# GEOPHYSICAL REPORT

## INDUCED POLARIZATION/RESISTIVITY SURVEYS

DOME MOUNTAIN PROPERTY, SMITHERS AREA

CHRIS, APRIL 1, APRIL 2, APRIL 3, AND MAG 1 CLAIMS

OMINECA MINING DIVISION, BRITISH COLUMBIA

Latitude: 54° 43' N    Longitude: 126° 33' W    NTS 93L/10

on behalf of

TEESHIN REOURCES LTD.
100 - 581 Argus Road
Oakville, Ontario L6J 3J4

Field work completed: October 5 to 17, 1989

by


Alan Scott, Geophysicist
SCOTT GEOPHYSICS LTD.
4013 West 14th Avenue
Vancouver, B.C. V6R 2X3


December 15, 1989

TABLE OF CONTENTS



ACCOMPANYING MAPS

## 1. INTRODUCTION

Induced polarization and resistivity surveys were conducted over portions of the Dome Mountain Property (Chris, April 1, April 2, April 3, and Mag 1 Claims), Smithers Area, B.C., within the period October 5 to 17, 1989. The work was conducted by Scott Geophysics Ltd. on behalf of Teeshin Resources Ltd.

The pole dipole electrode array was used on the induced polarization surveys, with an "a" spacing of 20 meters on the Chris and April Claims, and 50 meters on the Mag 1 Claims. Readings were taken at "n" separations of 1 to 5.

This report describes the instrumentation and procedures used on the surveys, and discusses the results obtained.

## 2. CLAIMS LOCATION AND ACCESS

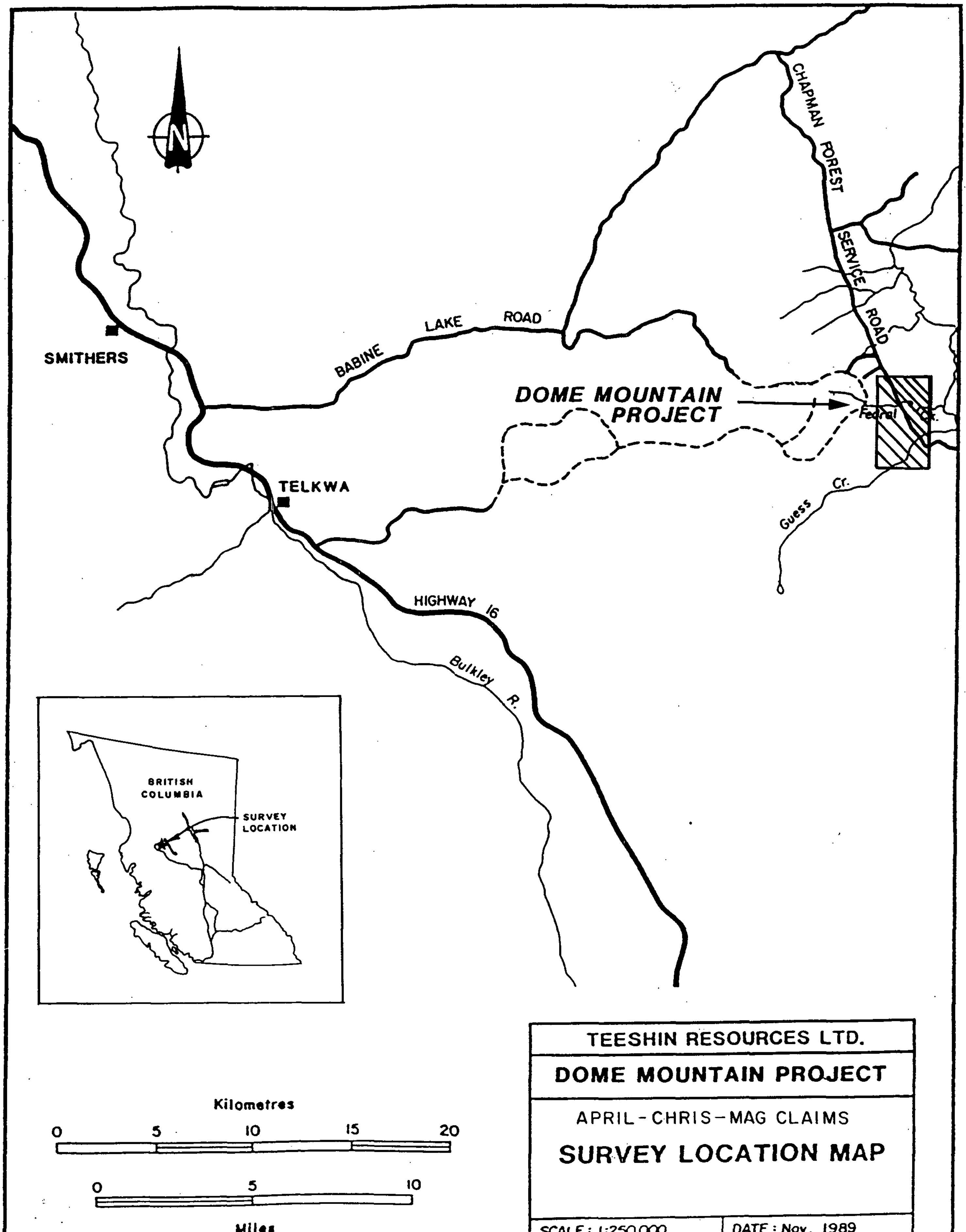
The Chris, April, and Mag 1 Claims are located approximately 37 kilometers east of Smithers, B.C. (location maps - figures 1 and 2). Access to the Claims is via the Chapman Forest Service Road. Record numbers, groupings, and recorded owner are given below.

| Claim Name | Record No. | Group | Recorded Owner |
|---|---|---|---|
| April 1 | 6161 | April | A. L'Orsa, Smithers, B.C. |
| April 2 | 6162 | April | A. L'Orsa, Smithers, B.C. |
| April 3 | 6163 | April | A. L'Orsa, Smithers, B.C. |
| Chris | 6135 | Chris | A. L'Orsa, Smithers, B.C. |
| Mag 1 | 6129 | Chris | L. Warren, Smithers, B.C. |

All these claims are subject to an agreement between the owners and Teeshin Resources Ltd., 100-581 Argus Road, Oakville, Ontario, L6J 3J4.

## 3. PREVIOUS WORK

Limited prospecting, mapping, geochemical sampling, line cutting, trenching and diamond drilling have been done on the April and Chris groups (Price, 1987), and airborne and ground geophysical surveys in 1985 (Sheldrake, 1985).




TEESHIN RESOURCES LTD.

DOME MOUNTAIN PROJECT

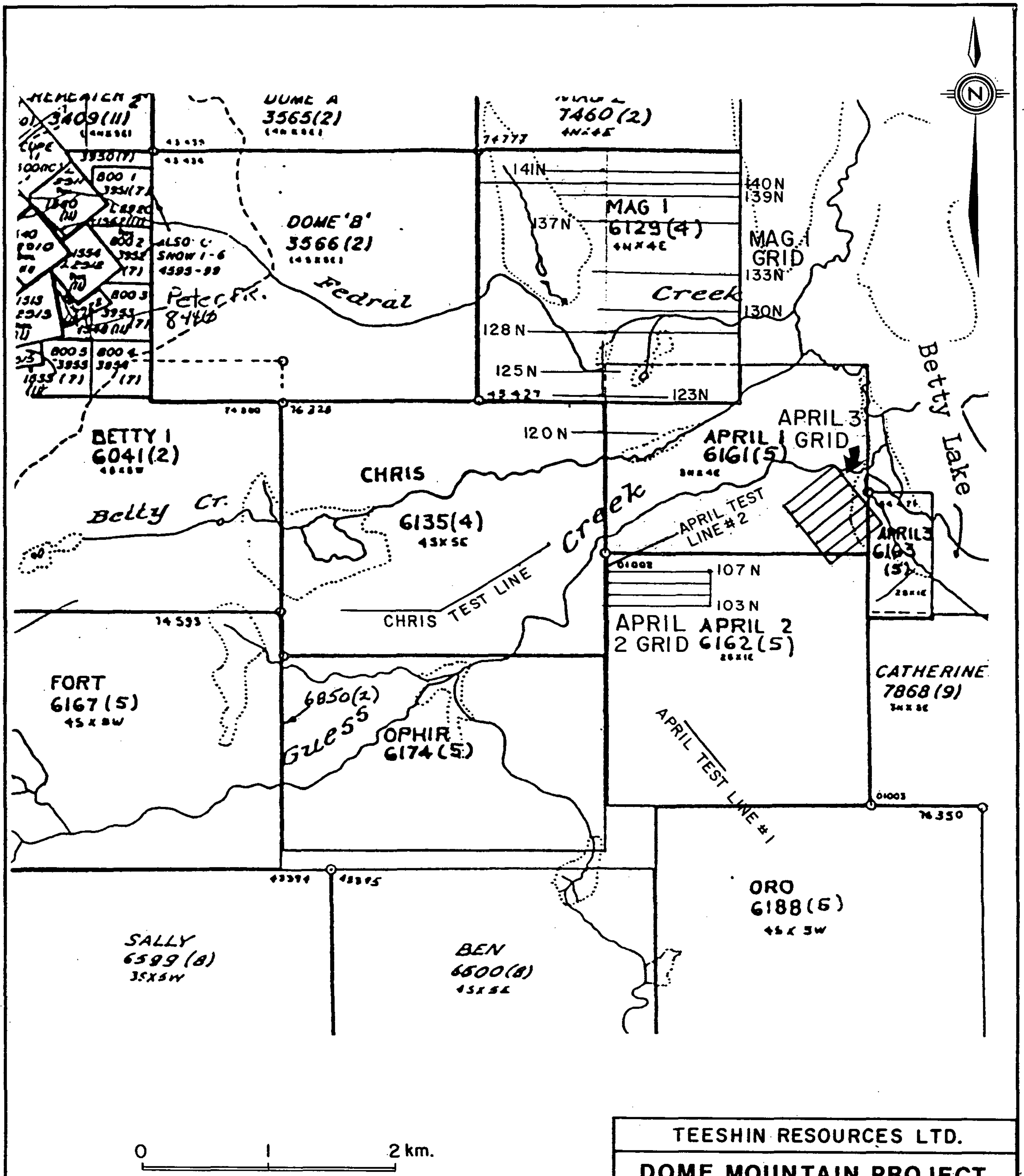
APRIL-CHRIS-MAG CLAIMS

SURVEY LOCATION MAP

SCALE: 1:250,000 | DATE: Nov. 1989

SCOTT GEOPHYSICS LIMITED

FIG.1




TEESHIN RESOURCES LTD.

**DOME MOUNTAIN PROJECT**

APRIL-CHRIS-MAG CLAIMS

CLAIMS AND GRID MAP

| SCALE: AS SHOWN | DATE NOV. 1989 |
|---|---|
| SCOTT GEOPHYSICS LIMITED | FIG. 2 |

## 4. PHYSIOGRAPHY

The claims area is one of moderate relief, and is located at the southeastern end of the Babine Range. Long northwest trending hills on the claims reach an elevation of 1237 meters.

A number of lakes and creeks in the area all form part of the Guess Creek drainage system, which flows northeasterly to Fulton Lake. Balsam Fir, Spruce, and Pine are the dominant tree species on the claims. The district has been extensively logged and much of the area is occupied by large clear cut blocks.

## 5. GEOLOGY

The claims lie on the Skeena Arch, near the southern edge of the Bowser Basin. The area is mainly underlain by Lower to Middle Jurassic eugeosynclinal volcanic and sedimentary rocks, which are cut by a few granitic to dioritic intrusions.

The geology has been mapped by Tipper (1976) and the regional geological setting discussed by Tipper and Richards (1976). There are few outcrops on the April and Chris groups.

## 6. SURVEY GRID AND SURVEY COVERAGE

The location of the lines surveyed is indicated on accompanying figure 2. Survey coverage on each grid is tabulated below.

| | | | |
|---|---|---|---|
| Chris Test Line: | 1760 meters | "a" = 20 meters | n=1 to 5 |
| April 1, 2, and 3: | 7900 meters | "a" = 20 meters | n=1 to 5 |
| Mag 1: | 11850 meters | "a" = 50 meters | n=1 to 5 |

## 7. PERSONNEL

Ken Moir, technician, was the party chief on the survey and operated the IPR11 receiver. Tony L'Orsa, geologist, was the Teeshin Resources' representative on site for the duration of the survey.

## 8. INSTRUMENTATION AND PROCEDURES

A Scintrex IPR11 time domain, microprocessor based receiver, and a Scintrex 10 kw TSQ4 transmitter were used for the induced polarization survey. Readings were taken using a 2 second alternating square wave. The chargeability for the eighth slice (690 to 1050 milliseconds after shutoff; midpoint at 870 milliseconds) is the value that has been plotted on the accompanying plans and pseudosections.

The survey data was archived, processed, and plotted using a Sharp PC7000 microcomputer running Scintrex Soft II, IGS, and proprietory software. All chargeability responses were analyzed for their spectral characteristics (cole-cole intrinsic chargeability, time constant, and frequency dependence) using Johnson's curve matching procedure (Scintrex Soft II).

The pole dipole electrode array was used on the survey, with an interelectrode ("a") spacing of 20 meters on the Chris and April Claims and 50 meters on the Mag 1 Claim. The current electrode was to the west of the potential electrodes on April 2 Test Line 2, April 2 Grid, April 3 Grid, and Mag 1 Grid. The current electrode was to the east of the potential electrodes on April 2 Test Line 1 and the Chris Test Line.

## 9. DISCUSSION OF RESULTS

The results of the survey are presented as pseudosections of the chargeability and resistivity on accompanying figures 9 to 15, and as contour plans for the April 2 Grid, April 3 Grid, and Mag 1 Grids on accompanying figures 3 to 8.

Chargeability highs have been categorized on the pseudosections as defined below:

strong chargeability high
moderate chargeability high
weak chargeability high
---- weak chargeability high (poorly defined)

long time constant chargeability high

All chargeability highs detected on the April and Chris groups were characterized by relatively short time constants (<1 second), indicative of fine grained polarizable sources, such as fine grained disseminated sulphides.

Chris Test Line Results:
The Chris Test Line results are presented in pseudosection form as figure 9. A broad area of weakly to moderately high chargeability response is defined from 1180 west to 840 west and from 300 west to 40 west. Overburden in excess of 10 meters is probable over both anomalies (higher responses at the n=2 and 3 levels).

April Test Lines 1 and 2:
The April test line 1 and test line 2 results are presented in pseudosection form as figure 10. A weak chargeability high is defined from 480 east to 560 east at the n=4 and 5 levels on test line 2, and weak (poorly defined) highs at the east and west ends of test line 2. Above background values are indicated on test line 1 from 140 west to 60 west.

April 2 Grid:
The April 2 survey results are presented in pseudosection form as figure 11, and in contour plan for the 2nd separation as figures 3 and 4. A broad area of weakly (to moderately) high chargeability response is defined on the west side of the grid at the n=3 to 5 separations.

April 3 Grid:
The April 3 survey results are presented in pseudosection form as figures 12 and 13, and in contour plan for the 2nd separation as figures 5 and 6. Weak (poorly defined) chargeability highs are defined at the n=4 and 5 separations on line 11000 north centered at about 10220 east and 10360 east. Above background responses are noted at the n=5 level on lines 10900, 10800, and 10700 north at approximately the same easting.

Mag 1 Grid:
The Mag 1 survey results are presented in pseudosection form as figures 14 and 15, and in contour plan for the 1st separation as figures 7 and 8. Note that the electrode spacing for the Mag grid was 50 meters, as opposed to 20 meters on the other survey lines. Weak chargeablility highs are defined on line 12300 north from 9950 to 10300 east and on line 12000 north from 9900 to 10050 east and at the east end of the line. Above background values were detected elsewhere on the grid. Chargeablility responses on the mag grid tend to be uniform for all separations. While this would tend to indicate less overburden, it is not possible to state this categorically as the larger spacing has inherently less resolution than the smaller spacing survey on the other survey lines.

## 10. RECOMMENDATIONS

The induced polarization survey on the April, Chris, and Mag claims detected weak to moderate chargeability highs that merit further investigation.

Relatively deep overburden (>10 meters) is suggested from the results of the Chris and April surveys. This suggests that geochemical surveys and detailed geological mapping will be of litte use in assessing these results. It is not possible to estimate if the overburden thickness is shallow enough for such work to be meaningful on the Mag 1 grid owing to the larger spacing used on that grid.

The broad area of weakly to moderately high chargeability response at the further separations on the west side of the April 2 grid is sufficiently well defined for diamond drill testing. Further induced polarization surveying is required on all the other grids before a specific target could be recommended for diamond drilling.

These recommendations are made subject to a geological appraisal of the exploration potential of the property.

Respectfully Submitted,

Alan Scott, Geophysicist

## References

Johnson, J.M., 1984, Spectral induced polarization parameters as determined through time domain measurements: Geophysics Vol. 49.

Price, B., 1987, Dome Mountain gold property (April, Chris, Mag, Fort, Ophir, Sally, Ben, West Dome claims): Report for Freemont Gold Corp.

Sheldrake, R.F., 1985, Report on a Helicopter borne multifrequency electromagnetic and magnetometer survey in the Dome Mountain area, British Columbia: Report for Freemont Gold Corp., and Assessment Report 85-230-13707, Victoria, B.C.

Tipper, H.W., 1976, Smithers map area, British Columbia: Geological Survey of Canada, O.F. 351 (Geological Map).

Tipper, H.W. and Richards, T.A., 1976, Jurassic stratigraphy and history of north-central British Columbia: Geological Survey of Canada, Bulletin 270.

## Statement of Qualifications

I, Alan Scott, of 4013 West 14th Avenue, Vancouver, B.C., V6R 2X3, do hereby certify that:

1 I graduated from the University of British Columbia with a B. Sc. degree (Geophysics) in 1970, and with an MBA (evening program) in 1982.

2 That I am a member of the Society of Professional Engineers, Geologists and Geophysicists of the Province of Saskatchewan, the Society of Exploration Geophysicists, and the B.C. Geophysical Society.

3 That I have been practising by profession as an Exploration Geophysicist since graduation from the University of British Columbia in 1970.

4 That I supervised the geophysical work discussed in this report.

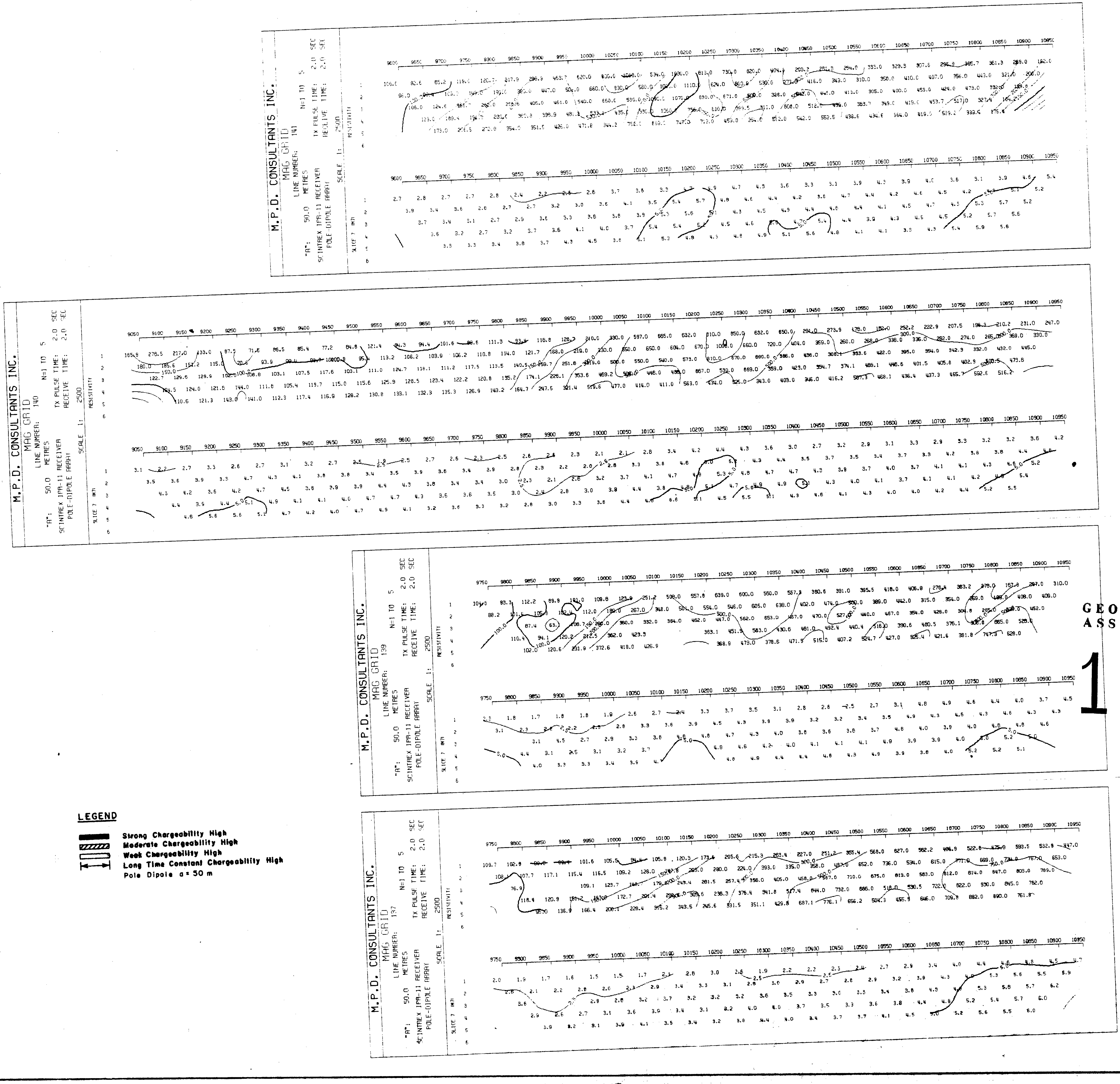
Alan Scott, Geophysicist

## Statement of Costs

| | | |
|---|---|---|
| IP Survey: | 11 field days @ $1796.08/day | $19,756.84 |
| | (Includes mob. and demob.) | |
| | Reports and interpretation | 1,227.81 |
| Supervision: | A. L'Orsa, geologist | 600.00 |
| | Two days @ $300/day | |
| Linecutting: | 19.5 km @ $311.54/km | 6,075.00 |
| Vehicle: | 4X4 truck, two days @ $50/day | 100.00 |
| | | $27,759.65 |

A. L'Orsa

Anthony L'Orsa




**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High
- Pole Dipole a = 50 m

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,923

TEESHIN RESOURCES LTD.

DOME MOUNTAIN PROJECT

APRIL-CHRIS-MAG CLAIMS
MAG GRID
IPR II SURVEY - PSEUDOSECTIONS
LINES 13700N to 14100N

SCALE 1:2500 | DATE

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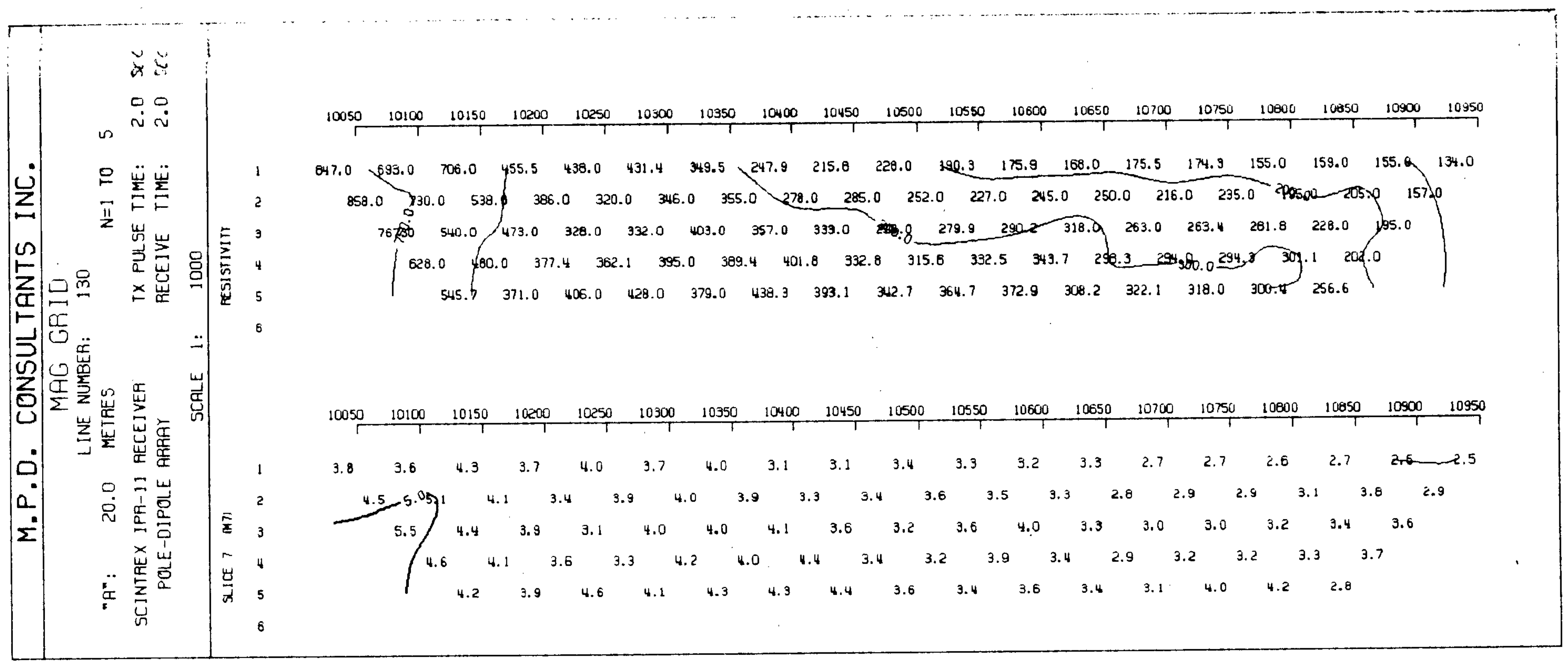


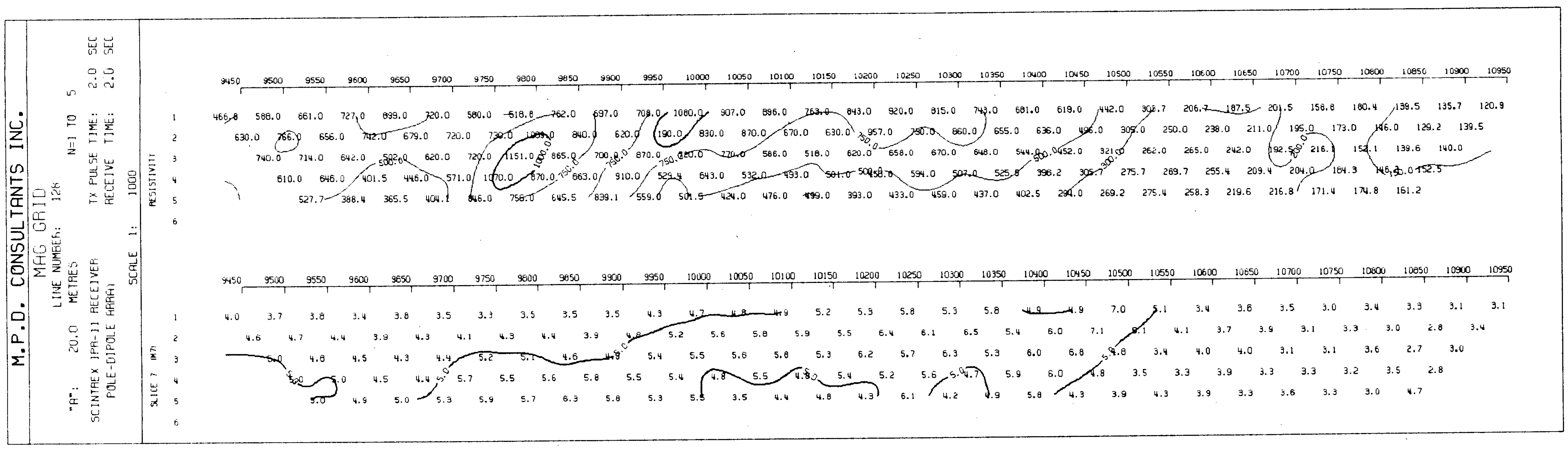


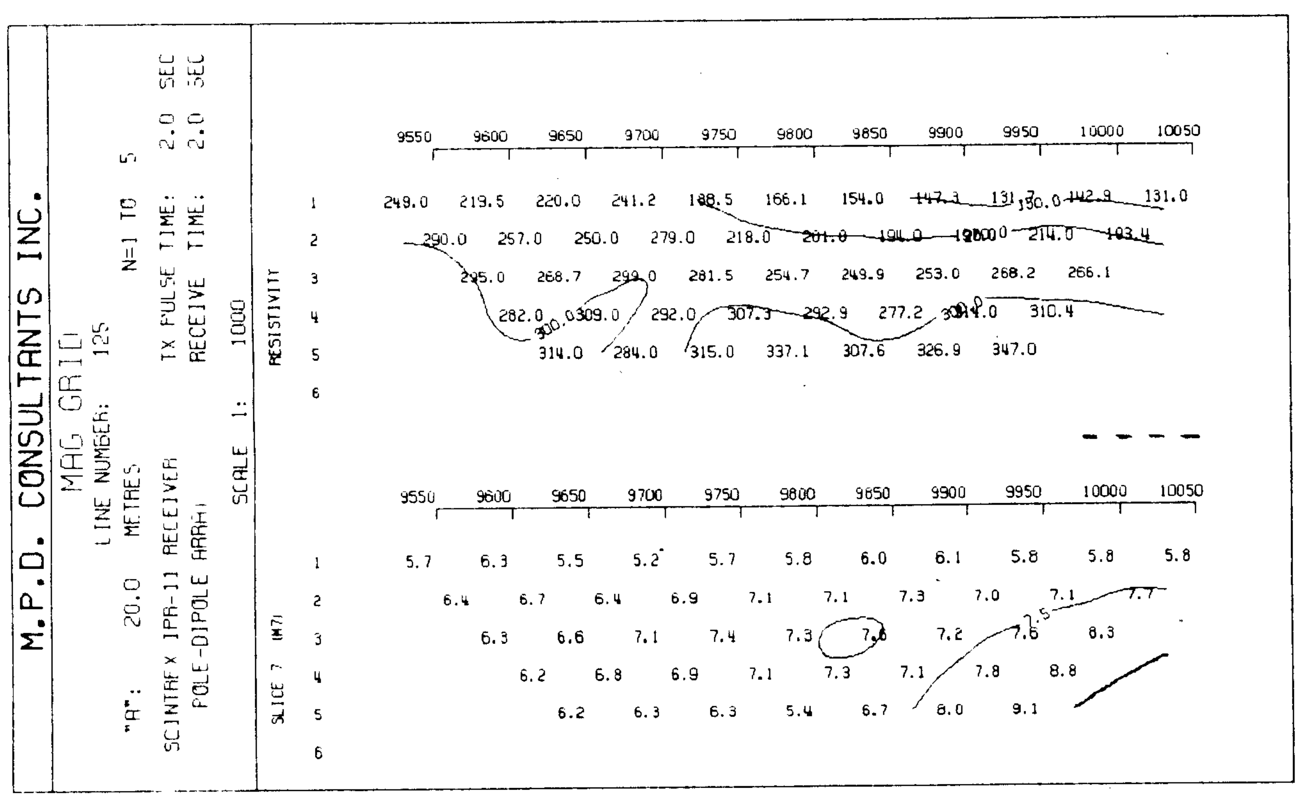


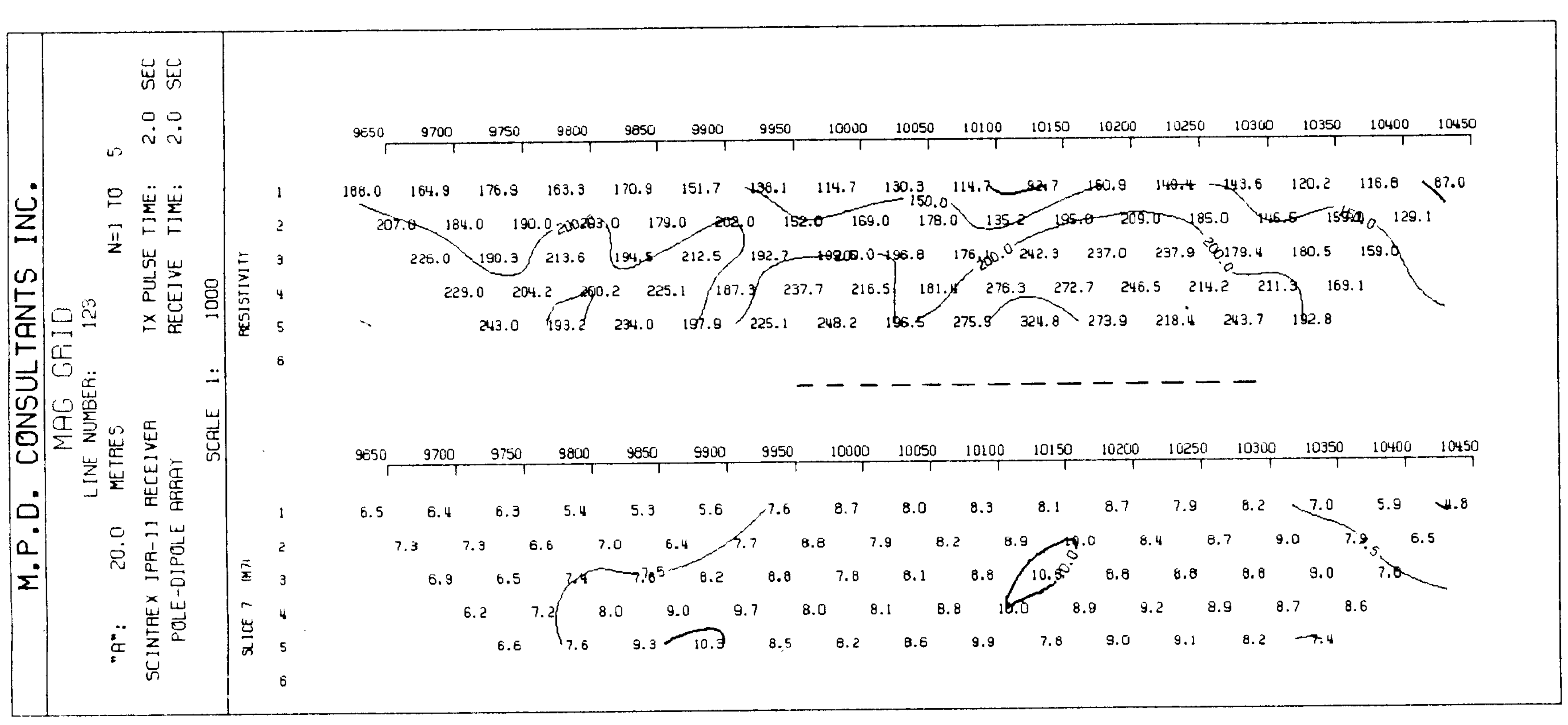


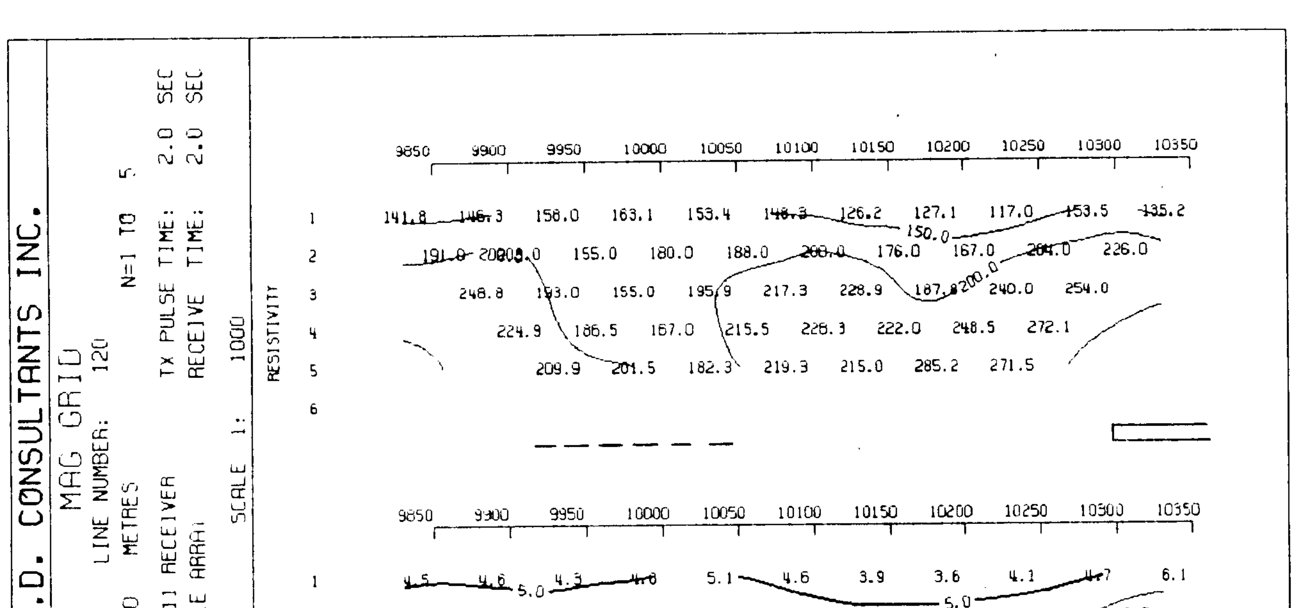


**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High
- Pole Dipole a=50m



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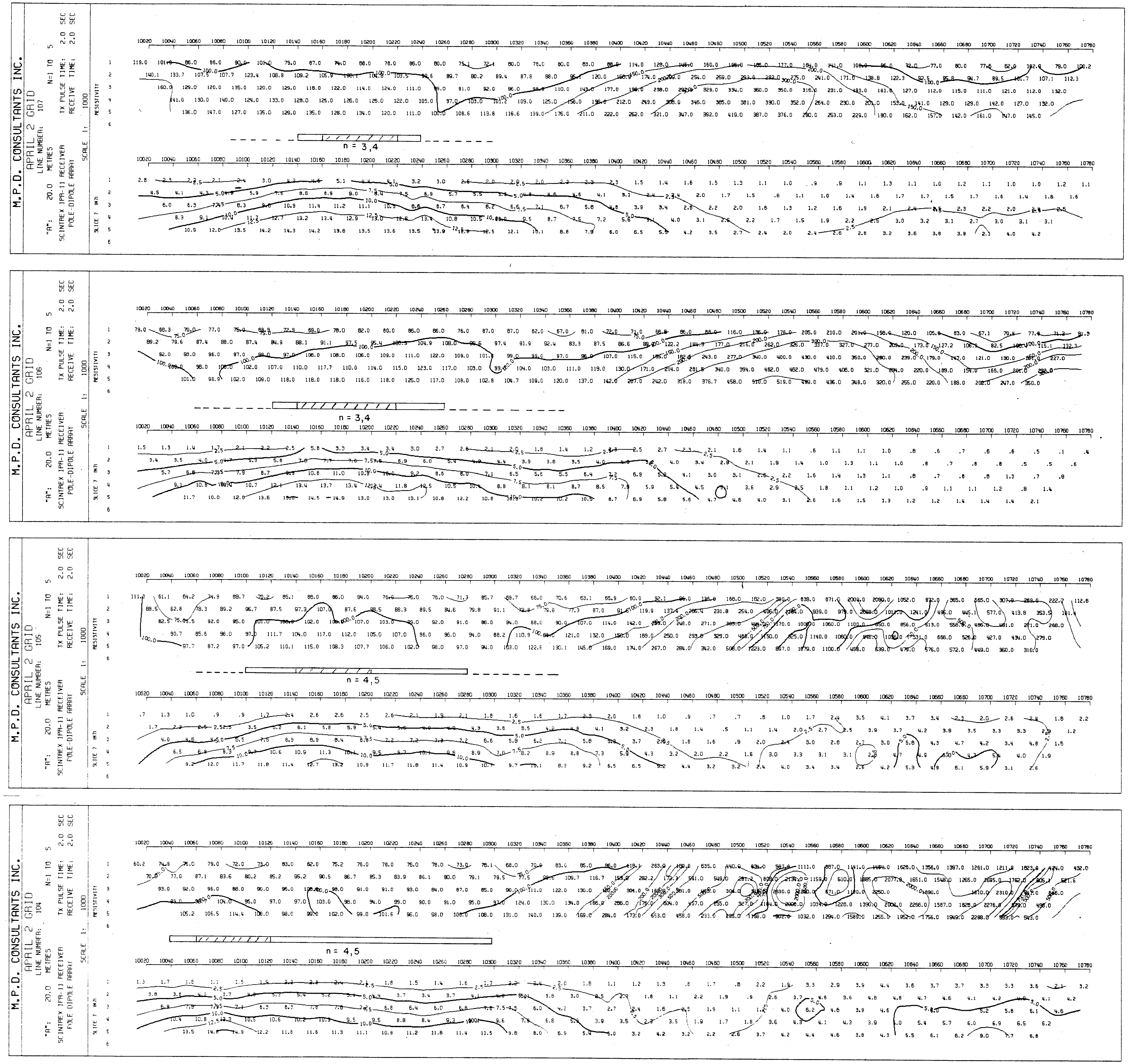
**DOME MOUNTAIN PROJECT**

APRIL-CHRIS-MAG CLAIMS
MAG GRID
IPR II SURVEY — PSEUDOSECTIONS
LINES 12000N to 13000N

| | |
|---|---|
| SCALE 1:5000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 14 |




**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High

Pole - Dipole a = 20m

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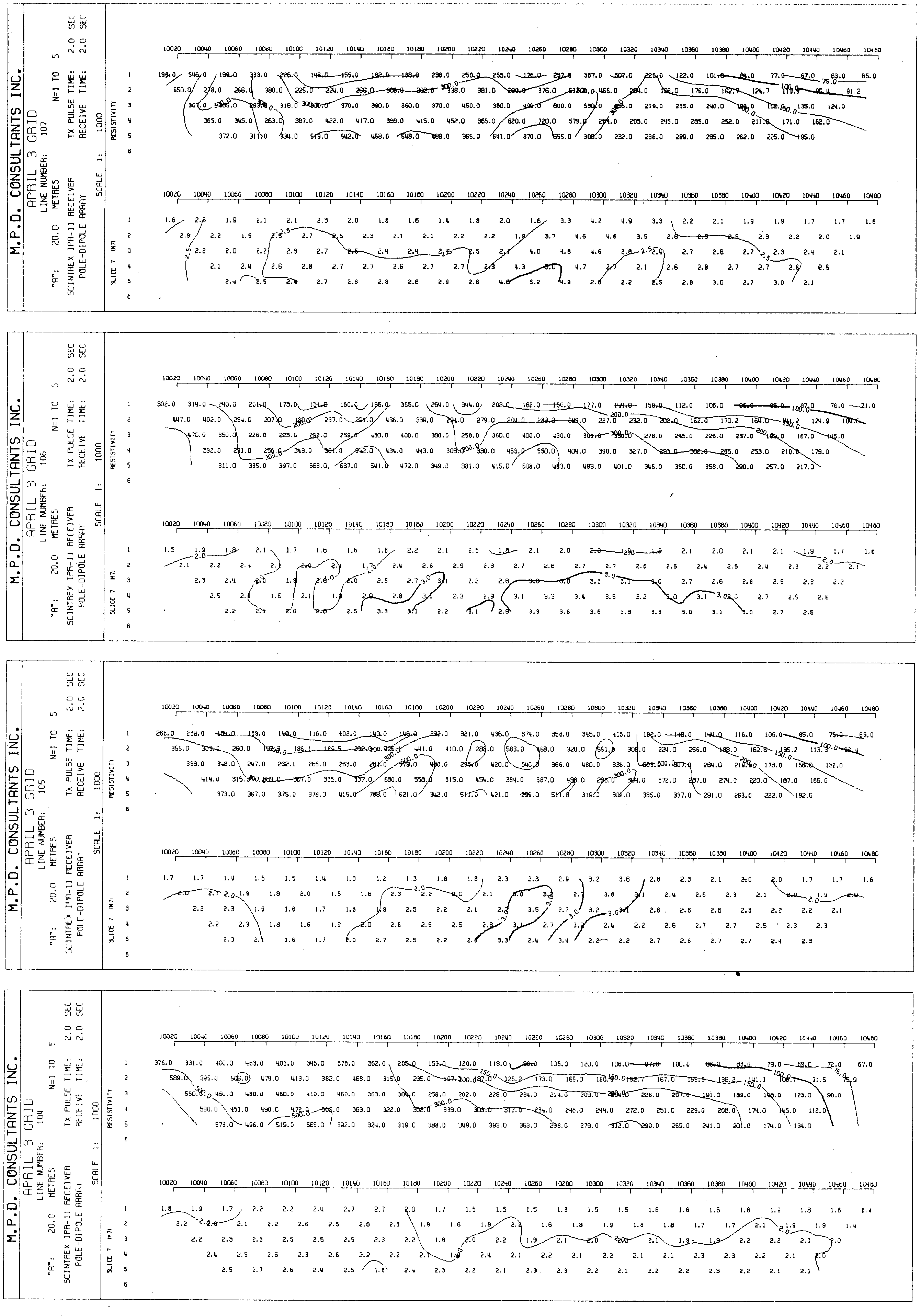
**DOME MOUNTAIN PROJECT**

APRIL-CHRIS-MAG CLAIMS
APRIL 2 GRID
IPR II SURVEY – PSEUDOSECTIONS
LINES 104-107

| SCALE 1:2000 | DATE NOV. 1989 |
|---|---|
| SCOTT GEOPHYSICS LIMITED | FIG. 11 |




**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High

Pole Dipole a = 20 m

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**DOME MOUNTAIN PROJECT**

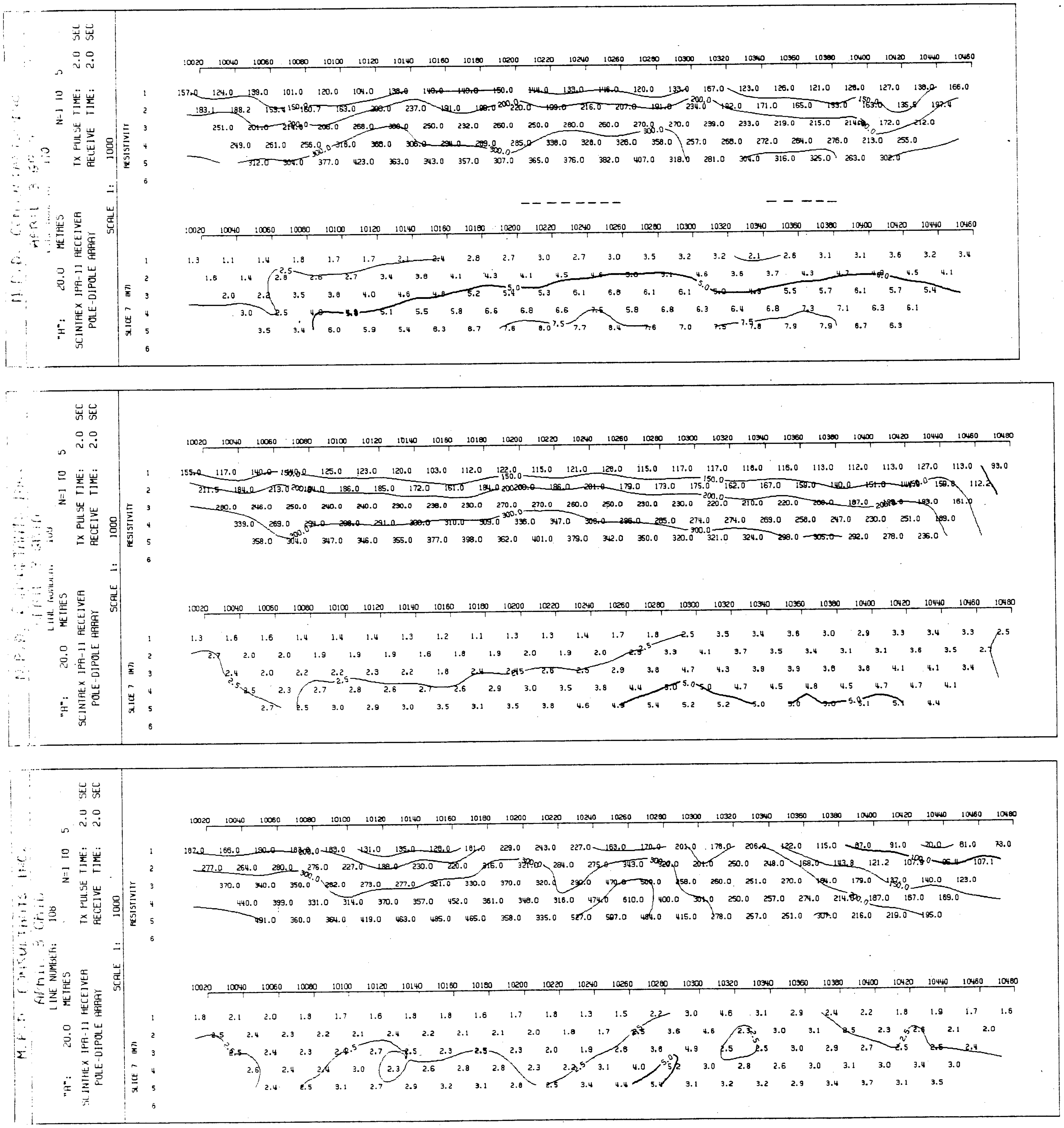
APRIL-CHRIS-MAG CLAIMS

APRIL 3 GRID

IPR II SURVEY — PSEUDOSECTIONS

LINES 10400N to 10700N

| SCALE 1:2000 | DATE NOV. 1989 |
|---|---|
| SCOTT GEOPHYSICS LIMITED | FIG. 12 |




**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High

Pole Dipole a=20m.

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**DOME MOUNTAIN PROJECT**

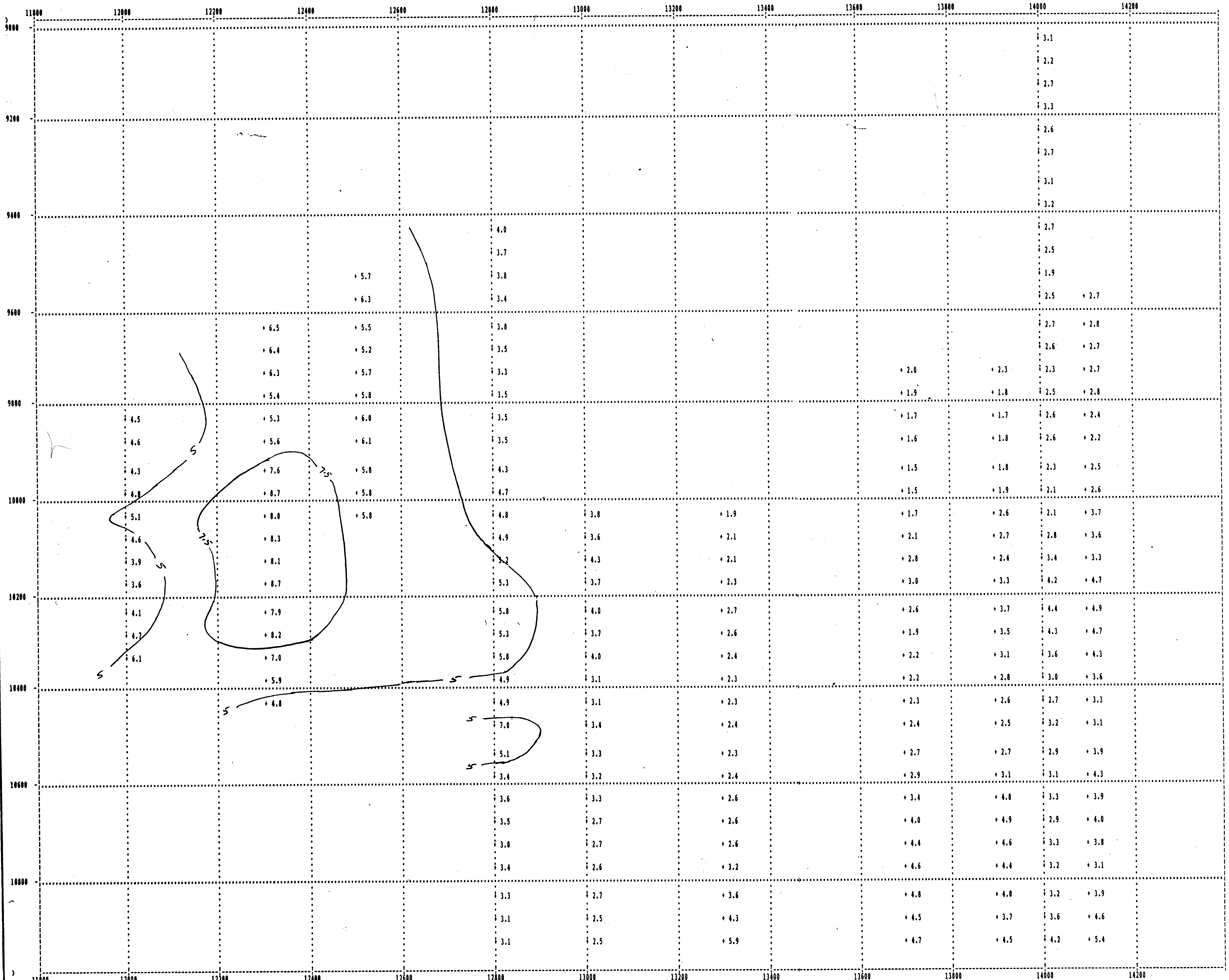
**APRIL-CHRIS-MAG CLAIMS**

**APRIL 3 GRID**

**IPR II SURVEY — PSEUDOSECTIONS**

**LINES 10800N to 110 000 N**

| SCALE 1:2000 | DATE NOV. 1989 |
|---|---|
| SCOTT GEOPHYSICS LIMITED | FIG. 13 |

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DOME MOUNTAIN PROJECT

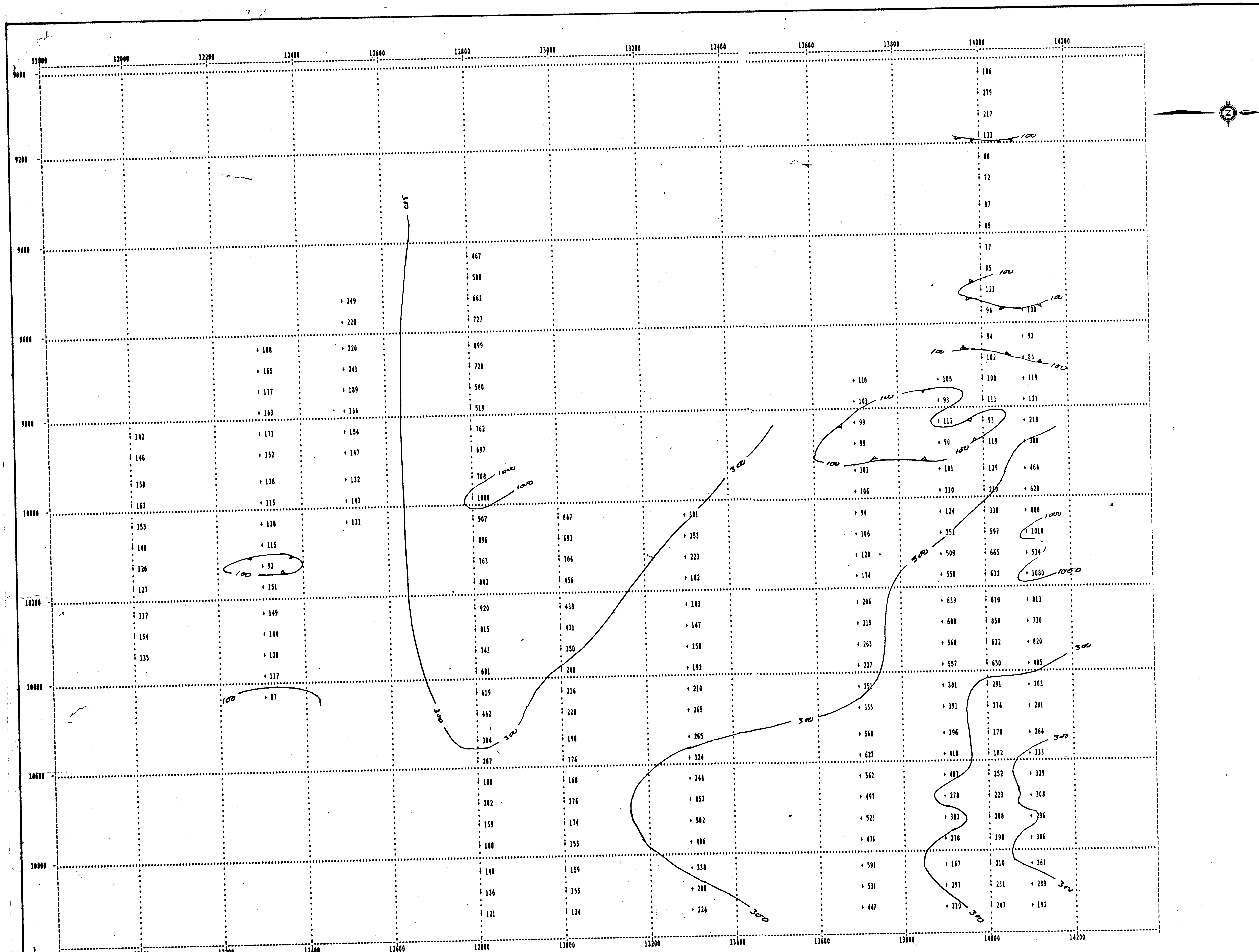
APRIL-CHRIS-MAG CLAIMS

MAG I GRID

CHARGEABILITY CONTOUR PLAN

Pole Dipole Array a=50m n=1

| | |
|---|---|
| SCALE 1:5000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 7 |

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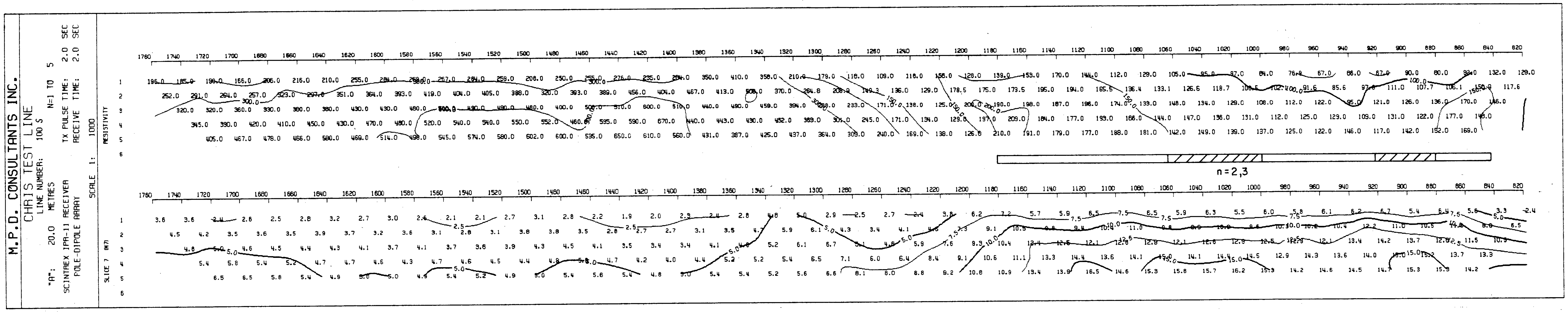
APRIL-CHRIS-MAG CLAIMS

MAG I GRID

RESISTIVITY CONTOUR PLAN

Pole Dipole Array a=50m n=1

| | |
|---|---|
| SCALE 1:5000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 8 |



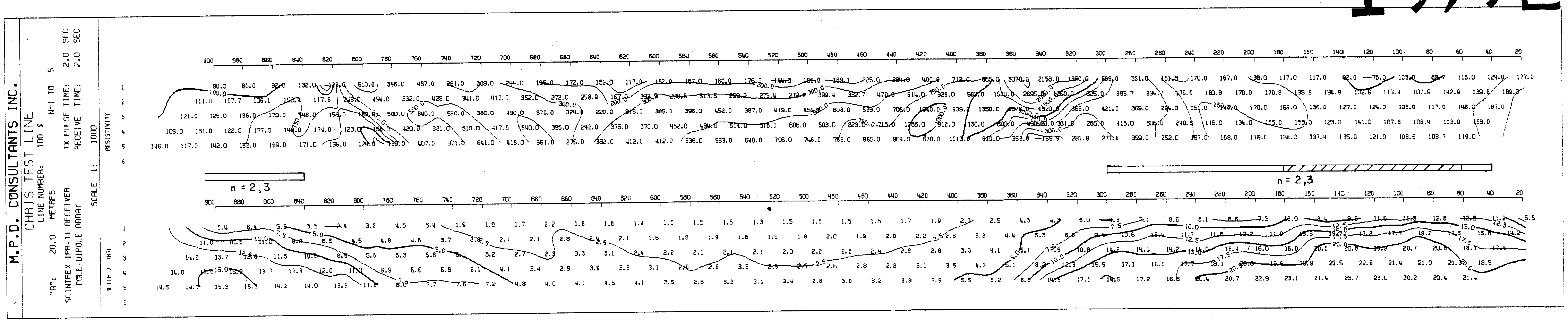

**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High

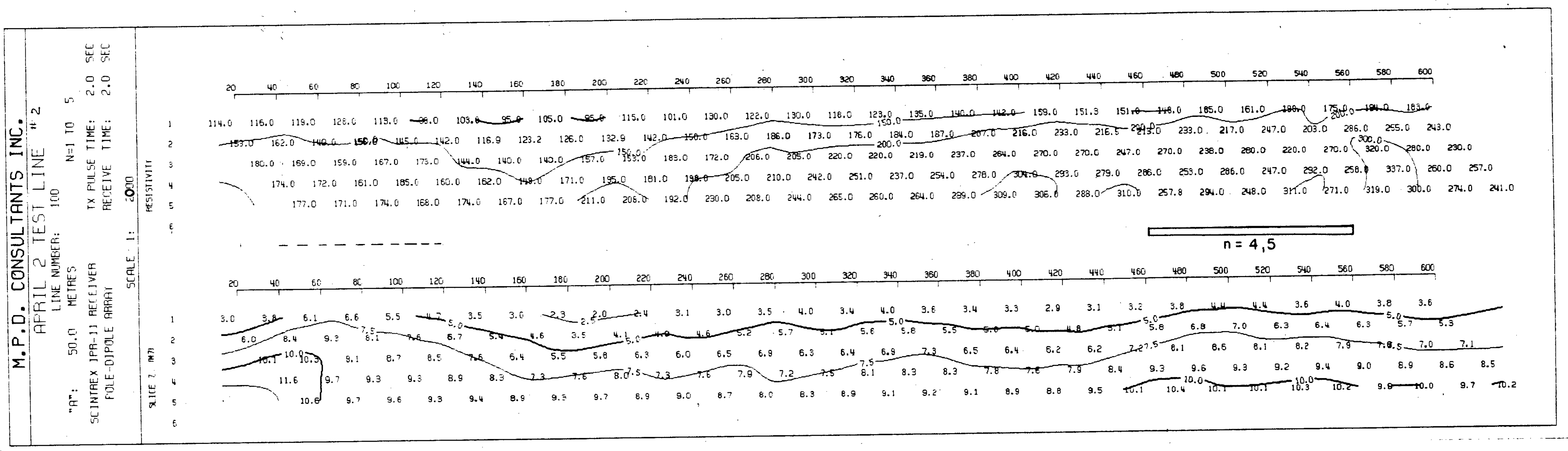
Pole Dipole a = 20 m.

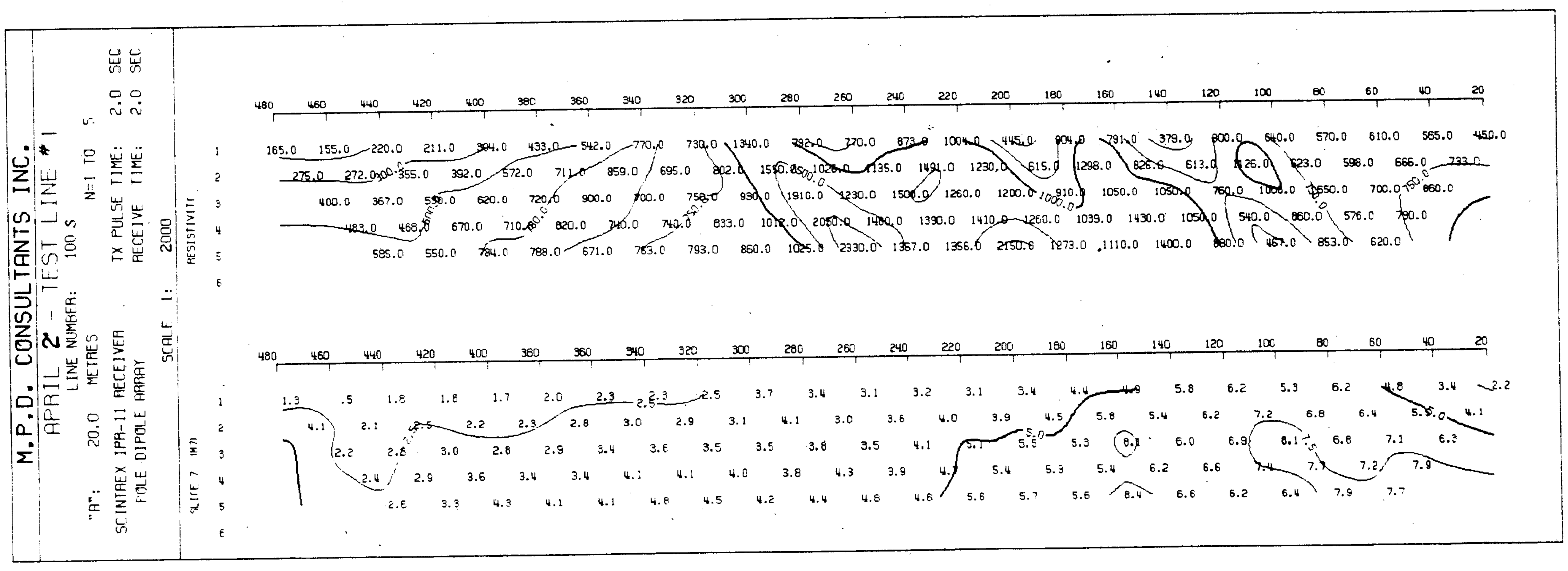
**GEOLOGICAL BRANCH ASSESSMENT REPORT**

# 19,923




| | |
|---|---|
| TEESHIN RESOURCES LTD. | |
| DOME MOUNTAIN PROJECT | |
| APRIL-CHRIS-MAG CLAIMS<br>CHRIS TEST LINE<br>IPR II SURVEY — PSEUDOSECTIONS | |
| SCALE 1:2000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 9 |




**LEGEND**

- Strong Chargeability High
- Moderate Chargeability High
- Weak Chargeability High
- Long Time Constant Chargeability High
- Pole Dipole a = 20 m

GEOLOGICAL BRANCH
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|---|---|
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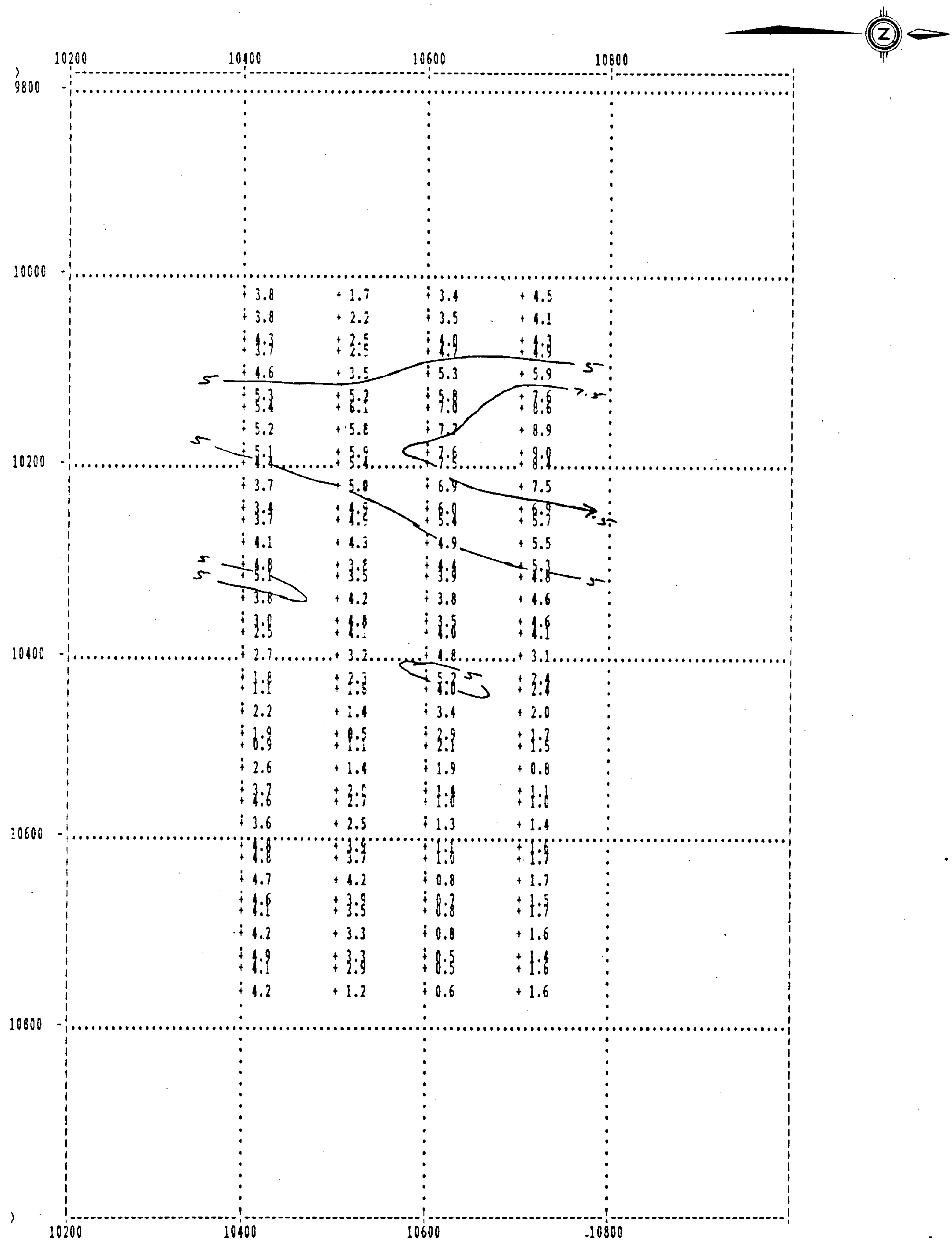
| DOME MOUNTAIN PROJECT | |
| APRIL-CHRIS-MAG CLAIMS<br>APRIL 2 GRID<br>IPR II SURVEY – PSEUDOSECTIONS<br>TEST LINES 1 and 2 | |
| SCALE 1:2000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 10 |




TEESHIN RESOURCES LTD.

DOME MOUNTAIN PROJECT

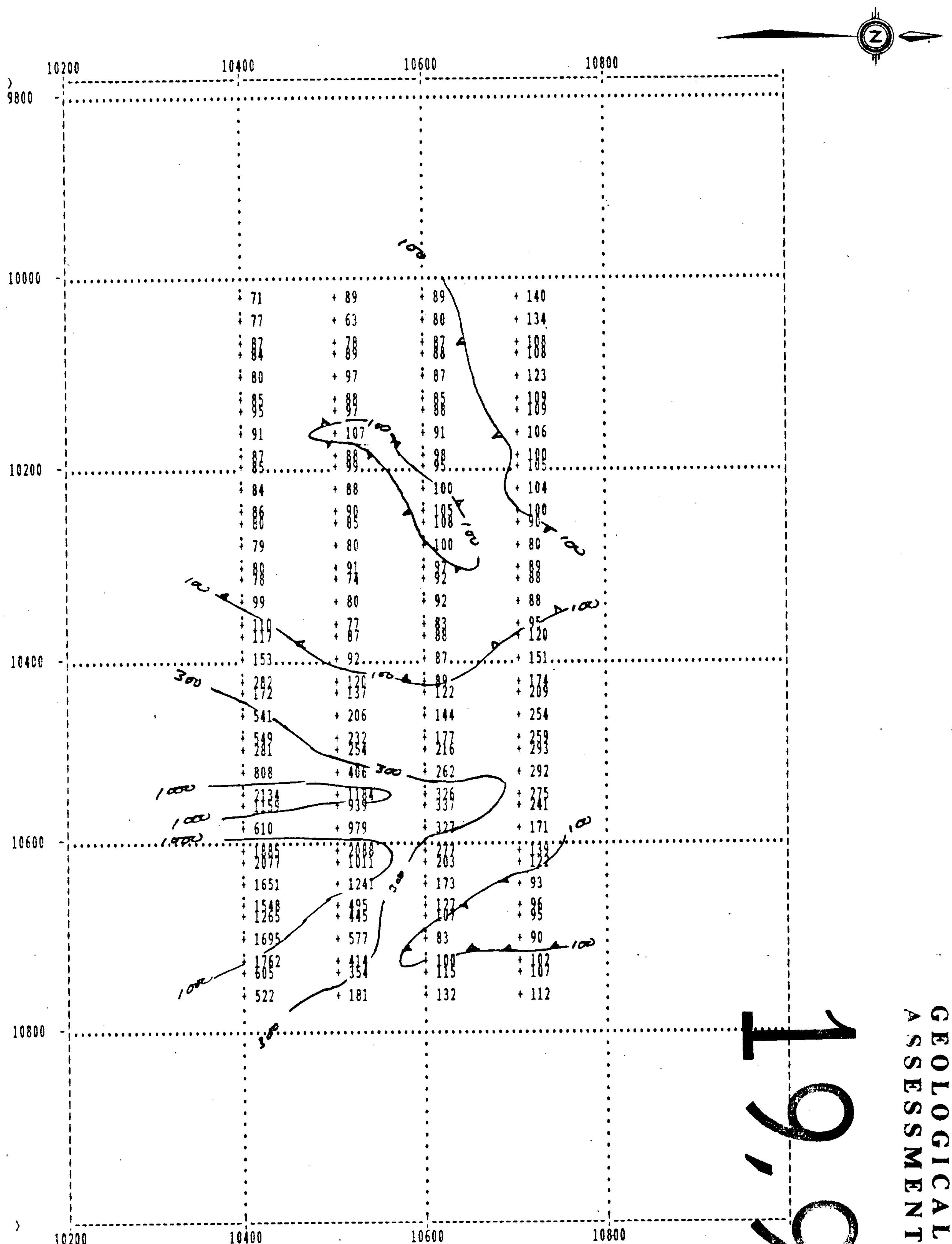
APRIL-CHRIS-MAG CLAIMS

APRIL 2 GRID

CHARGEABILITY CONTOUR PLAN

Pole Dipole Array a=20m n=2

| SCALE 1:5000 | DATE NOV. 1989 |
| --- | --- |
| SCOTT GEOPHYSICS LIMITED | FIG. 3 |

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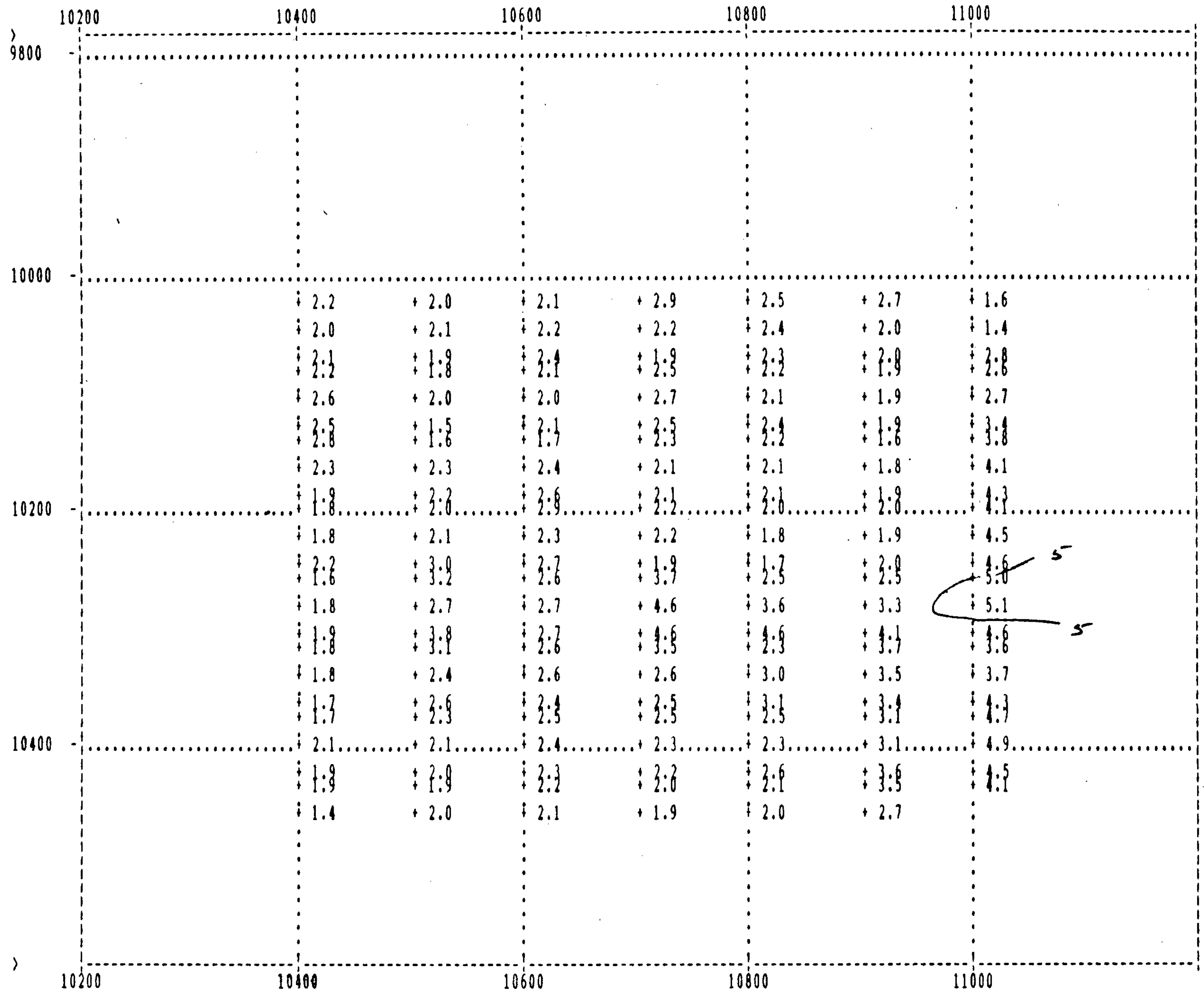
| TEESHIN RESOURCES LTD. |
| DOME MOUNTAIN PROJECT |
| APRIL-CHRIS-MAG CLAIMS<br>APRIL 2 GRID<br>RESISTIVITY CONTOUR PLAN<br>Pole Dipole Array a=20m n=2 |
| SCALE 1:5000 — DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED — FIG. 4 |

Fig 4




GEOLOGICAL BRANCH
ASSESSMENT REPORT

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TEESHIN RESOURCES LTD.

DOME MOUNTAIN PROJECT

APRIL-CHRIS-MAG CLAIMS

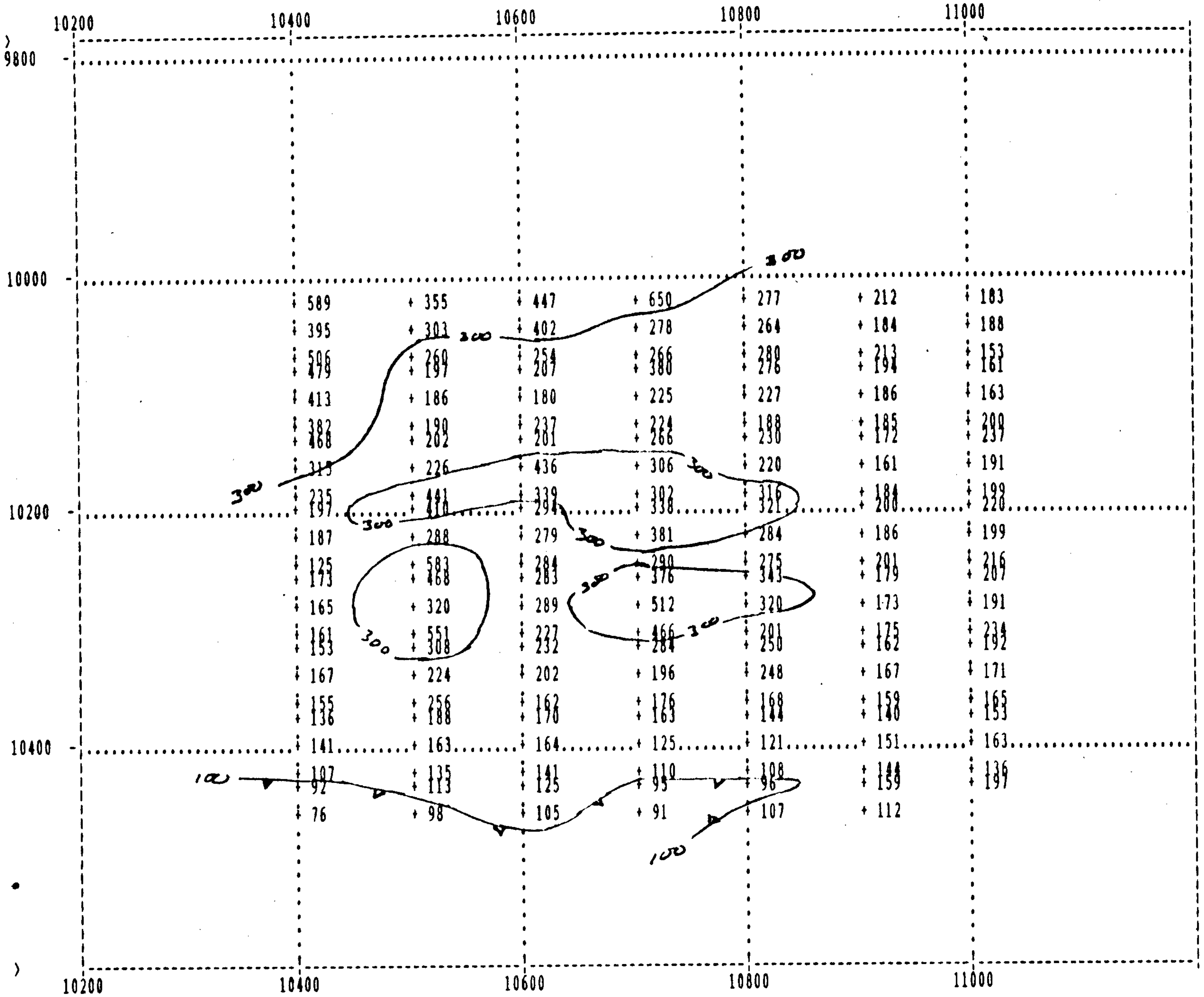
APRIL 3 GRID

CHARGEABILITY CONTOUR PLAN

Pole Dipole Array a=20m n=2

SCALE 1:5000 | DATE NOV. 1989

SCOTT GEOPHYSICS LIMITED FIG. 5

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TEESHIN RESOURCES LTD.

DOME MOUNTAIN PROJECT

APRIL-CHRIS-MAG CLAIMS

APRIL 3 GRID

RESISTIVITY CONTOUR PLAN

Pole Dipole Array a=20m n=2

| | |
|---|---|
| SCALE 1:5000 | DATE NOV. 1989 |
| SCOTT GEOPHYSICS LIMITED | FIG. 6 |