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# A REPORT ON GEOPHYSICAL SURVEYS OVER THE GLOBE WORKINGS, HEEMSKIRK GRANITE, SPL 129

for


MICROFILMED


RENISON LTD.

by


OPEN FILE



Dr. J.R. BISHOP


RN/MG82/04
March 1982

AMG REFERENCE POINTS ADDED

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SUMMARY

The Globe workings consist of three adits and a shaft located in the south east corner of the Heemskirk Granite. The mineralisation consists of base metal sulphides as well as cassiterite: significant silver values have also been recorded.

A gradient array IP survey was conducted over the Globe Grid by Scintrex in November, 1980. This was extended to the south in November 1981 by a second survey. Agreement between the two surveys (where they overlap) is poor, since, it is assumed, the southern current electrode of the earlier survey was placed in chargeable material. Contour plans of chargeability and resistivity have been compiled for this report using the later survey as a standard, since this data is considered to be the more reliable. The plans have also incorporated information from a similar survey of the East Heemskirk Grid where it overlaps the Globe Grid. The chargeability plan shows that the area around the workings is moderately anomalous (at 30+ mv/v), however the strongest responses (40+ mv/v) are to the south east. The workings coincide with the lowest recorded resistivities (<1000 ohm-m), but the area of high chargeabilities in the south east is associated with high resistivities (2000 - 3000 ohm-m).

Dipole-dipole surveys were carried out on six lines in Nov. - Dec. 1981, and broadly similar results to the gradient array surveys can be seen in contour plans of the chargeability and resistivity. Interpretation of the dipole-dipole pseudosections suggests a chargeable and resistive tabular body beneath lines 160E to 320E, at a depth below surface of less than 20m.: the thickness is 20m. to 40m. and the width varies from 90m. to 180m.

Because of the association of high chargeabilities with high resistivities, metal factors were calculated for the dipole-dipole data. In contour form, these show the most anomalous area to be beneath, and to the east of, the entrance to the main adit. Both the areas of high chargeability and high metal factor should be investigated (specific drill holes are listed at the end of this report).

The dipole-dipole contour plans of chargeability and metal factor suggest that the anomalous area continues south past the limits of the survey. This is not evident on the gradient array IP figures, however I believe that the former is more representative of the bulk properties of the rock and is less influenced by near-surface variations. Thus further work may be warranted, but only if the results from the recommended drill holes are sufficiently encouraging.

While significant amounts of base metal or silver mineralisation may occur at the Globe, tin has been Renison's primary target on the granite. It is emphasised that no geophysical methods directly respond to cassiterite, the likely form of the tin, and furthermore, the tin may not be intimately associated with the sulphides. Cannard (1981) noted that there appeared to be (at least) two phases of mineralisation; one localising the sulphides, the other the tin.

## AIM AND INTRODUCTION

The old Globe mine is situated in the south east corner of the Heemskirk Granite, within SPL 129 (see Figure 1). Although Renison's exploration on the granite has been directed at tin, the Globe also contains silver and base metal mineralisation (Blissett (1962), Cannard (1981)).

Renison's first investigations of the Globe were by Ross (1979) and Roberts (1980a). It was noted that there were apparent similarities with the polymetallic Sweeney's deposit 2.5 km. to the SW, and since Sweeney's had given an excellent response to an IP survey, a similar survey was recommended by Roberts for the Globe.

A small gradient array IP survey was carried out over the workings in Nov. 1980 and this was extended by a further survey in Nov. 1981. Six lines of dipole-dipole IP were also read during this latter survey. Also relevant to the Globe is part of an IP survey of the East Heemskirk Grid, some lines of which overlap the Globe Grid. A magnetic survey was carried out by Cannard as part of a detailed exploration program over the mine (Cannard, 1981).

For this report, I have integrated and interpreted the data from all surveys and have recommended a number of drill targets. Further surveys are also recommended to define anomalous areas south of the mine.

## GEOLOGICAL TARGET

Four styles of mineralisation have been recognised on the Heemskirk Granite (Roberts, 1980b), and the Globe has many similarities with Sweeney's, the polymetallic sulphide type deposit. Like Sweeney's, the Globe contains base metal mineralisation and has a halo of argillic alteration: greisen veins are also present. However Sweeney's probably contains more sulphide (at 10% S) than does the Globe.

The Globe Grid was mapped by Cannard who produced a 1:500 scale map (see Figure 2). Cannard (1981) made the following observations: the Globe occurs within 'red' granite near the site of intruded fine grained 'white' granite. There is a large exposure of quartz-tourmaline alteration in

the adits, but little surface expression of it. A halo of argillic alteration surrounds the quartz tourmaline. Cannard also noted "that the tin mineralisation (probably cassiterite) and the silver, lead, zinc mineralisation are distinct, though overlapping, and probably indicate at least two phases of mineralisation".

The presence of sulphides at the Globe meant that geophysics might be a useful tool for outlining the extent of the mineralisation. This had previously been tried over Sweeney's where a gradient array IP survey had produced a 65+ mv/v chargeability anomaly (Howland-Rose, 1977). Despite the good geophysical response, Sweeney's has been an extremely difficult target to define; from eighteen holes, only seven intersected mineralisation, and its shape is still unresolved. However no dipole-dipole IP surveys have been conducted over Sweeney's and it is argued in this report that such surveys considerably aid the interpretation of a target's depth and shape.

Although geophysical surveys may successfully define mineralisation, tin in the form of cassiterite makes no contribution and thus there may be no correlation between sulphides and tin content. Although this does not appear to be the case at Sweeney's, it may be important at the Globe, since Cannard (1981) has suggested that the tin has been emplaced by a different phase of mineralisation to that which localised the sulphides.

## GEOPHYSICAL SURVEYS

On the type deposit, Sweeney's, good chargeability and moderate resistivity responses have been obtained from a gradient array IP survey. In contrast, tests of EM (using Crone's PEM equipment) were unsuccessful (Wells, 1978), and no diagnostic results were obtained from measurement of core with a gamma-ray spectrometer (Wells, 1977). A magnetic survey of Sweeney's was affected by ferrous debris, but a generally flat response was obtained. A test SP survey over another sulphide occurrence on the granite (area 1 of the Agnew Grid) indicates that this method may be most useful (Bishop, 1982, in prep.), however this may not apply to such deposits as the Globe, where lower concentrations of sulphides are indicated. Thus the IP method is the most applicable and the technique that has evolved from several programs on the granite is to (1) conduct a

reconnaissance gradient array survey and (2) follow up by covering the most anomalous areas with dipole-dipole IP surveys.

IP and magnetic surveys have been conducted over the Globe: the former outlined a well-defined anomalous area, while the latter, at least locally, was not so diagnostic.

Gradient Array Induced Polarisation:

A gradient array IP survey was carried out over the Globe by Scintrex in Nov. 1980: eight lines were read and the coverage is listed in Table 1. Street (1981) presented the results as contours at 1:500 scale and stated that although the resistivity results showed little, the chargeabilities over the area were generally high, particularly in the southern part of the survey: this he considered was likely to be due to the southern electrode's emplacement in chargeable material. Since the anomalous area was not closed off to the south, and because of the possibly misleading results, Street recommended that the survey be repeated, using the same 10m. dipole spacing, but covering a larger area. A second survey (coverage listed in Table 2) was conducted in Nov. 1981; it did not cover the area of the earlier survey, but there was considerable overlap: the survey extended the coverage to the south of the workings (see Figure 3). The results have been presented by Howland-Rose (1982) as contour plans at a stated 1:1000 scale (actually nearer 1:800). They have been plotted, with the previous survey's results, on to Renison's composite profiles at a scale of 1:500 (Figures 4 to 12): these show that the chargeabilities and resistivities from the southern section of the first survey are at least 30% too high. From both surveys, the profiles show a series of rather moderate chargeability anomalies, none being better than twice background.

Part of a gradient array IP survey over the East Heemskirk Grid (EHG) overlaps the Globe Grid and I have used the results, with those of the 1980 and 1981 Globe surveys, to construct chargeability and resistivity contour plans at a scale of 1:1000. The contouring has been based on the 1981 survey, and so about 30% was (mentally) subtracted from the 1980 values when drawing in the contours. (The East Heemskirk values were comparable to those of the 1981 survey.)

The chargeability contours (Figure 13) show that although the area around the old workings is moderately anomalous (30+ mv/v), there are larger anomalies 80 to 150m. to the south east (40+ mv/v). However the lowest resistivities (<1000 ohm-m) are over the old workings which suggests that they (the workings) are in the area of greatest alteration. The high chargeabilities in the south east of the survey are coincident with high resistivities (2000 to 3000 ohm-m); why this may be so is considered in the Discussion.

Dipole-Dipole Induced Polarisation:

Dipole-dipole IP surveys were carried out on lines 00N, 120E, 160E, 240E and 320E of the Globe Grid and 2750N of the East Heemskirk Grid between Nov. and Dec. 1981. The dipole spacing was 30m. and readings were made to n = 5. The results are shown in the composite profiles and in Figures 19 to 24 where the metal factor parameter has also been plotted.

These pseudosections show a definite increase in chargeabilities to the east with the broadest volume at 240E: resistivities also increase to the east. These trends are clearly shown in the contour plans of the chargeabilities and resistivities* (Figures 17 and 18 respectively). The former shows the highest response to the south east of the workings, in rough agreement with the gradient array chargeabilities (the dipole-dipole data shows a much broader response because (a) the data has been averaged and (b) there is less dipole-dipole coverage). In contrast to the gradient array results, Figure 17 suggests that the sulphide content (i.e. chargeable material) drops off sharply westwards through the workings

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* A procedure for contouring of dipole-dipole data has been described by Fraser (1981). The algorithm produces one value from a triangular shaped averaging window for any number of levels.

$$\text{plotted value 'X'} = \tfrac{1}{4}\left[A_1+\frac{(B_1+B_2)}{2}+\frac{(C_1+C_2+C_3)}{3}+\frac{(D_1+D_2+D_3+D_4)}{4}\right]$$

between lines 160E and 120E. The averaged dipole-dipole resistivity data (Figure 18), like the gradient array data, shows low values over the workings with high values to the east, coincident with high chargeabilities. The lowest resistivity value is at the southernmost data point on line 120E: this should be verified (by another survey centred at (say) 120E/120S), and if genuine, fully defined by extending the coverage on several lines to the south of the present survey limit.

Although the dipole-dipole contour presentation is useful for determining broad trends and perhaps for locating the bulk of any mineralisation, it should not be used for siting drill targets and cannot be used for any detailed interpretation. For these purposes, one must refer to the pseudosections. An inspection of the chargeability pseudosections for lines 160E, 240E and 320E suggests a roughly tabular chargeable 'body' beneath the lines: its width varies from approximately 180m. on lines 160E and 240E to 90m. on line 320E: its thickness is perhaps between 40 and 60m. and the top of the body may be up to 20m. from the surface (since the high values are still open at n = 1, the minimum depth cannot be determined). This interpretation is supported by the data on cross lines 00N and 2750N. Diagrams of the interpretation are shown on Figure 25. The intrinsic chargeability of the body is probably between 50 and 60 mv/v).

Magnetics:

A magnetometer survey of the area north of line 2750N (EHG) was carried out by Cannard: the total field was measured at a station spacing of 10m. and the results contoured at 1:500 scale (see Figure 16, Roberts, 1981). There was little variation over the area surveyed except in the north western corner, on line 40E, where "a significant positive anomaly ... is related to magnetite alteration of the granite" (Cannard, 1981). The magnetic coverage should be increased to include the southern extensions to the grid, and possibly the magnetite area should be better defined (by closer stations and infill lines) since some targets on the Federation grid were magnetic (see below).

In the light of Cannard's survey, the following general points are made about conducting a magnetic survey:

(1) A base station was established for the diurnal correction, however its

location and given value were apparently not recorded; hence any extensions to the grid must be tied in to the first survey by repeating a section of a line. Base stations should be established (in a magnetically quiet area) as permanent places with the fixed value recorded at the site. It is then an easy matter to tie in all surveys in any given area.

(2) Where 'significant' anomalies occur, particularly if only over one or two stations, in-fill readings should be taken.

The following specific points may be made about the survey over the Globe: (1) The 'low' immediately to the south of the anomaly referred to above has not been contoured. It is probably genuine and suggests a very local source. (2) The negative value at 80N on 00E referred to by Cannard (1981) is not evident on the map: the absolute (recorded) value is in keeping with the surrounding readings, and it is probably not genuine.

It is possible that the flat magnetic response over the Globe is due to alteration; if this is so, one use for a magnetic survey would be in defining the limits of the area of 'quiet' response; thus the coverage would need to be extended in all directions. Elsewhere on the granite, e.g. at Waxman and Weston's (Bishop, 1981), tin mineralisation is associated with an isolated magnetic anomaly. However the small intense response on the Globe is about five times as strong as that over Waxman and Weston's, and thus there is little similarity between the two.

## DISCUSSION

Both the gradient array and dipole-dipole surveys have outlined anomalous areas on the Globe Grid. Before recommending drill targets based on the results of these two modes of IP surveying, some comparative comment is appropriate. The gradient array surveys were successful in that chargeable areas were defined, and an area of (relatively) low resistivity probably defines the most altered area. The dipole-dipole surveys have done the job better in as much as the chargeability anomalies are at least two, typically four, and as much as ten, times background, and the resistivities may be as low as one

third background; but these have been at a greater cost in both time and money. The gradient array results appear to have responded more readily to near-surface changes in mineralisation, and they do not permit the semi-quantitative interpretation of the dipole-dipole array (e.g. the tabular-shaped body described above). The dipole-dipole array appears to better reflect the bulk properties of the rock and this is emphasised by the contouring algorithm.

The dipole-dipole chargeability contours (Figure 17) suggest that the greatest concentration of sulphides lies between lines 240E and 320E, however the resistivity results from these surveys suggest that the greatest amount of alteration, manifested by a lowering of values, has taken place around the workings. Since alteration and mineralisation are usually more closely associated, it has been suggested (at meetings with Renison geologists) that the area of both high chargeability and resistivity may be a more resistive alteration, e.g. silicification and tourmalinisation plus sulphides. Bishop (1982) suggested such a cause for some of the anomalies on the Agnew Grid. Since the Globe workings are strongly tourmalinised and are in an area of low resistivity, an alternative explanation may be required. Another interpretation (and one that applies also to the Agnew Grid) is given below.

An area of higher chargeabilities may not necessarily contain a higher percentage of chargeable material (sulphides). In a more resistive rock (i.e. one which has a limited porosity, this being the most important variable determining a rock's resistivity), a greater proportion of the current (from an IP survey) will pass through the sulphide grains which occupy areas of the pore spaces, than in a rock with the same percentage of sulphides but with a higher porosity; thus the more resistive rock will record a higher IP effect. This may be even more pronounced in an impermeable rock where most of the sulphides are in fracture planes: for such a rock nearly all electric current would be restricted to the planes and would pass through the sulphides. Thus the Globe may be a central zone of altered rocks (the workings) which contain disseminated sulphides and in the relatively unaltered rocks to the south east, the mineralisation is restricted to joints or fractures within the rock: for the reasons given above, this latter area records a higher chargeability. This is necessarily a simplistic

explanation and it is to be expected that the true situation would be more complex, perhaps a combination of the two possibilities discussed above.

In an attempt to overcome the effect of a host rock's resistivity, the metal factor was devised (e.g. Madden and Cantwell, 1967). This parameter, defined as $\frac{\text{percent frequency effect or chargeability}}{\text{resistivity}} \times 1000$ normalises the IP effect for the variations caused by changes in the resistivity. Figure 26 gives the metal factors for the averaged (contoured) dipole-dipole IP values. This shows the highest values much closer to the workings and the area of high chargeabilities is much reduced in interest. The figure suggests that the anomalous area continues to the south, however the southernmost value on line 120E, the highest metal factor calculated, would need to be verified by another survey. But this is 'required' by the high value contours open to the south. (Metal factors for the gradient array surveys have not been calculated, but a similar result would be obtained.)

An examination of the metal factor pseudosections (Figures 19 to 24) shows that the tabular body interpreted from the chargeabilities has become a series of small 'highs', particularly on lines 240E and 320E. Line 160E shows some substance to the anomaly, as does the southern half of line 120E. Although it is emphasised that the representations of the dipole-dipole IP are pseudosections, and do not accurately represent a cross-section below the survey, it is interesting to note that on line 120E, adit 1 is in an area of moderate chargeabilities and metal factors (both <30 units). On 160E, it is directly above the most anomalous part of the metal factor pseudosection, which, having its maximum value (>90) at n = 2, suggests that a concentration of mineralisation is buried beneath adit 1 (the highest chargeabilities are offset 75m. to the south). Like line 120E, the strong metal factor values and good chargeabilities on the southern edge of the survey, indicates that the coverage should be extended to the south. On line 240E, the anomalous area (for both metal factor and chargeability) is contained within the survey limits: the metal factor emphasises small zones (90+ and 70+) within the generally uniform high response of the chargeability pseudosection. Line 320E has high chargeabilities

(max. 70 mv/v), however the high resistivities (1000 to 2000 ohm-m) means that the metal factors are reduced to 50-60 units (siemen-m): two separate areas have been outlined, either side of the chargeability maximum. On Line 00N, the chargeability and resistivity anomalies are, atypically, near coincident, thus resulting in a very strong metal factor (max. value 142). Line 2750N has the highest chargeabilities (75+ mv/v) however like 320E, the high resistivities significantly reduce the metal factor. It is emphasised that all three parameters, resistivity, chargeability and metal factor, must be considered when planning a geophysically based drill target.

## CONCLUSIONS AND RECOMMENDATIONS

The gradient array IP surveys over the Globe showed the site of the old workings to have moderate chargeability responses, but the best anomalies (40+ mv/v) were to the south east of the workings in an area of high resistivity (2000 - 3000 ohm-m): the lowest resistivities were recorded over the workings. This response pattern is also evident from the contouring of the dipole-dipole IP results. For both array types, the areas of maximum response are incompletely defined and further work is recommended below to outline any southern extension of the anomalous area.

The dipole-dipole pseudosections for lines 160E, 240E and 320E suggest a tabular chargeable body varying between 90m. and 180m. wide (i.e. from 5 to 6 dipole units) and 20m. to 40m. thick at a depth below surface of no more than 20m. Drill targets to intersect more anomalous areas of this body are recommended below.

It was pointed out in the previous section that the higher chargeabilities to the south east may be due to a channelling of a higher percentage of the IP current through the sulphides, rather than to a higher concentration of sulphides. That is, the areas of lower (recorded) chargeabilities within areas of lower resistivity may be more prospective. To help assess this, the metal factor parameter was calculated from the dipole-dipole pseudosections. The metal factor contour plan shows the most prospective area beneath and east of the entrance to adit 1. Drill

holes into this area are recommended below. Investigation of both areas is also recommended on the grounds that the tin mineralisation may or may not be intimately associated with sulphides. That is, the areas of lower resistivities may be lower in sulphides, but possibly richer in tin.

Recommended drill holes (see Figures 19 to 24):

| Collar(line/stn.) | grid bearing | dip | min. length |
|---|---|---|---|
| (1) Chargeability anomalies: | | | |
| 2750N/390W | west | 55° | 150m. |
| 320E/60S | north | 55° | 75m. |
| (2) Chargeability and metal factor anomalies: | | | |
| 00N/210E | west | 40° | 120m. |
| 240E/75S | north | 45° | 150m. |
| (3) Metal factor anomalies: | | | |
| 160E/60S | north | 50° | 120m. |

Recommended dipole-dipole IP surveys:

(only warranted if sufficient encouragement from above drilling)

| line | coverage | centre stn. | dipole spacing |
|---|---|---|---|
| 120E | 45S - 255S | 150S | 30m. |
| 2700E | 100E - 310E | 210E | 30m. |
| 80E | 165S - 45N | 60S | 30m. |

J.R. Bishop

March, 1982

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TABLE 1

(a) Gradient array IP survey over the Globe

Survey by: Scintrex
Date: Nov. 1980
Dipole spacing: 10m.
IP receiver: IPR-8, 2 sec. pulse

| line | Current electrodes coverage |
|---|---|
| | 290N and 250S on 160E |
| 00E | 25S to 155N |
| 40E | 35S to 125N |
| 80E | 45S to 115N |
| 120E | 65S to 85N |
| 160E | 75S to 85N |
| 200E | 85S to 85N |
| 240E | 85S to 85N |
| 320E | 5N to 165N |

(b) Extensions to the gradient array coverage over the Globe

Survey by: Scintrex
Date: Nov. 1981
Dipole spacing: 10m.
IP receiver: IPR-10, 2 sec. pulse

| line | Current electrodes coverage |
|---|---|
| | 350S and 250N on 160E |
| 80E | 125S to 5N |
| 120E | 155S to 25N |
| 160E | 155S to 35N |
| 200E | 185S to 5N |
| 240E | 185S to 5N |
| 320E | 85S to 85N |

TABLE 2

Dipole-dipole surveys over the Globe

Surveys by: Scintrex
Date: Nov. - Dec. 1981
Dipole spacing: 30m. (read to n=5)
IP receiver: IPR-10, 2 sec. pulse

| line | coverage * |
|---|---|
| 00N | 25E to 235E |
| 120E | 135S to 75N |
| 160E | 135S to 75N |
| 240E | 195S to 15N |
| 320E | 105S to 75N |
| 2750N (E.H. Grid) | 575W to 365W |

* Coverage is defined as the interval between which all readings (n = 1 to n = 5) have been taken.

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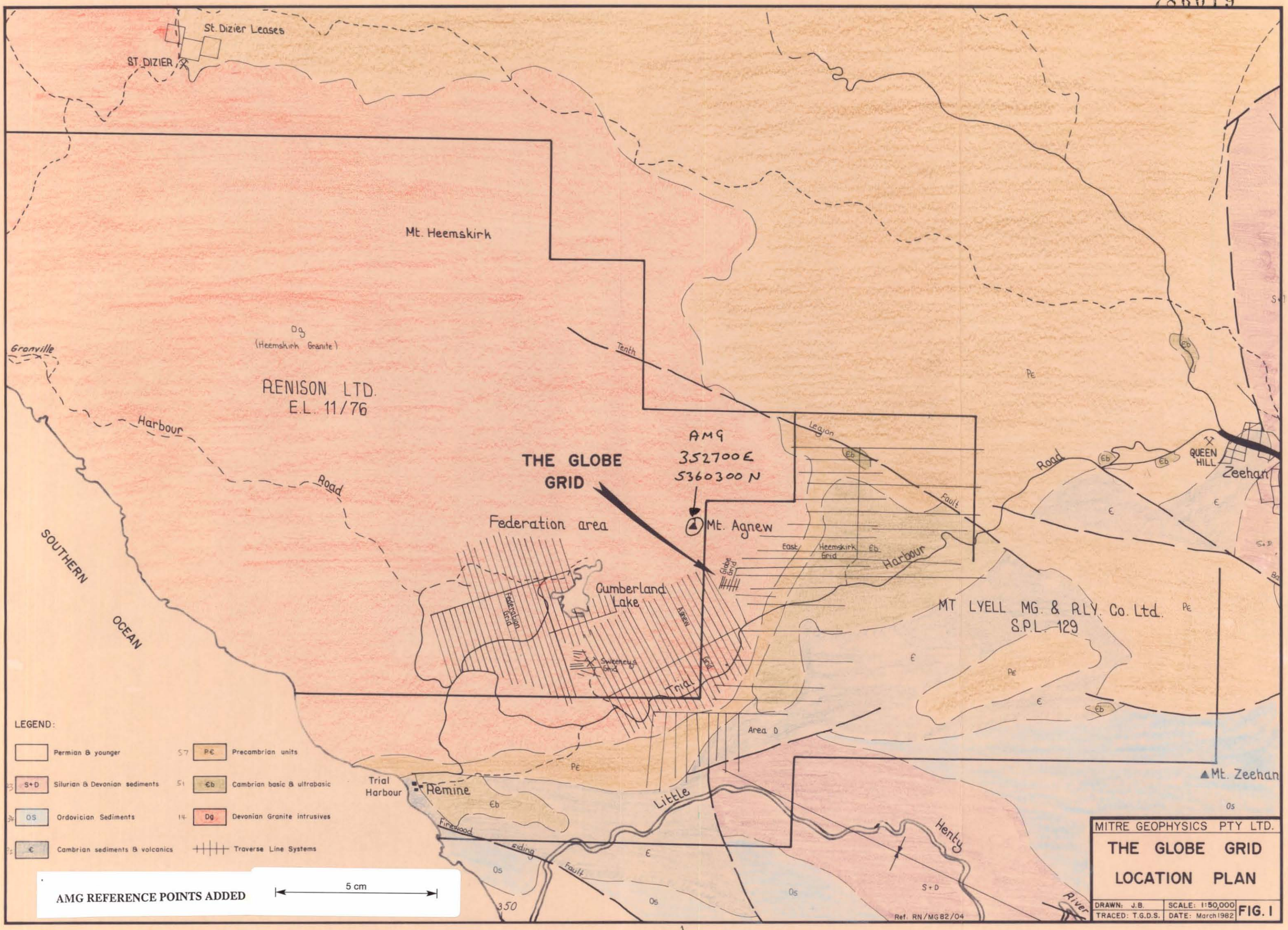


St. Dizier Leases
ST. DIZIER
Mt. Heemskirk
Dg
(Heemskirk Granite)
Granville
RENISON LTD.
E.L. 11/76
Harbour
Road
Tenth
Legion
Fault
THE GLOBE GRID
AMG
352700E
5360300N
Mt. Agnew
Federation area
Cumberland Lake
Federation Grid
Agnew Grid
Sweeneys Grid
Trial
East Heemskirk Grid
Globe Grid
Harbour
Road
QUEEN HILL
Zeehan
MT LYELL MG. & R.LY. Co. Ltd.
S.P.L. 129
SOUTHERN
OCEAN
Area D
Trial Harbour
Remine
Little
Henty
River
Firewood
siding
Fault
Mt. Zeehan
LEGEND:
Permian & younger
S+D Silurian & Devonian sediments
OS Ordovician Sediments
€ Cambrian sediments & volcanics
P€ Precambrian units
€b Cambrian basic & ultrabasic
Dg Devonian Granite intrusives
Traverse Line Systems
AMG REFERENCE POINTS ADDED
5 cm
Ref. RN/MG82/04
MITRE GEOPHYSICS PTY LTD.
THE GLOBE GRID
LOCATION PLAN
DRAWN: J.B.
TRACED: T.G.D.S.
SCALE: 1:50,000
DATE: March 1982
FIG. 1

00E. 40E. 80E. 120E. 160E. 200E. 240E. 320E.

285 N.

East Heemskirk Grid 2800N

180 N 450 E

400E

5,359,500 N.

110N 300E

90N 350E

250E

370E

BASELINE

340E

160N

150N

"Magnetite Bearing Alteration"

110N 95N

120N

30N

5,359,400 N.

90N

30S

60N

60S

00 350W

East Heemskirk Grid 2750N

40E

400W

350E East Heemskirk Grid 2700N.

450W

90S

500W

300E

10E

250E

00

120S

353,200 E.

200E

30S

50S

150E

50S

180S

100E

A.M.G. NORTH

210S

East Heemskirk Grid 2600N

180S

240S

270S

270S

210S

270S

450S.

GEOLOGY LEGEND

- Total tourmalinization occasionally with hematite
- Argillic alteration
- Quartz-mica greisen
- Aplite or microgranite
- Coarse grained Red granite

Geology reduced from the 1:500 scale map by C.Cannard, 1981

LEGEND

- Adit
- Shaft

Ref: RN/MG82/04

5 cm

786020

82-1750

MITRE GEOPHYSICS PTY. LTD.

# THE GLOBE GRID

# INTERPRETED GEOLOGY

| | | |
|---|---|---|
| DRAWN: C.Cannard | SCALE: 1:1000 | FIG. 2 |
| TRACED: T.G.D.S. | DATE: March 1982 | |

00E. 40E. 80E. 120E. 160E. 200E. 240E. 320E.

285 N

East Heemskirk Grid 2800N.

180N 450E. 400E. 360E. 90N 110N 300E. 250E.

5 359 500 N

BASELINE

370E 340E

5 359 400 N

East Heemskirk Grid 2750N.

East Heemskirk Grid 2700N.

East Heemskirk Grid 2600N.

353 300 E.

353 200 E.

150N 160N 120N 90N 60N 30N 00 30S 40S 50S 110N 95N 10E 40E 30S 60S 90S 120S 150S 180S 210S 240S 270S 450S

N°3 N°2 N°1

A.M.G. NORTH

LEGEND

Adit

Shaft

1979 & 1980 gradient array I.P.

1981 gradient array I.P.

1981 dipole-dipole I.P.

Gradient array surveys : 10m dipole

Dipole-dipole surveys : 30m dipole n = 1 to 5

(dipole-dipole I.P. coverage defined as the distance along which there is full n=1 n=5 coverage)

Surveys by Scintrex Nov. 1980 and Nov.-Dec. 1981.
I.P. receiver : IPR-8 (&10) 2 secs. on, 2 secs. off

5 cm

Ref: RN/MG82/04

786021

82-1750

MITRE GEOPHYSICS PTY. LTD.

# THE GLOBE GRID

# I.P. COVERAGE

| | | | |
|---|---|---|---|
| DRAWN: J.Bishop | SCALE: 1:1000 | FIG. 3 |
| TRACED: T.G.D.S. | DATE: March 1982 | |

# I.P. Data

## Geochemistry
P P M

As <10 ppm.

290 (Sn)

900 (Sn)

580 (Sn)

## GRADIENT ARRAY
CHARGEABILITY IN MILLIVOLTS / VOLT (——)
RESISTIVITY IN Ohm - METRES (- - -)

30S 00 30N 60N 90N 120N 150N 180N 210N 240N

## POLE - DIPOLE OR DIPOLE - DIPOLE
RESISTIVITY (Ωm)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

## POLE - DIPOLE
CHARGEABILITY (mv/v)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

## Total Magnetic Field (γ)
62 600
62 500
62 400
62 300
62 200
62 100

## Topography & Geology
HEIGHT ABOVE SEA LEVEL - (METRES)
400
375
350
325

CREEK

30S 00 30N 60N 90N 120N 150N 180N 210N 240N

786022

82-1750

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| LINE OOE. | |
| SECTION LOOKING W | |
| SCALE. 1: 500 METRES (10 0 10 20 30) | FIG. 4 |

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1: 500 |
| DRAWING No. | |

I P DATA

CHARGEABILITY & RESISTIVITY

S Anomaly Letter number

5 cm

MAGNETICS

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As <10ppm

REF: RN/MG82/04

GEOLOGY

ALTERATION

Quartz and topaz and / or tourmaline
Total tourmalinization, occasionally with hematite
Hydrothermal
Collapse
Breccias
White Alteration Dykes
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND

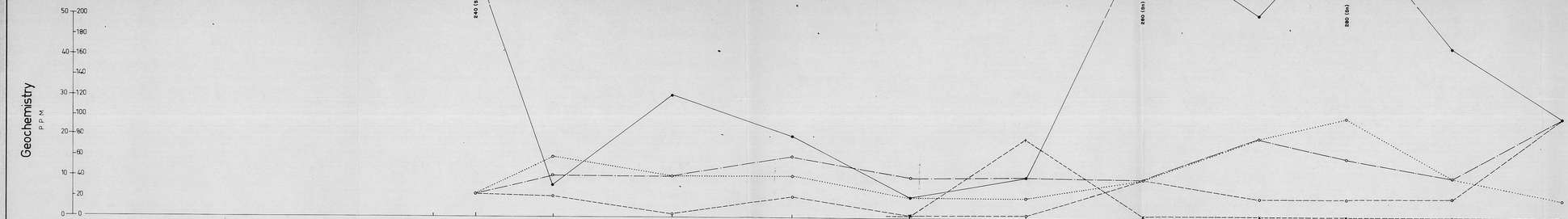
ROCK TYPES

Aplite or microgranite
Fine grained
Medium grained
White granite
Porphyritic granite
Medium grained
Coarse grained
Red granite

Major lineament
F —— F Fault
Definite
Approximate
? Inferred
Geological boundaries

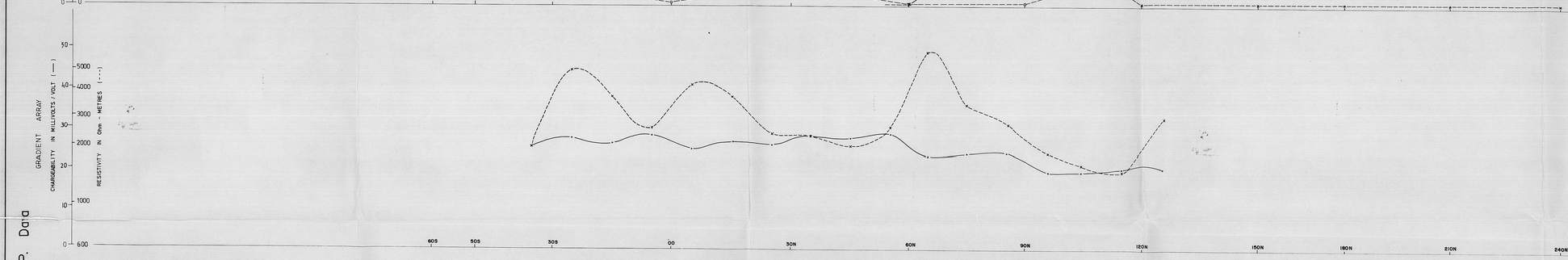
# I.P. Data

## Geochemistry PPM




## GRADIENT ARRAY

CHARGEABILITY IN MILLIVOLTS / VOLT (——)
RESISTIVITY IN Ohm - METRES (- - -)

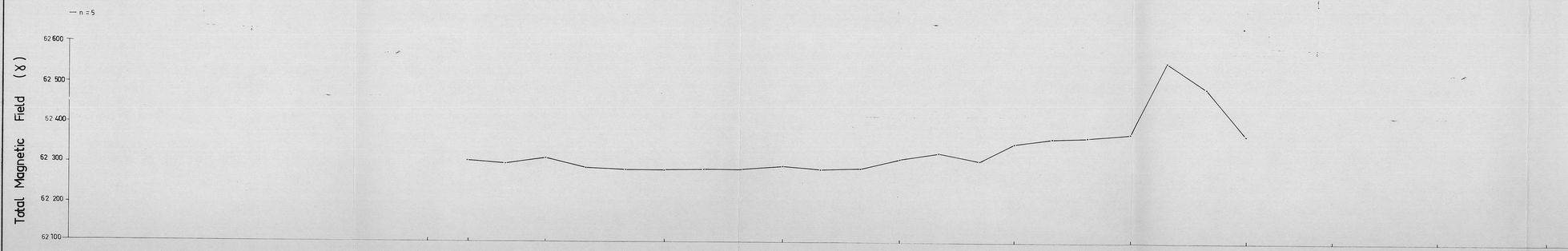


## DIPOLE - DIPOLE

RESISTIVITY (Ωm)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

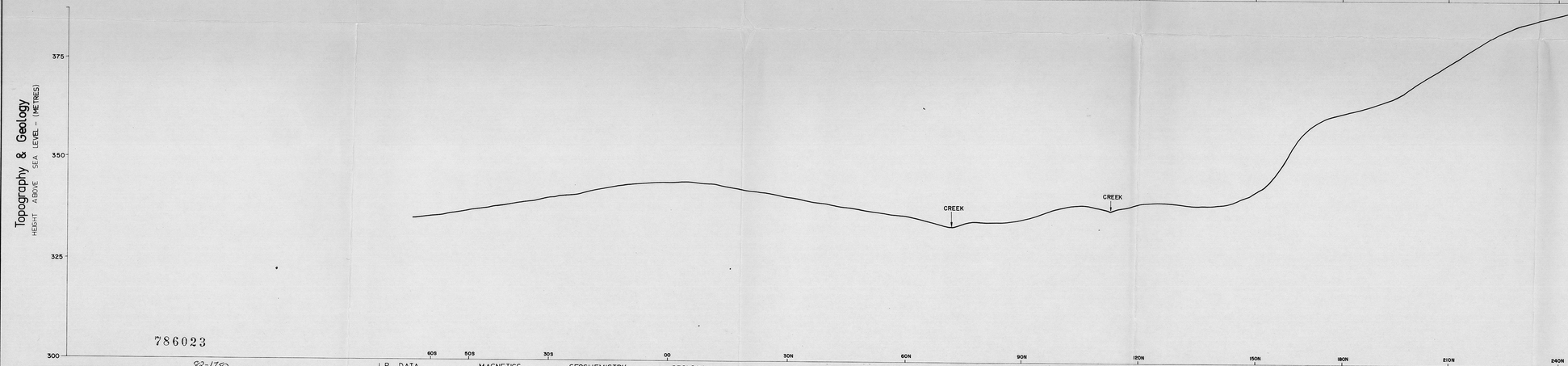
CHARGEABILITY (mv/v)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

## Total Magnetic Field (γ)



## Topography & Geology

HEIGHT ABOVE SEA LEVEL - (METRES)




60S 50S 30S 00 30N 60N 90N 120N 150N 180N 210N 240N

786023

82-178

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| LINE 40E. | |
| SECTION LOOKING W. | |
| SCALE. 1: 500 METRES (0 10 20 30) | |

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1: 500 |
| DRAWING No. | FIG. 5 |

I.P. DATA
CHARGEABILITY & RESISTIVITY

MAGNETICS

S Anomaly Letter number

5 cm

REF: RN/MG82/04

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As

GEOLOGY

ALTERATION
Quartz and topaz and / or tourmaline
Total tourmalinization, occasionally with hematite
Hydrothermal
Collapse
Breccias
White Alteration "Dykes"
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND

ROCK TYPES
Aplite or microgranite
Fine grained
Medium grained
White granite
Porphyritic granite
Medium grained
Coarse grained
Red granite

Major lineament
F — F Fault
Definite
Approximate
Inferred
Geological boundaries

## Geochemistry P.P.M.

As (10ppm.

## I.P. Data

GRADIENT ARRAY

CHARGEABILITY IN MILLIVOLTS / VOLT (——)

RESISTIVITY IN Ohm - METRES (- - -)

DIPOLE - DIPOLE RESISTIVITY (Ωm)

— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

POLE - DIPOLE OR DIPOLE - DIPOLE CHARGEABILITY (mv/v)

— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

## Total Magnetic Field (γ)

## Topography & Geology

HEIGHT ABOVE SEA LEVEL - (METRES)

ROAD

CREEK

CREEK

786024

82-1750

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| LINE 80E. | |
| SECTION LOOKING W. | |
| SCALE 1: 500 METRES | |
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1: 500 |
| DRAWING No. | FIG. 6 |

I.P. DATA

CHARGEABILITY & RESISTIVITY

S Anomaly Letter number

5 cm

REF: RN/MG82/04

MAGNETICS

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As (10ppm

GEOLOGY

ALTERATION

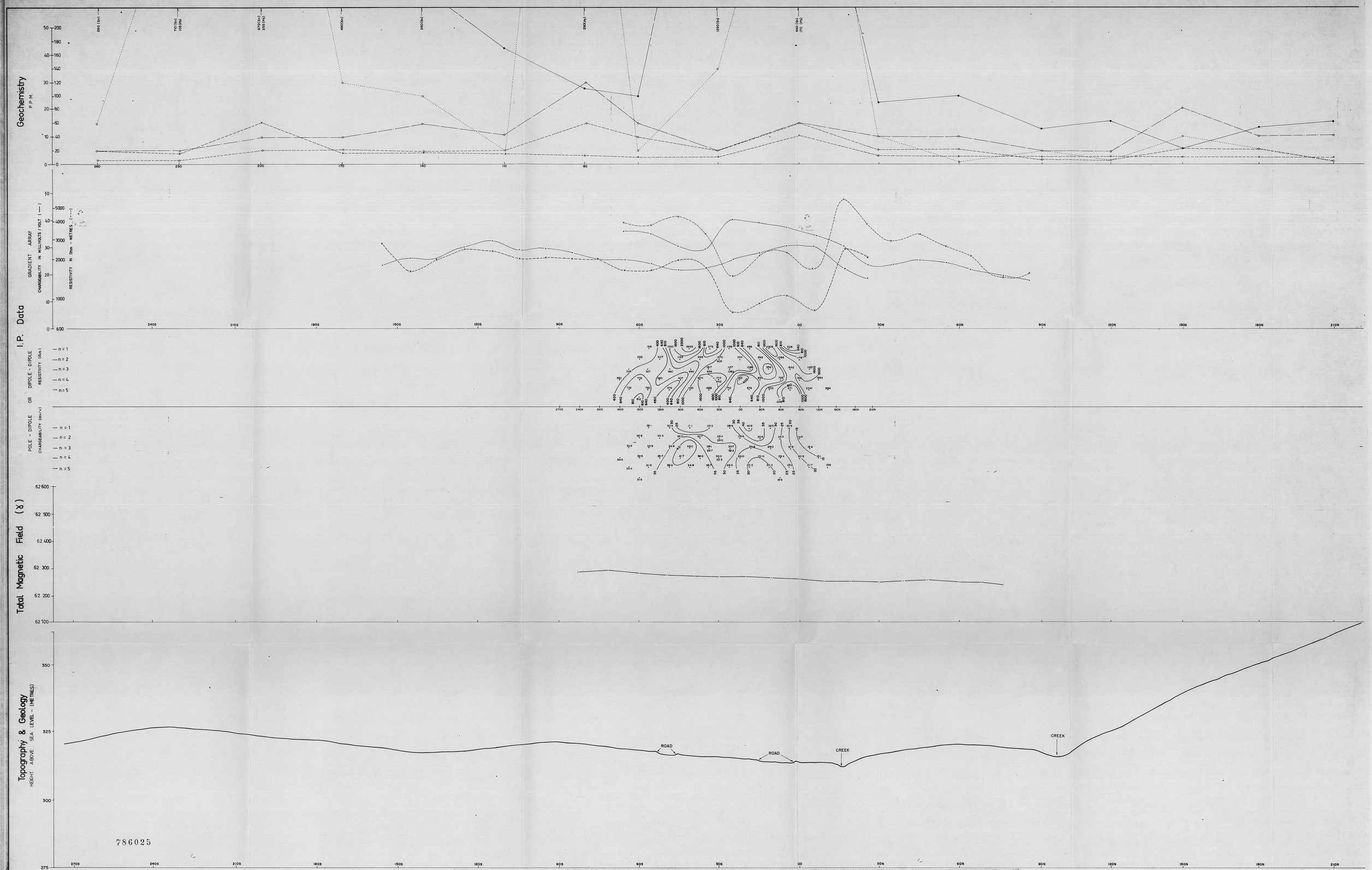
Quartz and topaz and / or tourmaline
Total tourmalinization, occasionally with hematite
Hydrothermal
Collapse
Breccias
White Alteration 'Dykes'
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND

ROCK TYPES

Aplite or microgranite
Fine grained
Medium grained
White granite
Porphyritic granite
Medium grained
Coarse grained
Red granite

Major lineament
F —— F Fault
Definite
Approximate
?— Inferred
Geological boundaries

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82-1750

| RENISON LIMITED | DRAWN | G.P.S. |
|---|---|---|
| GLOBE MINE GRID S.P.L. 129 | TRACED | T.G.D.S. |
| LINE 120E. | DATE | Feb. 1982. |
| SECTION LOOKING W. | SCALE | 1: 500 |
| SCALE 1: 500 METRES | DRAWING No. | FIG. 7 |

I.P. DATA

CHARGEABILITY & RESISTIVITY

Gradient Array

S Anomaly Letter number

5 cm

MAGNETICS

GEOCHEMISTRY

Sn, Cu, Pb, Zn, As, W

GEOLOGY

LEGEND

ALTERATION

Quartz and topaz and/or tourmaline

Total tourmalinization, occasionally with hematite

Hydrothermal

Collapse

Breccias

White Alteration 'Dykes'

Argillic alteration

"Green" alteration (sericitized granite) generally with hematite or pyrite

Quartz - mica greisen

Area of tourmaline nodules

ROCK TYPES

Aplite or microgranite

Fine grained

Medium grained

White granite

Porphyritic granite

Medium grained

Coarse grained

Red granite

Major lineament

F Fault

Definite

Approximate

Inferred

Geological boundaries

REF: RN/MG82/04

## Geochemistry

P.P.M.

50 200
180
40 160
140
30 120
100
20 80
60
10 40
20
0 0

As (10ppm.

## I.P. Data

GRADIENT ARRAY

CHARGEABILITY IN MILLIVOLTS / VOLT (——)

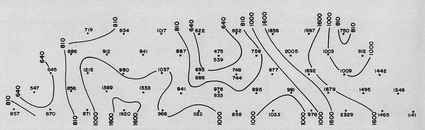
RESISTIVITY IN Ohm - METRES (- - -)

30
5000
40 4000
3000
30
2000
20
10 1000
0 600

90S 60S 30S 00 30N 60N 90N 120N 150N 180N 210N 240N 270N 300N

POLE - DIPOLE OR DIPOLE - DIPOLE RESISTIVITY (Ωm)

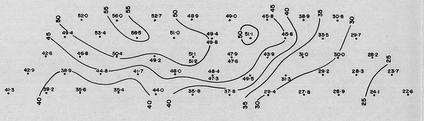
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5



450S 420S 390S 360S 330S 300S 270S 240S 210S 180S 150S 120S 90S 60S 30S 00 30N 60N 90N 120N 150N 180N 210N 240N 270N 285N

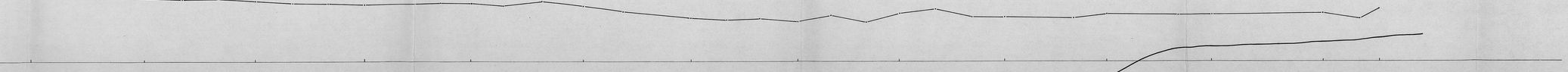
POLE - DIPOLE CHARGEABILITY (mv/v)

— n = 1
— n = 2
— n = 3
— n = 4
— n = 5



## Total Magnetic Field (γ)

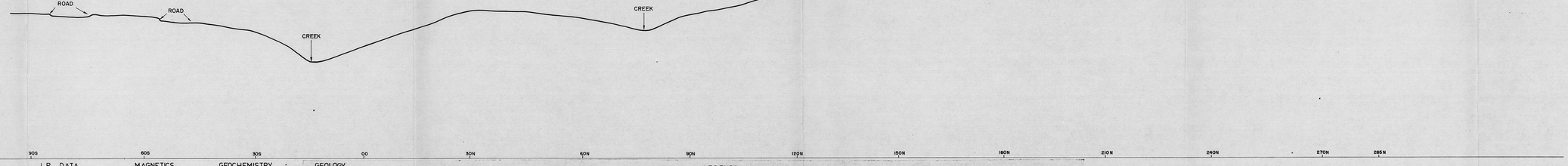
62 600
62 500
62 400
62 300
62 200
62 100



## Topography & Geology

HEIGHT ABOVE SEA LEVEL - (METRES)

350
325
300
275




90S 60S 30S 00 30N 60N 90N 120N 150N 180N 210N 240N 270N 285N

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82-1750

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| LINE 160E. (NTH.) | |
| SECTION LOOKING W. | |
| SCALE. 1: 500 METRES (10 0 10 20 30) | |

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1: 500 |
| DRAWING No. | FIG. 8 |

I. P. DATA

CHARGEABILITY & RESISTIVITY

——— Gradient Array

S Anomaly Letter number

5 cm

REF: RN/MG82/04

MAGNETICS

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As (10ppm

GEOLOGY

ALTERATION

Quartz and topaz and / or tourmaline
Total tourmalinization, occasionally with hematite — White Alteration Dykes"
Hydrothermal — Breccias
Collapse — Breccias
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND

ROCK TYPES

Aplite or microgranite
Fine grained — White granite
Medium grained — White granite
Porphyritic granite
Medium grained — Red granite
Coarse grained — Red granite

Major lineament
F —— F Fault
Definite — Geological boundaries
Approximate — Geological boundaries
? Inferred — Geological boundaries

## Geochemistry P.P.M.

As (10ppm

## I.P. Data

GRADIENT ARRAY
CHARGEABILITY IN MILLIVOLTS / VOLT (——)
RESISTIVITY IN Ohm - METRES (- - -)

DIPOLE - DIPOLE RESISTIVITY (Ωm)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

POLE - DIPOLE OR DIPOLE - DIPOLE CHARGEABILITY (mv/v)
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

## Total Magnetic Field (γ)

## Topography & Geology

HEIGHT ABOVE SEA LEVEL - (METRES)

ROAD
ROAD
CREEK

786027

82-1750

RENISON LIMITED

GLOBE MINE GRID S.P.L. 129
LINE 160E. (STH.)
SECTION LOOKING W

SCALE. 1: 500 METRES
0 10 20 30

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1 500 |
| DRAWING No. | FIG. 9 |

RN/MG82/04

I.P. DATA
CHARGEABILITY & RESISTIVITY
——— Gradient Array
S Anomaly Letter number

5 cm

MAGNETICS

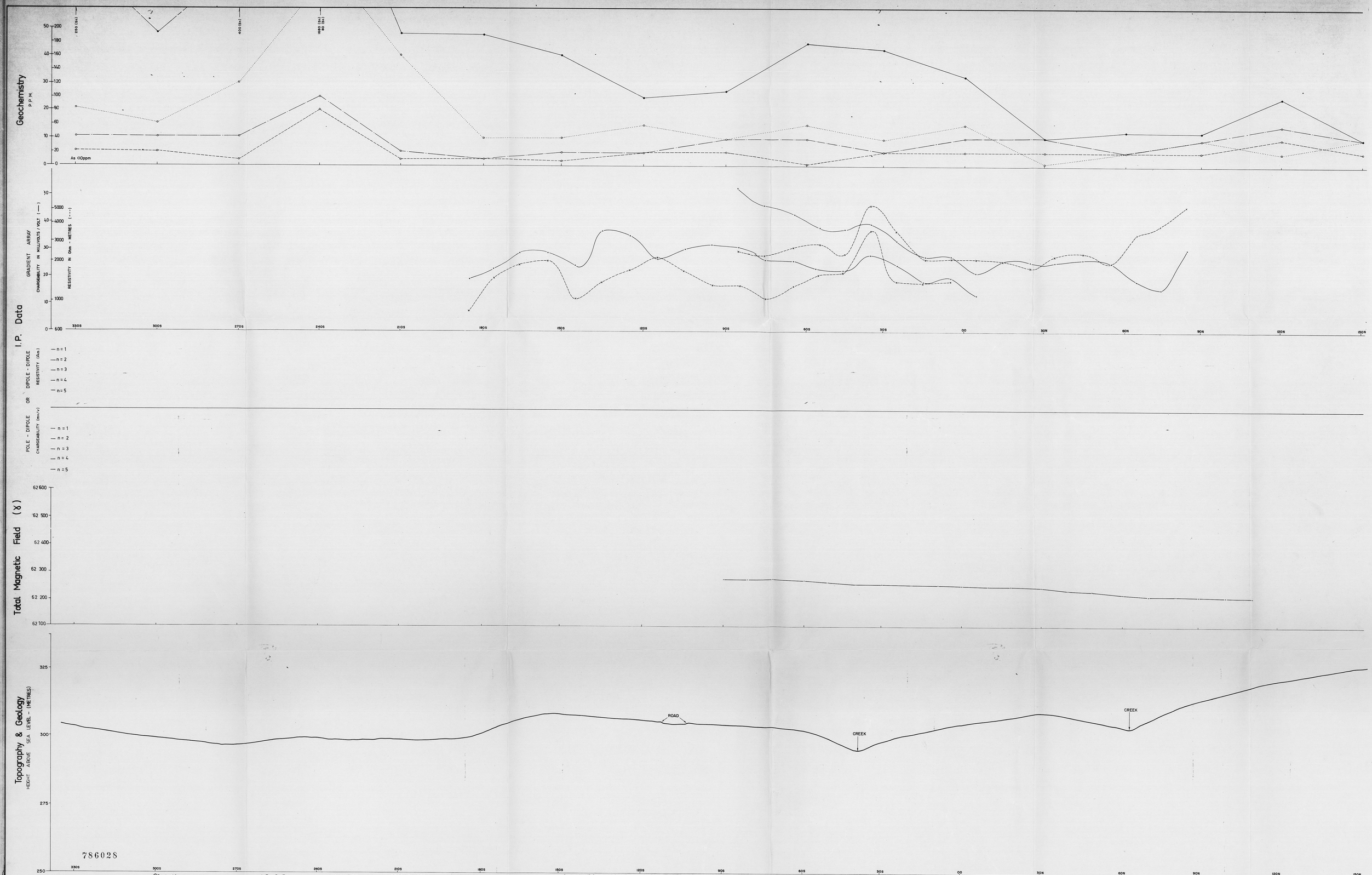
GEOCHEMISTRY
Sn
Cu
Pb
Zn
As (10ppm

GEOLOGY

ALTERATION
"Quartz and topaz and / or tourmaline
Total tourmalinization, occasionally with hematite
Hydrothermal
Collapse
Breccias
White Alteration Dykes"
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND
ROCK TYPES
Aplite or microgranite
Fine grained
Medium grained
White granite
Porphyritic granite
Medium grained
Coarse grained
Red granite

Major lineament
F —— F Fault
Definite
Approximate
—? — Inferred
Geological boundaries




82-1750

| RENISON LIMITED | DRAWN | G.P.S. |
|---|---|---|
| GLOBE MINE GRID S.P.L. 129 | TRACED | T.G.D.S. |
| LINE 200E. | DATE | Feb. 1982 |
| SECTION LOOKING W. | SCALE | 1: 500 |
| SCALE. 1: 500 METRES | DRAWING No. | FIG. 10 |

I.P. DATA

CHARGEABILITY & RESISTIVITY

Gradient Array

S Anomaly Letter number

5 cm

REF: RN/MG82/04

MAGNETICS

GEOCHEMISTRY

Sn

Cu

Pb

Zn

As (10ppm

GEOLOGY

ALTERATION

Quartz and topaz and/or tourmaline

Total tourmalinization, occasionally with hematite

Hydrothermal

Collapse

Breccias

White Alteration "Dykes"

Argillic alteration

"Green" alteration (sericitized granite) generally with hematite or pyrite

Quartz - mica greisen

Area of tourmaline nodules

LEGEND

ROCK TYPES

Aplite or microgranite

Fine grained

Medium grained

White granite

Porphyritic granite

Medium grained

Coarse grained

Red granite

Major lineament

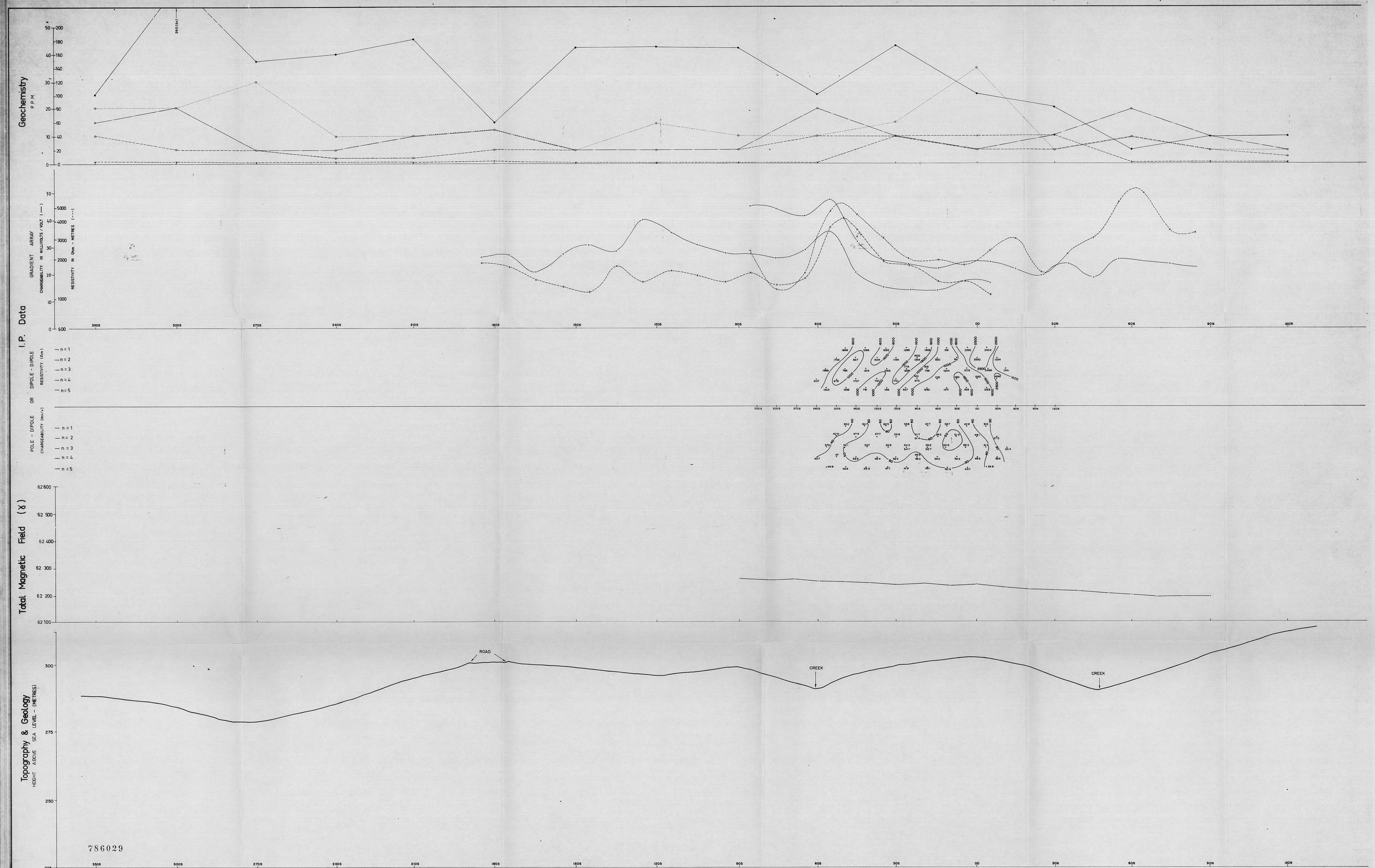
F — F Fault

Definite

Approximate

Inferred

Geological boundaries




786029

82-1750

| RENISON LIMITED | | |
|---|---|---|
| GLOBE MINE GRID S.P.L. 129 | DRAWN | G.P.S. |
| LINE 240E. | TRACED | T.G.D.S. |
| SECTION LOOKING W. | DATE | Feb. 1982 |
| SCALE 1: 500 METRES | SCALE | 1: 500 |
| | DRAWING No. | |
| | FIG. 11 | |

I.P. DATA

CHARGEABILITY & RESISTIVITY

Gradient Array

S Anomaly letter number

5 cm

REF: RN/MG82/04

MAGNETICS

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As

GEOLOGY

ALTERATION

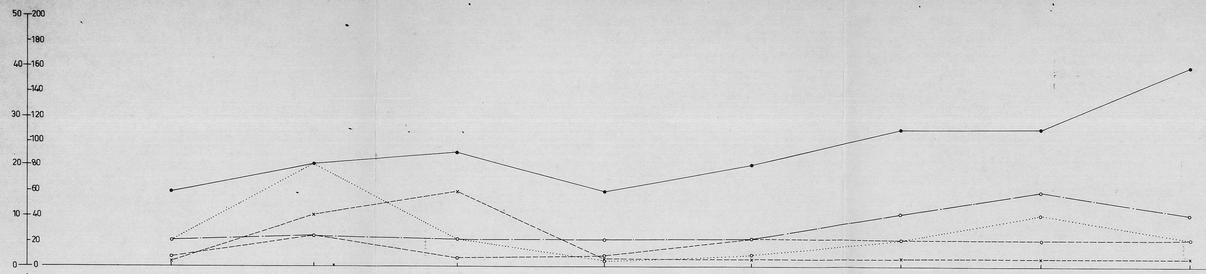
Quartz and topaz and/or tourmaline
Total tourmalinization, occasionally with hematite
Hydrothermal
Collapse
Breccias
White Alteration 'Dykes'
Argillic alteration
"Green" alteration (sericitized granite) generally with hematite or pyrite
Quartz - mica greisen
Area of tourmaline nodules

LEGEND

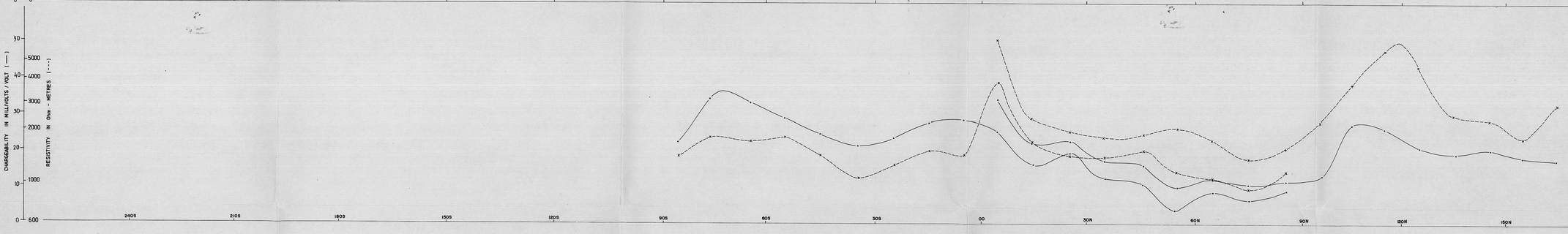
ROCK TYPES

Aplite or microgranite
Fine grained
Medium grained
White granite
Porphyritic granite
Medium grained
Coarse grained
Red granite
Major lineament
F — F Fault
Definite
Approximate
Inferred
Geological boundaries

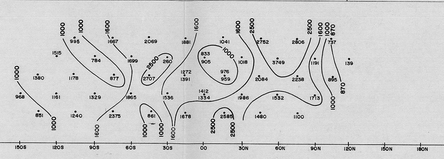
## Geochemistry
P.P.M.



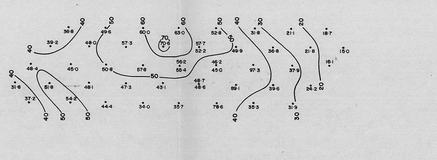

## I.P. Data
GRADIENT ARRAY
CHARGEABILITY IN MILLIVOLTS / VOLT (——)
RESISTIVITY IN Ohm - METRES (- - -)



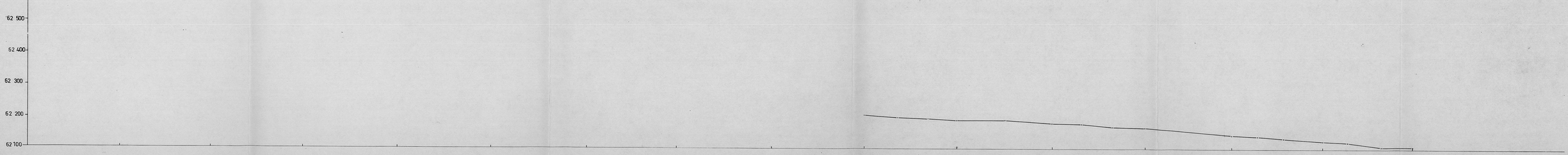

POLE - DIPOLE OR DIPOLE - DIPOLE RESISTIVITY (Ωm)



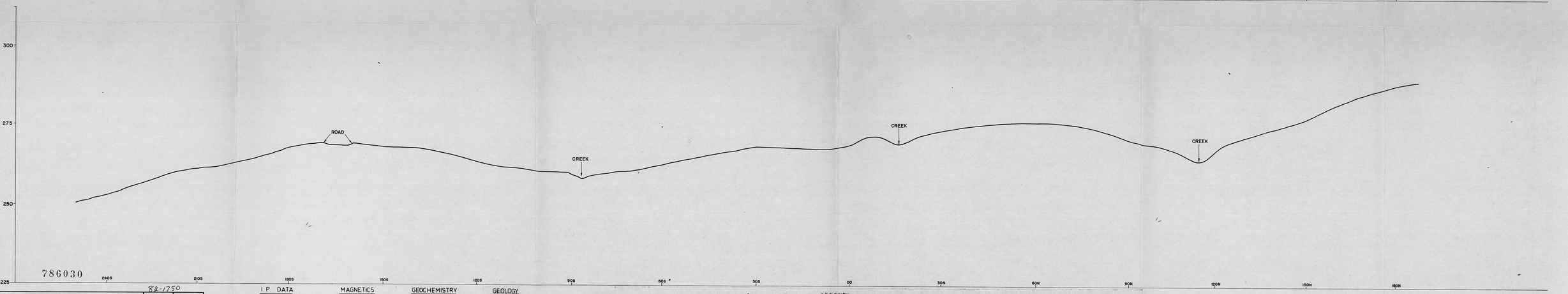

POLE - DIPOLE OR DIPOLE - DIPOLE CHARGEABILITY (mv/v)




## Total Magnetic Field (γ)




## Topography & Geology
HEIGHT ABOVE SEA LEVEL - (METRES)




786030

82-1750

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| LINE 320E. | |
| SECTION LOOKING W. | |
| SCALE 1: 500 METRES (10 0 10 20 30) | |

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1 500 |
| DRAWING No. | |

FIG. 12

REF: RN/MG82/04

I.P. DATA
CHARGEABILITY & RESISTIVITY
——— Gradient Array
S Anomaly Letter number
5 cm

MAGNETICS

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As

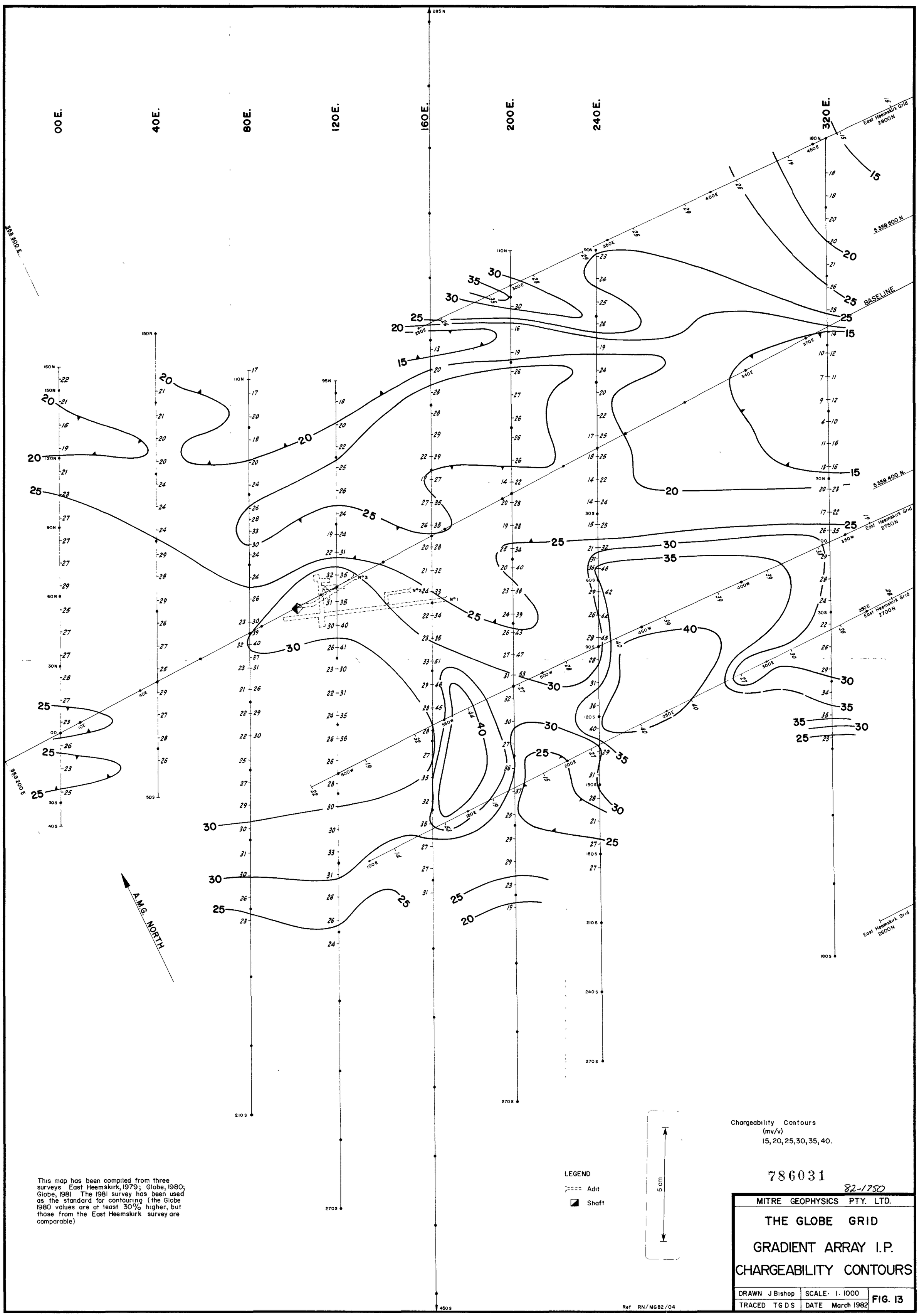
GEOLOGY

ALTERATION
- Quartz and topaz and / or tourmaline
- Total tourmalinization, occasionally with hematite
- Hydrothermal
- Collapse
- Breccias
- White Alteration 'Dykes'
- Argillic alteration
- "Green" alteration (sericitized granite) generally with hematite or pyrite
- Quartz - mica greisen
- Area of tourmaline nodules

LEGEND

ROCK TYPES
- Aplite or microgranite
- Fine grained
- Medium grained
- White granite
- Porphyritic granite
- Medium grained
- Coarse grained
- Red granite

- Major lineament
- F —— F Fault
- Definite
- Approximate
- ? Inferred
- Geological boundaries




This map has been compiled from three surveys East Heemskirk, 1979; Globe, 1980; Globe, 1981 The 1981 survey has been used as the standard for contouring (the Globe 1980 values are at least 30% higher, but those from the East Heemskirk survey are comparable)

LEGEND

Adit

Shaft

5 cm

Chargeability Contours
(mv/v)
15, 20, 25, 30, 35, 40.

786031

82-1750

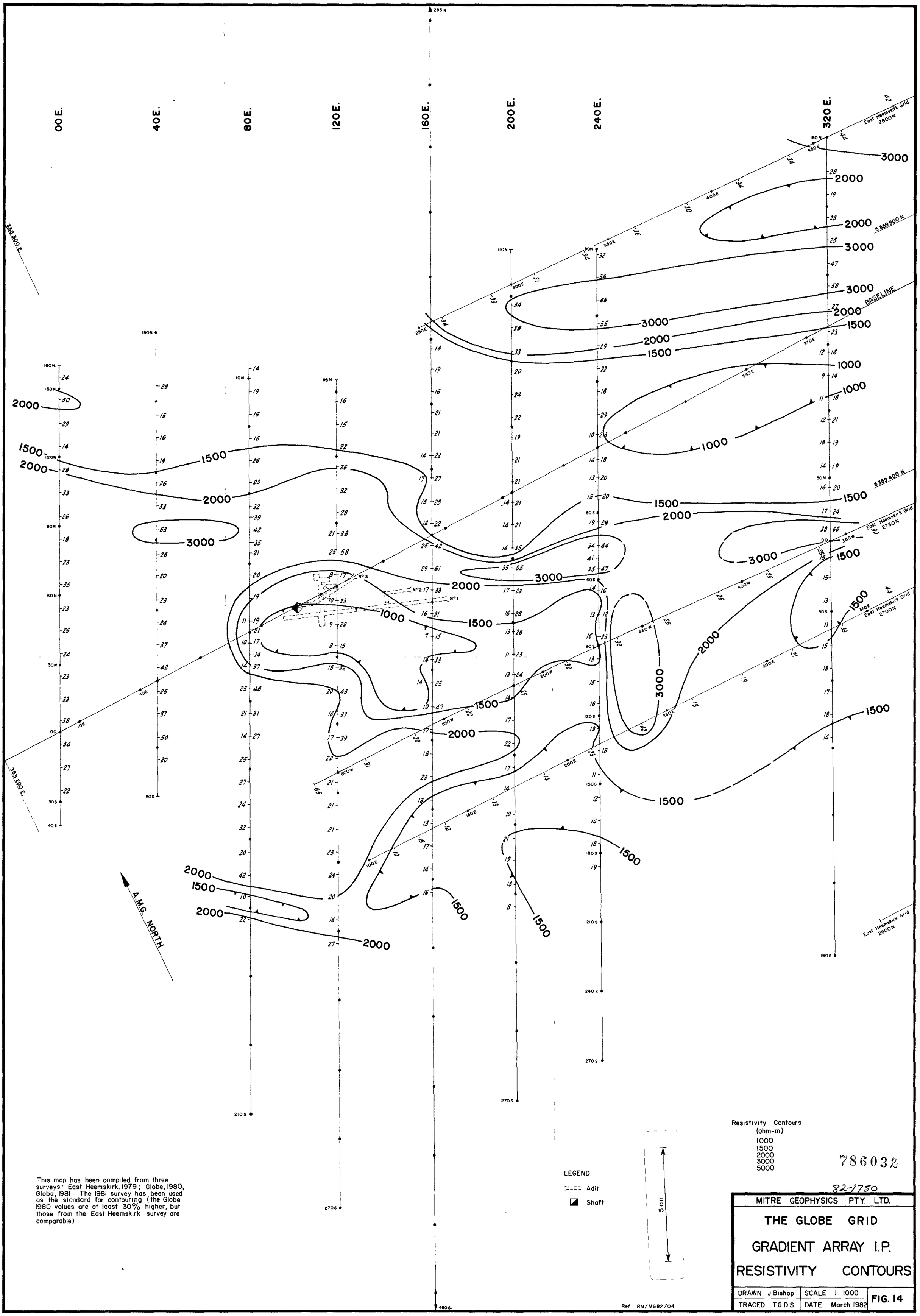
MITRE GEOPHYSICS PTY. LTD.

# THE GLOBE GRID

# GRADIENT ARRAY I.P. CHARGEABILITY CONTOURS

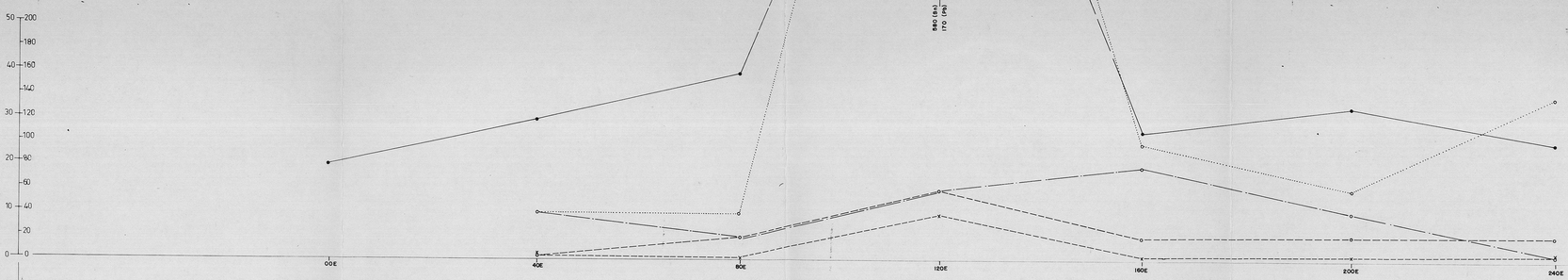
| | | |
|---|---|---|
| DRAWN J Bishop | SCALE 1:1000 | FIG. 13 |
| TRACED TG D S | DATE March 1982 | |

Ref RN/MG82/04


00E.
40E.
80E.
120E.
160E.
200E.
240E.
320E.
285 N
East Heemskirk Grid 2800N
180N
460E
3000
2000
2000
5 359 500 N
3000
3000
BASELINE
2000
1500
1000
1000
5 359 400 N
East Heemskirk Grid 2750N
1500
3000
1500
East Heemskirk Grid 2700N
1500
2000
3000
1500
1500
East Heemskirk Grid 2600N
450S.
353 300 E.
353 200 E.
A.M.G. NORTH
2000
1500
2000
2000
1000
1500
1500
2000
1500
1500
1500
1500
2000
1500
1500
1500
3000
2000
1500
3000
3000
2000
1500
1000
1000
1500
2000
1500
1500
1500
1500

# I.P. Data

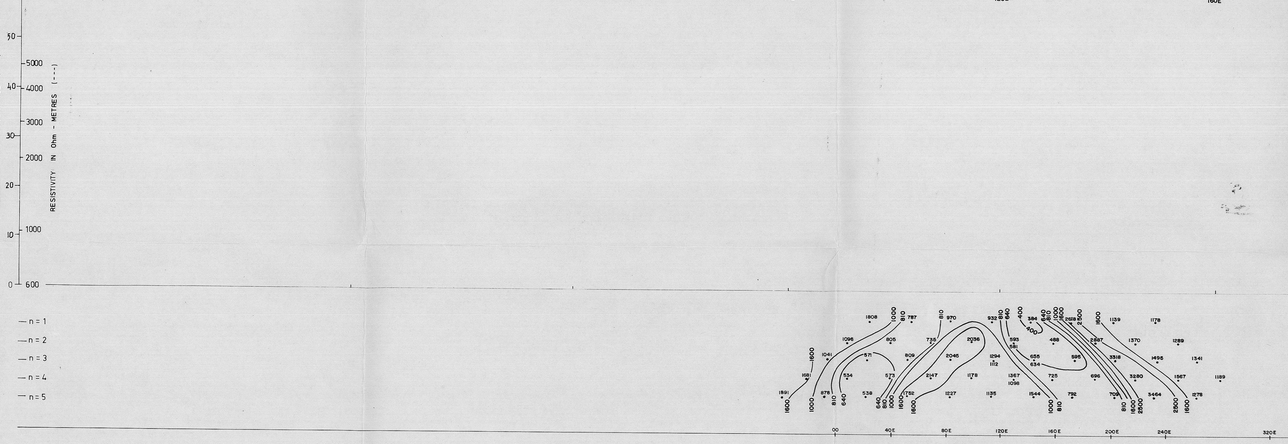
## Geochemistry
P P M




GRADIENT ARRAY

CHARGEABILITY IN MILLIVOLTS / VOLT ( — )

RESISTIVITY IN Ohm - METRES ( - - - )




POLE - DIPOLE OR DIPOLE - DIPOLE

RESISTIVITY (Ωm)

— n = 1
— n = 2
— n = 3
— n = 4
— n = 5

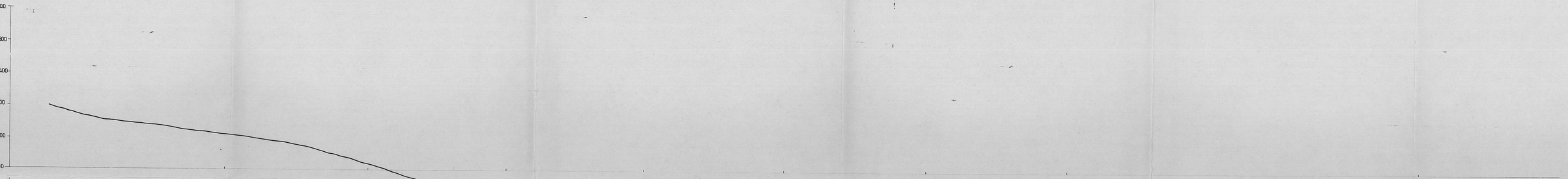


CHARGEABILITY (mv/v)

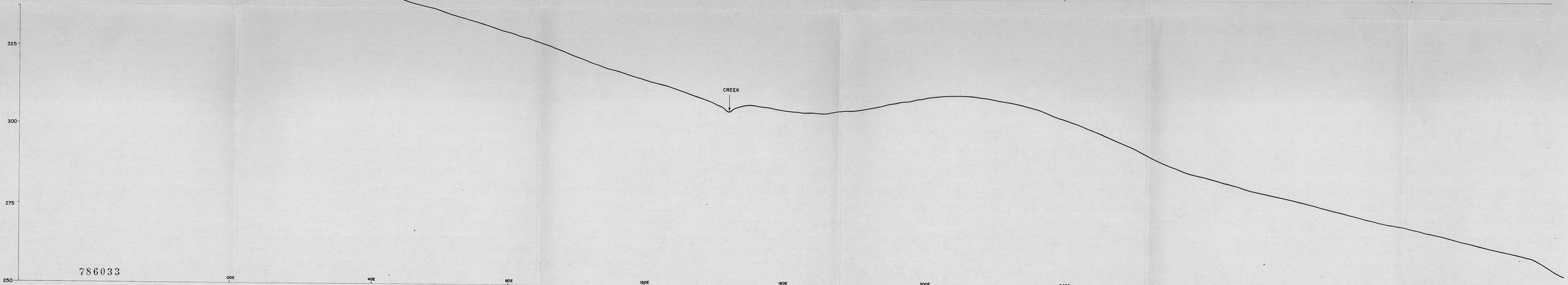
— n = 1
— n = 2
— n = 3
— n = 4
— n = 5



## Total Magnetic Field (γ)




## Topography & Geology
HEIGHT ABOVE SEA LEVEL - (METRES)




786033

82-1750

| | |
|---|---|
| RENISON LIMITED | |
| GLOBE MINE GRID S.P.L. 129 | |
| BASE LINE OON. | |
| SECTION LOOKING N. | |
| SCALE. 1: 500 METRES (10 0 10 20 30) | |

| | |
|---|---|
| DRAWN | G.P.S. |
| TRACED | T.G.D.S. |
| DATE | Feb. 1982 |
| SCALE | 1: 500 |
| DRAWING No. | FIG. 15 |

I.P. DATA

CHARGEABILITY & RESISTIVITY

Gradient Array

S Anomaly Letter number

5 cm

REF: RN/MG82/04

MAGNETICS

GEOCHEMISTRY




GEOLOGY

ALTERATION

- Quartz and topaz and / or tourmaline
- Total tourmalinization, occasionally with hematite
- Hydrothermal
- Collapse — Breccias
- White alteration Dykes
- Argillic alteration
- "Green" alteration (sericitized granite) generally with hematite or pyrite
- Quartz - mica greisen
- Area of tourmaline nodules

LEGEND

ROCK TYPES

- Aplite or microgranite
- Fine grained
- Medium grained — White granite
- Porphyritic granite
- Medium grained
- Coarse grained — Red granite

- Major lineament
- F Fault
- Definite
- Approximate — Geological boundaries
- ? Interred

Line 2700 N

I.P. Data - GRADIENT ARRAY

Resistivity in Ohm-metres

Chargeability in milliseconds per volt

Geochemistry

PPM

I.P. Data - POLE DIPOLE

RESISTIVITY IN OHM-METRES (APPARENT)

Total Magnetic Field (γ)

COARSE SCALE

Topography & Geology

HEIGHT ABOVE SEA LEVEL IN METRES

Old walking track

Gravels

Creek gravels

Fine grained granite float

Creek

Walkers track

786034

82-1750

| | |
|---|---|
| RENISON LIMITED | |
| EAST HEEMSKIRK GRID S.P.L.129 | DRAWN: J.F.Gau |
| LINE 2750N-LINE 2700 N. | TRACED: T.G.D.S. |
| 100 E. - 700 E. | DATE: JULY '79 |
| SCALE 1:2000 METRES | SCALE: 1:2000 |
| FIG. 16 | DRAWING No. |

REF: RN/WG82/04

I.P. DATA — CHARGEABILITY & RESISTIVITY POLE - DIPOLE

MAGNETICS — 1000γ Scale

GEOCHEMISTRY

I.P. DATA — CHARGEABILITY & RESISTIVITY GRADIENT ARRAY

Ms

Mn

Zn

Cu

Pb

As

Ni

Ag

Mo

Sn

W

Bi

Co

Sb

Be

Ba

Cr

V

Sr

Zr

Y

Nb

La

Ce

Nd

Sc

Ga

Th

U

Hf

Ta

Au

Pt

Pd

Te

Se

Cd

In

Tl

Re

Hg

Fe

Ti

Mn

Ca

K

P

Al

Mg

Na

Li

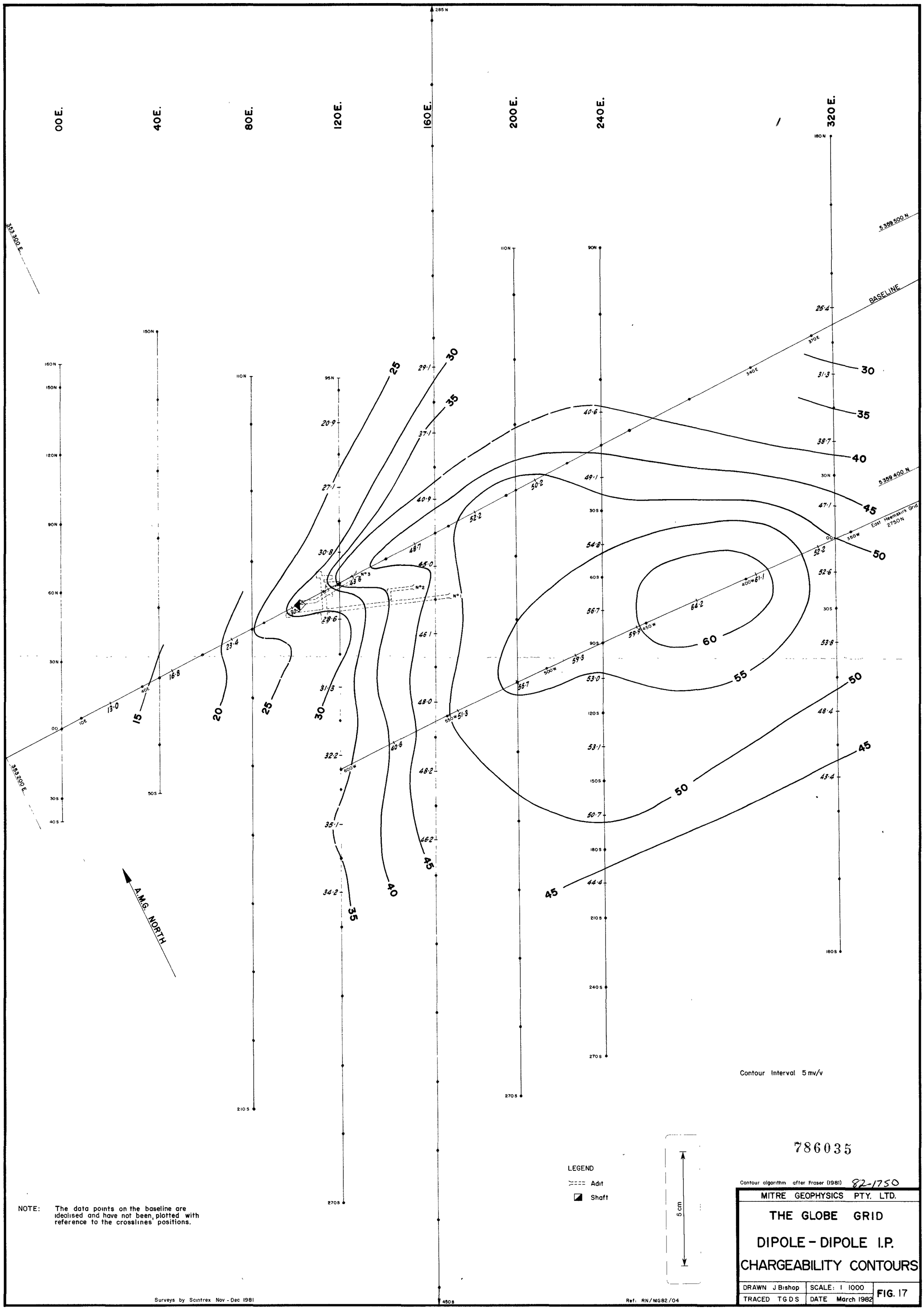
Rb

Cs

Ge

Sn

Ag




NOTE: The data points on the baseline are idealised and have not been plotted with reference to the crosslines' positions.

Surveys by Scintrex Nov - Dec 1981

Ref: RN/MG82/04

Contour Interval 5 mv/v

786035

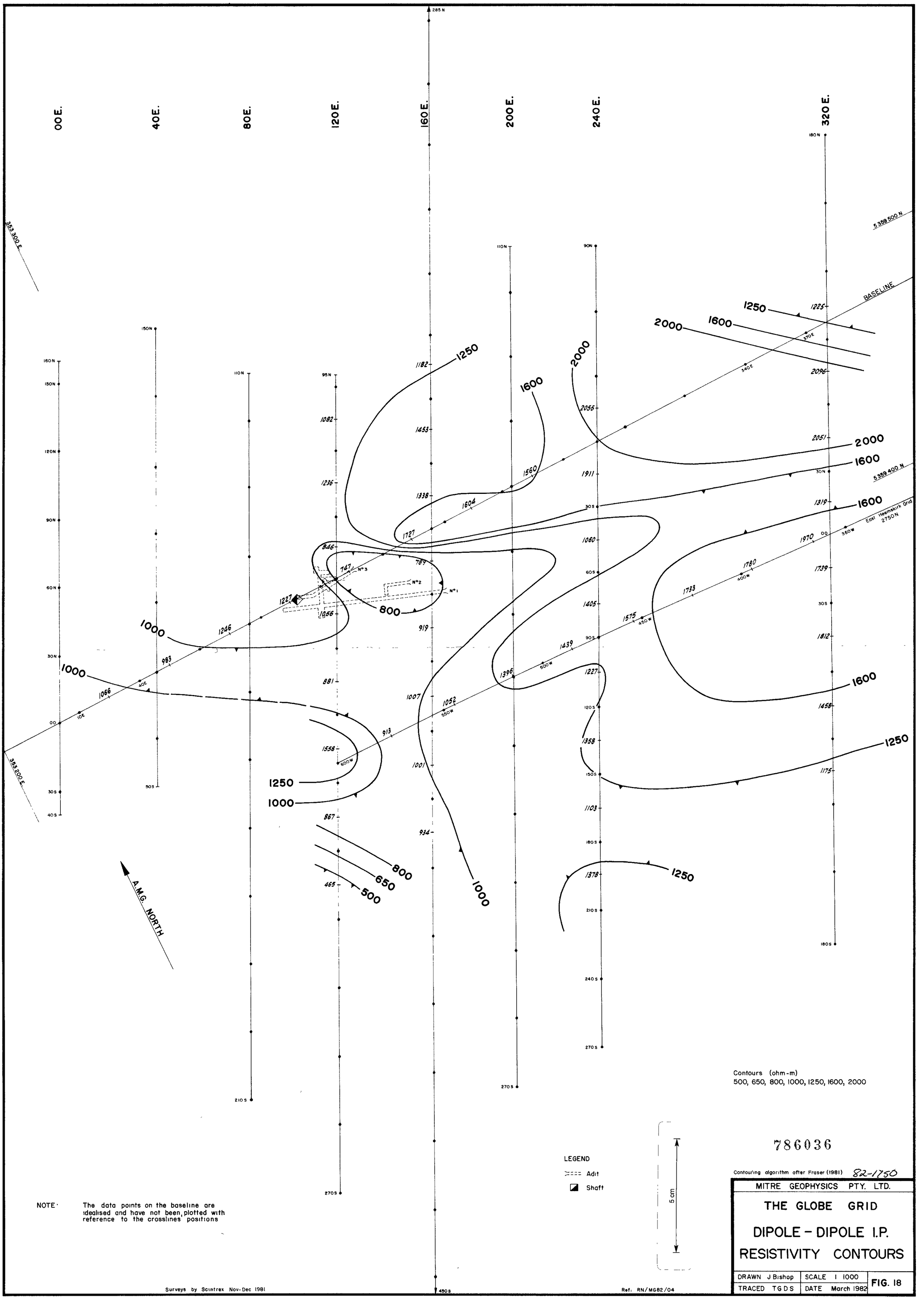
Contour algorithm after Fraser (1981) 82-1750

MITRE GEOPHYSICS PTY. LTD.

# THE GLOBE GRID

# DIPOLE - DIPOLE I.P. CHARGEABILITY CONTOURS

| | | |
|---|---|---|
| DRAWN J Bishop | SCALE: 1 1000 | FIG. 17 |
| TRACED TGDS | DATE March 1982 | |




NOTE: The data points on the baseline are idealised and have not been plotted with reference to the crosslines' positions

Surveys by Scintrex Nov-Dec 1981

Ref: RN/MG82/04

Contours (ohm-m)
500, 650, 800, 1000, 1250, 1600, 2000

786036

Contouring algorithm after Fraser (1981) 82-1750

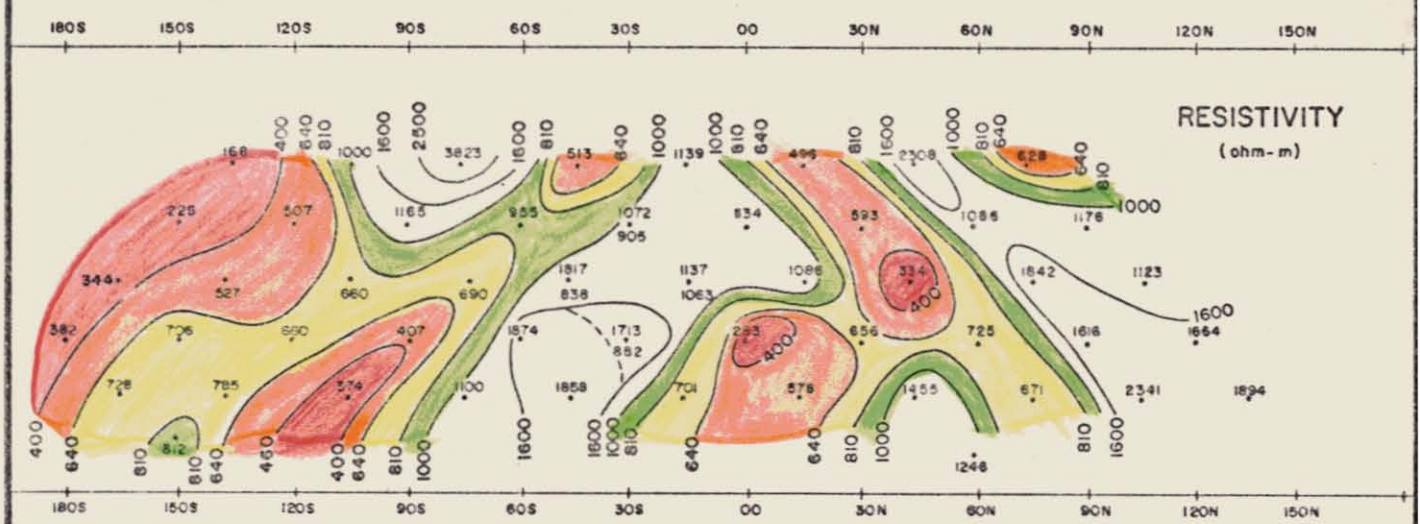
MITRE GEOPHYSICS PTY. LTD.

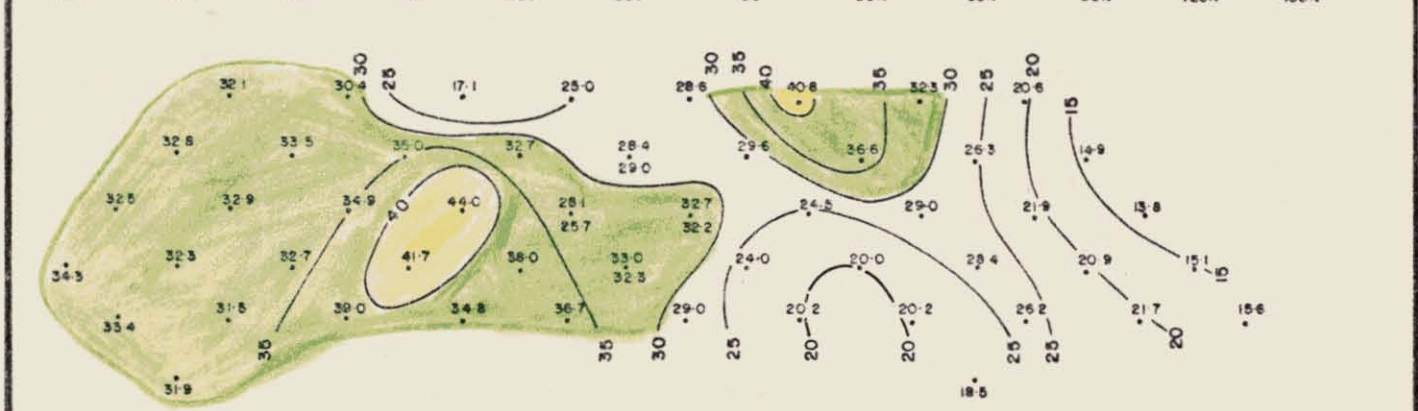
# THE GLOBE GRID

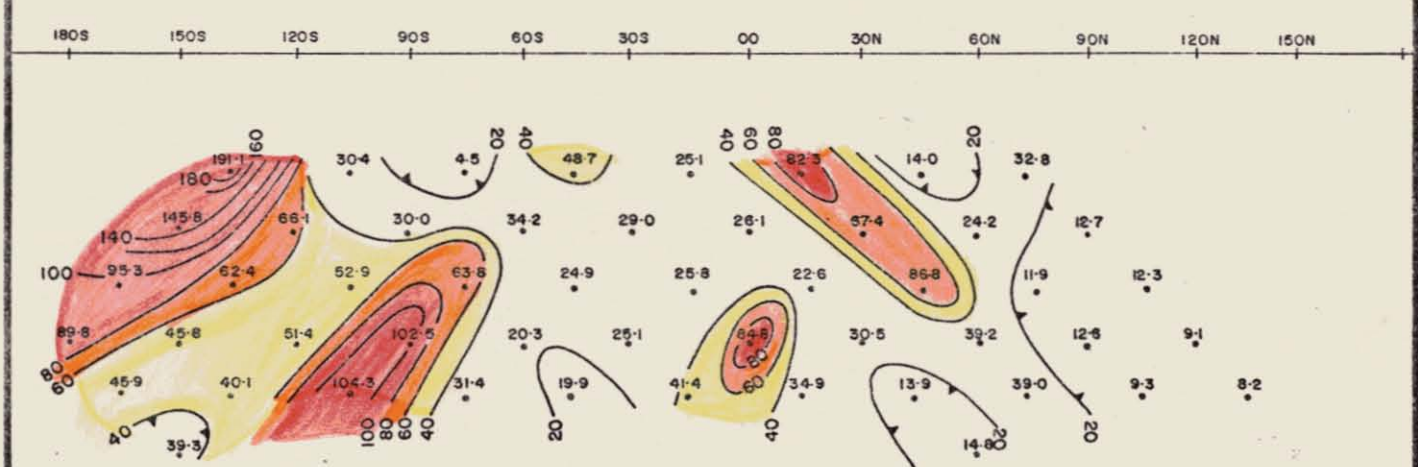
# DIPOLE – DIPOLE I.P. RESISTIVITY CONTOURS

| | | |
|---|---|---|
| DRAWN J Bishop | SCALE 1 1000 | FIG. 18 |
| TRACED TG D S | DATE March 1982 | |

786037




5 cm

Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec. pulse)
Dipole spacing : 30m

Ref. RN/MG 82/04

92-1750

MITRE GEOPHYSICS PTY. LTD.

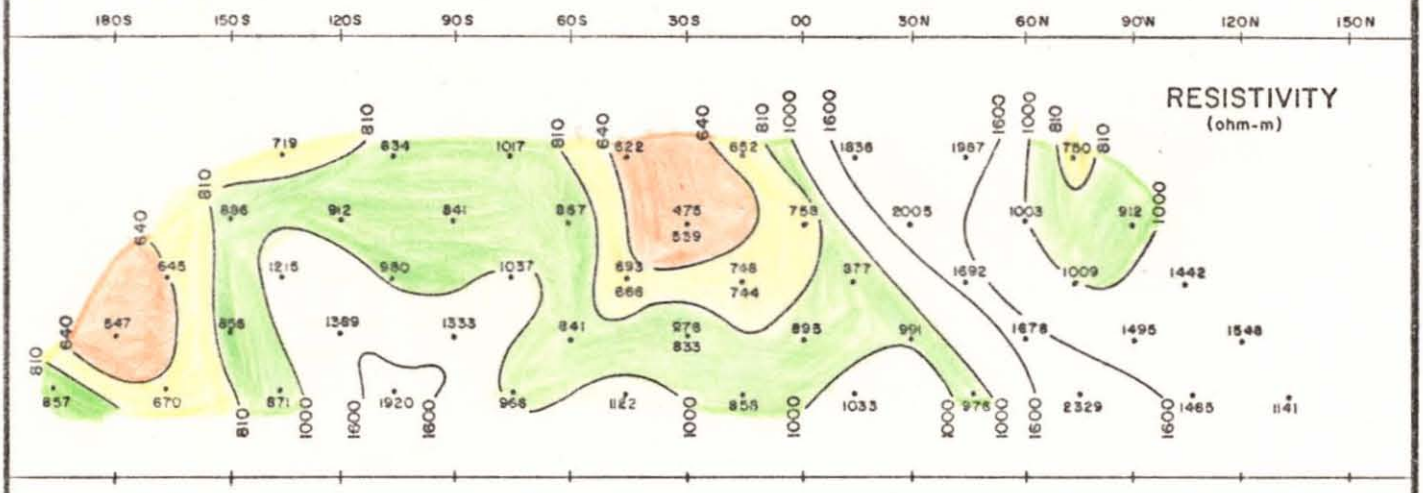
# GLOBE GRID

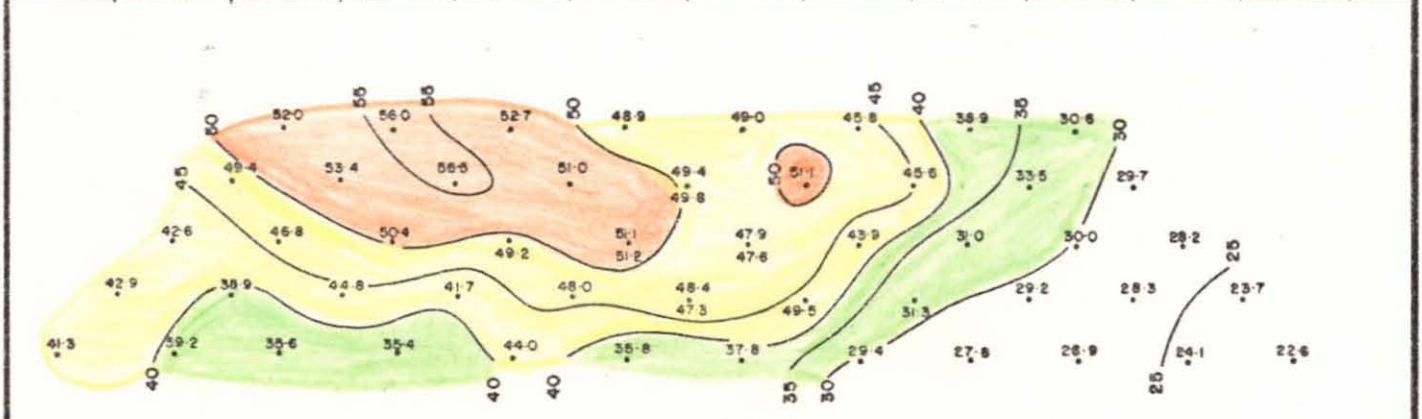
# I.P. PSEUDOSECTION

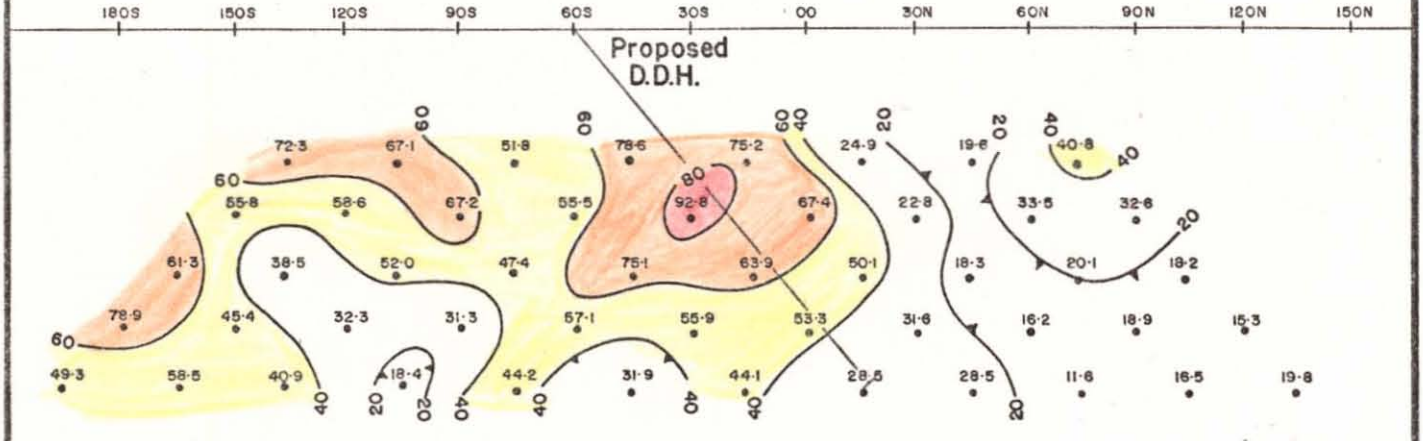
# LINE 120E.

| | | |
|---|---|---|
| Drawn by Scintrex | Scale. 1:2000 | FIG. 19 |
| Traced by T.G.D.S. | Date. March 1982 | |

786038




5 cm

82-1780

MITRE GEOPHYSICS PTY. LTD.

GLOBE GRID

I.P. PSEUDOSECTION

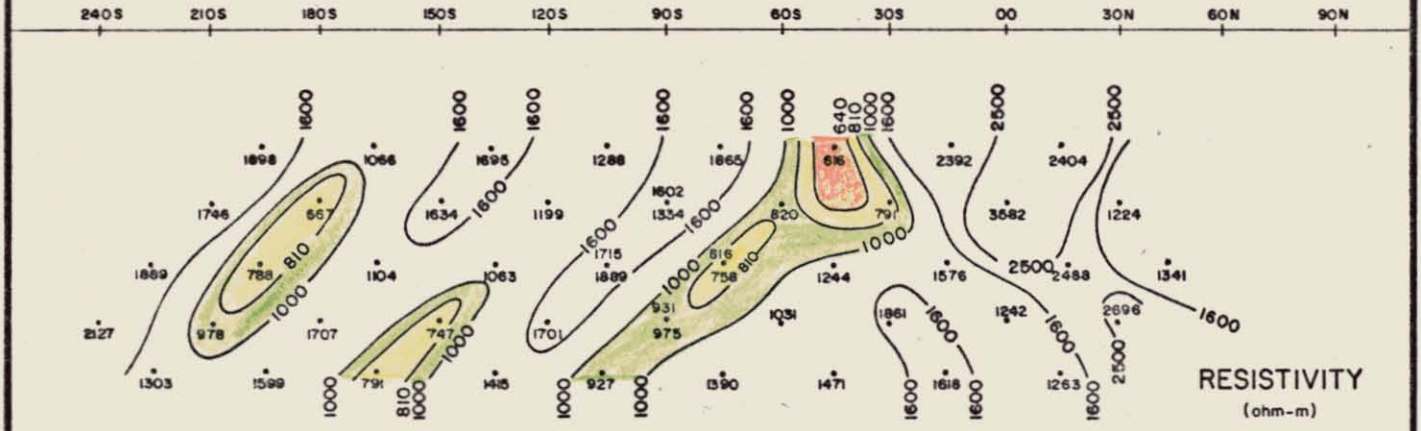
LINE 160E

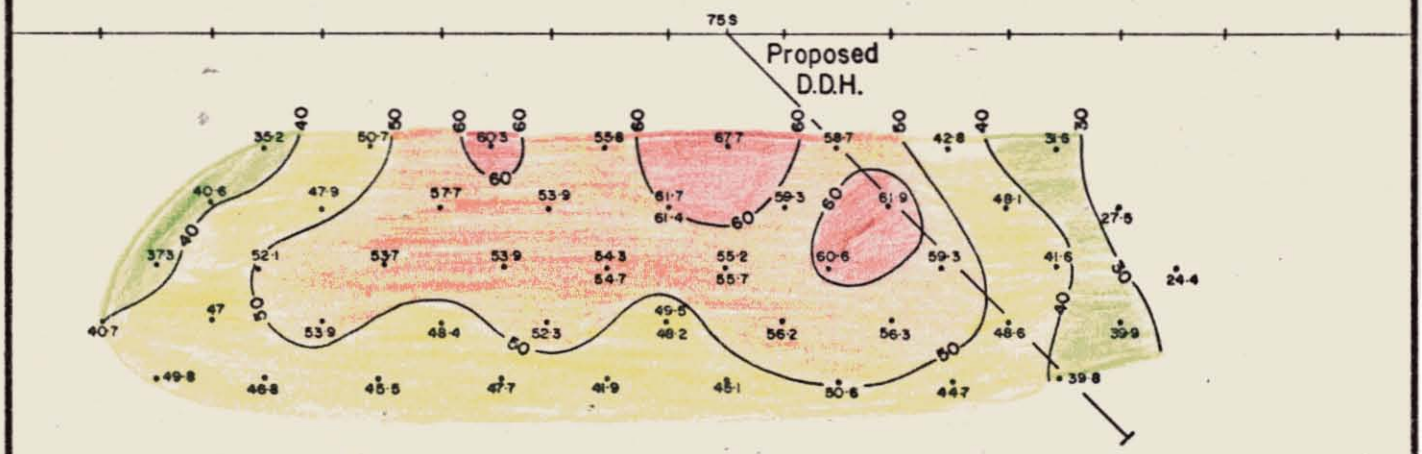
| | | |
|---|---|---|
| Drawn by Scintrex | Scale. 1:2000 | FIG.20 |
| Traced by T.G.D.S. | Date. March 1982 | |

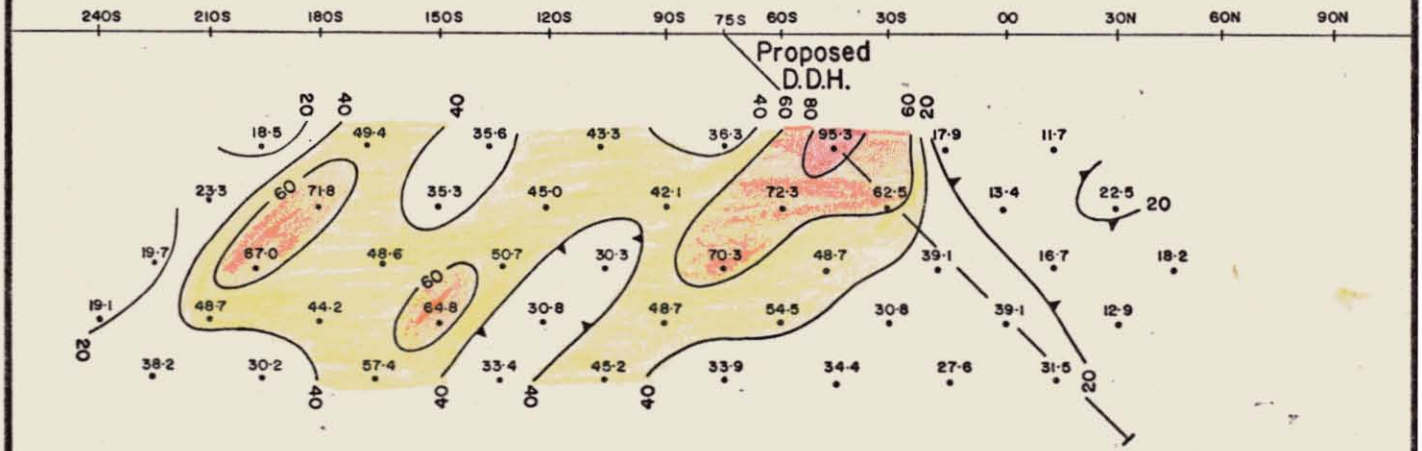
Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec. pulse)
Dipole spacing : 30m

Ref. RN/MG 82/04

786039




5 cm

82-1780

MITRE GEOPHYSICS PTY. LTD.

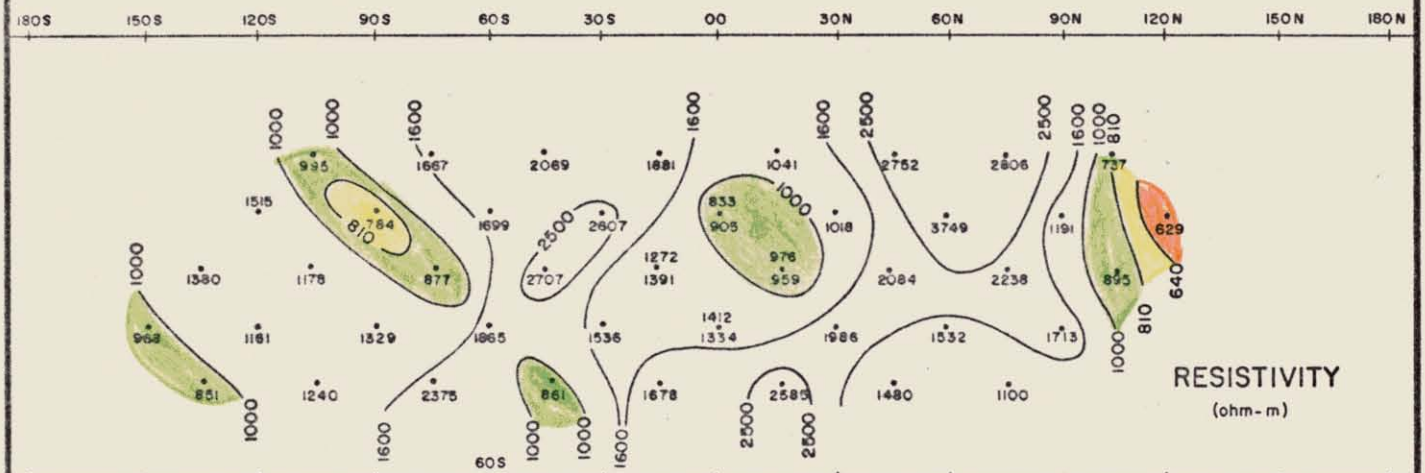
# GLOBE GRID
# I.P. PSEUDOSECTION
# LINE 240E

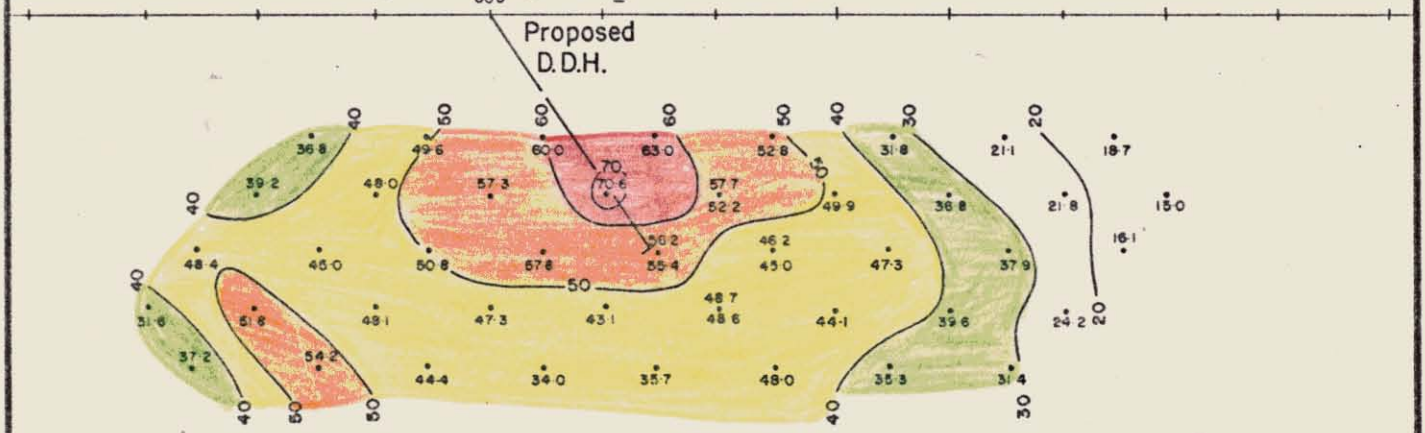
| | | |
|---|---|---|
| Drawn by Scintrex | Scale 1:2000 | FIG.21 |
| Traced by T.G.D.S. | Date. March 1982 | |

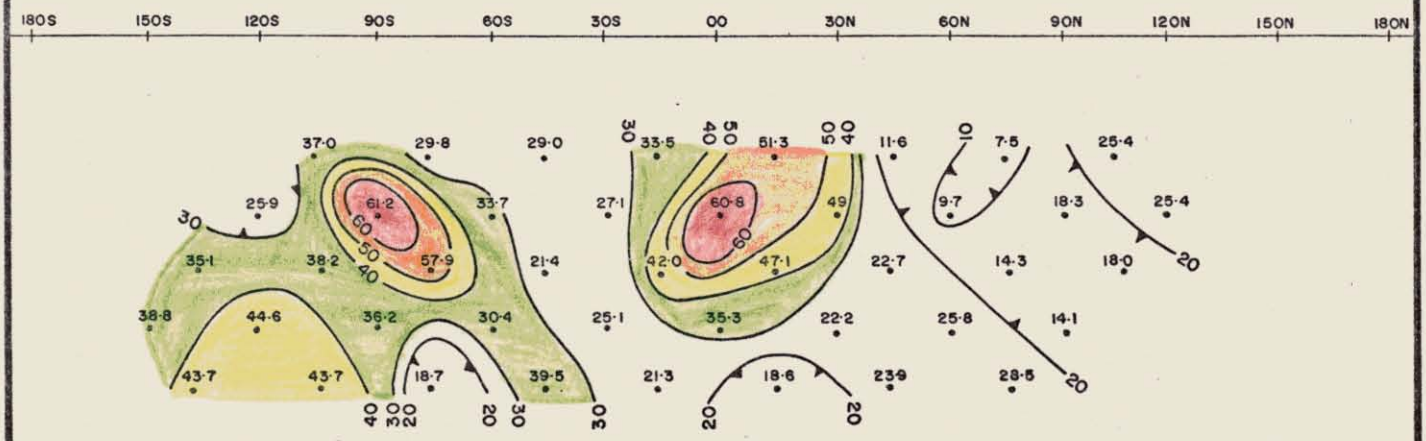
Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec. pulse)
Dipole spacing : 30m

Ref. RN/MG 82/04

786040




5 cm

82-1750

MITRE GEOPHYSICS PTY. LTD.

GLOBE GRID

I.P. PSEUDOSECTION

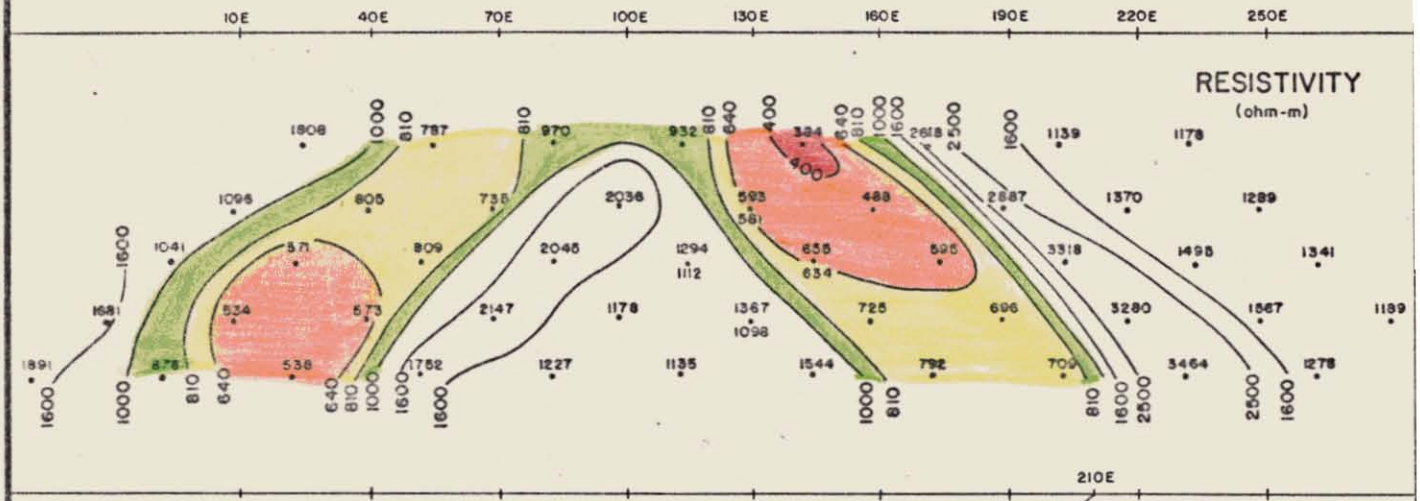
LINE 320E.

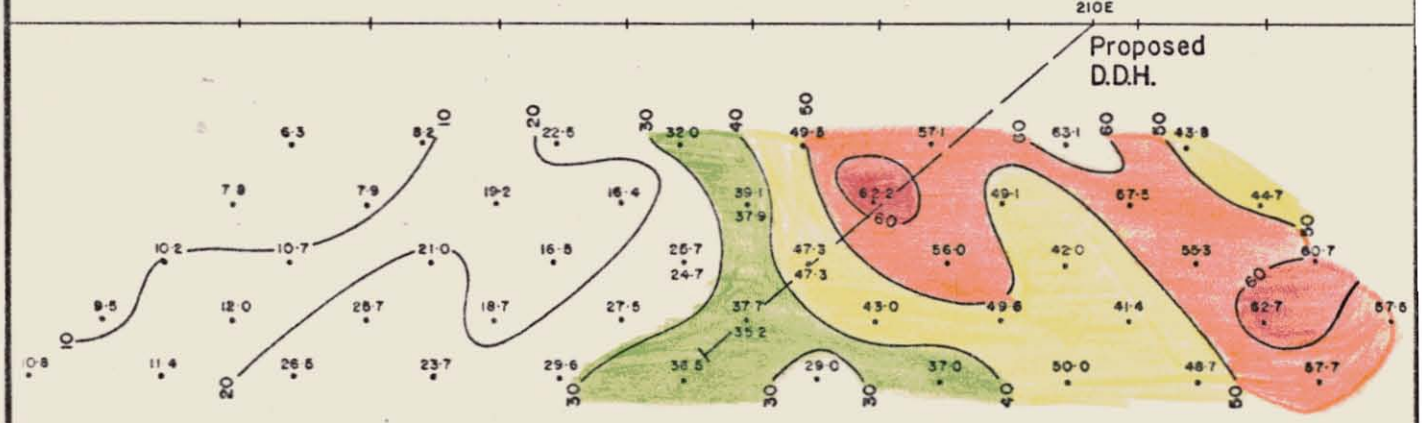
| | | | |
|---|---|---|---|
| Drawn by Scintrex | Scale. 1:2000 | FIG.22 |
| Traced by T.G.D.S. | Date. March 1982 | |

Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec. pulse)
Dipole spacing : 30m

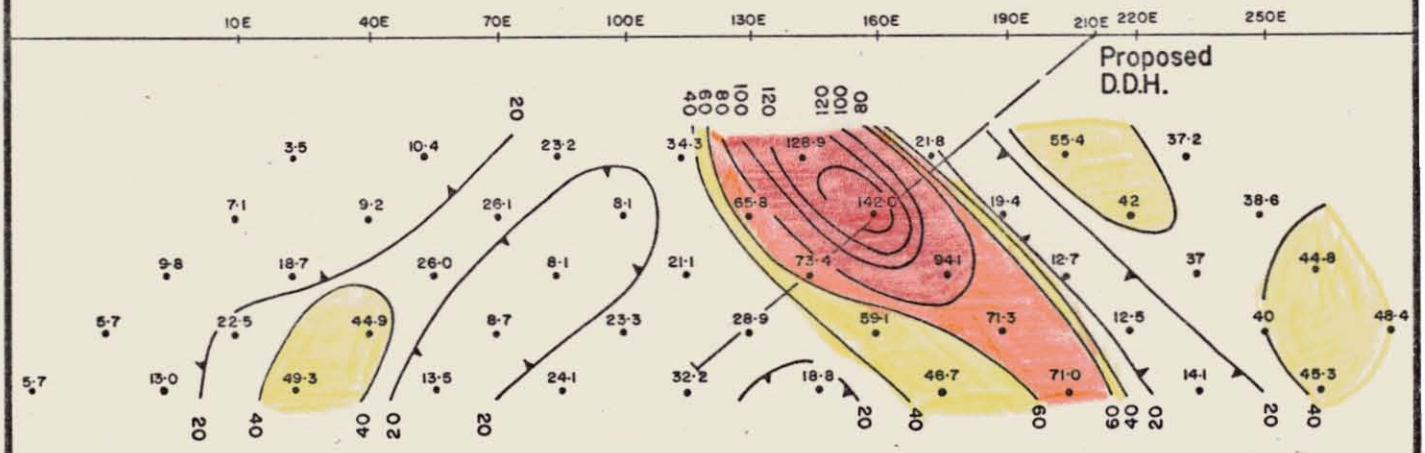
Ref. RN/MG 82/04

786041




CHARGEABILITY
(mv/v)




METAL FACTOR

5 cm

82-1780

MITRE GEOPHYSICS PTY. LTD.

GLOBE GRID

I.P. PSEUDOSECTION

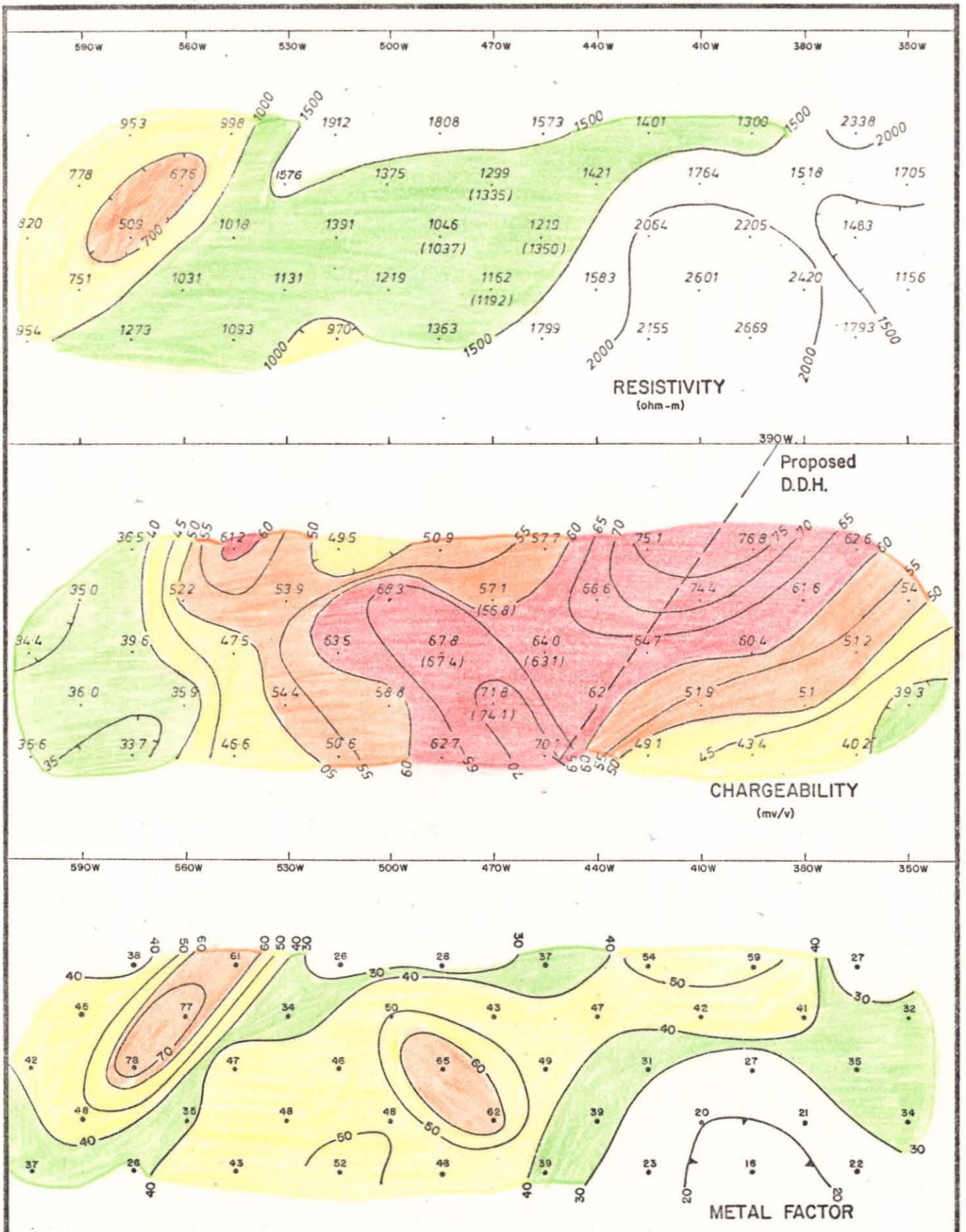
LINE OON.

| | | |
|---|---|---|
| Drawn by Scintrex | Scale. ~1:2000 | FIG.23 |
| Traced by T.G.D.S. | Date. March 1982 | |

Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec.pulse)
Dipole spacing : 30 m

Ref. RN/MG 82/04

786042




82-1780

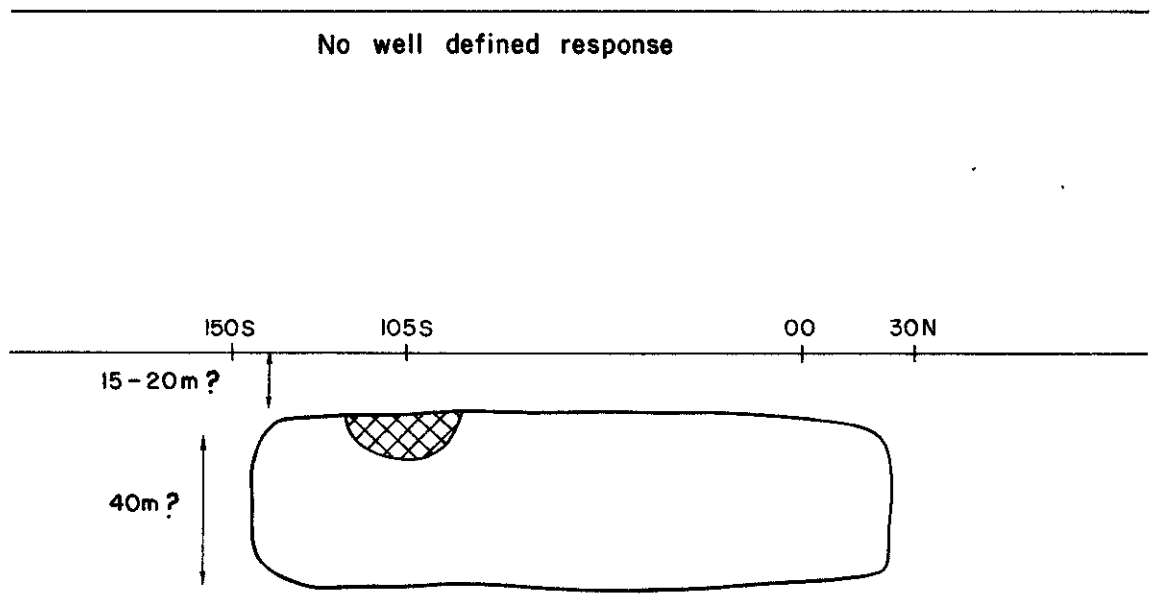
Survey by : Scintrex
Date : Nov.- Dec., 1981
IP receiver : IPR-10 (2 sec.pulse)
Dipole spacing : 30m

Ref. RN/MG 82/04

MITRE GEOPHYSICS PTY. LTD.

# GLOBE GRID
# I.P. PSEUDOSECTION
# LINE 2750N. (E.H.G.)

| | | |
|---|---|---|
| Drawn by Scintrex | Scale. 1:1500 | FIG.24 |
| Traced by T.G.D.S. | Date. March 1982 | |




The dipole-dipole IP surveys over the Globe suggest a chargeable body with the above approximate dimensions. Areas of hatching indicate a higher concentration of chargeable material

MITRE GEOPHYSICS PTY. LTD.

GLOBE GRID

# Interpretation of Dipole-dipole Chargeability

| | |
|---|---|
| DRAWN J Bishop | SCALE 1:2000 |
| TRACED T.G.D.S | DATE April '82 |

FIG.25

82-1750

Ref RN/MG82/04

T860043

00E. 40E. 80E. 120E. 160E. 200E. 240E. 320E.

285 N. 180 N. 110 N. 90 N.

5 359 500 N.

353 200 E.

BASELINE

150 N. 160 N. 110 N. 95 N. 120 N. 90 N. 60 N. 30 N. 0.0 30 S. 40 S. 50 S. 210 S. 270 S. 450 S. 90 S. 120 S. 150 S. 180 S. 240 S.

10E. 40E. 340E. 370E. 600W. 550W. 500W. 450W. 400W. 350W.

5 359 400 N.

East Heemskirk Grid 2750 N.

20 30 40 50 60 70 80 90 99

N°1 N°2 N°3

A.M.G. NORTH

metal factor = $\frac{\text{chargeability}}{\text{resistivity}} \times 1000$

Contour Interval : 10

NOTE: The data points on the baseline are idealised and have not been plotted with reference to the crosslines' positions.

LEGEND

Adit

Shaft

5 cm

Surveys by Scintrex Nov - Dec. 1981.

Ref: RN/MG82/04

786044

Contouring algorithm after Fraser (1981)

82-1750

MITRE GEOPHYSICS PTY. LTD.

# THE GLOBE GRID

# DIPOLE – DIPOLE I.P.

# METAL FACTOR CONTOURS

| | | | |
|---|---|---|---|
| DRAWN: J. Bishop | SCALE: 1: 1000 | FIG. 26 |
| TRACED: T.G.D.S. | DATE: March 1982 | |