A Report on
An Induced Polarization Survey
Pasayten Group of Mineral Claims
(49°, 120°, S.W.)

by
Peter E. Walcott, P.Eng.

December 1970

A REPORT

on

AN INDUCED POLARIZATION SURVEY

Manning Park Area, B.C.

For

IRONSIDES EXPLORATION CORPORATION LTD.

Vancouver, British Columbia

By

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

DECEMBER 1970

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INTRODUCTION

Between July 8th and 19th, and October 26th and November 7th, 1970, Peter E. Walcott & Associates Limited carried out an induced polarization (I.P.) survey on part of a property, located in the Manning Park area of British Columbia, optioned by Ironsides Exploration Corporation Limited.

The survey was started in July but was shut down after a week by the extreme fire hazard in the forests of southern B.C. and was not resumed until October.

The survey was carried out over handcut lines which were turned off at right angles from an approximate north-south baseline, and which were chained and picketed at 100 foot intervals.

Measurements (first to fourth separation) of apparent resistivity and frequency effect (the I.P. response parameter) were made using the "dipole-dipole" method of surveying with a 200 foot electrode separation and frequencies of 0.3 and 5 c.p.s.

The data are presented in contoured form on individual line profiles contained in this report. In addition, the anomalous zones are outlined on a plan map of the line grid (Map W-114-1) that accompanies the report.

PROPERTY, LOCATION AND ACCESS

The property, referred to as the Pasayten Group, is located in the Similkameen Minind Division of British Columbia, and consists of the following mineral claims and leases:

Claim Name		Record Number
Spheno	1 - 16	23893 - 23908
Spheno	17, 19 - 20	23915 - 917
Spheno	21 - 26	23909 - 914
Spheno	27 - 53	23918 - 944
Spheno	54 - 57	24003 - 006
Ajax	1 - 10	14066 - 075
Pete	1 - 8	7689 - 696
Lorne	3 - 7	7730 - 734
Dianne	1 - 6	18134 - 139
Cal	1 - 4, Fr 1, Fr 2	27422 - 437
Air	1 - 2	27439 - 440
Enid	1 - 6	22700 - 705
Enid	7 - 15	12383 - 391
Bee	1 - 8	18140 - 147
Madeline	1 - 2, Fr	22695 - 697
Wood	Fr	27438
Venture	1, Fr	12018 - 019
Mineral Leases		L 229, 273, 399, 400, 1195

The claims are located in the Similkameen River Valley and on the adjoining slopes at the east boundary of Manning Park, some 30 miles south of the town of Princeton, British Columbia.

Access to the property is obtained by means of the Hope - Princeton Highway which bisects the property, and thence by several secondary roads that traverse the claims.

PREVIOUS WORK

Exploration work was first conducted around the turn of the century. Since then considerable work has been done on the property that includes.

1. Extensive trenchings and stripping.

2. Driving of numerous adits.

3. Percussion and diamond drilling.

4. Geological mapping.

5. Geochemical and magnetic surveys.

The results of this work is documented in reports by various engineers who have visited and/or worked on the property over the years.

PURPOSE

The purpose of the survey was to try and locate by the induced polarization technique concentrations of disseminated sulphide mineralization, the occurrence of which is known on the property.

GEOLOGY

The reader is referred to a report by J.G. Simpson Ph.D., P.Eng. of Cyprus Exploration Corporation Limited.

Briefly the claims are underlain by volcanic and sedimentary rocks, consisting for the most of andesites, tuffs, argillites and limestones, of the Nicola Group, Upper Triassic in age.

These generally strike north 20° - 30° west, and dip to the west in and around the vicinity of the property.

Strong shearing is present parallel to the above formational trend, and in many places the rocks have been altered to chlorite and quartz - sericite schists.

Several mineralized zones occur and have been explored on the property. Mineralization consists of pyrite, pyrrhotite, sphalerite, chalcopyrite, bornite, malachite and covellite which occur within the schists and in discontinuous quartz lenses and veins.

SURVEY SPECIFICATIONS

The induced polarization (I.P.) survey was carried out using a system manufactured by McPhar Geophysics Limited of Don Mills, Ontario. Measurements with this system are made in the frequency domain.

The system consists basically of three units, a receiver, a transmitter and a motor generator. - The transmitter, which obtains its power from the 2.5 kw 400 cycle generator driven by a gasoline engine, injects current into the ground at two electrodes C_1 and C_2 at two preselected frequencies, while the receiver, a very stable and sensitive potentiometer tuned to the frequency selected, makes measurements of observed voltages across the potential electrodes P_1 and P_2.

The data recorded in the field consists of careful measurements of the current (I) flowing through electrodes C_1 and C_2, the voltage (V) appearing between the potential electrodes P_1 and P_2 on the low frequency, and the "percentage apparent frequency effect" appearing between P_1 and P_2 (the receiver is designed to measure directly

$$\text{the \% age F.E.} = \frac{(P_a \text{ low} - P_a \text{ high}) \times 100)}{P_a \text{ high}}$$

The apparent resistivity (P_a) in ohm-feet is proportional to the ratio of the measured voltage and current, the proportionality factor depending on the geometry of the array used. In practise $\frac{P_a}{2\pi}$ is plotted.

A third parameter termed the "metal factor" is also calculated by dividing the apparent frequency effect by $\frac{P_a}{2\pi}$ and multiplying by 1000.

The survey was carried out using the "dipole-dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or n.

In practise the equipment is set up at a particular station of the line to be surveyed; three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e. n = 4; the equipment is moved 3 "a" feet along the line to the next set-up.

SURVEY SPECIFICATIONS cont'd

A 200 foot separation was used on the survey.

Severe difficulties were encountered on the first part of the survey in injecting current into the ground on account the the extremely dry ground conditions, even though two layered tinfoil electrodes at 20 to 3 feet depths, soaked with a gallon of water, were employed at each station.

The progress of the survey was hampered by the steepness of the terrain, 20^{o} - 30^{o} slopes with 50 foot vertical drop-offs where excavating and road-building had been undertaken. Added impediment was caused by incorrectly measured 100 foot intervals necessitating frequent additions and subtractions to the precut transmitting wires.

DISCUSSION OF RESULTS

The I.P. survey, as performed with 200 foot dipoles, indicated the presence of three major anomalous zones on the property as can be seen on Map W-114-1 and the individual line profiles.

These three zones all strike approximately north-south and roughly coincide with the locations of anomalous copper soils.

The most westerly zone, located on and near the baseline, is not continuous and could be classified into two zones. However its characteristics are the same, and as the writer feels it has the same causative source throughout, for the purpose of discussion it will be treated as one.

Its northern extremity coincides with an area of rusty stained rock containing much finely disseminated pyrite.

The middle zone, located around T.L. 38 E, is undefined at both ends. It occurs in a strong wide shear in chlorite and quartz sericite schist and is located over a maze of partially caved adits.

High frequency effects and low resistivity values were encountered over this zone, particularly on the northern end where overburden cover is thin, resulting in very high metal factors. The former are considered due to suspected graphite and sulphide mineralization, while the latter are partially due to the same and partially due to the strong shear.

The most easterly zone, as different from the other two, was not previously associated with known mineralization and is located mostly beneath overburden cover halfway up the valley wall.

It has the same characteristics as the second zone, and also appears to occur, from limited rock exposure, in a north-south trending shear in which graphite was observed by the writer.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between July 8th and 19th, and October 26th and November 7th, 1970, Peter E. Walcott & Assoc. Ltd. carried out and induced polarization (I.P.) survey over part of a property optioned by Ironsides Exploration Corporation Ltd.

The property, the Pasayten Group, is located near the east boundary of Manning Park, some 30 miles south of Princeton, British Columbia.

The I.P. survey, performed with 200 foot dipoles, indicated the presence of three major north-south trending anomalous zones, the locations of which roughly correspond with those of anomalous copper soil anomalies.

The most easterly anomaly coincides on its northern extremity with a zone of rusty stained rock containing finely disseminated pyrite, while the other two are contained in strong shears in the chlorite and quartz sericite schist, in which the presence of graphite and sulphide mineralization have been noted.

As a result the writer concludes that the most easterly zone is most probably caused by disseminated pyrite, while the latter two are probably attributable to graphite and pyrite.

He therefore suggests that this could be tested by a small three hole drill programme, the cost of which could be considerably reduced if the drill sites are located on the numerous secondary roads that traverse the hill sides and the anomalous zones.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng.
Geophysicist

December 1970

Vancouver,
British Columbia

A P P E N D I X

COST OF SURVEY

Peter E. Walcott & Associates Limited undertook the I.P. survey on a daily basis. Mobilization and draughting costs were extra so that the total cost of services provided was $7,967.35.

PERSONNEL EMPLOYED ON SURVEY

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	July 8th - 19th & Oct. 28th - Nov. 7th & Nov. 28th - Dec. 5th 1970
G. MacMillan	Geophysical Operator	"	July 8th - 19th, Oct. 26th - Nov. 7th & Nov. 25th - Dec. 4th 1970
V. Pashniak	"	"	Oct. 26th - Nov. 7th & Nov. 26th - Dec. 4th, 1970
J. Walcott	Typing	"	Dec. 9th, 1970
K. Drobot	Geophysical Operator	McPhar Geophysics Ltd. 139 Bond St., Toronto, Ontario	Oct. 26th - Nov. 7th 1970
B. Hewitt	Helper	General Delivery Princeton, B.C.	Jul. 9th - 19th & Nov. 5th - 7th, 1970
B. Montgomery	"	"	Jul 8th - 16th, 1970
R. Scott	"	"	Jul 17th - 19th, 1970

CERTIFICATION

I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.

2. I have been practising my profession for the last eight years.

3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.

4. I hold no interests, direct or indirect, in the securities or properties of Ironsides Exploration Corporation Limited nor do I expect to receive any.

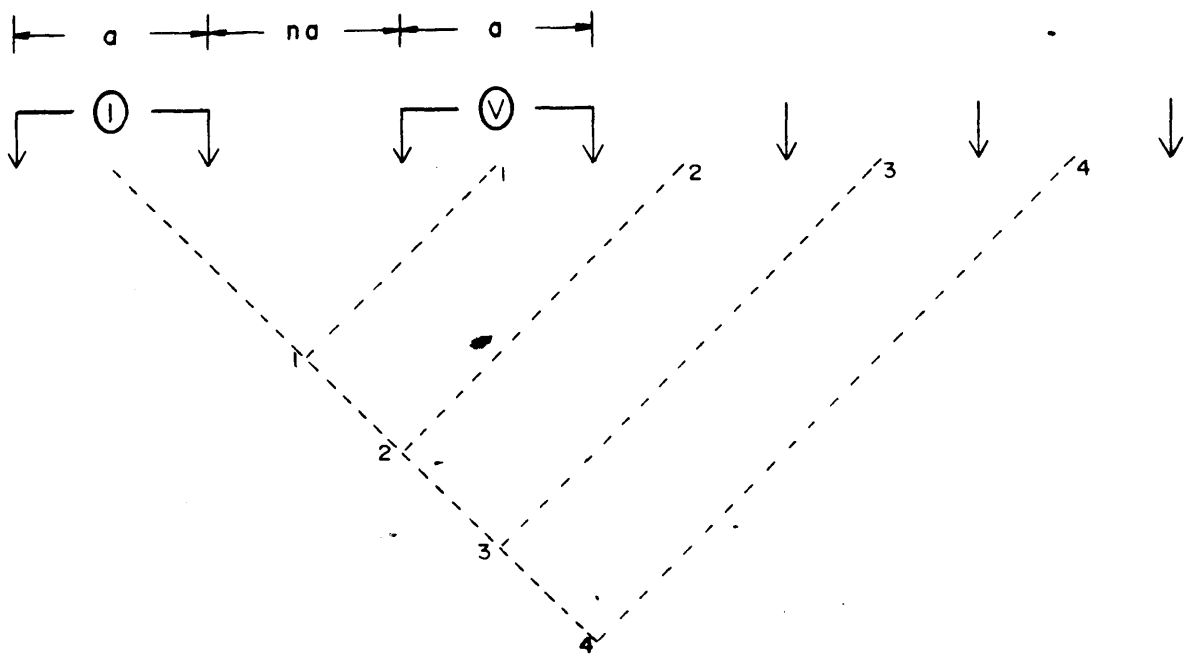
Peter E. Walcott

Peter E. Walcott, P.Eng.

Vancouver,
British Columbia,

December 1970

DIPOLE — DIPOLE ARRAY

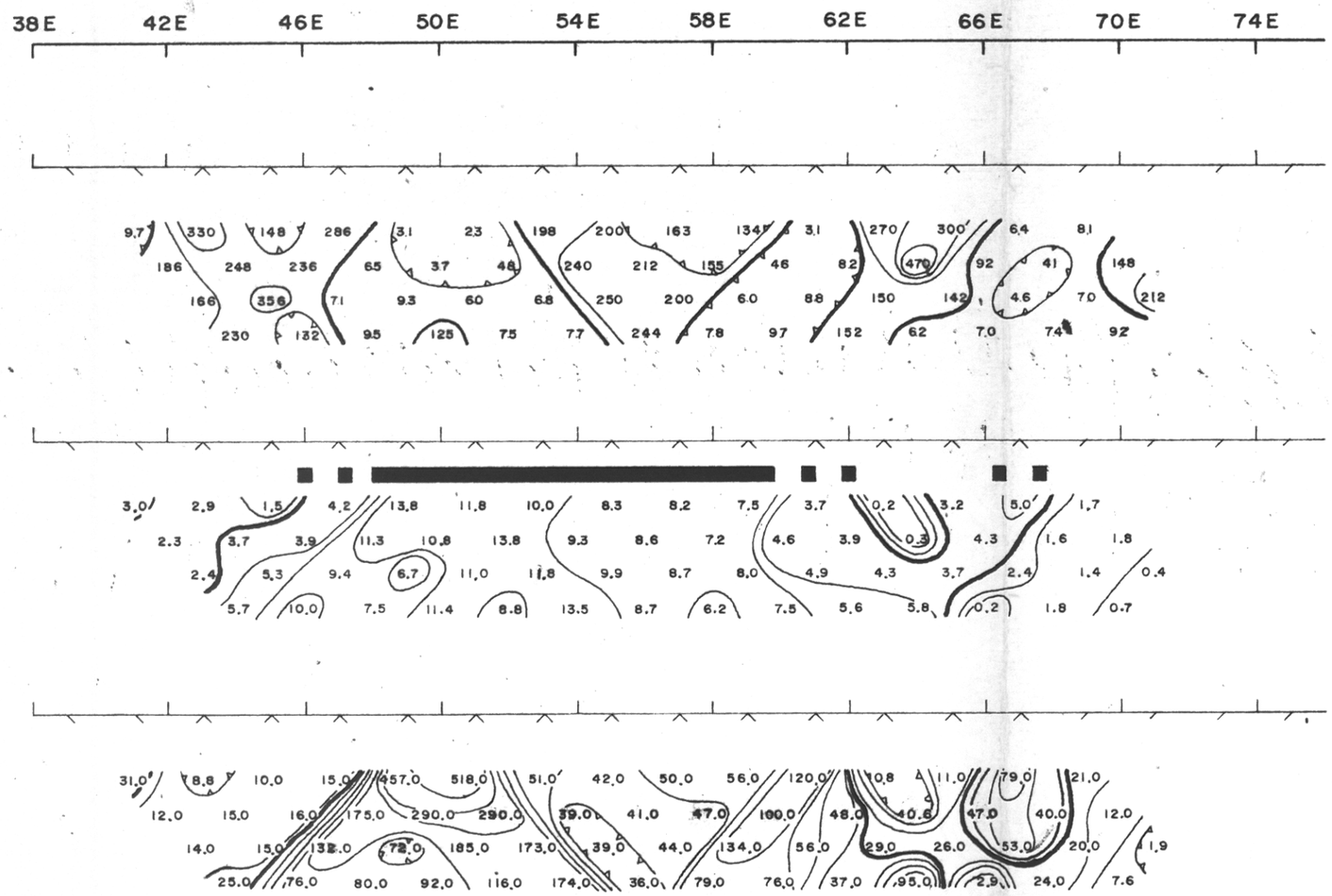


ANOMALOUS ZONE

PROBABLE ANOMALOUS ZONE

POSSIBLE ANOMALOUS ZONE

QUESTIONABLE ANOMALOUS ZONE



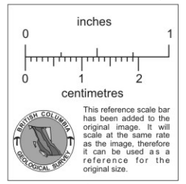
IRONSIDES EXPLOR. CORP. LTD.

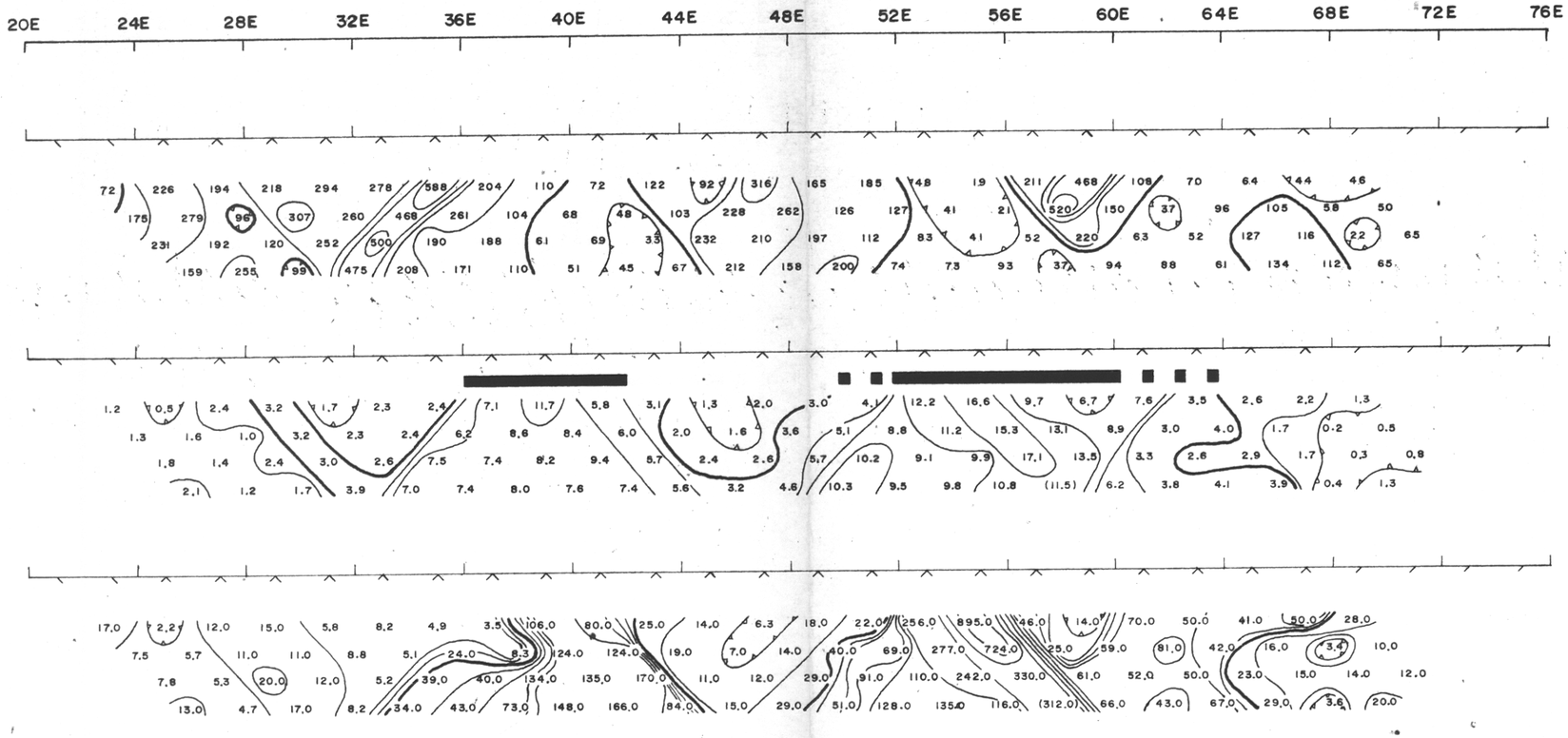
SPÈNHO AREA

LINE 21+00 N

SCALE 1"= 400'

F.R.— 5 + 0.3 C/SEC.





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SPENHO AREA

LINE 15 + 00 N

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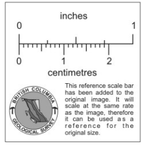
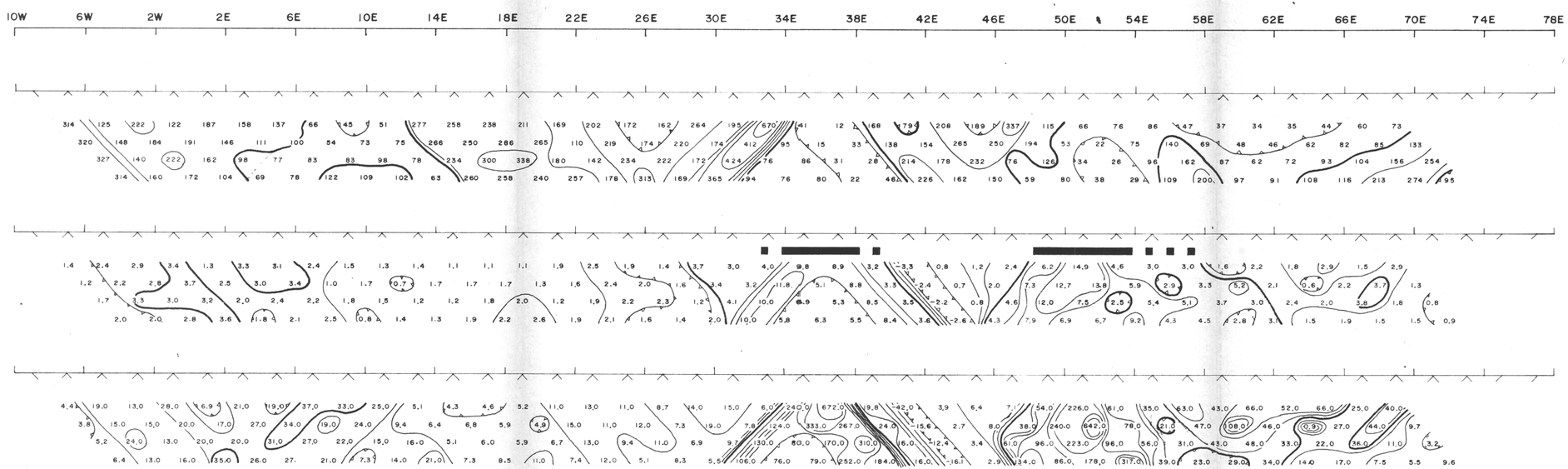
F.R. — 5 + 0.3 C/SEC.





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SPENHO AREA

LINE 9 + 00 N

SCALE 1" = 400'

F.R. — 5 + 0.3 C/SEC.

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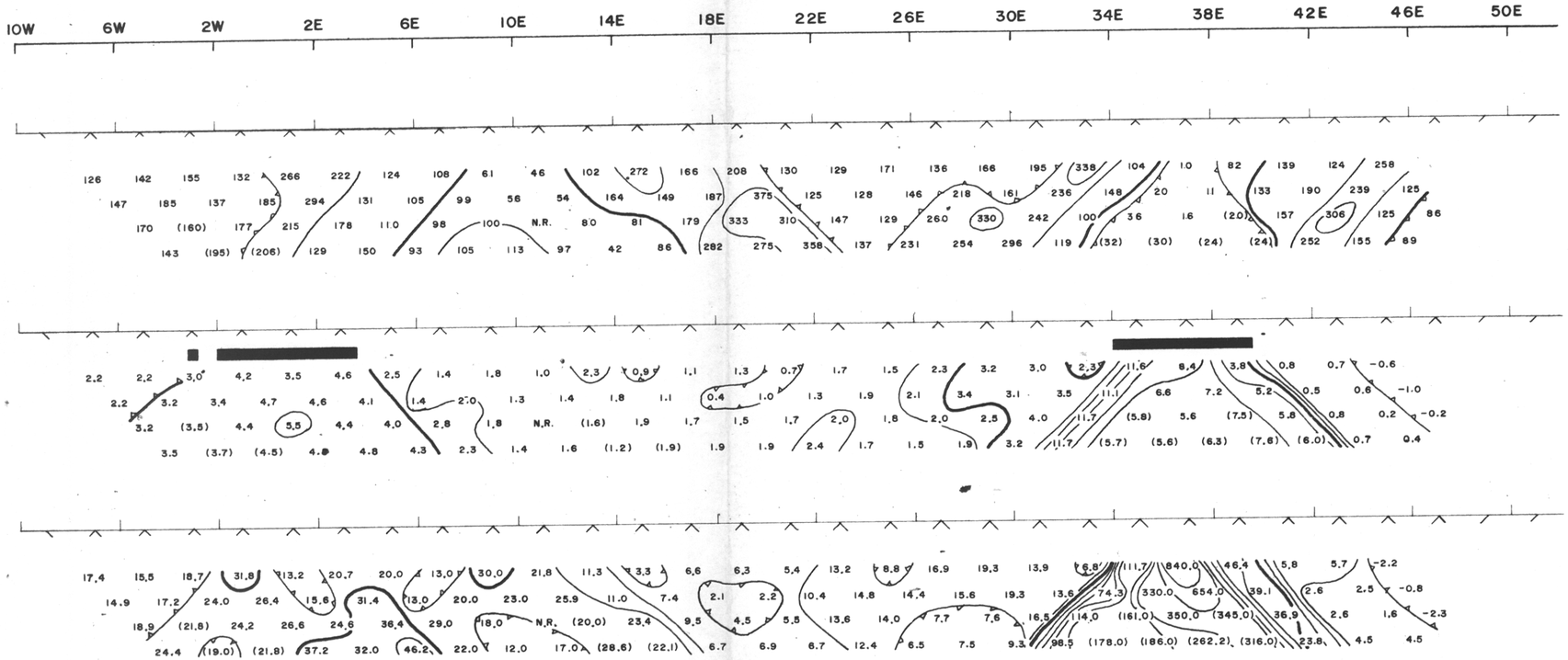

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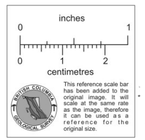

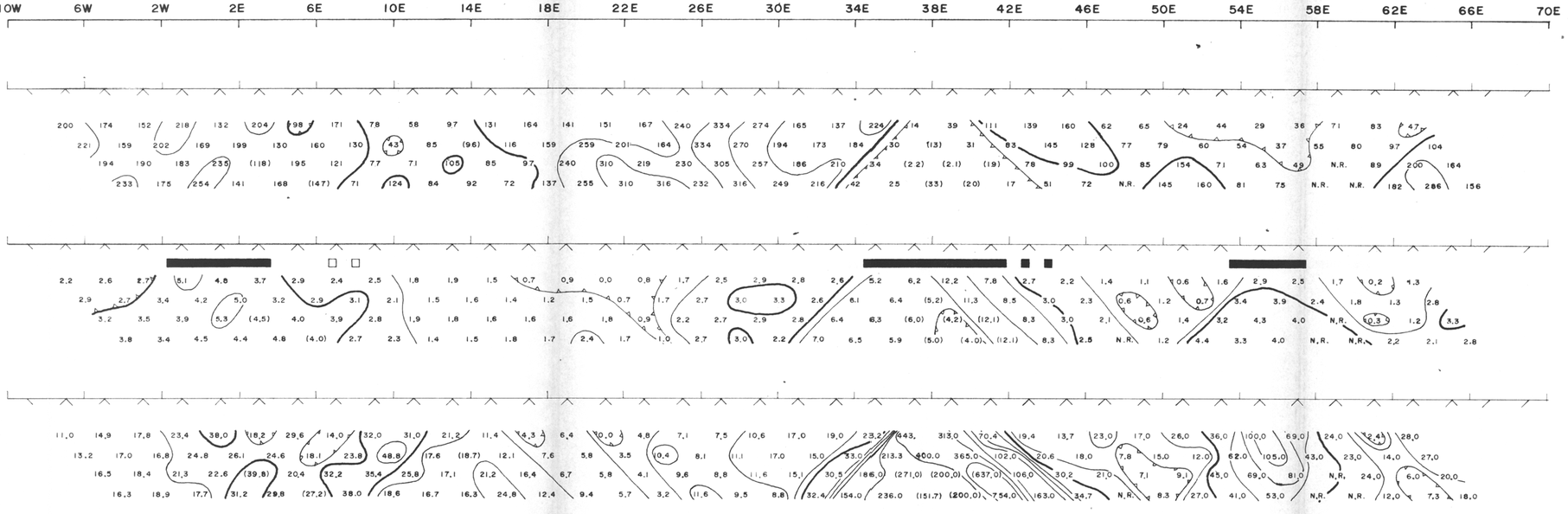

Pa/2π

F.E.

M.F.

IRONSIDES EXPLOR. CORP. LTD.

SPENHO AREA

LINE 3 + 00 N

SCALE 1" = 400'

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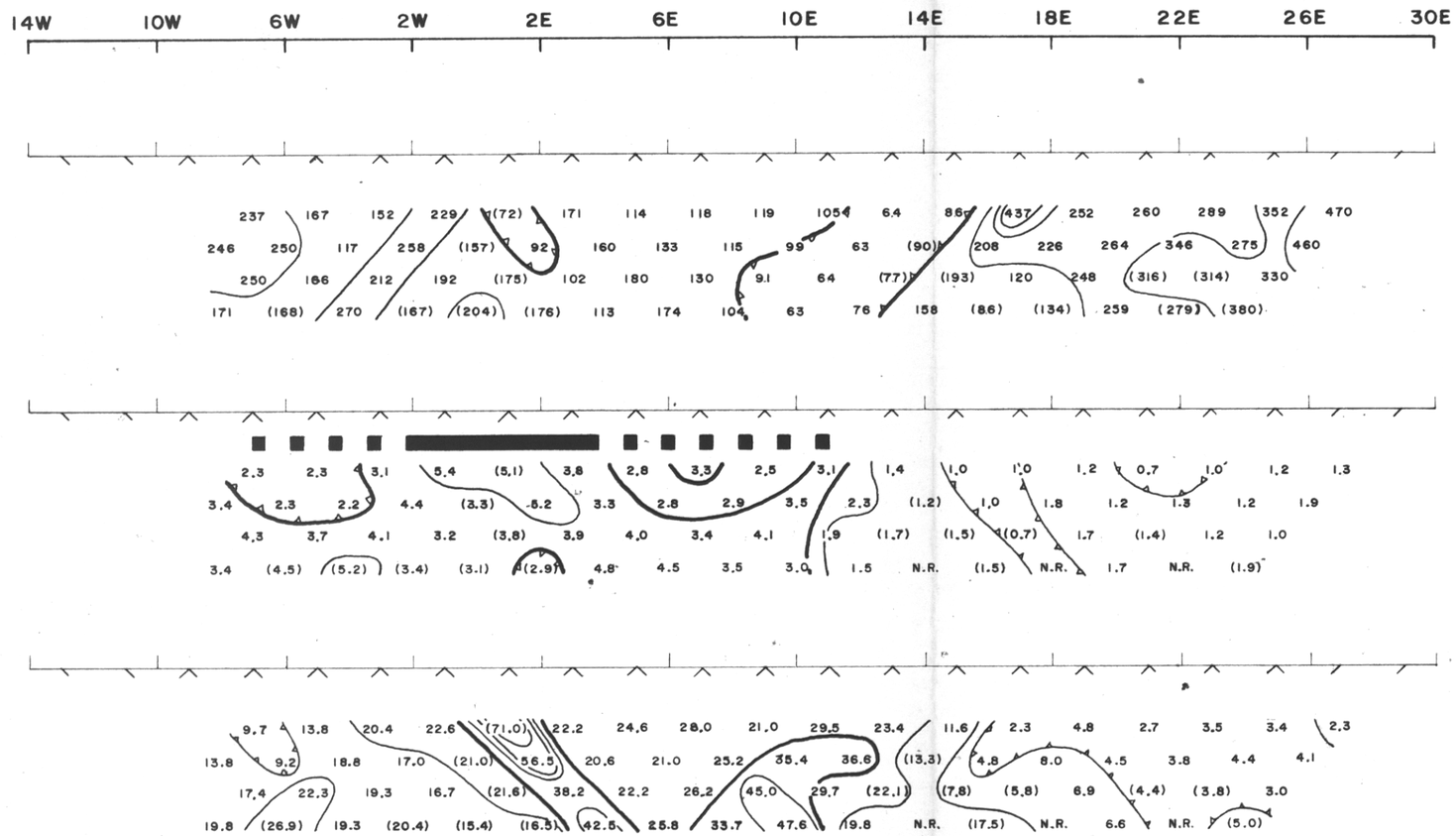

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F.E.

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IRONSIDES EXPLOR. CORP. LTD.

SPENHO AREA

LINE 0+00

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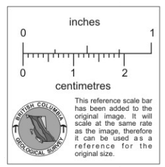

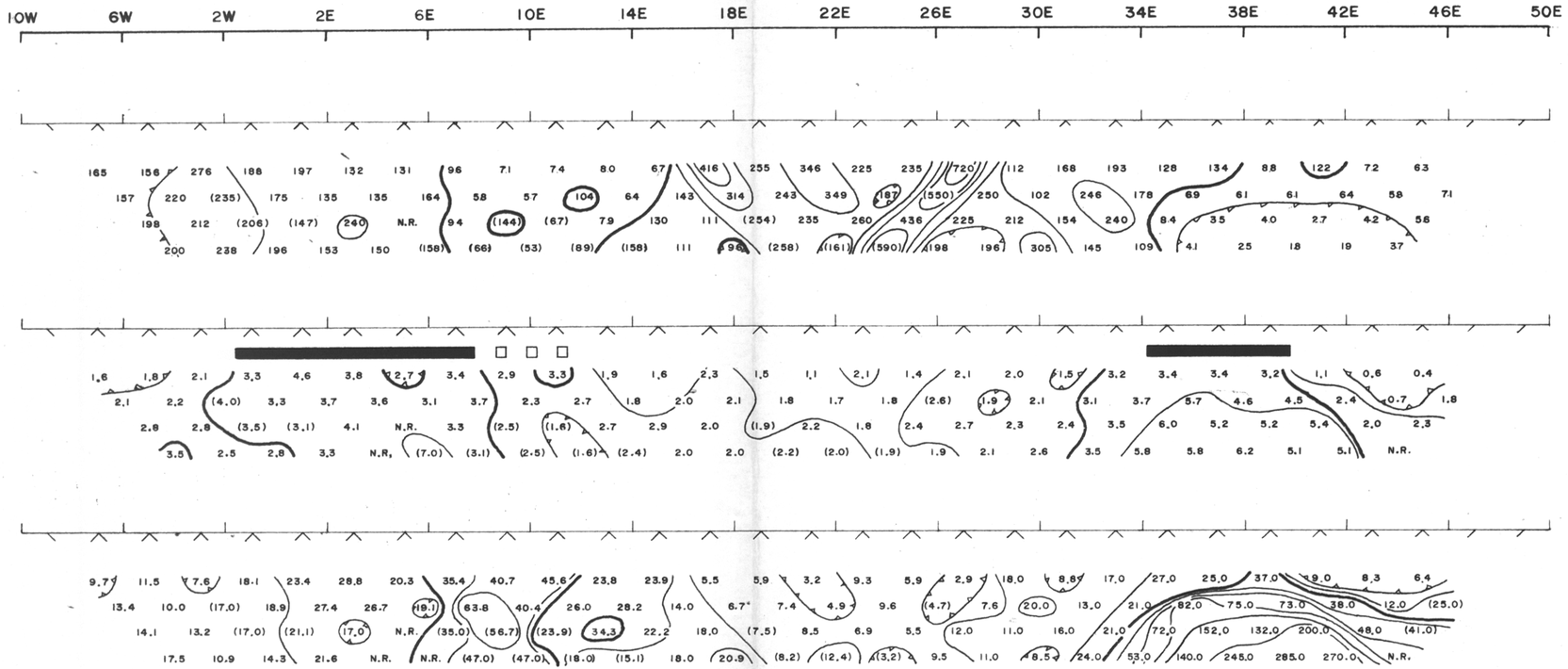

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SPENHO AREA

LINE 3 + 00S

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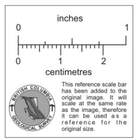

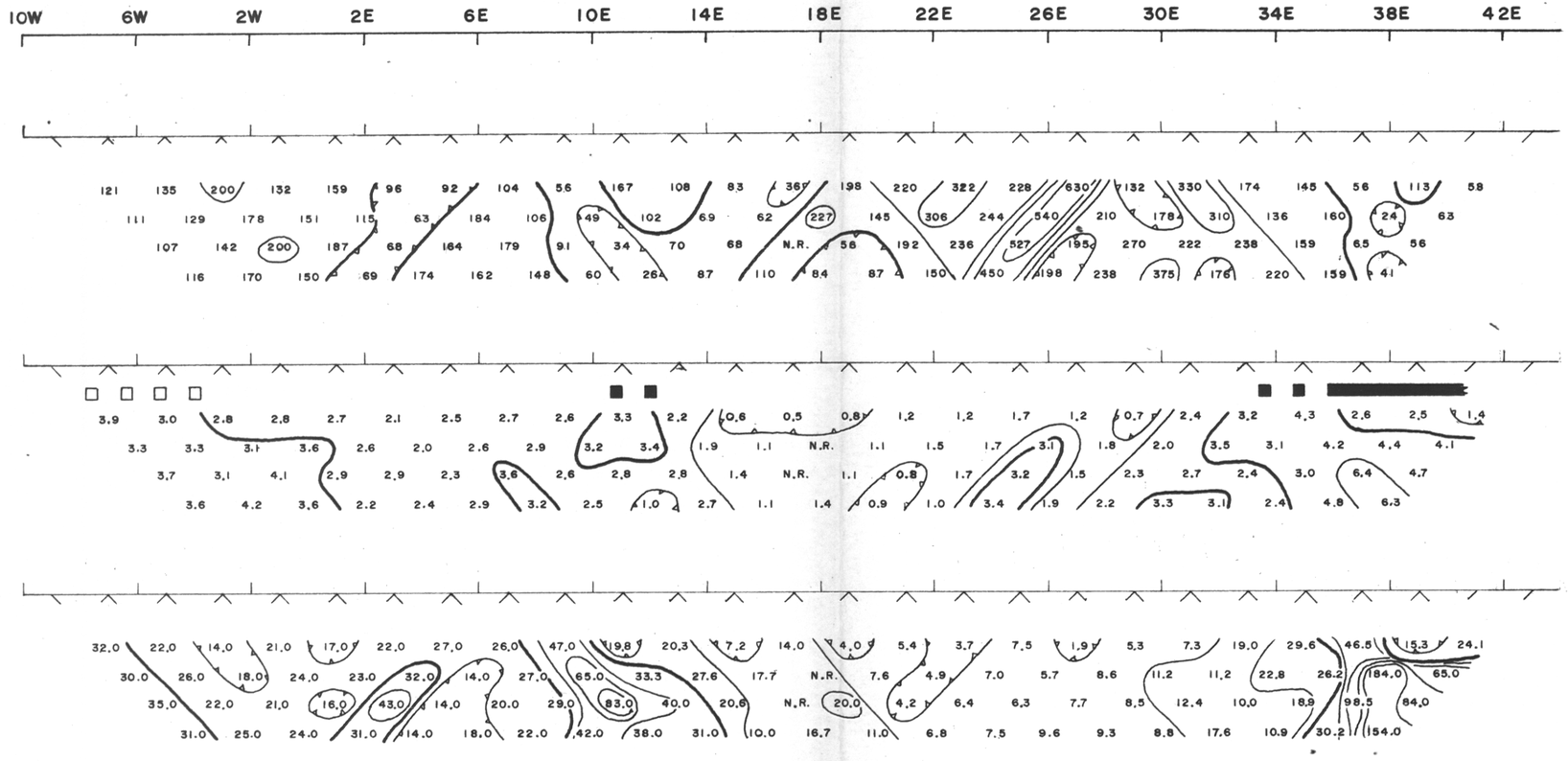

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SPENHO AREA

LINE 9 + 00 S

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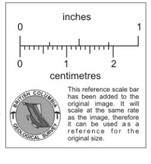

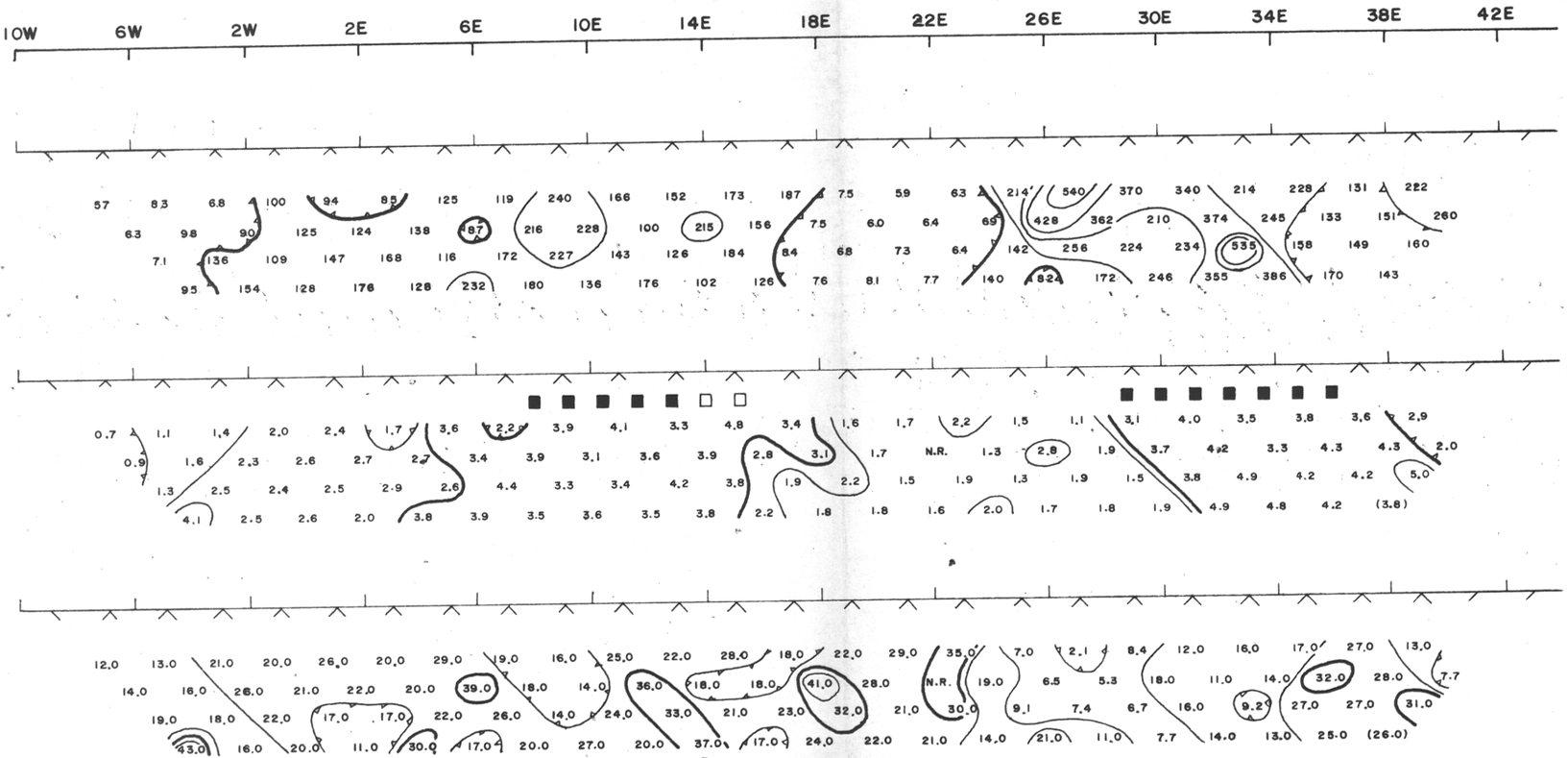

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SPENHO AREA

LINE 15+00 S

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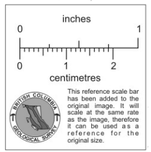

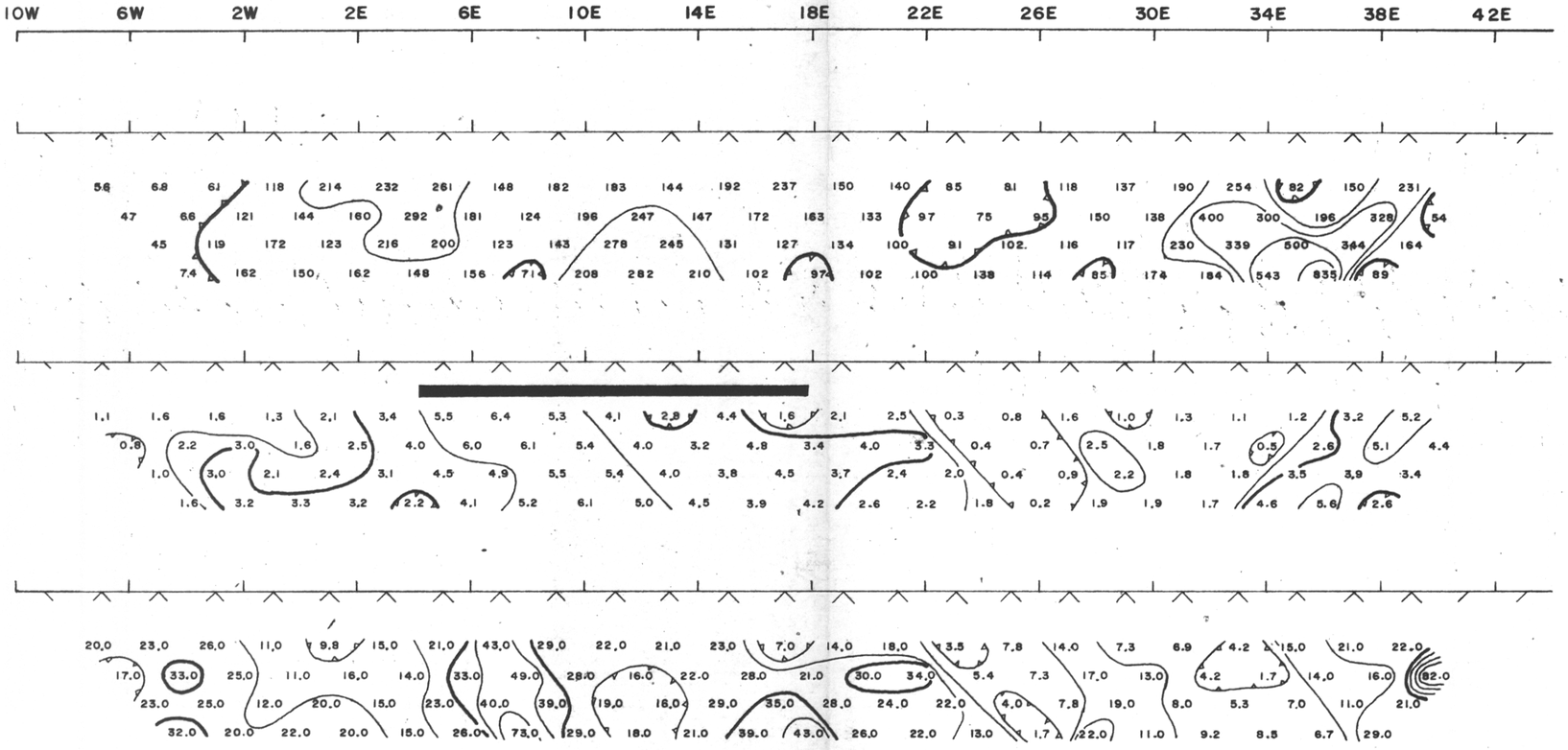

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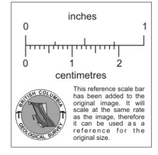

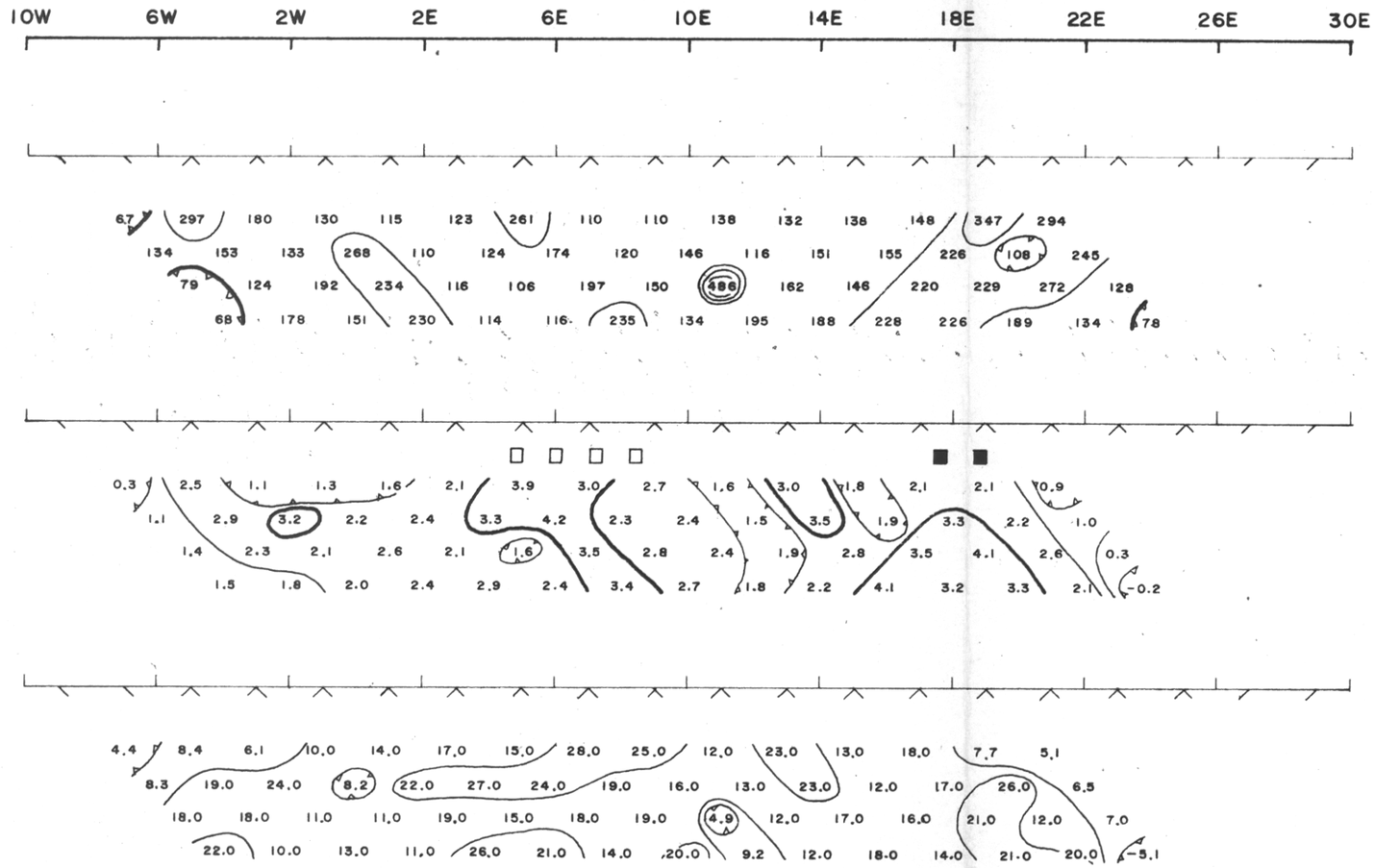

Pa/2 TT

F. E.

M.F.

IRONSIDES EXPLOR. CORP. LTD.

SPENHO AREA

LINE 27 + 00 S

SCALE 1"= 400'

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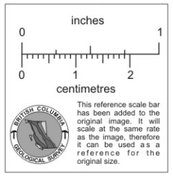

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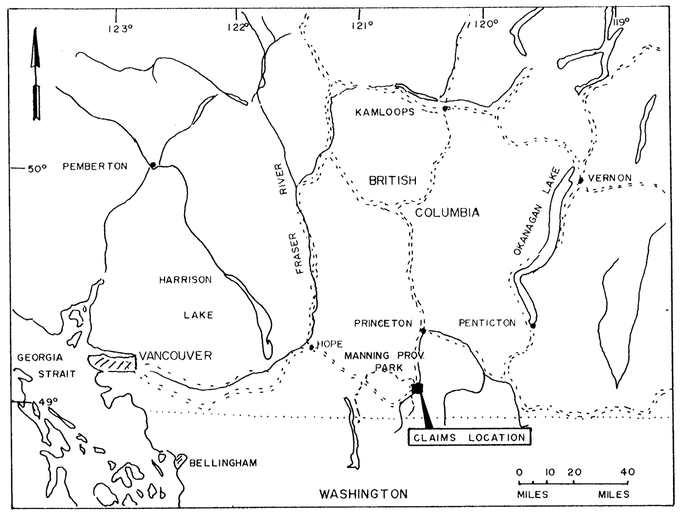
L-15N
L-9N
L-6N
L-3N
L-0
L-3S
L-9S
L-15S
L-21S
L-27S

HIGHWAY

HOPE — PRINCETON

LEGEND

- ANOMALOUS ZONE
- PROBABLE ANOMALOUS ZONE
- POSSIBLE ANOMALOUS ZONE



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PASAYTEN GROUP, SIMILKAMEEN MINING DIVISION, BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

ANOMALY LOCATION MAP

SCALE - 1 INCH = 500 FEET

500 250 0 500 1000 1500
FEET FEET

MAP No. W-114-1
TO ACCOMPANY A REPORT
PETER E. WALCOTT P. Eng.
DATED-NOVEMBER 1970

PETER E. WALCOTT & ASSOC. LTD.

JULY, OCT.-NOV. 1970

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA PETER E. WALCOTT