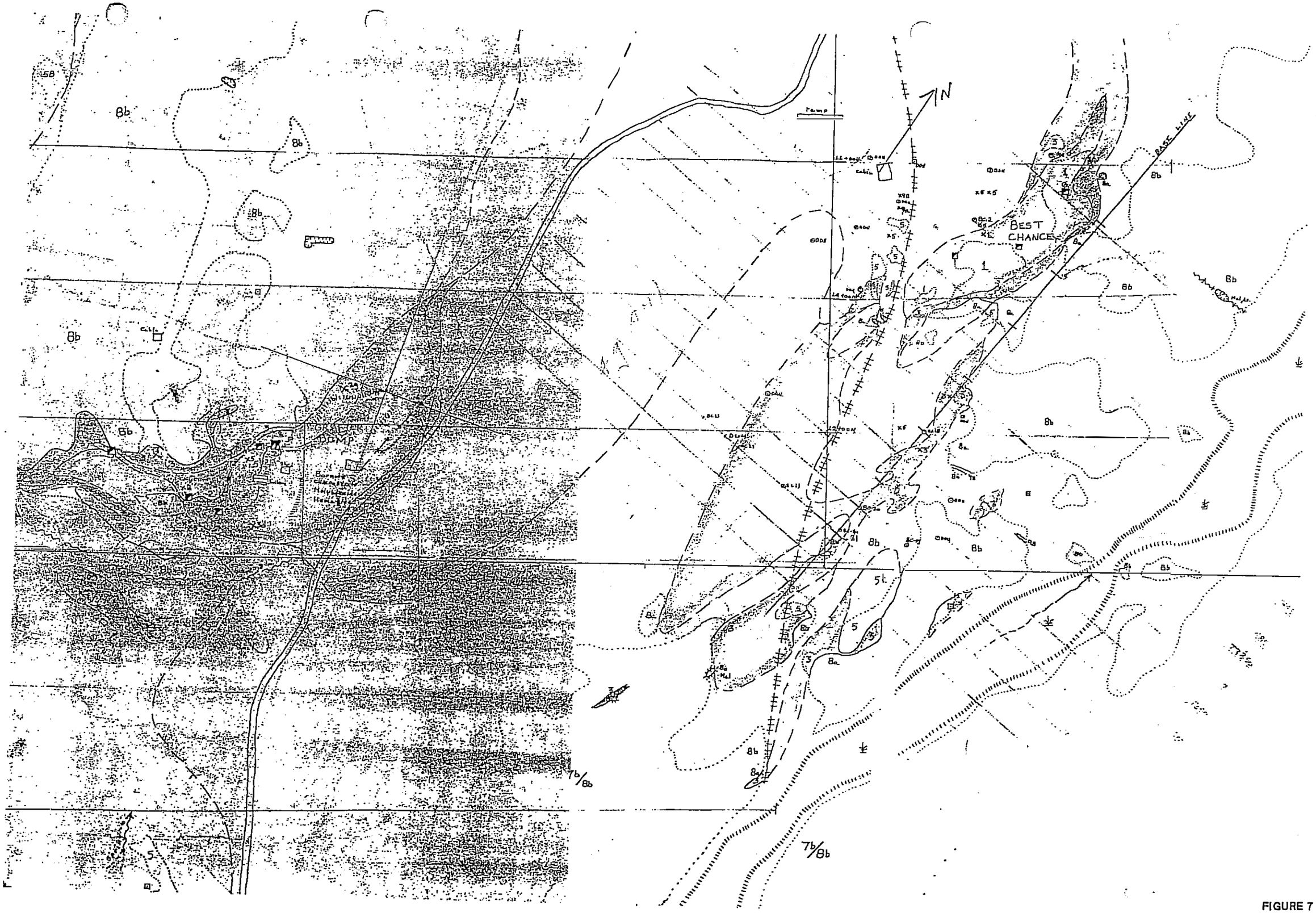


FIGURE 7

GEOLOGY MAP (HBM&S)

SCALE 1:1740

SELF-POTENTIAL SURVEY
BEST CHANCE DEPOSIT,
WHITEHORSE, YUKON TERRITORY

A self-potential survey was carried out over the Best Chance deposit from May 12 - 17, 1994, near Whitehorse, Yukon Territory. The area had been surveyed previously with magnetic, VLF and induced polarisation surveys. A number of drill holes have defined the upper part of the deposit which is exposed at the surface. The possibility exists that the Best Chance is connected at depth to the Grafter deposit which is located just to the west.

SELF POTENTIAL METHOD

The mechanism that produces a voltage over massive ore bodies is not fully understood but anomalies have been documented over a large number of ore bodies and the method has become a standard exploration tool. The potential is only generated if the causative source is considered to be 'massive', i.e. has sufficient grade and volume to provide good electrical conductivity throughout the body. The Best Chance ore body qualifies as a massive body due to the large amount of magnetite which occurs with the copper ore.

The self-potential survey was conducted along the survey lines by taking voltage measurements in millivolts at 50 foot intervals in a series of closed loops which were then corrected for closure errors. The data is presented as a series of 5 individual profiles, Line 0 to Line 600N. The data is noisy due to the shallow overburden and the large amount of minor surface mineralisation

that occurs throughout the area. The survey lines were extended from the Best Chance to the west to cover parts of the nearby Grafter deposit in order to obtain a better estimate of the background level as well as providing comparative data over a non-magnetic ore body.

INTERPRETATION

The results show a very distinctive anomaly over the Best Chance ore body and confirms a steep dip to the west. Because much of the anomaly is probably derived from the presence of magnetite the data should be considered in conjunction with the magnetic data. It should be emphasised that the lack of a self-potential anomaly does not mean that the copper content is sub-economic.

The self-potential results are similar to the magnetic data and does show that the Best Chance ore body is actually composed of two, approximately parallel, zones. The western zone occurs only on lines 400N and 500N and is approximately equal strength on both lines. The second zone is located approximately 100 feet to the east and is probably connected to the small pit located on line 600N at 350E. This zone is only dominant on line 500N but does extend to line 400N where it is probably only indicating a minor amount of material near surface.

Although the dominant response is over the surface exposure at the Best Chance, there is a weak anomaly on line 200N at approximately station 500W whenn the regional is taken into consideration. A very weak magnetic anomaly occurs at this location and this area may be worth additional work as the drilling program

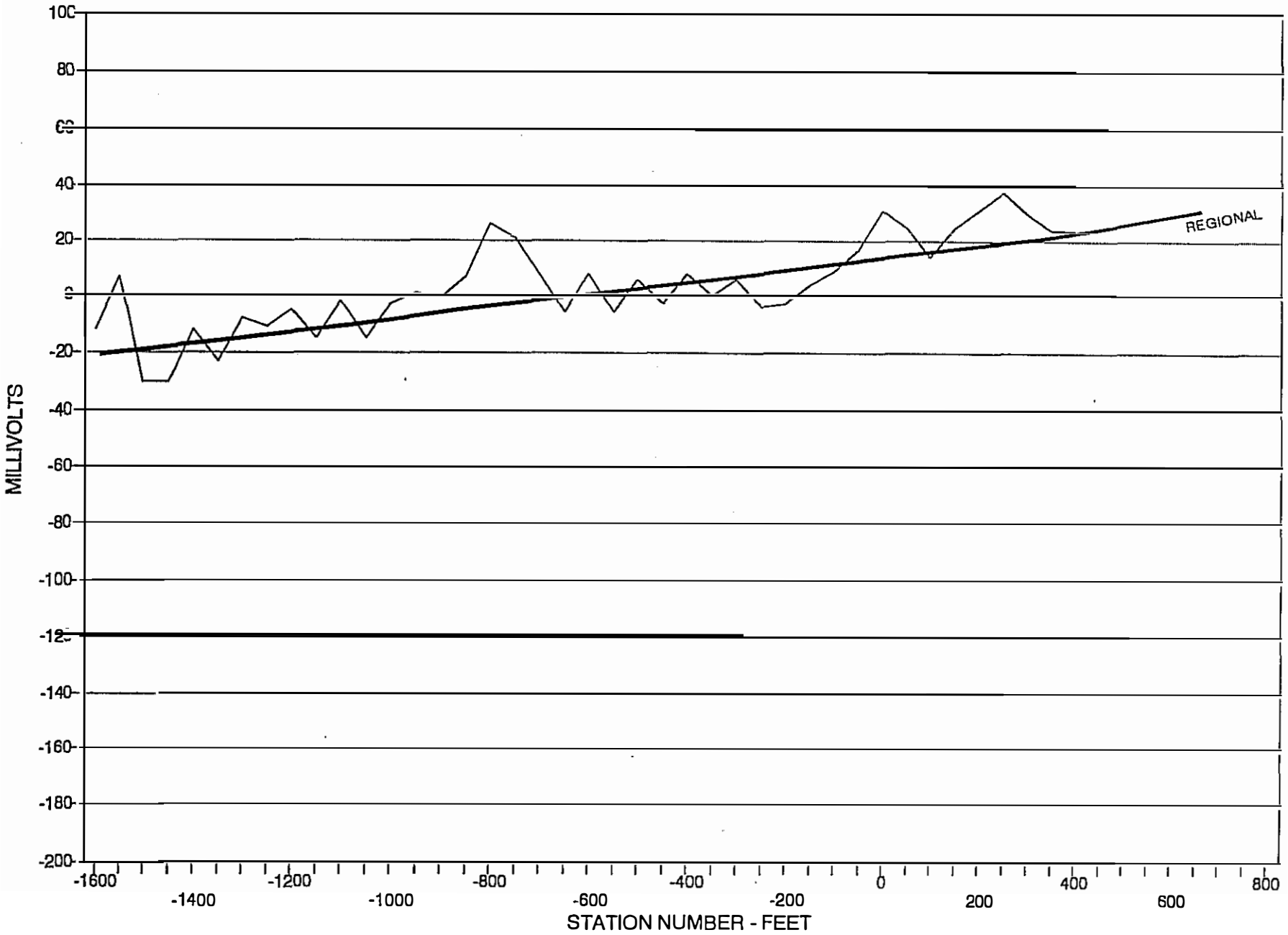
did not cover this location.

CONCLUSIONS

The self-potential survey shows that the copper mineralisation on its own would probably not produce significant anomalies in this environment. Where magnetite is present the anomaly is obvious but the method would not be preferred to a standard magnetic survey. The fact that some weak anomalies were observed does however suggest that if a self-potential survey were conducted carefully enough and the grade of copper mineralisation were better, non-magnetic deposits could be detected by this type of survey.

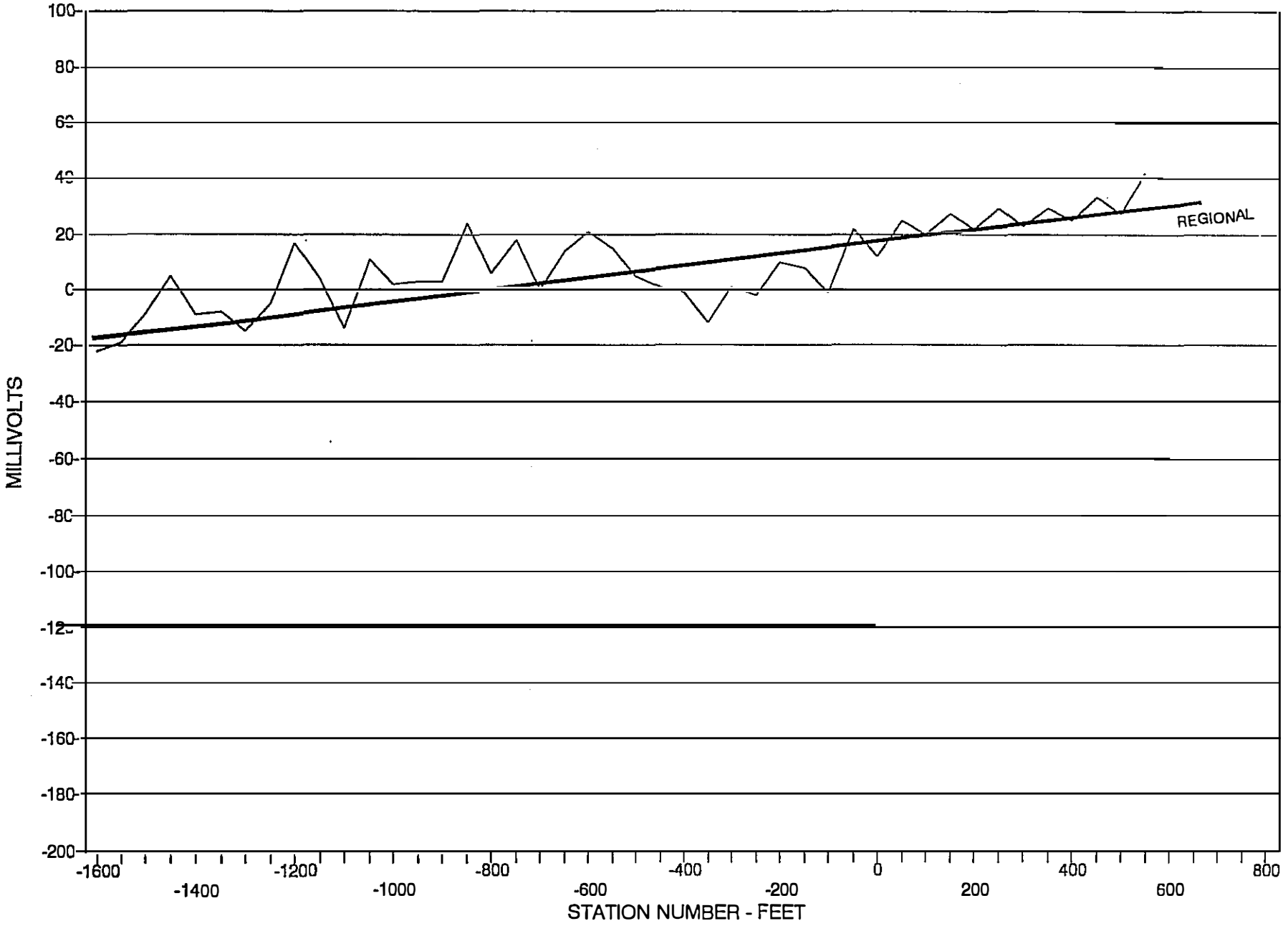
SELF-POTENTIAL SURVEY

LINE 0 NORTH



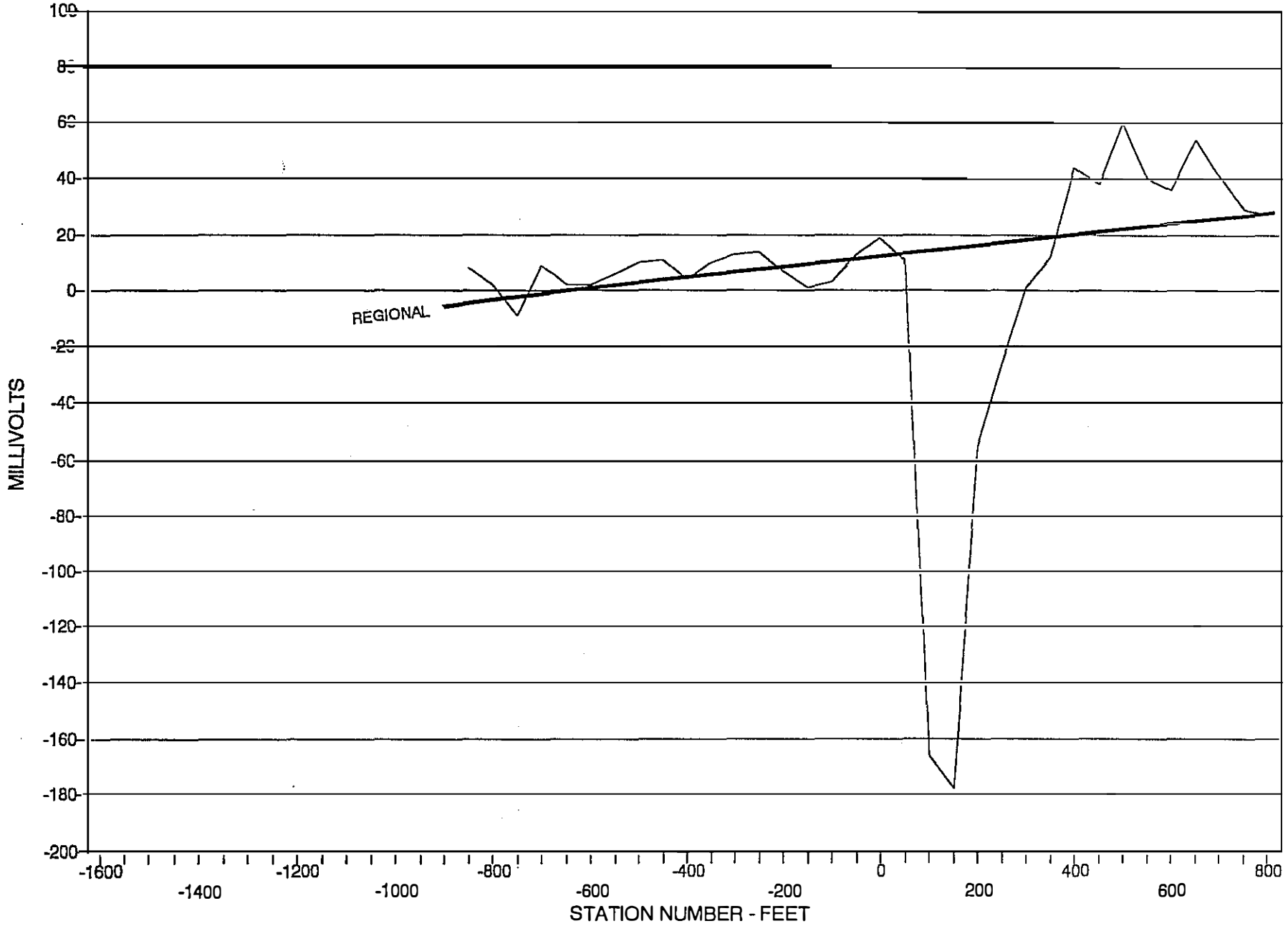
SELF-POTENTIAL SURVEY

LINE 200 NORTH



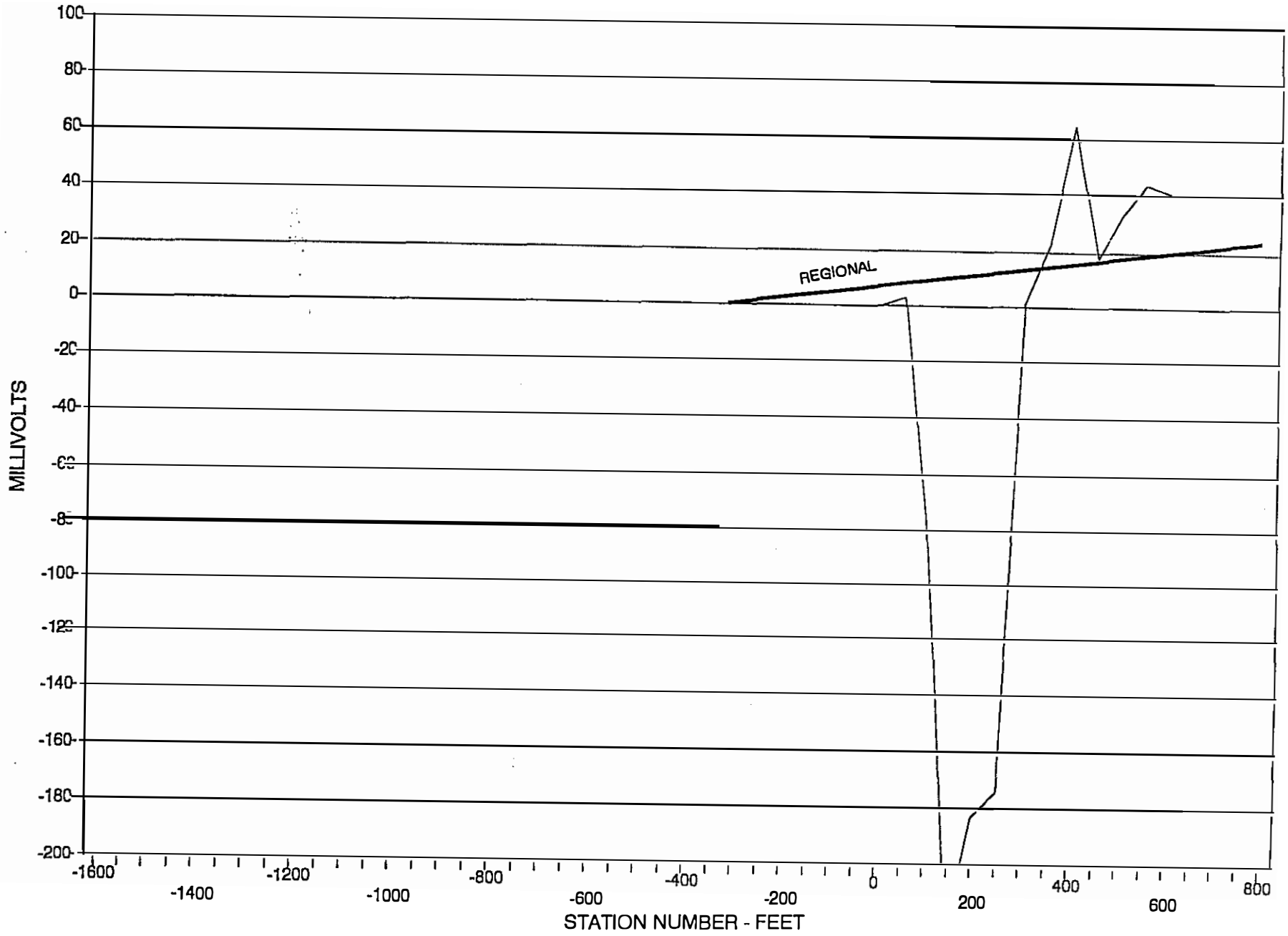
SELF-POTENTIAL SURVEY

LINE 400 NORTH



SELF-POTENTIAL SURVEY

LINE 500 NORTH



SELF-POTENTIAL SURVEY

LINE 600 NORTH