827696

REPORT
ON
DRILL HOLE EM-37 SURVEY

MT. SICKER PROPERTY
VANCOUVER ISLAND, B.C.

FOR

CORPORATION FALCONBRIDGE COPPER
VANCOUVER, B.C.

July 1985
Vancouver, B.C.

J.R. Roth, M.A.
MPH Consulting Limited

TABLE OF CONTENTS

		page
1.0	INTRODUCTION	1
2.0	EQUIPMENT AND SURVEY PROCEDURES	2
3.0	DATA REDUCTION AND PRESENTATION	5
4.0	RESULTS AND DISCUSSION	6
	- DH MTS 85-7	6
	- DH MTS 85-8	7
	- DH MTS 85-9	9
5.0	CONCLUSIONS	11

APPENDIX I DH EM-37 PROFILES

1.0 INTRODUCTION

This report briefly summarizes the operations and results of a large transmitter loop, time domain electromagnetic (Geonics EM-37) survey conducted by MPH Consulting Limited for Corporation Falconbridge Copper in three diamond drill holes on the Mt. Sicker property on Vancouver Island.

The purpose of the survey was to locate electromagnetic conductors indicative of massive sulphide mineralization in the vicinity of the drill holes and characterize the size potential of sparse sulphide mineralization intersected in one of the holes.

The survey was conducted by Keith Morrison, B.Sc. assisted by personnel supplied by Corporation Falconbridge Copper, during the period June 17-22, 1985.

The drill holes located at 0+00, 2+95N (MTS 85-7), 1+50E, 2+40N (MTS 85-8) and 2+10E, 3+00N (MTS 85-9) form a reasonably compact cluster. The holes were drilled to test for mineralization similar to that contained in the nearby Twin J deposit within the Sicker volcanics. The holes are angled at 60°S at an azimuth of 180° and have approximate depths of 215 m, 250 m and 190 m, respectively. A thin but geologically significant intercept of mineralization was obtained in hole MTS 85-8 at about 140 m.

2.0 EQUIPMENT AND SURVEY PROCEDURES

The survey was conducted with a Geonics EM-37 time domain electromagnetic system and a Geonics BH-43 drill hole probe and winch unit.

With the EM-37 system, a strong, primary electromagnetic field is created by abrupt termination of current flowing in a large loop. The down-hole receiver records the presence of secondary fields caused by eddy currents circulating in nearby conductors.

By using transmitter loops at different locations, conductors may be preferentially excited, thereby providing diagnostic indications of their presence and geometry.

Drill holes MTS 85-7, 85-8 and 85-9 were surveyed. The disposition of the holes was such that all three could be effectively logged using each of several transmitter loop locations. In the present survey, a total of three transmitter loops were employed, consisting of 500 m x 400 m loops with the following corner locations:

Loop 1 (Central Loop)

1+00W, 0+70S
3+00E, 0+70S
3+00E, 4+25N
1+00W, 4+25N

Loop 2 (North Loop)

1+00W, 4+25N
3+00E, 4+25N
3+00E, 9+00N
1+00W, 9+00N

Loop 3 (East Loop)

3+00E, 0+70S
7+00E, 0+70S
7+00E, 4+25N
3+00E, 4+25N

Transmitted current averaged 22.5 amperes and the average turn-off time of the current pulse was 375 microseconds.

The holes were logged at 10 m intervals. The logging interval was decreased near 140 m in the vicinity of the mineralization in MTS 85-8 for transmitters 2 and 3. Twenty percent (20%) of the stations were repeated when the probe was withdrawn from each hole.

Operations are summarized as follows:

June 17	- mob to site
18	- set up Loop 1, test EM-37 and BH-43
19	- log MTS 85-7, 8, 9 (Loop 1)
20	- set up Loop 2, log MTS 85-7, 8, 9 (Loop 2)
21	- set up Loop 3, log MTS 85-7, 8, 9 (Loop 3)
22	- pick up Loop 3, demob from site.

Problems encountered during the survey were as follows:

1) The DAS-54 data logger failed; consequently data was recorded by hand and subsequently entered manually on the HP-85 for processing;

2) Truck fuel lines malfunctioned on June 19, causing a modest delay in field efforts;

3) The depth counter of BH-43 failed on the final day of logging. Depths on this day were consequently measured using a hip chain. The malfunction was subsequently traced to a worn-out part which allowed the cable to 'de-rail' from the guide wheels of the counter.

Although the above problems caused some delays and slightly altered efficiency, none was sufficiently severe as to materially affect survey activities or data quality.

3.0 DATA REDUCTION AND PRESENTATION

The data from each hole are identified using the following format:

DH7 — hole number

L 1 — transmitter loop

D — refers to data

The results are presented in computer (HP-85) drawn profiles (Appendix I). Depths are plotted linearly along the top of each profile. Measured data are plotted as separate profiles for each of the 20 channels recorded using a linear scale which varies for each group of channels as shown at top of each profile.

The behaviour of the primary field is also shown as an inset on each of the profile.

The recorded data (in nanovolts/m^2/amp) have been corrected for the finite turn-off time of the transmitter.

The profiles show generally excellent noise levels with noise of 0.5 nV/m^2 usually evident only on the latest channels plotted at the smallest (1.0 nV/m^2) scale.

4.0 RESULTS AND DISCUSSION

DH MTS 85-7

Loop 1 (Central Loop)

The primary field behaves in a normal manner in all of the holes surveyed from Loop 1 in that the field decreases steadily with depth (distance from the transmitter).

Nothing of interest was recorded in MTS 85-7 using Loop 1. The field from this loop would have been optimally coupled to any flat-lying conductor near the drill hole. Thus it is unlikely that such a conductor with significant volume exists near the hole.

Loop 2 (North Loop)

No local anomalies were recorded in MTS 85-7 using Loop 2.

The secondary field, however, is observed to increase modestly with depth. This feature may indicate the presence of a large conductive body some distance away from and below the hole, although such a conductor, if present, might well be a stratigraphic horizon. Alternatively, this behaviour may be caused by the inclination of the hole relative to the field.

The primary field in hole MTS 85-7 changes smoothly, decreases to zero at about 170 m and thereafter remaining negative. The decrease in strength of the primary field with depth is normal. Achieving zero field strength is also possible when the direction of the primary field is orthogonal to the axis of the receiver probe. The reversal in sign of the primary field is probably related to the increase in the secondary field observed at the bottom of the hole.

Loop 3 (East Loop)

Nothing of interest was recorded in MTS 85-7 operating with Loop 3.

Thus, the results in MTS 85-7 indicate no significant conductor near the drill hole and no consistent evidence for a conductor below and away from the drill hole.

DH MTS 85-8

Loop 1 (Central Loop)

The data in hole MTS 85-8 from the central loop outline a response on channels 4-20 near the bottom of the hole.

The location of the anomaly depends on the assumed behaviour of the background. If one assumes that the data obtained in the bottom 20 m of the hole is background, then the anomaly is negative and peaks at about 210 m. Alternately, if the trends of the data evident at the middle of the hole are extrapolated, then the anomaly is positive and at the bottom of the hole and is incompletely defined. The latter situation, which is largely consistent with the results with other loops, is probably the most reasonable. In this case, the DH intersects or comes close to the causative source.

Because this anomaly is only partially defined, no quantitative interpretation can be realized. It is evident, however, that the amplitude of the anomaly is small and if one assumes half of it has been traversed, its width is relatively narrow. These characteristics indicate that the cause of the anomaly may be close, albeit below, the hole and has limited size potential and low conductance.

Single station 'blips' in channels 11 and 12 at about 140 m correlate with the narrow zone of sulphides intersected in hole MTS 85-8. Detailing of this section of the hole with loops 2 and 3 recorded clear cut 'in-hole' anomalies in this locale as will be discussed below.

Loop 2 (North Loop)

A distinct but narrow, negative anomaly was recorded at 140 m where detailed, 1 m measurements were made across the known mineralization in MTS 85-8. The anomaly is caused by a thin sheet which dips at a steep angle to the hole. The position of the greater positive peak below the anomaly indicates that the hole has intersected the upper edge of the sheet. The narrowness and amplitude of the anomaly indicate that the causative body is small and has a moderate conductance.

A very weak positive response near 240 m correlates with the anomaly detected in MTS 85-7.

Loops 3 (East Loop)

A well defined anomaly was recorded on channels 7-20 at about 140 m in MTS 85-8 with Loop 3. This response correlates with the known mineralization in the hole as discussed under Loop 2 above.

The response previously noted 240 m is only very weakly indicated with Loop 3, suggesting a causative source that does not extend toward Loop 3.

There is a modest increase in the secondary field with depth and the primary field passes smoothly through zero at about 180 m.

DH MTS 85-9

Loop 1 (Central Loop)
A vague, somewhat erratic, positive anomaly is evident on channels 13-17 between 60 m and 80 m in MTS 85-9 with the central loop. This feature is relatively poor and would normally not attract particular attention. However, it correlates with similar anomalies obtained with Loops 2 and 3, as will be discussed below. The erratic nature of the anomaly in this hole precludes quantitative interpretation. However, its size and amplitude are not consistent with a large sulphide conductor at this depth.

Loop 2 (North Loop)
A composite negative anomaly is evident on channels 11-20 between 60 m and 80 m in hole MTS 85-9 with Loop 2. This anomaly is seen with Loops 1 and 3 as well but is best defined with Loop 2.

In detail, the response is probably composed of two separate sources which are intersected by the hole.

The absence of any correlating response in holes MTS-7 and 8 limits the extent of the conductive source to the west. Its limit to the east, however, is not defined.

The secondary field in hole MTS 85-9 exhibits a modest but general increase with depth; this behaviour would be consistent with a large conductive body occurring below the hole. Such a conductor could be a conductive stratigraphic unit or (less likely) a large sulphide mass.

The primary field changes sign at the bottom of the hole like the other two holes logged with Loop 2.

Loop 3 (East Loop)

An erratic 'off-hole' anomaly on the last 10 channels of data is evident between 60 m and 80 m in MTS 85-9 with Loop 3. This feature correlates with anomalies obtained from Loops 1 and 2. As with the other loops, the anomaly is too erratic for quantitative interpretation, but would be consistent with a composite source intersected by the hole.

As with the other holes logged from Loop 3, the secondary field increases with depth and the primary field changes polarity (at about 130 m) in MTS 85-9. As indicated in the discussion of the results for Loop 2, these characteristics may indicate the presence of a large conductive body in the vicinity of the holes.

5.0 CONCLUSIONS

1. In MTS 85-7, no significant local anomalies were recorded, indicating the absence of any sizeable conductive sulphide mass within a radius of 100 m from the drill hole.

2. In MTS 85-8, the survey recorded an anomaly which correlates with the known mineralization. The anomaly is interpreted as caused by a small, moderately conductive body intersected near its upper edge.

   A partially defined anomaly at the bottom of MTS 85-8 may reflect a small, modest conductor close to but below the hole.

3. In MTS 85-9, a weak, composite anomaly was recorded at depths from 60 m to 80 m. The anomaly reflects two relatively small, moderate conductors probably intersected by the hole.

4. The secondary field exhibits a modest, gradual increase with depth in all three holes logged with Loop 2 and in holes 8 and 9 logged with Loop 3. The primary field passes through zero near the bottom of these holes as well. These results could indicate the presence of a large conductive body or horizon located at depth and to the north of the holes, although the absence of a correlating response with Loop 1 casts some uncertainty on this conclusion. Variations in coupling with the primary field with a dipping drill hole are an alternate explanation.

Respectfully submitted
MPH Consulting Limited

J.R. Roth, M.A.

July 1985
Vancouver, B.C.

CERTIFICATE

I, Jeremy Roth of Toronto, Ontario hereby certify that:

1. I hold a Bachelor of Arts degree in Mathematics from Harvard College, Cambridge, Mass., and a Master of Arts degree in Geophysics from Harvard University, Cambridge, Mass.

2. I have practised my profession in explorations geophysics continuously since graduation.

3. I have based conclusions contained in this report on my personal experience in geophysical exploration, techniques and knowledge of geophysical interpretation techniques.

4. I hold no interest, directly or indirectly, in this property other than professional fees, nor do I expect to receive any interest in the property or in Corporation Falconbridge Copper or any of its subsidiary companies.

Toronto, Ontario
September, 1985

Jeremy Roth, M.A.
MPH CONSULTING LIMITED

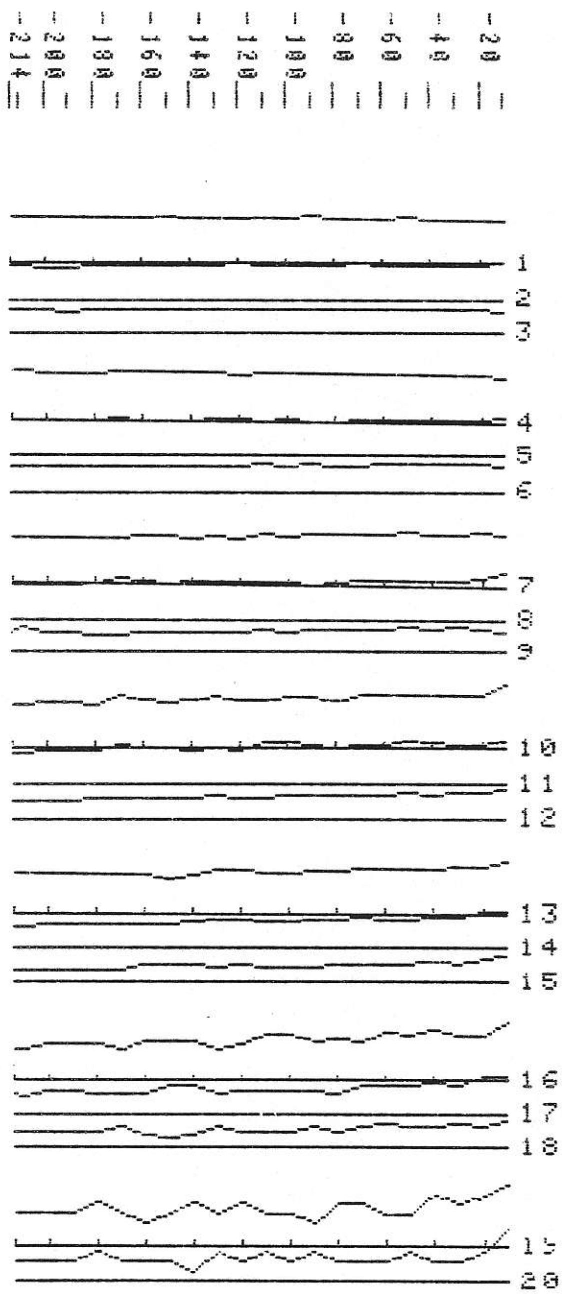
APPENDIX I

DH EM-37 PROFILES

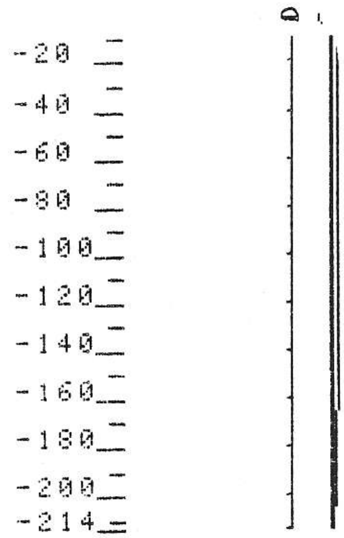
MPH

Data file DHZL10
LINE DH7 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	18	3.00
19	to	20	1.00



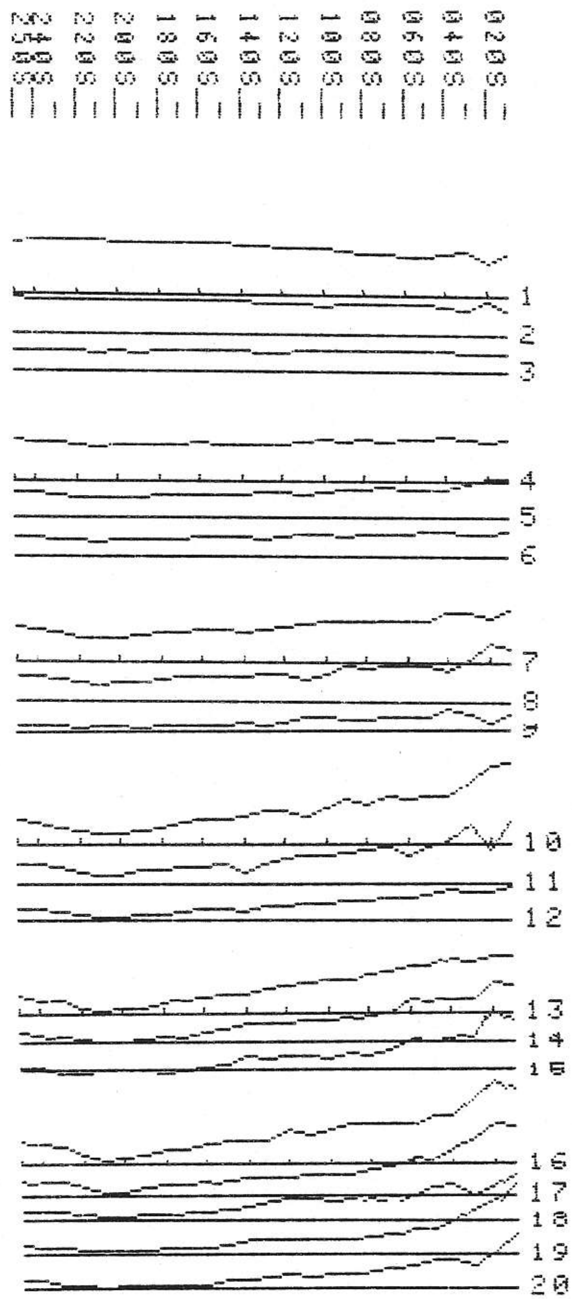
Primary Pulse



Scale
5 mm:
10,000 nV/m²

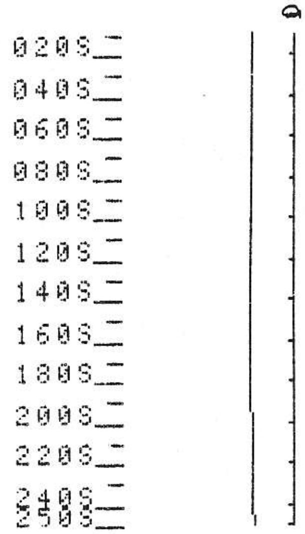
Data file DH8L10
LINE DH8 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00



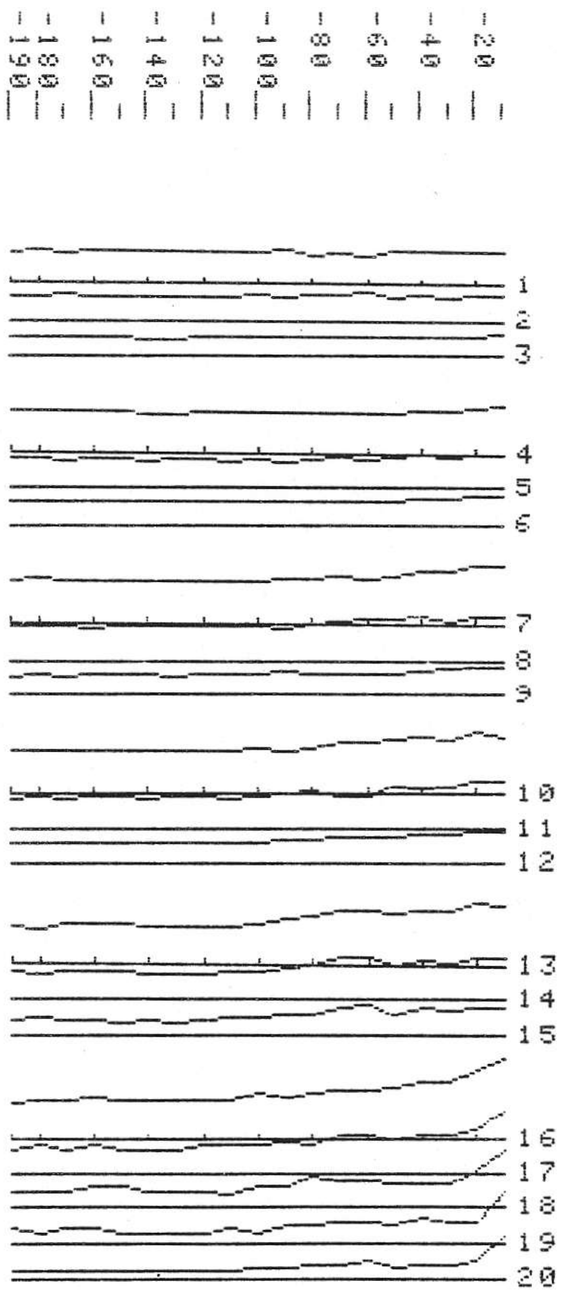
Primary Pulse

Scale
5 mm:
10,000 nV/m²

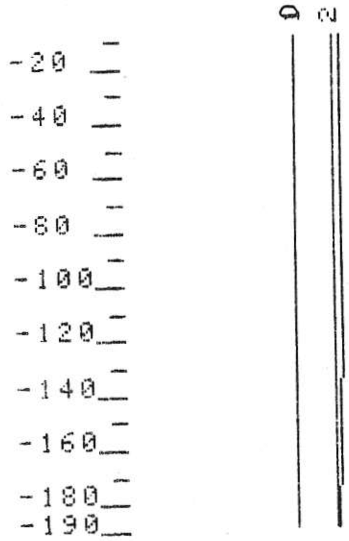


Data file DH9L10
LINE DH9 Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00



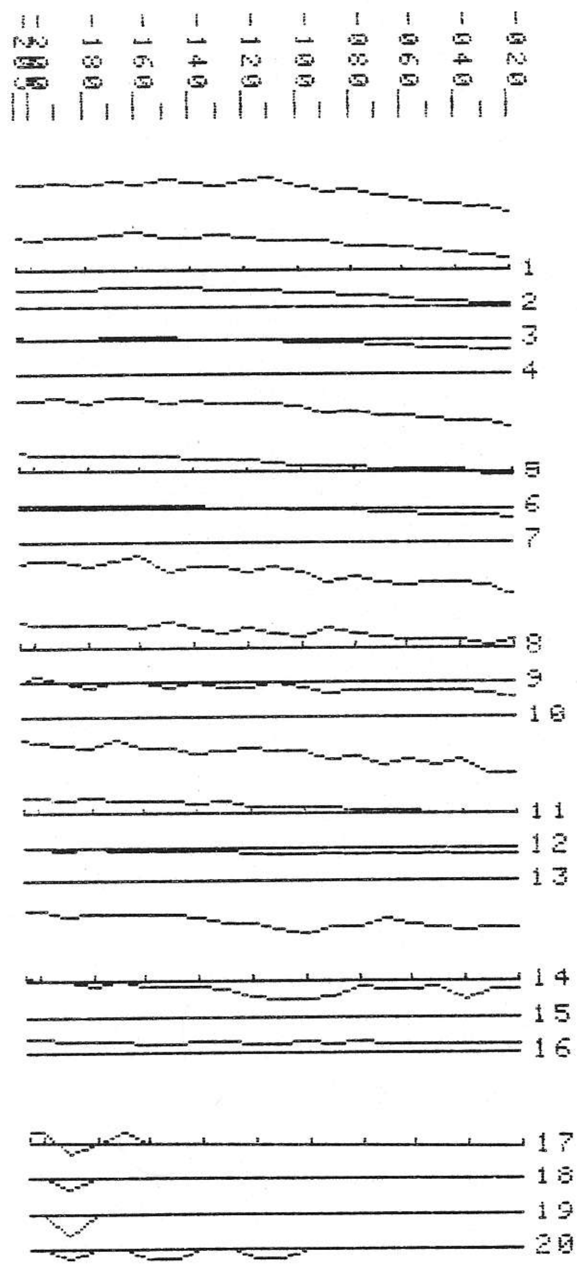
Primary Pulse



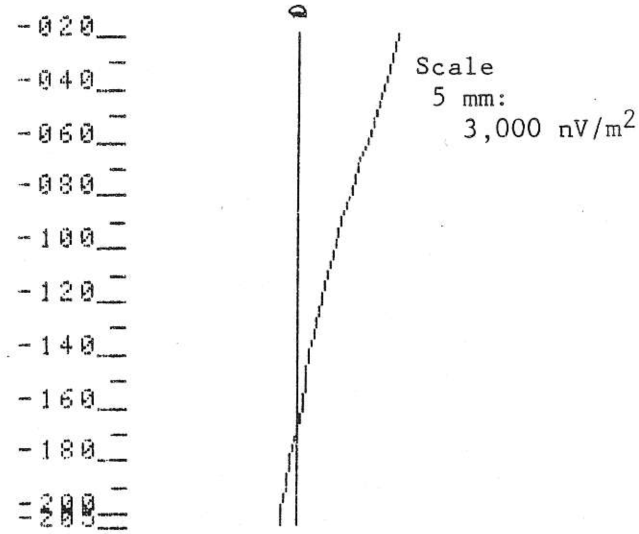
Scale
5 m: 10,000 mV/m^2

Data file DH7L2D
LINE DH7 Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	4	300.00
5	to	7	100.00
8	to	10	30.00
11	to	13	10.00
14	to	16	3.00
17	to	20	1.00

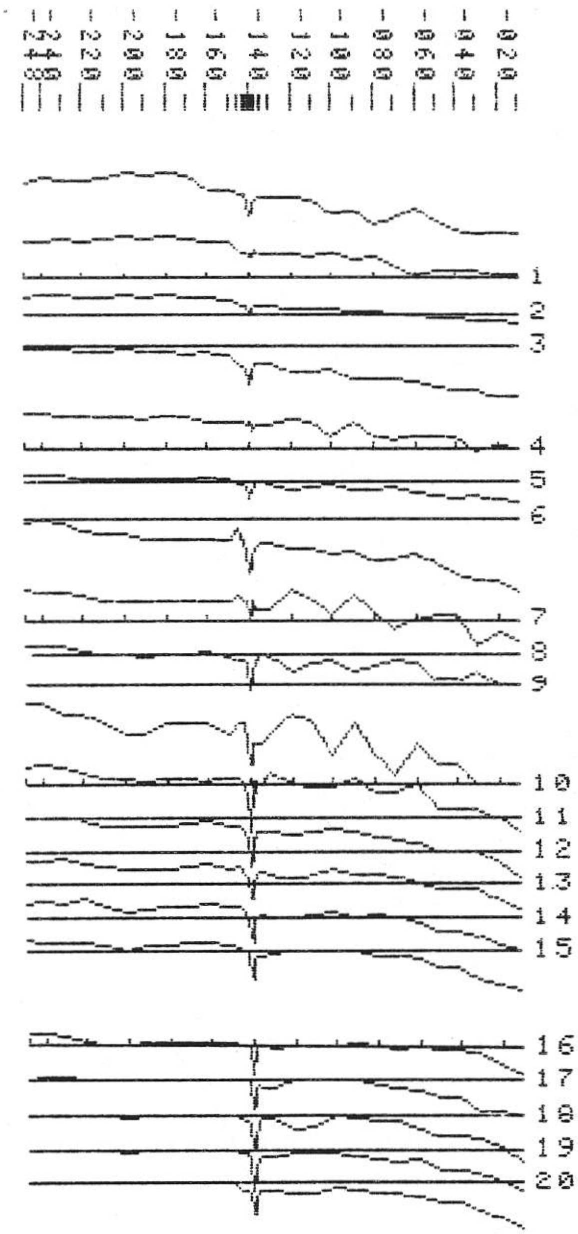


Primary Pulse

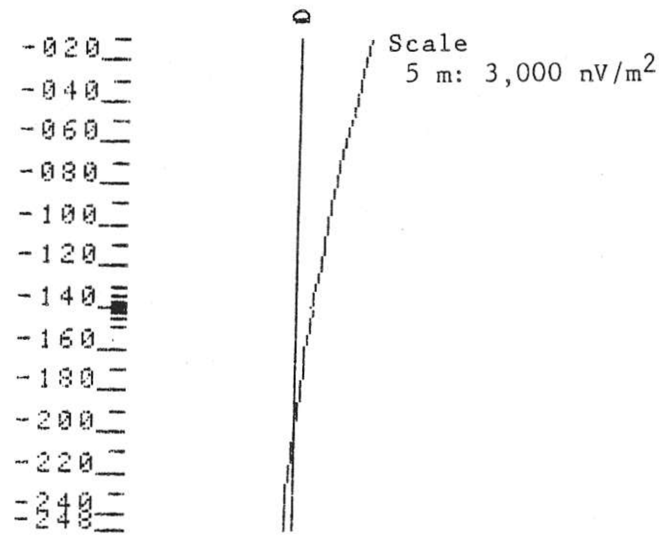


Data file DH8L2D
LINE DH8 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	300.00
4	to	6	100.00
7	to	9	30.00
10	to	15	10.00
16	to	20	3.00

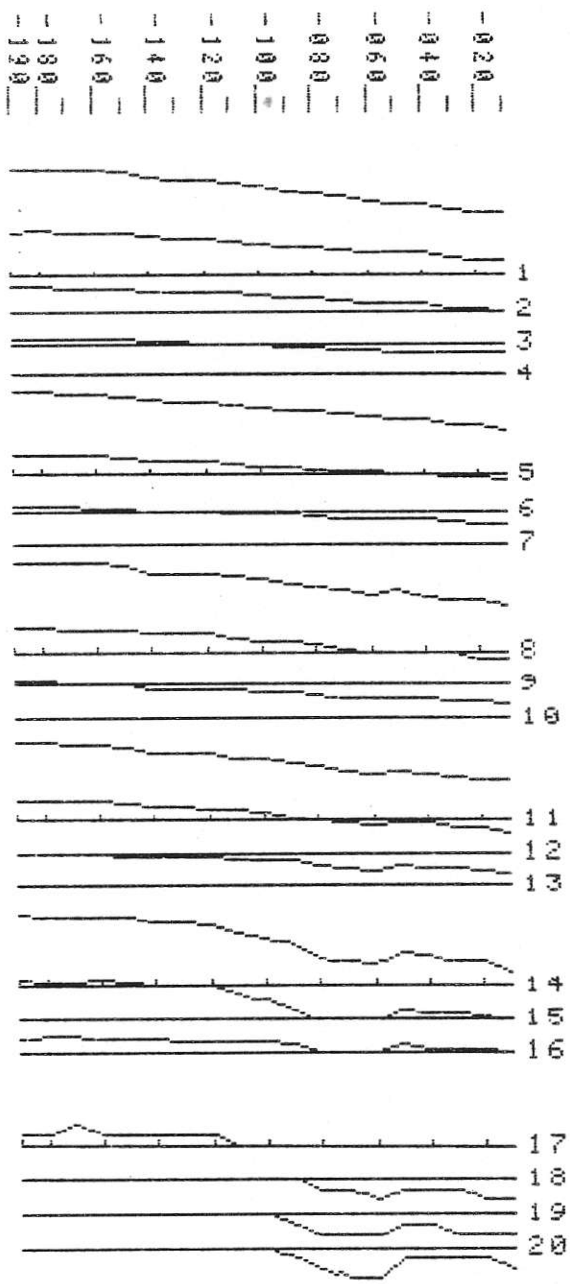


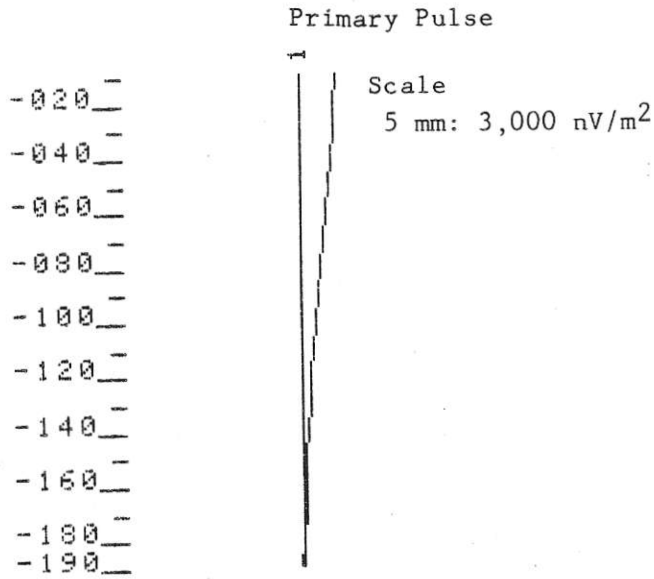
Primary Pulse



Data file DH9L2D
LINE DH9   Z Component
ΔBZ/Δt nV/m²

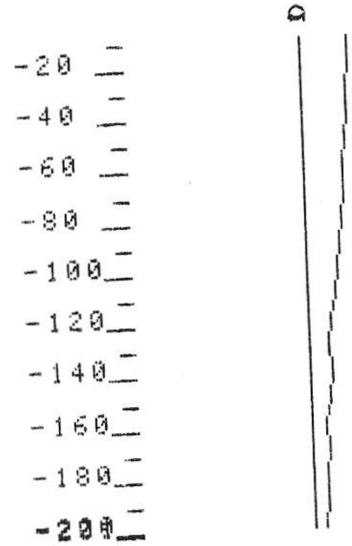
Channels			Scale
1	to	4	300.00
5	to	7	100.00
8	to	10	30.00
11	to	13	10.00
14	to	16	3.00
17	to	20	1.00

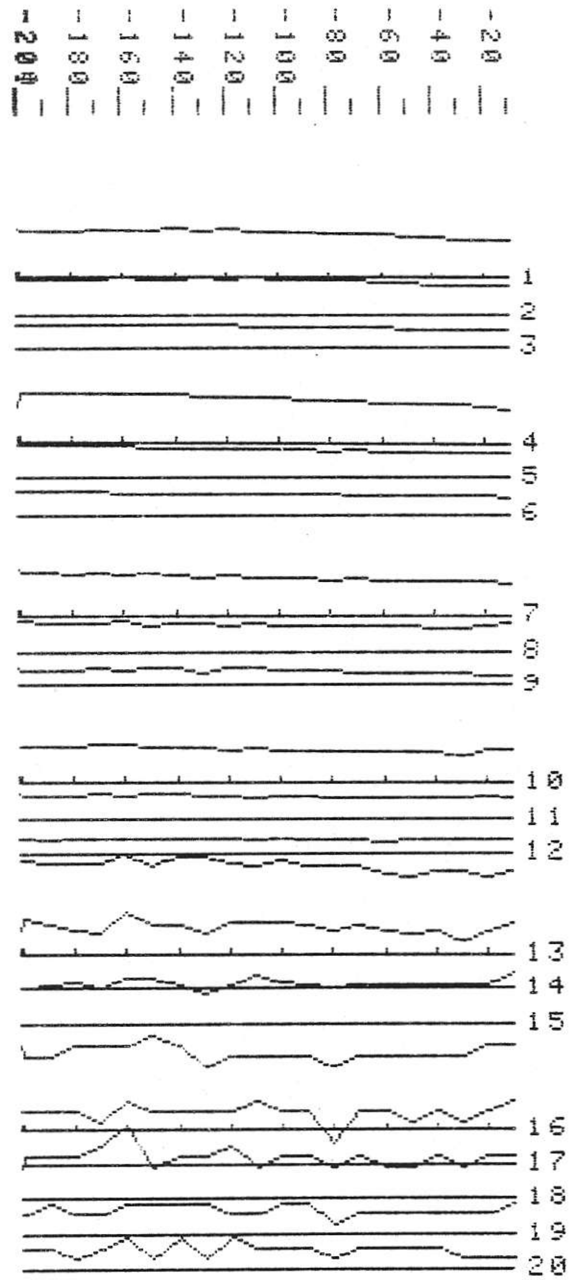




Data file DH7L3D
LINE DH7   Z Component
ΔBZ/Δt nV/m²

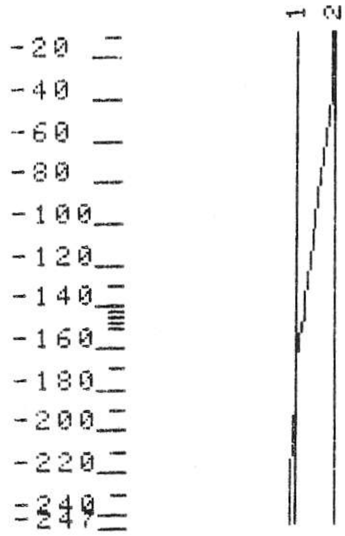
Channels	Scale
1 to 3	1000.00
4 to 6	300.00
7 to 9	100.00
10 to 12	30.00
13 to 15	3.00
16 to 20	1.00





Data file DH8L3D
LINE DH8 Z Component
ΔBZ/Δt nV/m²

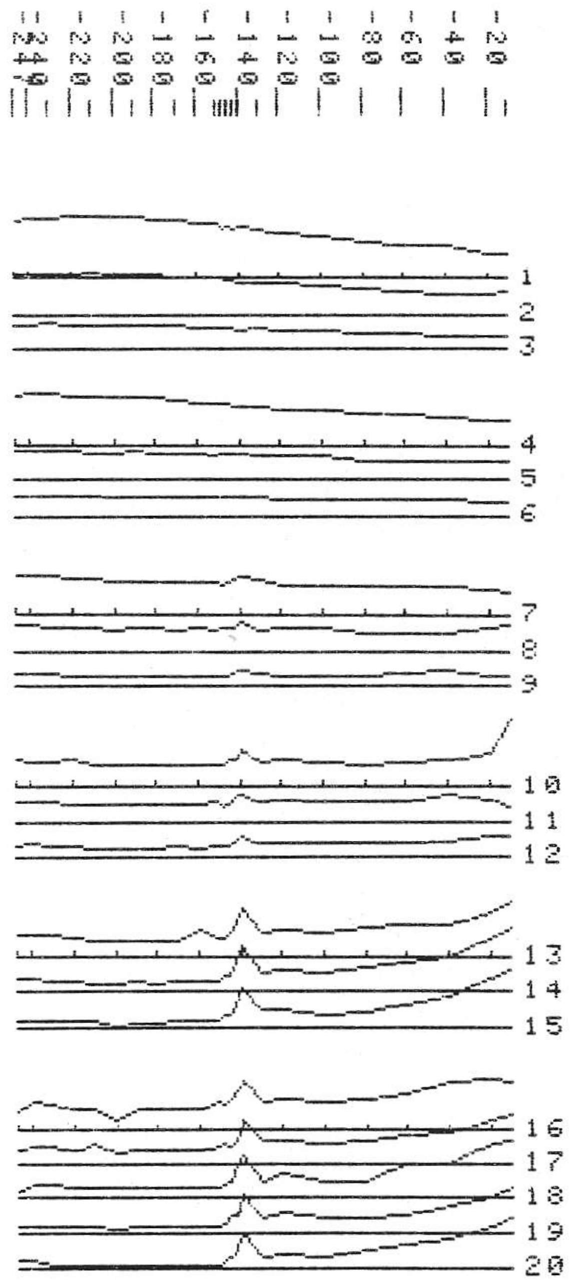
Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00



Primary Pulse

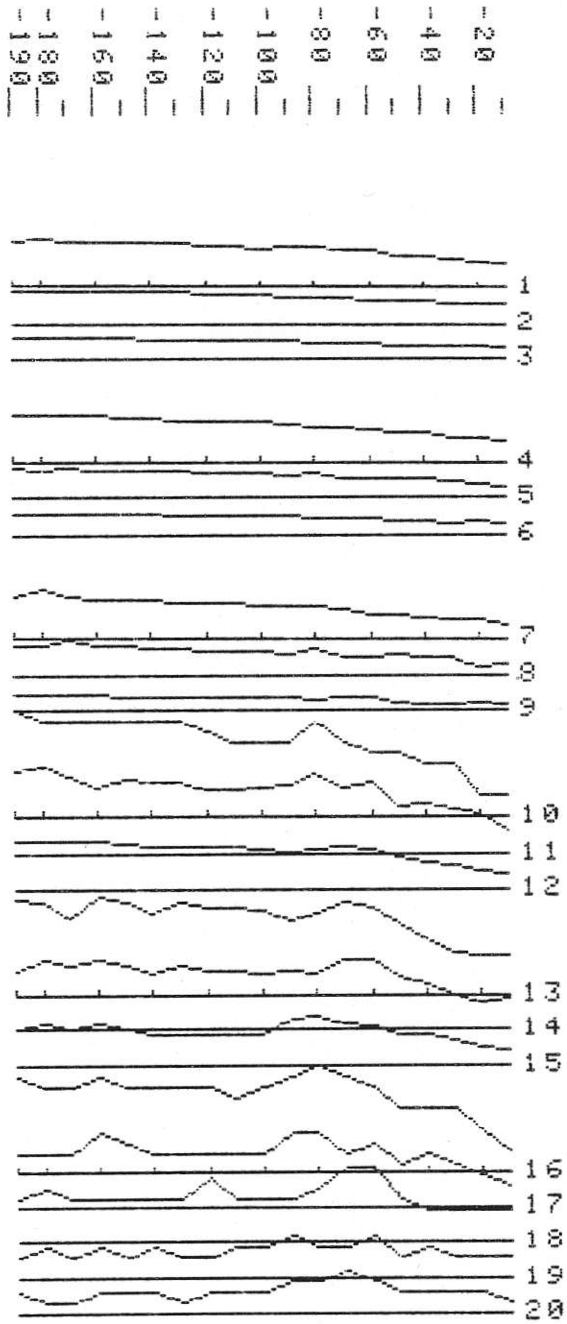
Scale

5 mm: 3,000 nV/m²

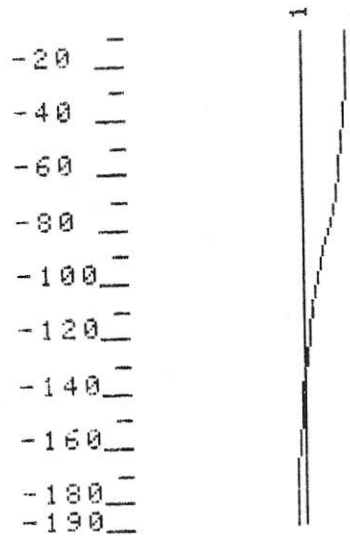


Data file DH9L3D
LINE DH9   Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	10.00
13	to	15	3.00
16	to	20	1.00



Primary Pulse



Scale
5 mm: 10,000 nV/m²

CORPORATION FALCONBRIDGE COPPER

MEMORANDUM

DATE: July 8, 1985

À / TO: A. J. Davidson

COPIES A / COPIES TO: D. H. Watkins, M. J. Knuckey

DE / FROM: D. V. Lefebure

SUJET / SUBJECT: Summary of June, 1985 Borehole Geonics EM 37 Surveys, Mt. Sicker

Introduction

MPH completed 9 EM 37 borehole surveys of the MTS 7, MTS 8 and MTS 9 drill holes with three 500 by 400m loops (Figure 1). The surveys took the operator and one helper 5 days on a moderately steep hillside. Survey costs were $1,100 per working day and $975 for standby or travel days. A summary of the EM 37 borehole equipment is given by A. Jolin in his memo dated May 27, 1985. The stacked profiles for the survey are appended.

Results

Three anomalies were defined by the surveys:

1) an "in-hole" anomaly in MTS 8 at 140m;
2) a broad "off-hole" anomaly in MTS 8 at 210m - 240m; and
3) a weak "in-hole" anomaly in MTS 9 at 65-70m.

The narrow "in-hole" anomaly in MTS 8 shows up on surveys from loops #2 (20 channels) and #3 (channels 7 to 20). It is probable that no "in-hole" anomaly was found in MTS 8 for loop #1 because the narrow mineralized horizon was bracketed by the EM 37 readings which were taken every 10m. The anomalous responses in MTS 8 for loop #2 only span a 6m interval. Computer modelling of the "in-hole" anomaly by K. Morrison of MPH shows it is produced by a restricted, plate-like conductor dipping 60^{o} to the north. He believes it could be produced by intersecting the edge of a conductive sheet or by cutting a large, weakly conductive sheet.

The broad "off-hole" anomaly at the bottom of MTS 8 is weak and shows up for loops #1 (channels 3-20), #2 (channels 6-16) and #3 (channels 16-20). This anomaly has not been explained by the MPH geophysicists. K.

Morrison says it is not related to the Postuk-Fulton Horizon which produces the "in-hole" anomaly in MTS 8. Even after discussing the anomaly with the other geophysicists, he cannot determine if the anomaly is produced by sulphides, a particular lithology or a fault. I find both the breadth and consistency from one loop to the next of this anomaly encouraging. It could reflect a deeper mineralized horizon or sulphides on the Postuk-Fulton horizon at some distance from MTS 8.

The third anomaly ("in-hole") in MTS 9 is very weak (a DVL pick) showing up on surveys for Loops #1 (channels 13-15) and #2 (channels 14-20). It corresponds to a cherty felsic tuff with minor pyrite and chalcopyrite veinlets. The tuff is 10m above the "white" rhyolite dome(?) in MTS 9 and could be a favourable horizon.

The primary pulse for the surveys of holes with loops #2 and #3 shows a steady increase in field strength with depth which MPH geophysicists found very unusual. It would appear to reflect coupling with a conductor off-hole, but it is most unusual to see such a steady increase with no minima.

Comments on Geonics EM 37

A. Jolin has evluated the Geonics EM 37 system already so I will just add a few comments. Although we have no Crone PEM data for comparison, I feel the EM 37 did not provide any better detection of sulphides. The bulky, heavy equipment required more field time for the surveys (20%) more) and road access to the drill sites (alternatively we could have rented an argo). Data presentation of stacked profiles was on 11cm tapes is certainly no better than Crone's field printers. The computer modelling is interesting but worked only on the clearcut "in-hole" anomaly. The MPH geophysicists could not model, or even explain, the important "off-hole" at the bottom of MTS 8. Until there are more case histories with the EM 37, I suspect this will continue to be a problem.

Conclusions

1) The Postuk-Fulton Horizon in MTS 8 shows up as a moderate, narrow "in-hole" anomaly which indicates any massive sulphides on this horizon must be farther away from the hole.

2) A broad "off-hole" in MTS 8 could be due to a massive sulphide lens at some distance from the hole, possibly at deeper stratigraphic level than the Postuk-Fulton horizon.

3) The weak "off-hole" in MTS 9 corresponds to a cherty felsic tuff which could be a new mineralized horizon.

D. V. Lefebure

DVL/ik

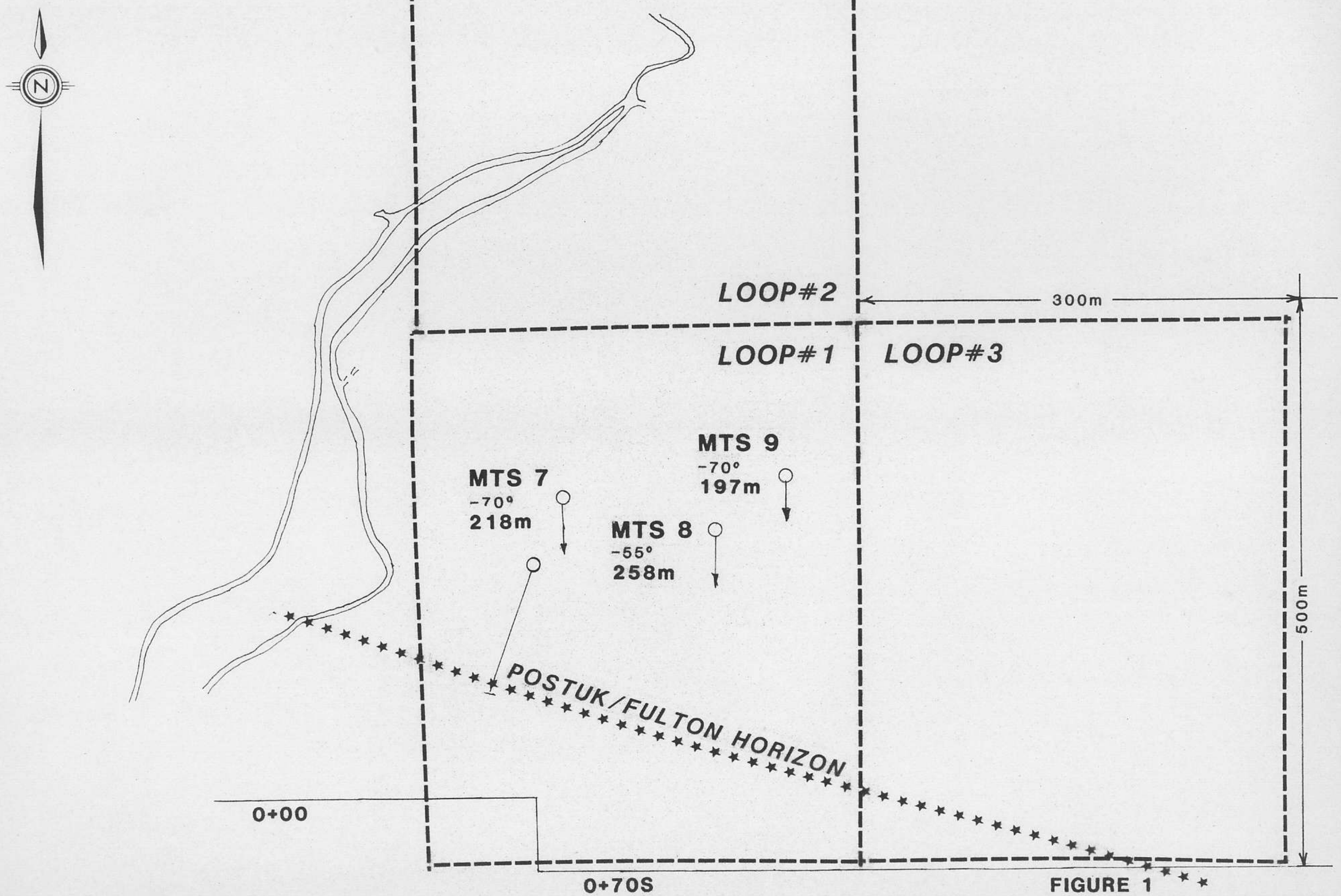


FIGURE 1

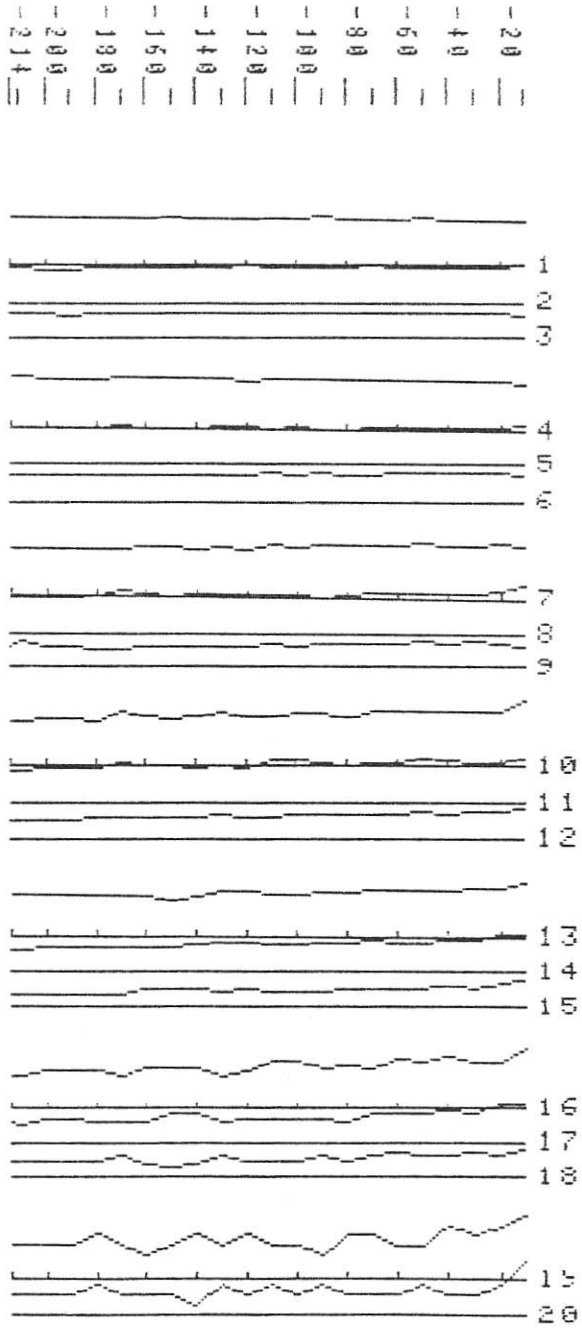
BOREHOLE LOOP LOCATIONS
1985 EM 37

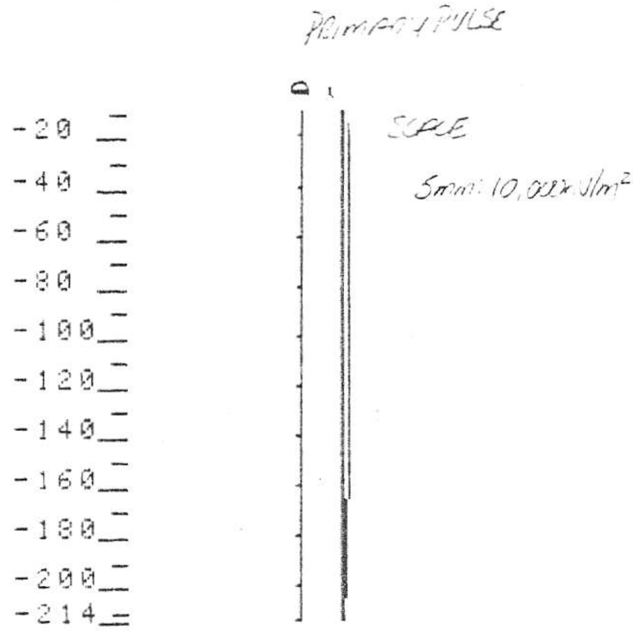
CORPORATION FALCONBRIDGE COPPER

D.V.L. JULY 1985

Data file DHZL1D
LINE DH7 Z Component
ΔBZ/Δt nV/m²

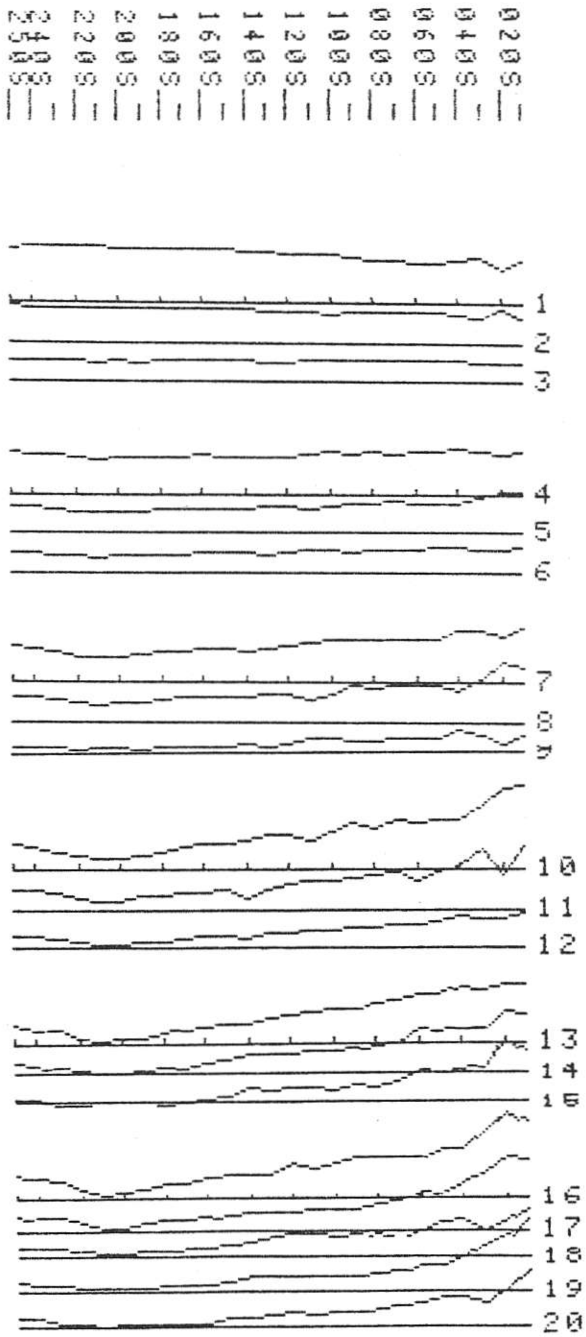
Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	18	3.00
19	to	20	1.00



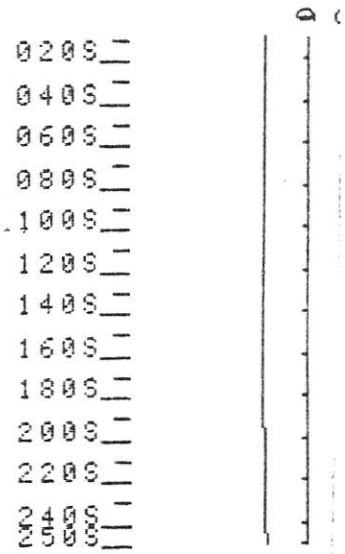


Data file DHSL10
LINE DHS   Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00

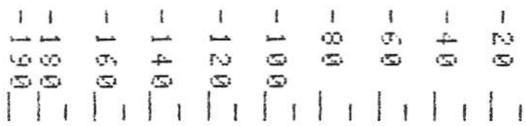


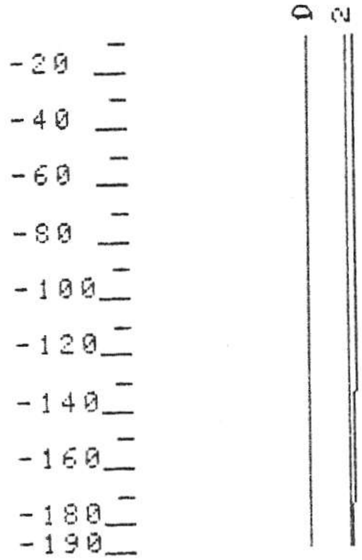
Primary Pulse
Scale
5mm: 10000 nV/m²



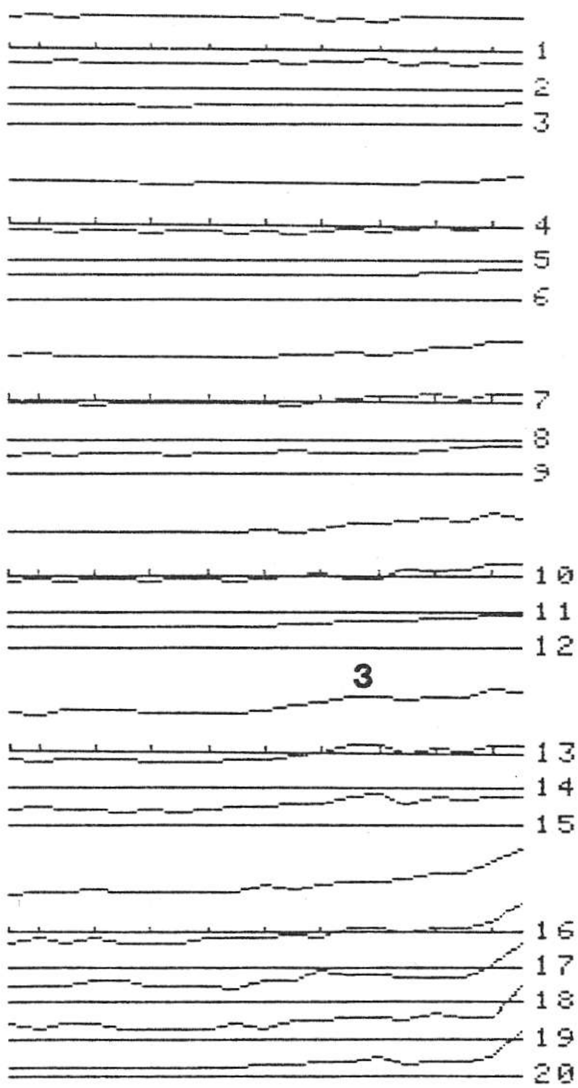
Data file DH9L1D
LINE DH9   Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00



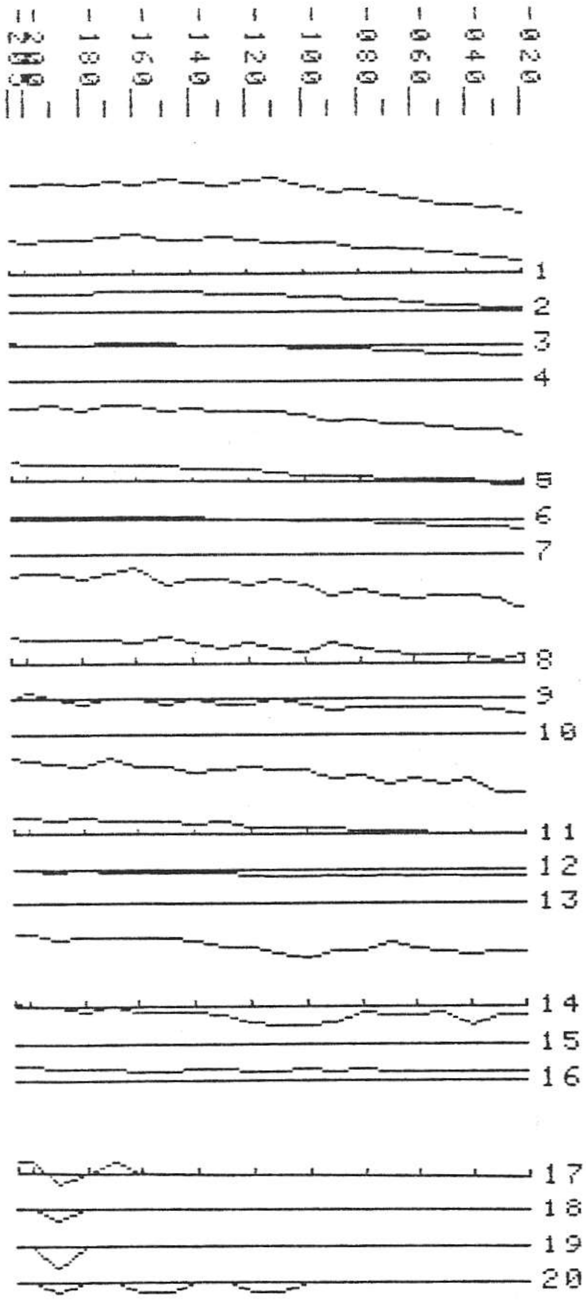


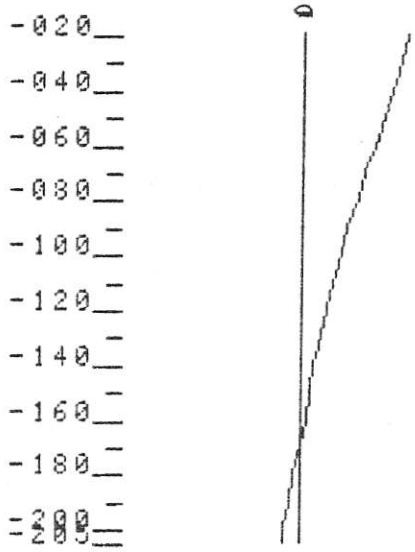
Primary Pulse
Scale
5m: 10,000nV/m²



Data file DH7L2D
LINE DH7 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	4	300.00
5	to	7	100.00
8	to	10	30.00
11	to	13	10.00
14	to	16	3.00
17	to	20	1.00

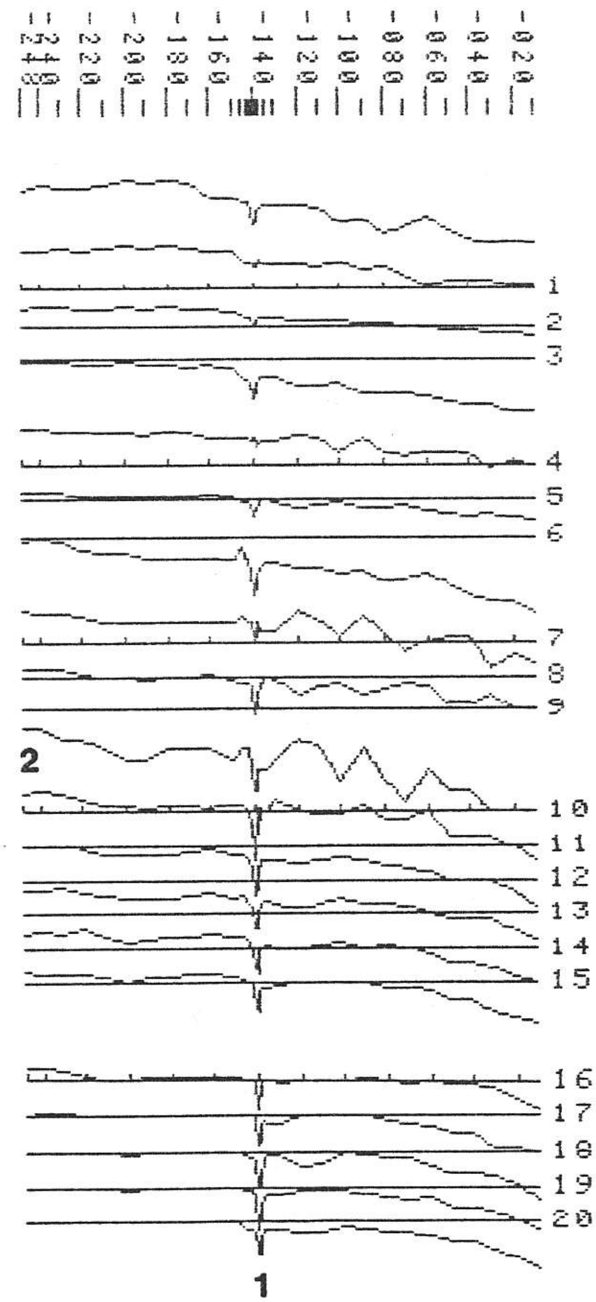


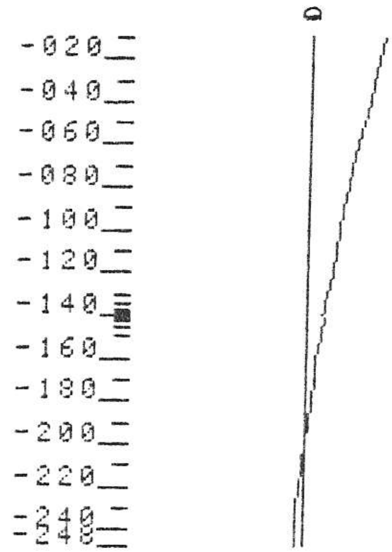


PRIMARY
PULSE
SCALE
[illegible]

Data file DH8L2D
LINE DH8 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	300.00
4	to	6	100.00
7	to	9	30.00
10	to	15	10.00
16	to	20	3.00

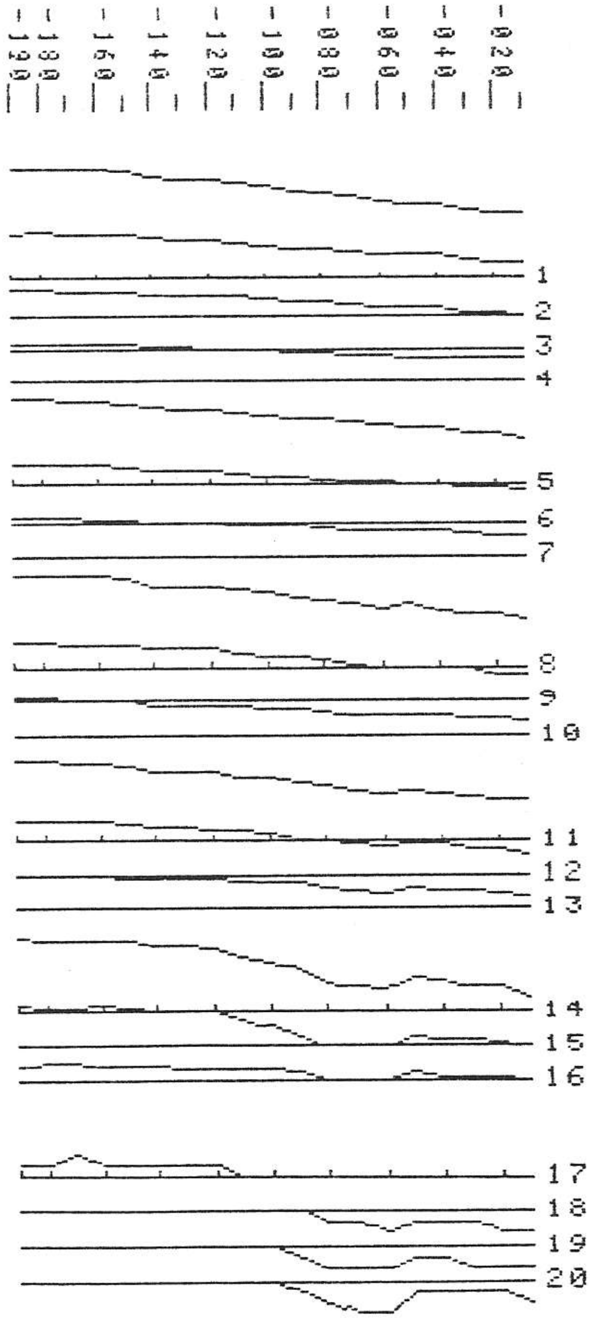


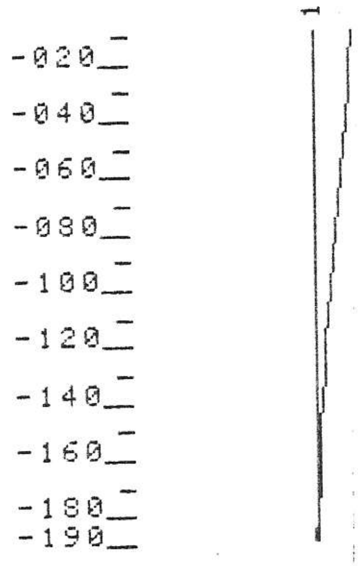


PRIMARY PULSE
SCALE
1cm: 2000 nV/m²

Data file DH9L2D
LINE DH9 Z Component
ΔBZ/Δt nV/m²

Channels			Scale
1	to	4	300.00
5	to	7	100.00
8	to	10	30.00
11	to	13	10.00
14	to	16	3.00
17	to	20	1.00

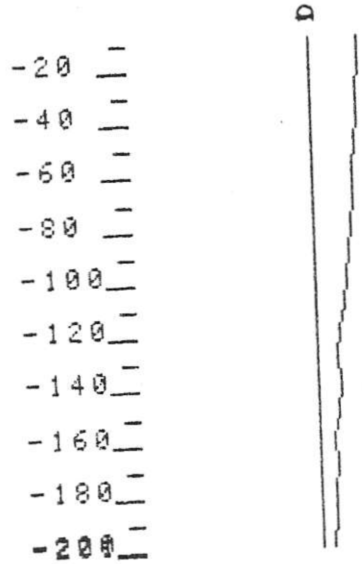


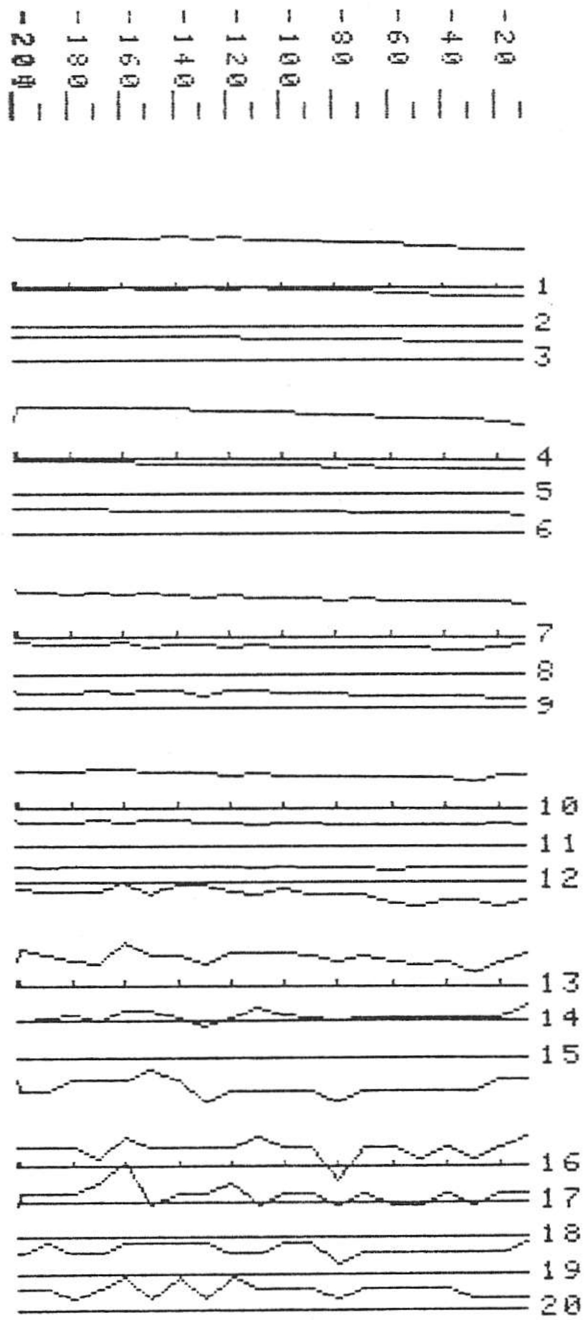


Primary Pulse
Scale
5mm : 300nV/m²

Data file DH7L3D
LINE DH7 Z Component
$\Delta BZ/\Delta t$ nV/m²

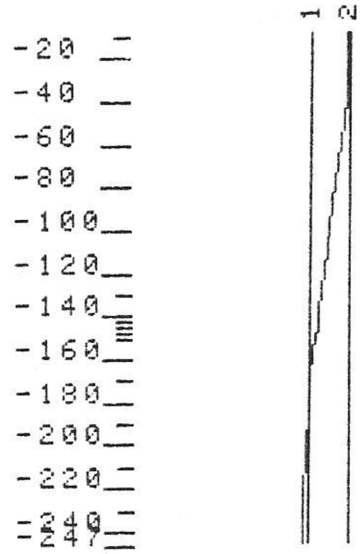
Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	3.00
16	to	20	1.00



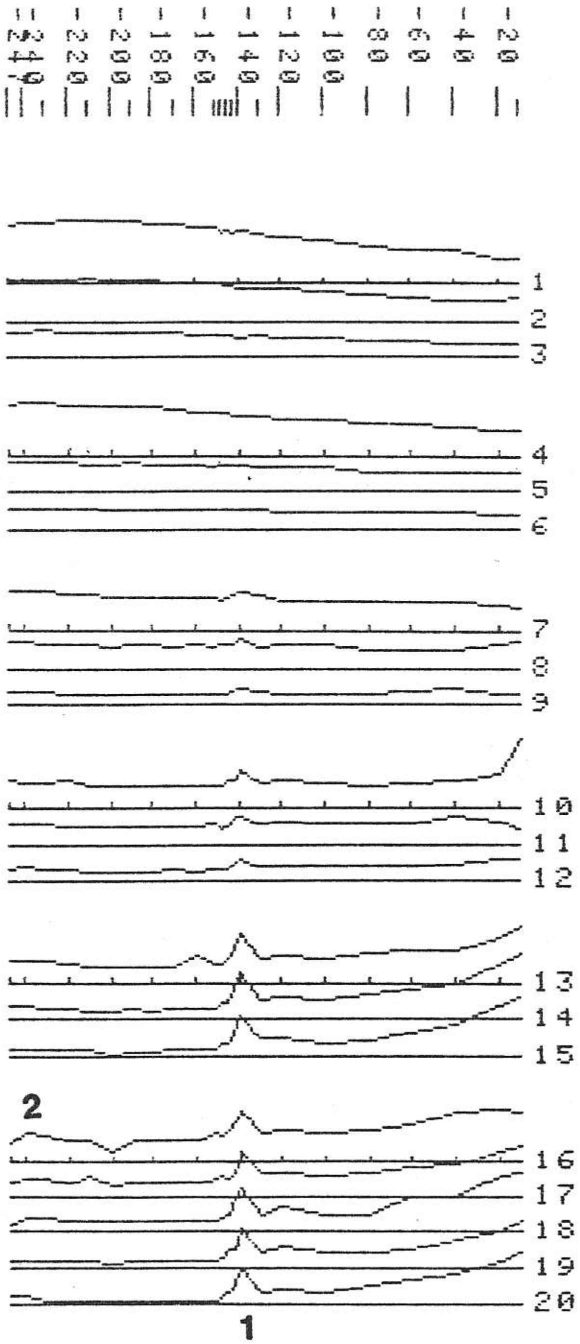


Data file DH8L3D
LINE DH8 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	30.00
13	to	15	10.00
16	to	20	3.00



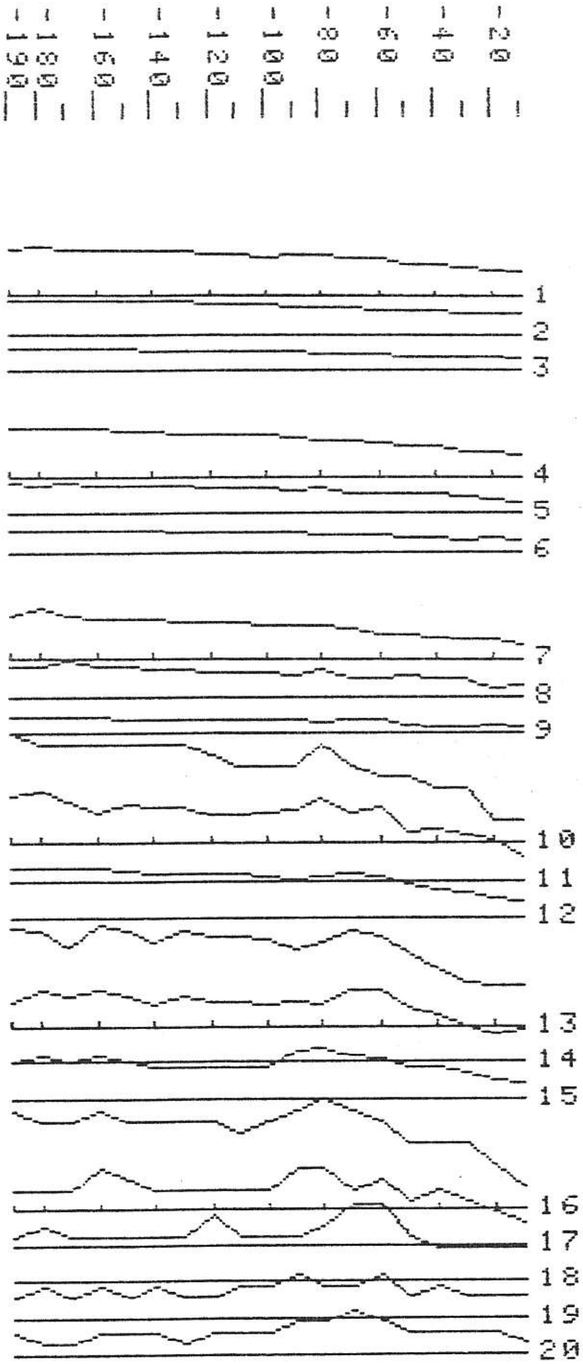
PRIMARY PULSE SCALE
5mm: 300 nV/m²



Data file DH9L3D
LINE DH9 Z Component
$\Delta BZ/\Delta t$ nV/m²

Channels			Scale
1	to	3	1000.00
4	to	6	300.00
7	to	9	100.00
10	to	12	10.00
13	to	15	3.00
16	to	20	1.00

Primary Pulse
Scale
5mm: 1000nV/m²



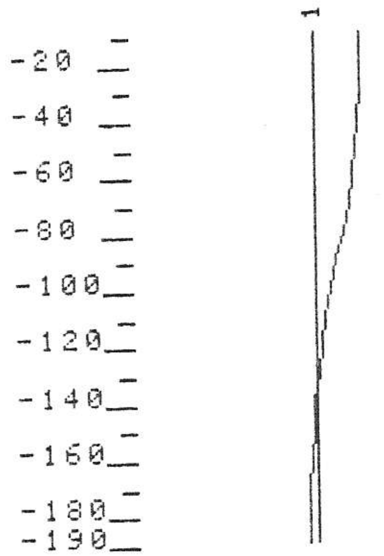


PLATE:

STRike 100
DIP 60
PLUnge 0
LENgth 100
DEPth 100
POSition 150 150 -147
CONduct*thick 2

TRANSMITTER

TXXdim 500
TXYdim 400
TXAngle 0
TXCurrent 22.5
TXFreq 30
TXTurnoff .0003
TXPosition 675 100 0

RECEIVER

RXGain# (7.58 for nV/m²) 7.58
RXTime gate .00035
- PATh limits 310 150 0
100 150 -211

COUPLING: 5.21E+00
TIME CONST: 2.51E-05

GRID SPACING:

Z intersects (m)-10
along path (m) 10

Field .. (nV/m²) 1.00E-03

Component: X-dot Y-dash Z-solid

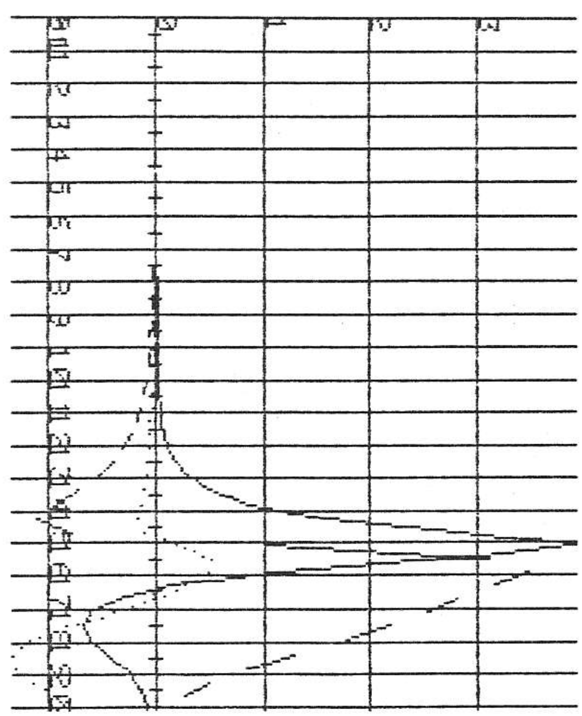


PLATE:

STRike	100
DIP	60
PLUnge	0
LENgth	40
DEPth	20
POSition 150 150	-147
CONduct*thick	2

TRANSMITTER

TXXdim	500
TXYdim	400
TXAngle	0
TXCurrent	22.5
TXFreq	30
TXTurnoff	.0003
TXPosition 675 100	0

RECEIVER

RXGain# (7.58 for nV/m²)
7.58

RXTime gate .00035
PATh limits 310 150 0
100 150 -211

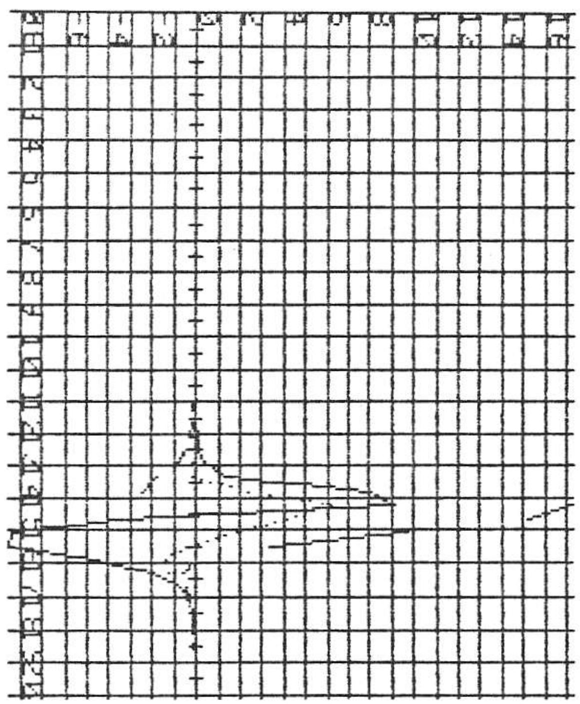
COUPLING: 4.94E-01
TIME CONST: 6.02E-06

GRID SPACING:

Z intersects (m)-10
along path (m) 10

Field .. (nV/m²) 1.00E-23

Component: X-dot Y-dash Z-solid



MPH Consulting Limited

120 Adelaide St. W.
Suite 2406
Toronto, Canada M5H 1T1
(416) 365-0930
Telex 06-219626

October 16, 1985

Mr. Alex Davidson
Corporation Falconbridge Copper
6415 - 6th Street
R.R. #5
Delta, British Columbia
V4K 4E2

Re: Revised Mt. Sicker Drill Hole EM-37 Plots

Dear Alex:

With due and considerable apologies for our delays re the above, I herewith enclose 4 copies of revised plots for the drill hole EM-37 survey conducted earlier on your Mt. Sicker property on Vancouver Island.

The attached plots all employ a convention that the primary field is negative inside the transmitter loop and positive outside. Thus, the sign of the secondary fields is now opposite that utilized in the initial (and consistent) set of small-scale HP plots.

With respect to the initial set of large-scale plots sent several weeks ago to you, it has been determined on careful reinspection of original field data and consideration of the sign of the primary field, that data sets for the second and third loop were plotted referenced to a primary field with inconsistent with normal behaviour and with the sign of the primary field for Loop 1.

These data files have now been changed from the predecessor set so that they are all consistent with the sign convention cited above. This problem has been determined to have originated in modifying our plotting software from that working on the HP-85 to the present larger, more satisfying format on our Compaq.

I trust the above is sufficiently clear, answers your initial question and resolves any underlying confusion.

Additionally, I have reviewed the report previously prepared by Larry Lebel with some assistance from myself. I discern no reason to change any of the interpretive comments offered at that time with the following exception.

The very narrow local response reflecting the narrow sulphide zone intersected by DH 8 seen in file DH 8L3 has a similar but opposite signed response when excited by Loop 2 as seen in file DH 8L2.

You will note in this regard that the secondary fields all are consistently negative at early times; it is only at late times that they exhibit opposite behaviour.

Although it is not easy to model a specific geometry that displays this characteristic of dependence on the direction of loop excitation, the conductor in any event is clearly very small and is intersected by the drill hole probably near one edge.

Again, our apologies for not responding in timely fashion as is our normal custom and our firm assurance that future endeavors will not suffer such afflictions.

With best regards,

MPH CONSULTING LIMITED

J. Roth, M.A.
Senior Geophysical Consultant

JR/jpm

Enc.

16/10/85

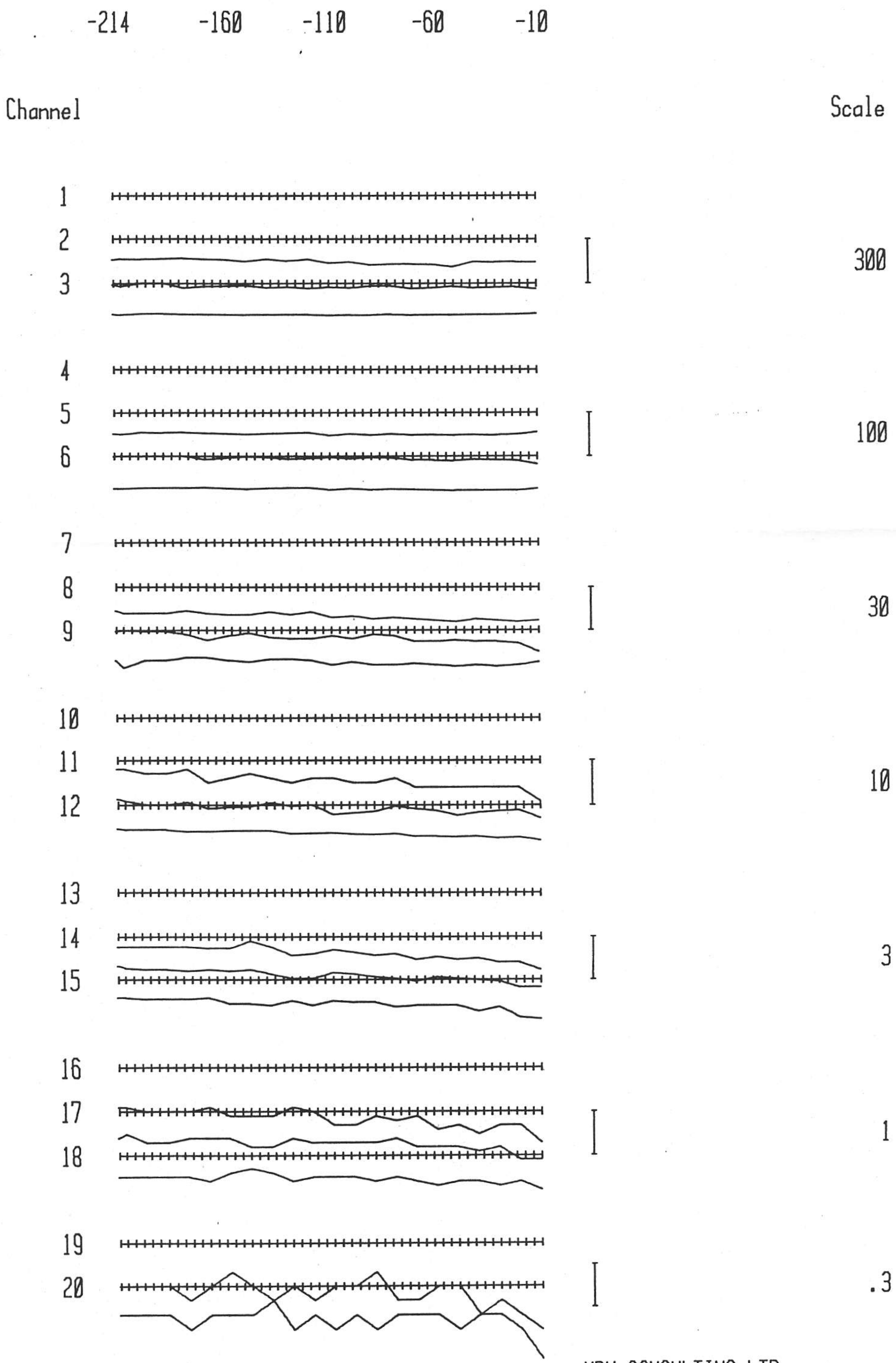
FALCONBRIDGE COPPER
EM-37 SURVEY

MNT SICKER — Line DH7

Loop size 300*300 m — Loop Edge see figures — File: DH7L1D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

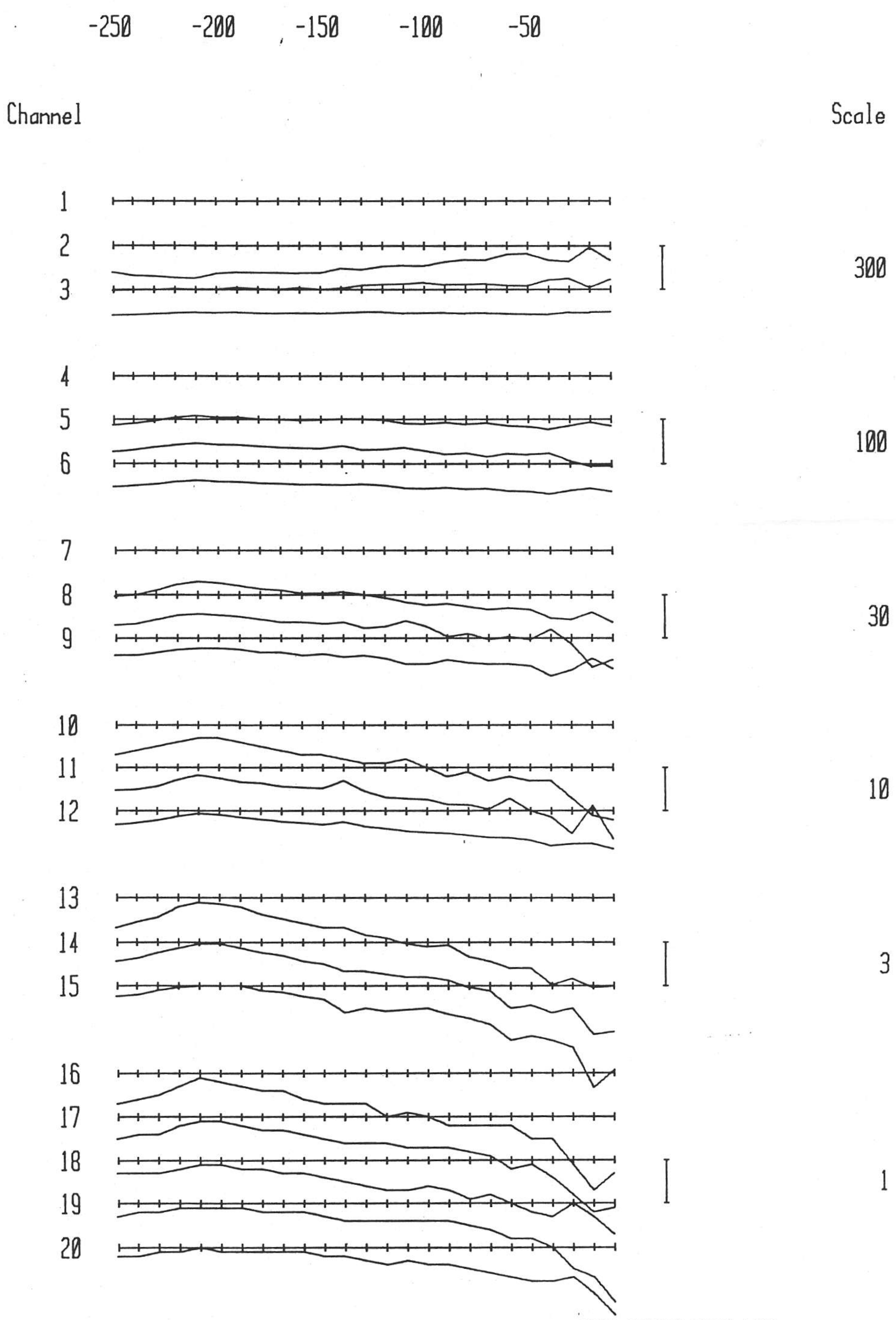
FALCONBRIDGE COPPER
EM-37 SURVEY

MNT SICKER   Line DH8

Loop size 300*300 m   Loop Edge see figures   File: DH8L1D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

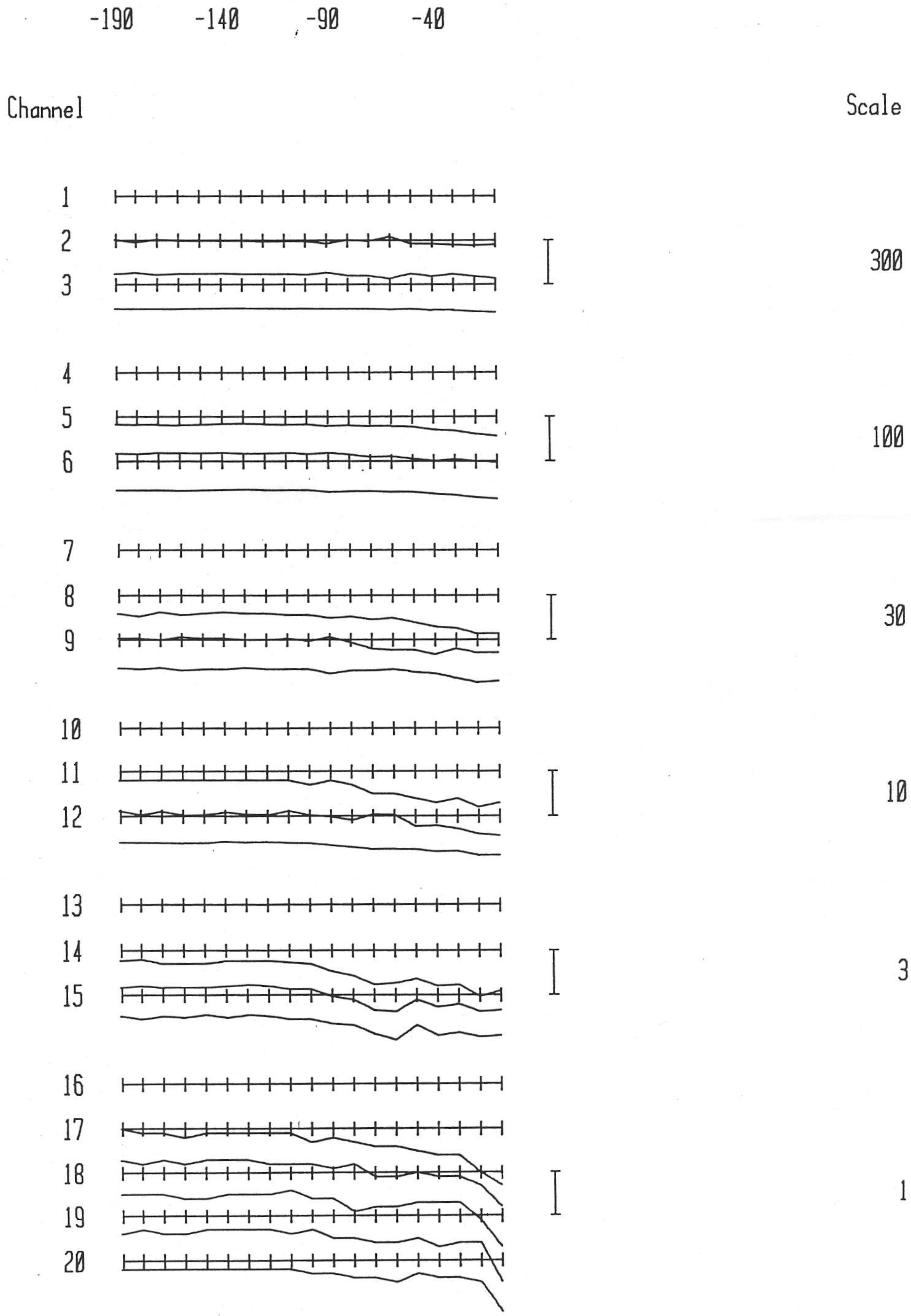
EM-37 SURVEY

MNT SICKER — Line DH9

Loop size 300*300 m — Loop Edge see figures — File: DH9L1D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

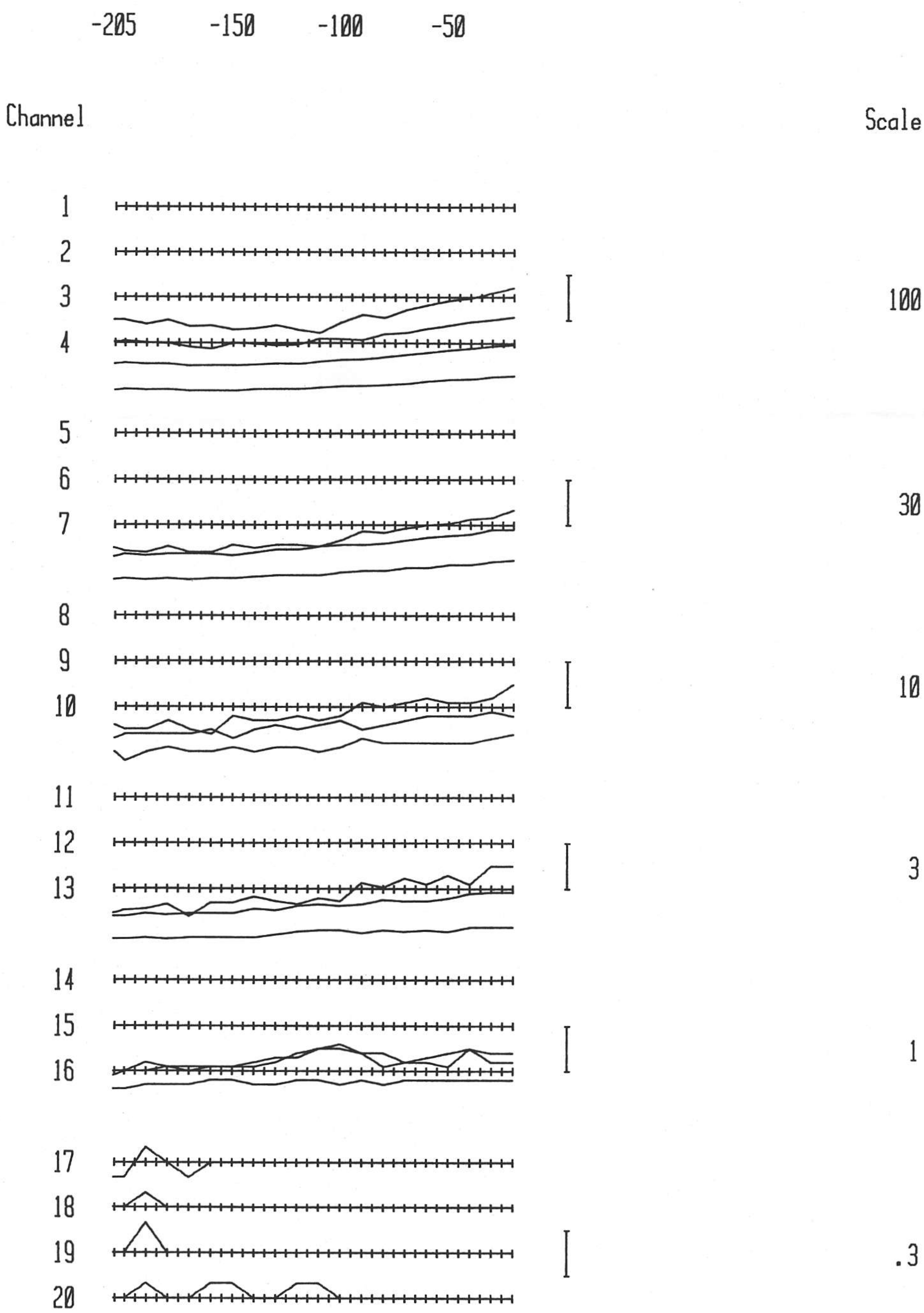
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER — Line DH7 — SUMMER '85

Loop size 300x300 m — Loop Edge see figures — File: DH7L2D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

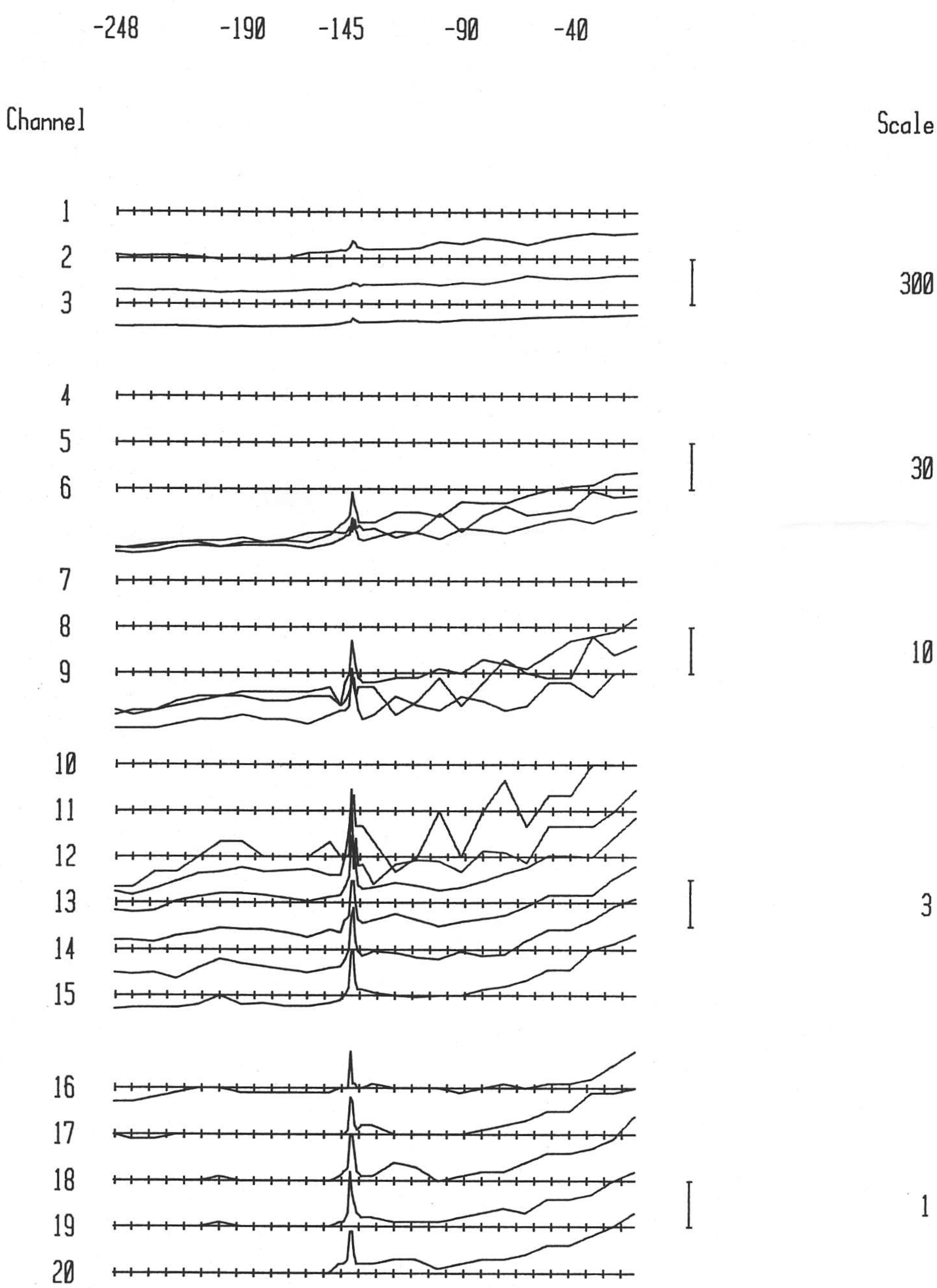
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER | Line DH8 | SUMMER '85

Loop size 300x300 m | Loop Edge see figures | File: DH8L2D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

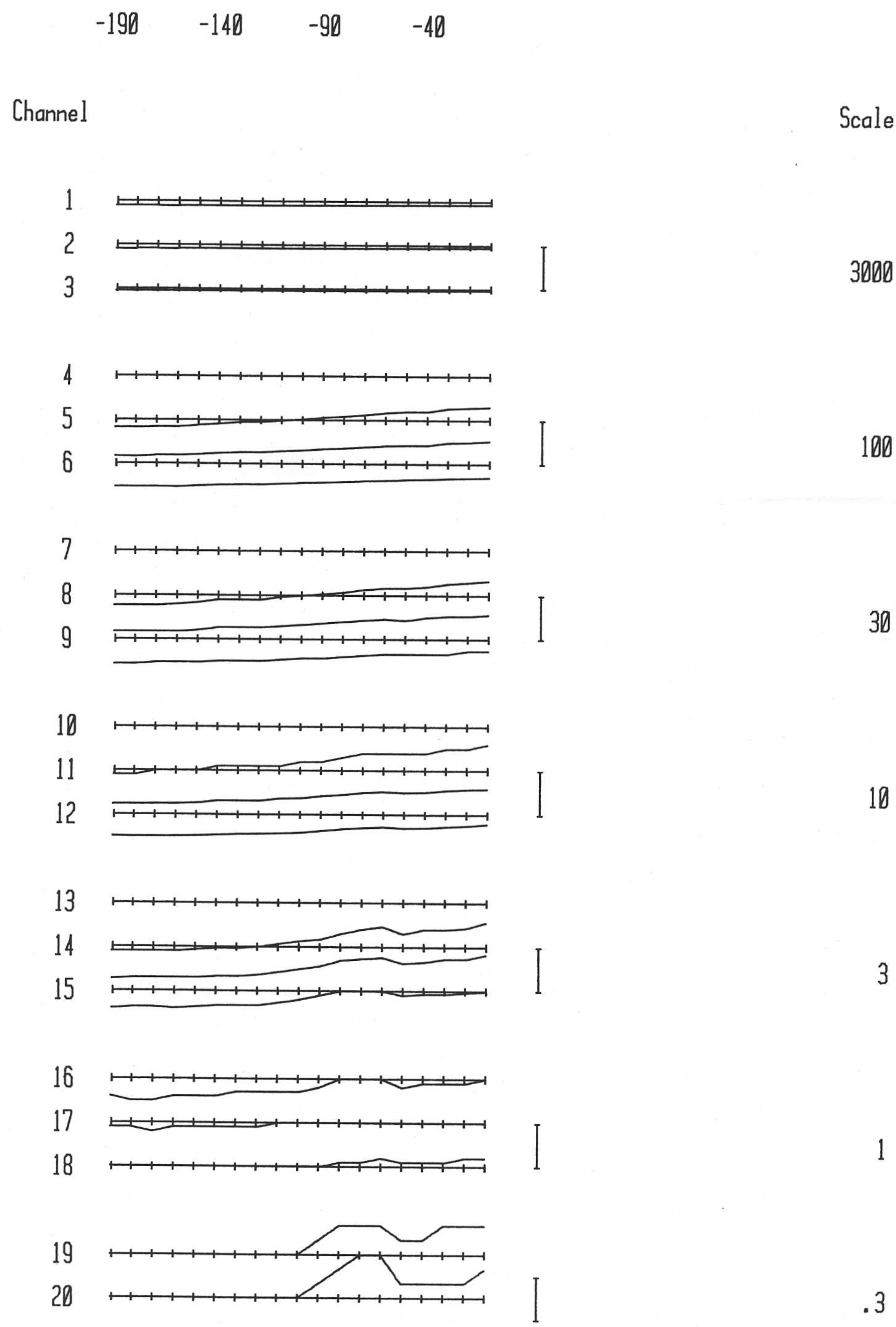
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER | Line DH9 | SUMMER '85

Loop size 300x300 m | Loop Edge see figures | File: dh912d.dat

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

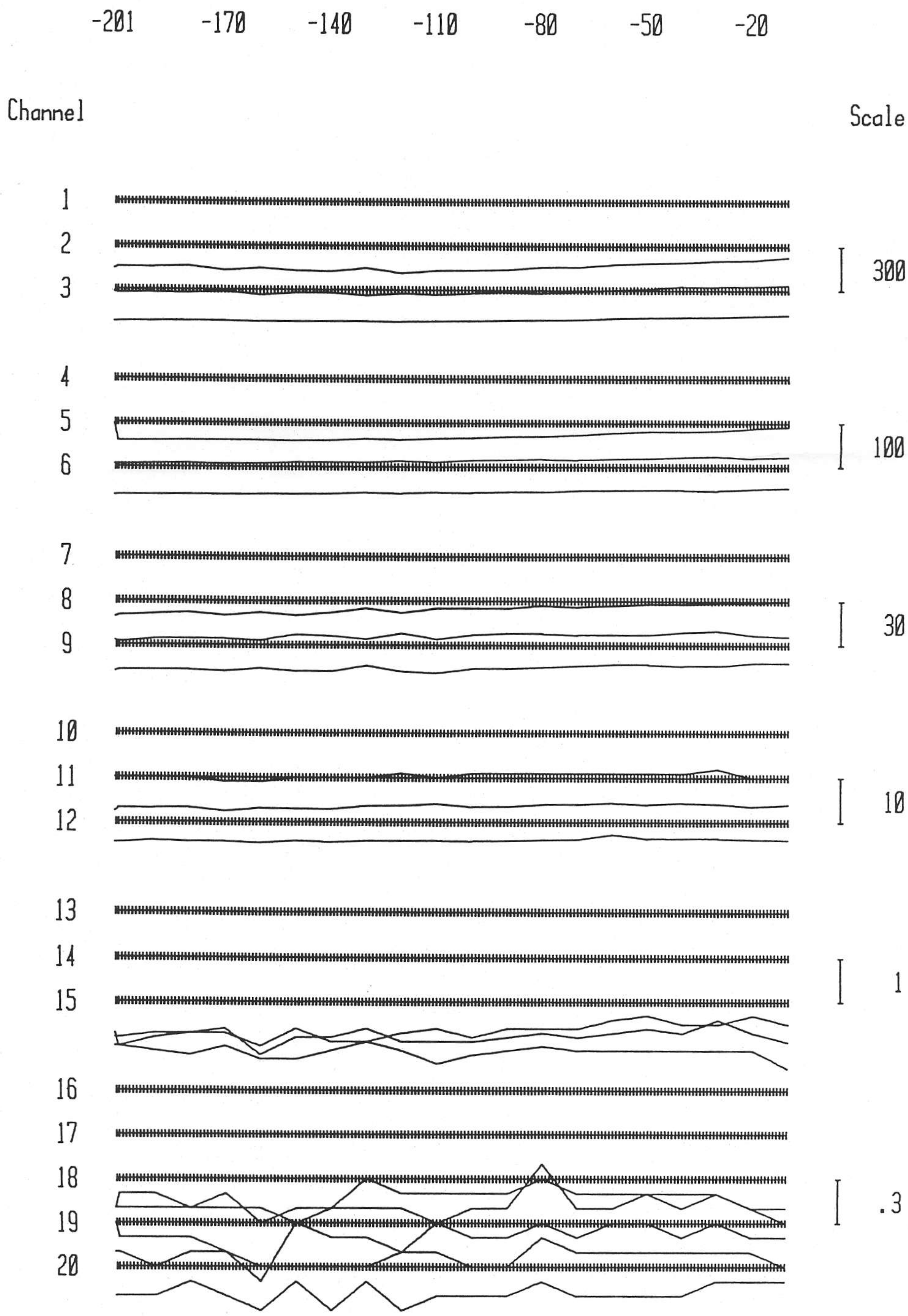
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER — Line DH7 — SUMMER '85

Loop size 300x300 m — Loop Edge see figures — File: DH7L3D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

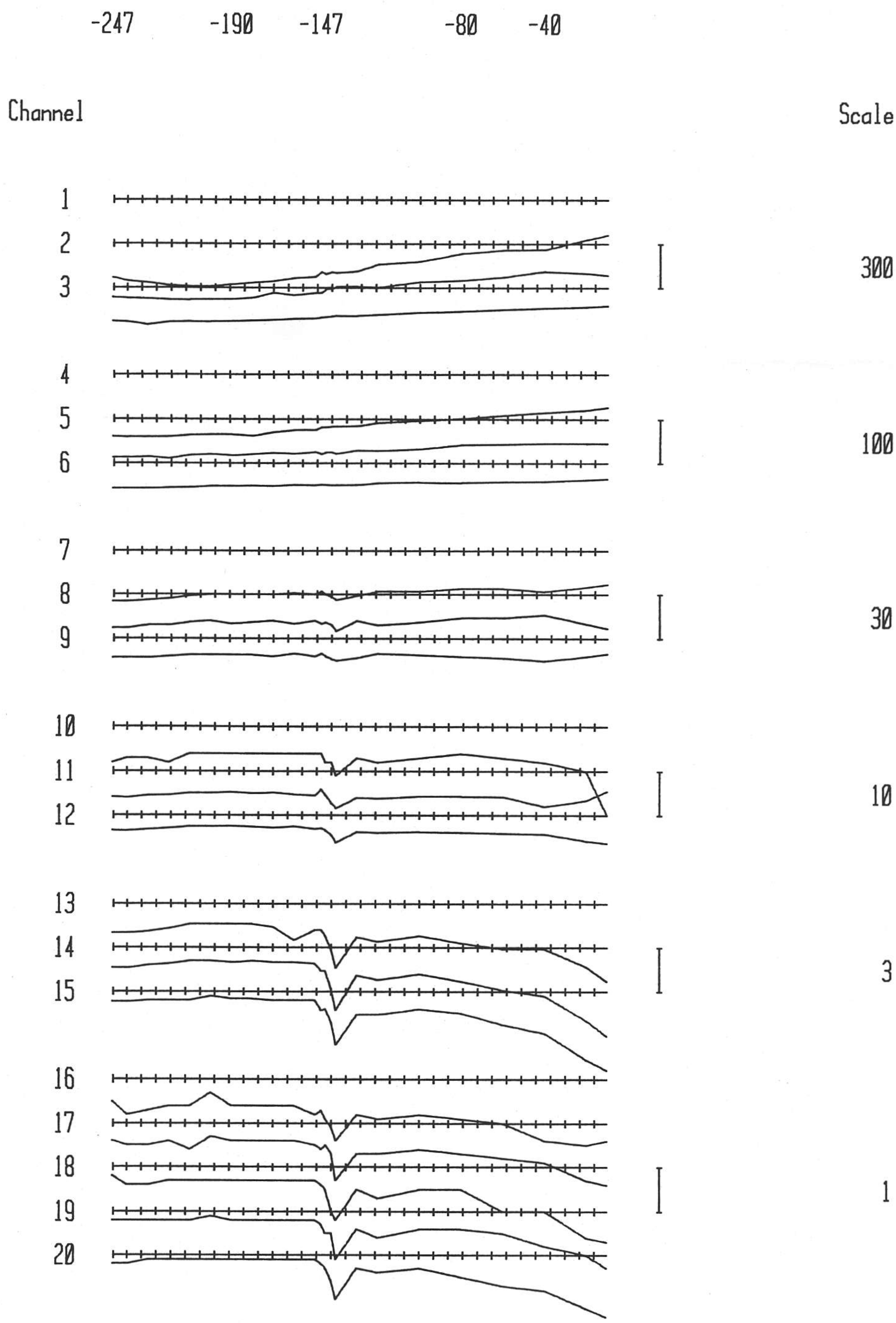
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER | Line DH8 | SUMMER '85

Loop size 300x300 m | Loop Edge see figures | File: DH8L3D.DAT

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.

16/10/85

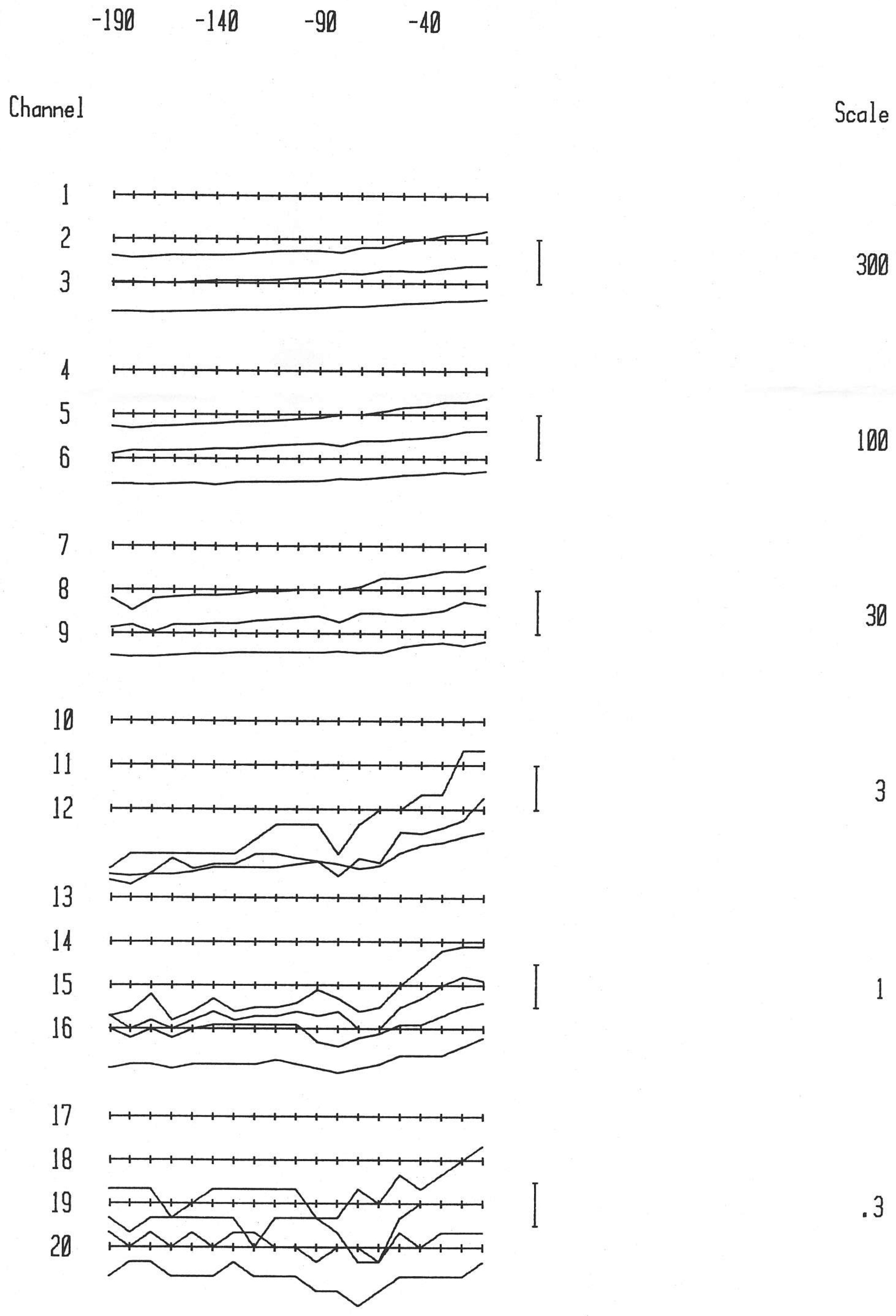
FALCONBRIDGE COPPER
EM-37 SURVEY

MT SICKER | Line DH9 | SUMMER '85

Loop size 300x300 m | Loop Edge see figures | File: dh913d.dat

Z Component

DBZ/Toff mV at gain 6



MPH CONSULTING LTD.