

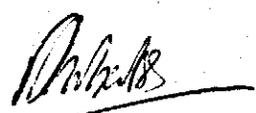
000

SEARCHED	INDEXED	SERIALIZED	FILED
- 2 APR 1986			E&IL
DEPT. OF MINES			
REF. No. 3008/86			

E.L.11/76 TRIAL HARBOUR AREA

PROGRESS REPORT - DECEMBER 1984 TO FEBRUARY 1986

MICROFILMED



By: P.A. Roberts
Senior Regional Geologist

March, 1986

Circulation: R.G.C.(1)
Tasmanian Mines Department (1)

G.F.E.L. Report No. TAS/86/2

SUMMARY

During the period covered by this report, E.L.11/76 was reduced in area from 79 sq. km. to 35 sq. km. and the following work was completed on the licence area, for a total cost of \$112,000:

- (1) Ground EM surveys on the Stonehenge Grid, comprising a major program of EM-37 and limited follow-up with UTEM over the S.E. corner of the grid.
- (2) Grid cutting, ground magnetics and bedrock geochemistry on eastern extensions to the Stonehenge Grid.
- (3) Two diamond drill holes, totalling 758m. The first hole, TH16, was drilled beneath the southern end of the Spray Mine workings. The second hole, TH17, tested a subtle combined magnetics and EM anomaly located at 2000E/400N (Stonehenge Grid co-ordinates).

The main exploration target on this E.L. is carbonate replacement tin mineralization. Unfortunately the results of the above efforts were generally disappointing and have shown that such mineralization, if present on the E.L., is probably deeply buried.

002

CONTENTS

	<u>Page No.</u>
SUMMARY	
1. INTRODUCTION	1
2. EXPENDITURE	2
3. LAND TENURE	3
4. WORK COMPLETED AND RESULTS	4
4.1 Stonehenge Grid	4
4.1.1 Access	4
4.1.2 Geology	5
4.1.3 Geochemistry	5
4.1.4 Geophysics	6
4.1.5 Diamond Drilling	8
4.1.6 Discussion	11
4.2 Magnetic Anomaly South-West of Stonehenge Grid	12
5. CONCLUSIONS	14
6. REFERENCES	15

APPENDICES

1. Expenditure for the period November, 1984 to February, 1986.
2. Stonehenge Grid - sample descriptions and assays.
3. Stonehenge Grid - ground magnetics data - eastern grid extensions, magnetic anomaly S.W. of Stonehenge Grid.
4. Mitre Geophysics report on interpretation of EM37 results, Stonehenge Grid.
5. Mitre Geophysics report on interpretation of UTEM results, Grubbs Mine area, Stonehenge Grid.
6. Mitre Geophysics report on interpretation of downhole EM results, DDH TH17.
7. Diamond drill logs, TH16 and TH17.
8. Petrological reports.

003

GOLD FIELDS EXPLORATION PTY. LIMITED

LIST OF PLANS

043004

1. Locality Plan, 1:250,000 (In Text)
2. Stonehenge Area, Interpretive Geology, 1:5,000
3. Stonehenge Grid, Bedrock Geochemistry, Sn, 1:5,000
4. Stonehenge Grid, Bedrock Geochemistry, As, 1:5,000
5. Stonehenge Grid, Bedrock Geochemistry, Cu, 1:5,000
6. Stonehenge Grid, Bedrock Geochemistry, Pb, 1:5,000
7. Stonehenge Grid, Bedrock Geochemistry, Zn, 1:5,000
8. Stonehenge Grid, Composite Line Profile, 600N, 1:2,000.
9. Stonehenge Grid, Composite Line Profile, 400N, 1:2,000
10. Stonehenge Grid, Composite Line Profile, 200N, 1:2,000
11. Stonehenge Grid, Composite Line Profile, 00N (00-1400E), 1:2,000
12. Stonehenge Grid, Composite Line Profile, 00N (1400-3450E), 1:2,000
13. Stonehenge Grid, Composite Line Profile, 200S, 1:2,000
14. Stonehenge Grid, Composite Line Profile, 400S, 1:2,000
15. Stonehenge Grid, Composite Line Profile, 600S, 1:2,000
16. Stonehenge Grid, Composite Line Profile, 800S, 1:2,000
17. Stonehenge Grid, Composite Line Profile, 1000S, 1:2,000
18. Stonehenge Grid, Composite Line Profile, 1200S, 1:2,000
19. Stonehenge Grid, Composite Line Profile, 800E, 1:2,000
20. Stonehenge Grid, Composite Line Profile, 900E, 1:2,000
21. Stonehenge Grid, Composite Line Profile, 1000E, 1:2,000
22. Stonehenge Grid, Composite Line Profile, 1100E, 1:2,000
23. Stonehenge Grid, Composite Line Profile, 1200E, 1:2,000
24. Stonehenge Grid, Composite Line Profile, 1300E, 1:2,000
25. Stonehenge Grid, Composite Line Profile, 1600E, 1:2,000
26. Stonehenge Grid, Composite Line Profile, 1700E, 1:2,000
27. Stonehenge Grid, Composite Line Profile, 1800E (900S-675N), 1:2,000
28. Stonehenge Grid, Composite Line Profile, 1900E, 1:2,000
29. Stonehenge Grid, Composite Line Profile, 2000E, 1:2,000
30. Stonehenge Grid, Composite Line Profile, 2100E (900S-550N), 1:2,000
31. Stonehenge Grid, Composite Line Profile, 2200E (1000S-1100N), 1:2,000
32. Stonehenge Grid, Composite Line Profile, 2300E (1100S-550N), 1:2,000
33. Stonehenge Grid, Composite Line Profile, 2400E, 1:2,000
34. Stonehenge Grid, Composite Line Profile, 2500E, 1:2,000
35. Stonehenge Grid, Composite Line Profile, 2600E (1100N-1100S), 1:2,000
36. Stonehenge Grid, Composite Line Profile, 2800E, 1:2,000
37. Stonehenge Grid, Composite Line Profile, 3000E, 1:2,000
38. Stonehenge Grid, Ground Magnetics, 1:5,000

004

GOLD FIELDS EXPLORATION PTY. LIMITED

043005

39. Stonehenge Grid, EM Interpretation, 1:5,000

40. Stonehenge Grid, Spray Mine Workings, Longitudinal Projection (In Text)

41. Stonehenge Grid, Spray Mine Workings, Diamond Drill Hole Profile, TH16.

42. Stonehenge Grid, Diamond Drill Hole Profile, TH17

1. INTRODUCTION

E.L.11/76 covers an area of 35 sq. km. west and south-west of Zeehan, Western Tasmania (Figure 1).

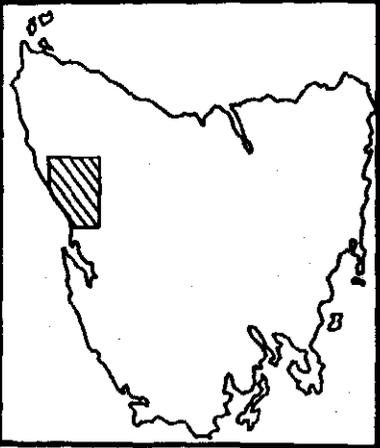
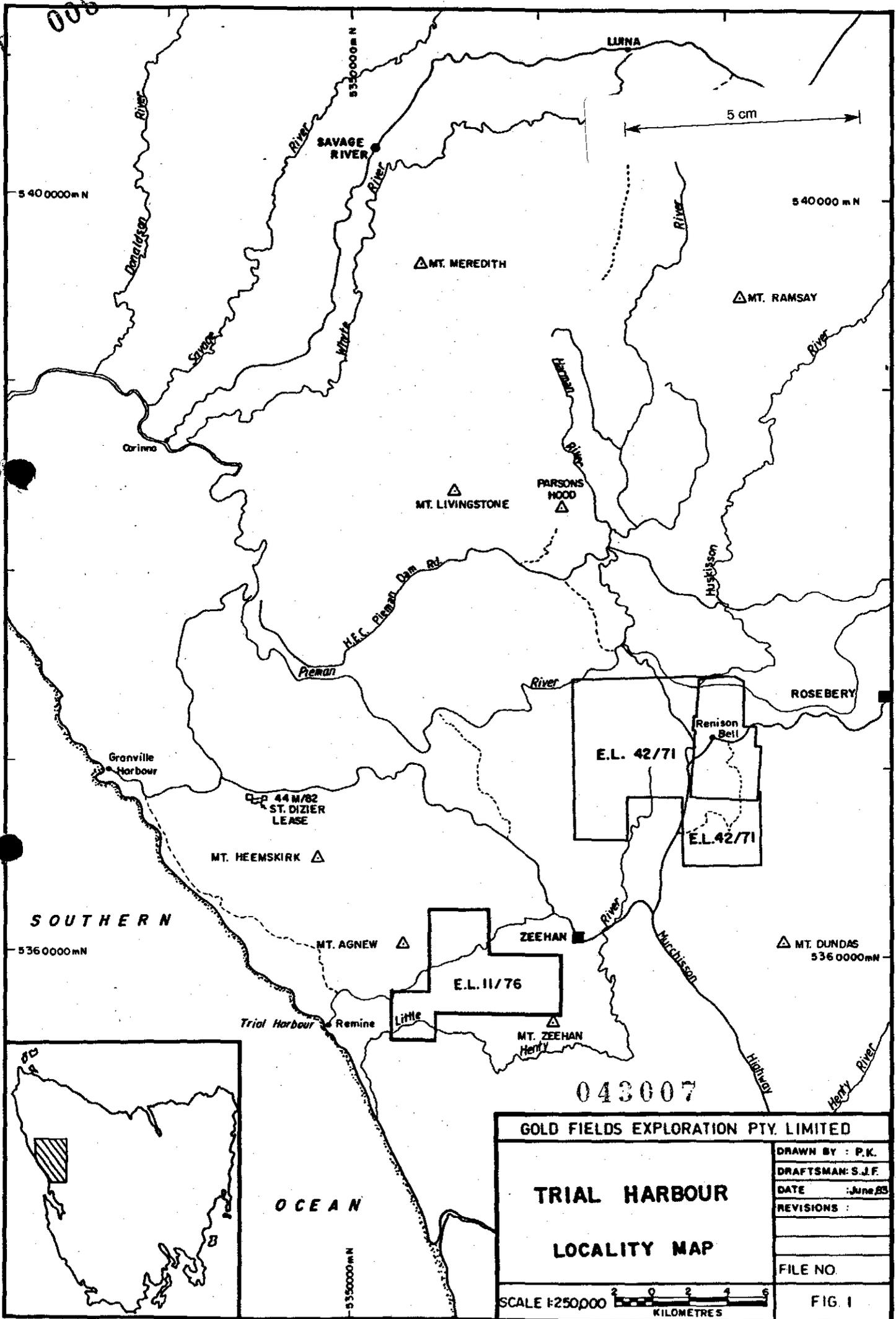
Geologically, the licence area covers a sequence of folded and faulted Upper Proterozoic to Paleozoic sediments, volcanics and basic to ultra-basic intrusives, intruded by the Upper Devonian Heemskirk Granite.

Known mineralization within the E.L. comprises stanniferous magnetite skarn in the Tenth Legion area at the western end of the licence area, and base metals-silver mineralization in veins and fault infillings at its eastern end.

Exploration within the current licence area has concentrated on two sections of the E.L., viz. the Area D/East Heemskirk Grids in the west and the Stonehenge Grid in the east. The former were explored for skarn and carbonate replacement tin mineralization during the 1974-1980 period; the latter has been the main focus of interest on the E.L. in recent years and has been explored for Queen Hill-style carbonate replacement tin orebodies.

This report describes the results of a program on the Stonehenge Grid comprising grid extensions, ground magnetics and EM surveys, bedrock geochemistry and diamond drilling.

006



GOLD FIELDS EXPLORATION PTY. LIMITED	
TRIAL HARBOUR	
LOCALITY MAP	
DRAWN BY : P.K.	DATE : June 83
DRAFTSMAN: S.J.F.	REVISIONS :
FILE NO.	FIG. 1



2. EXPENDITURE

Expenditure on the licence area for the 14 months from November, 1984, to the end of February, 1986 amounts to \$111,621. Detailed expenditure breakdowns are listed in Appendix 1.

Total spending on E.L.11/76 (including amounts spent on S.P.L.129 prior to the amalgamation of the two licences in 1984) to the end of February, 1986 is \$1,594, 539.

3. LAND TENURE

E.L.11/76 is held in the name of Renison Limited, a wholly owned subsidiary of Renison Goldfields Consolidated (R.G.C.). Exploration on the licence is currently being undertaken by Gold Fields Exploration Pty. Ltd., the exploration arm of R.G.C.

The E.L. has been reduced in area twice during the last two years. Until April, 1984, E.L.11/76 covered an 88 sq. km. area entirely underlain by the Heemskirk Granite; at the same time, S.P.L.129 covered a 46 sq. km. area south and south-east of the granite between Trial Harbour and Zeehan (i.e. including the current location of E.L.11/76). E.L.11/76 was then reduced to 33 sq. km. and amalgamated with S.P.L.129; the combined licence was named E.L.11/76. Subsequently in April, 1985, the E.L. was further reduced to 35 sq. km. by relinquishing the western end of the licence area including the remaining parts of the Heemskirk Granite. Consequently, E.L.11/76 - as it now is - includes none of the ground which it covered prior to April, 1984 - a somewhat novel and confusing situation.

Within the present licence area, there are nine current mining leases, viz:

- (1) Consolidated M.L. 4M/82 of 28 ha., over the Swansea Mine, held by the Swansea Mining Company (see Figure 2).
- (2) M.L. 64M/73 of 6 ha., over the Kynance Mine, held by the Kynance Mining Company (see Figure 2).
- (3) Part of Consolidated M.L. 123M/47 over the Comstock Workings, held by E.Z. (see Figure 2).
- (4) M.L.s 50M/75 to 54M/75 inclusive of 145 ha., over part of the Tenth Legion/East Heemskirk Grid area, held by Savage Resources.
- (5) Part of M.L. 3M/82, over an alluvial flat straddling the Trial Harbour road on the E.L.'s western boundary, held by R.S. and S.G. Laffer and J. Young.

The total area covered by the above leases is approximately 2 sq. kms.

4. WORK COMPLETED AND RESULTS4.1 Stonehenge Grid

The history of exploration on the Stonehenge Grid is well described by Komyshan et al. (1984) to which the reader is referred. Since that report was circulated in November 1984, the following work has been completed on the Stonehenge Grid:

- (1) EM-37 ground E.M. survey by Geoterrex in December, 1984.
- (2) Grid extensions east to the E.L. boundary covered by ground magnetics and bedrock geochemistry in December, 1984 to January, 1985.
- (3) Two diamond drill holes, TH16 and TH17, with a total depth of 758m, drilled in June-July and October, 1985, respectively.
- (4) Small UTEM ground E.M. survey by Lamontagne in the vicinity of Grubbs Mine in November, 1985.
- (5) Sirotem E.M. survey down drill hole TH17 by Solo Geophysics in February, 1986.

In detail:

4.1.1 Access

A small drill pad was cleared adjacent to the old Nubeena access track for the collar of TH16. Another, small drill pad was cleared for the TH17 site, together with a short access track leading off from the TH13 drill access road.

The Stonehenge Grid was extended east to the eastern E.L. boundary by cutting a series of lines 200m apart and orientated at right angles to the original Stonehenge Grid (i.e. 098° magnetic, parallel to the base line). This orientation was chosen primarily to ensure that the ground magnetics would define the major Stonehenge magnetic anomaly accurately and thereby permit the delineation of any subtle residual magnetic anomalies indicative of pyrrhotite mineralization.

4.1.2 Geology

Project geologist, P. Komyshan, mapped the eastern grid extensions, however his work just confirmed the previous geological interpretation (Komyshan, 1985). In addition, the lithologies intersected in the two diamond drill holes were broadly consistent with Komyshan et al.'s (1984) interpretation. Consequently the geological map from the latter report is reproduced, unchanged, as Figure 2.

The details of the geology of the Stonehenge Grid are well described by Komyshan et al. (1984), to which the reader is referred.

4.1.3 Geochemistry

A total of 261 weathered bedrock samples were collected on the eastern grid extensions by contractor P. Ashton, using a power auger. In addition, project geologist, P. Komyshan, collected 21 samples from the vicinity of various old workings throughout the Stonehenge Grid towards the end of 1984. All of these samples were submitted to Analabs in Burnie and assayed for Sn and As by X.R.F. and for Cu, Pb and Zn by A.A.S.

All of the results are presented with sample descriptions in Appendix 2 and on a series of single element plans as Figures 3 to 7.

Unfortunately this work provided little in the way of encouragement, however a number of observations can be made:

- (1) Sn values are generally at or below the detection limit (3 p.p.m.), however a number of low level anomalies were obtained; of these, the most prominent is a N.N.W. trending 400 x 100m², 3 line anomaly with a peak value of 45 p.p.m. in the vicinity of the Nubeena workings.
- (2) As values are very low throughout the grid extensions.
- (3) Cu and Zn values are also very low throughout the grid extensions, apart from some mineralized samples obtained from old dumps.

- (4) Pb values are commonly anomalous on the grid extensions, as they are on the rest of the Stonehenge Grid. Although N.N.W. trending contours have been drawn on the plan (Figure 6), these are based on the somewhat tenuous assumption that the anomalies should parallel the N.N.W. trend of the Spray to Nubeena "line of lode".

4.1.4 Geophysics

Ground magnetics data were recorded on the eastern grid extensions in January, 1985 and corrected by means of base station readings obtained at grid position 3000E, 450N. Raw grid corrected data are presented in Appendix 3 and on composite line profiles (Figures 8 to 18) and a contoured plan (Figure 38). This work completed the delineation of the major magnetic anomaly. Unfortunately, no irregularities were revealed on the contoured anomaly "surface" on its eastern side; such irregularities are important because they indicate residual magnetic anomalies which may be derived from concealed pyrrhotite orebodies.

The EM-37 survey was initially designed to cover the residual magnetic anomalies superimposed on the eastern "peak" of the major magnetic anomaly as well as the smaller western "peak" of the major anomaly. The purpose of the survey was to establish whether the magnetic bodies modelled as the sources of these anomalies could be composed of pyrrhotite. During the course of the survey, however, it was decided to enlarge the coverage by extending it north over the large W.N.W. trending zone of DIGHEM and VLF-EM anomalies there. Since the latter zone is almost devoid of residual magnetic responses, the target there was pyrite-rich carbonate-replacement tin mineralization (cf. pyrrhotite elsewhere). The methodology and results of this survey are fully described and discussed by J.R. Bishop in Appendix 4, to which the reader is referred. In addition, Bishop's interpreted anomaly locations are illustrated on composite line profiles (Figures 19 to 36) and on a grid plan (Figure 39). In summary, the survey revealed a plethora of substantial anomalies in the zone of DIGHEM responses and almost no

C 012

anomalies of interest elsewhere. Most of the "better" anomalies were ascribed to graphitic black shales and faults; thus only two were considered worthy of further work, viz:

- (1) 2000E, 400N. A subtle EM anomaly coincident with an equally subtle residual magnetic response over a small creek flat underlain by interpreted dolomitic lithologies. This was tested by diamond drill hole TH17 (see section 4.1.5., below).
- (2) 2600E, 375S. An EM anomaly was only partly defined at this position right at the S.E. edge of the survey. This response is located over Grubbs Workings and was considered to be of particular interest because of the presence of spilites, a lithology also noted at Queen Hill, and which might be an indicator of the "right" stratigraphic level (i.e. suitably reactive carbonates?) for orebody formation. This anomaly was followed-up with a small UTEM survey designed to fully define it and to test for any on strike extensions to it (see below).

The UTEM survey covered four lines, 2400E, 2600E, 2800E and 3000E, the first two of which had been partly covered by EM-37. The methodology and results of this work are described by J.R. Bishop in Appendix 5; Bishop's interpreted anomaly locations are shown on composite line profiles (Figures 34 to 37) and on a grid plan (Figure 39). Unfortunately, this survey showed that the anomaly over the Grubbs Mine area was too weak to be of interest. No other anomalies were identified which were considered worthy of follow-up.

The results of the down-hole Sirotem survey in TH17 are described by J.R. Bishop in Appendix 6. One response was obtained at 250m near a 2.5m intersection of pyritic breccia (at 254.2-256.7m), however it is considered too weak to be indicative of a large off-hole conductor.

4.1.5 Diamond Drilling

Two diamond drill holes were completed on the Stonehenge Grid during 1985, for a total depth of 758.3m. The first hole, TH16, was designed to intersect the Spray No.1 Lode at depth beneath the southern end of the workings where it was thought that the lode may be in contact with the dolomitic sediments observed in drillholes TH13 and TH15, 250m to the south; thus, the hole's target was carbonate-replacement tin mineralization. The second hole, TH17, was designed to test the subtle combined magnetic and EM anomaly mentioned previously (Section 4.1.4) approximately 200m below the surface, also for carbonate-replacement tin ore.

Drill hole logs are attached as Appendix 7. TH16's intersection point on the Spray No.1 Lode is illustrated on Figure 40, a longitudinal projection of the lode. Drillhole profiles are presented as Figures 41 and 42.

Results of the drilling are summarized below:

D.D.H. TH16

Collar co-ordinates (AMG): 5,360,002N; 360,490E
 Azimuth (AMG): 238°
 Inclination: -50°
 Depth: 450.0m
 Commenced: 18/6/85
 Completed: 28/7/85

Abbreviated Log:

0.0 - 14.1m	Sandstone, siltstone, intraformational breccia
14.1 - 26.4m	Pyritic grit, sandstone
26.4 - 148.8m	Interbedded sandstone, shale
148.8 - 194.7m	Quartz-carbonate veined, partly brecciated sandstone, shale
194.7 - 210.7m	<u>Cross Chloride Fault?</u> Zone of intense brecciation and veining
210.7 - 240.9m	Quartz-carbonate veined, partly brecciated sandstone, shale

014

043015

NORTH

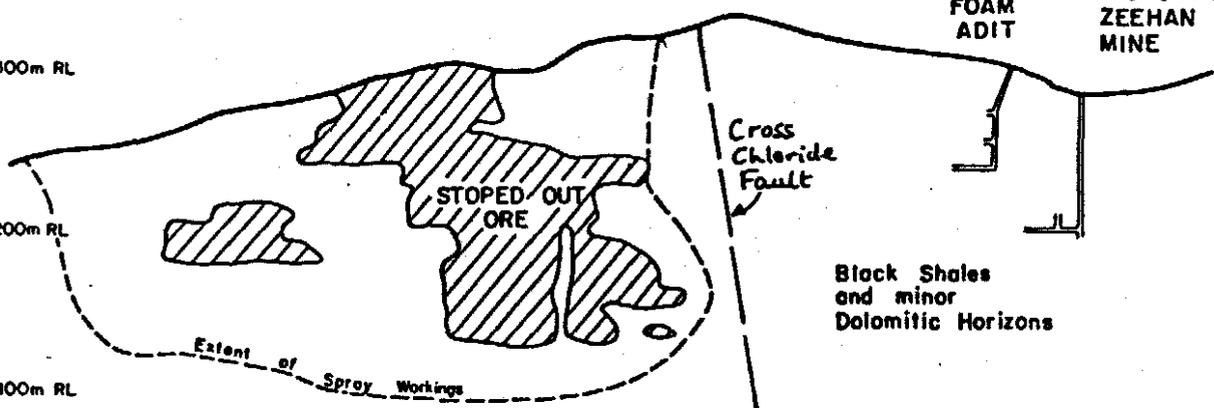
SOUTH

← SPRAY MINE →

FOAM ADIT

VICTORIA ZEEHAN MINE

2300m RL
2200m RL
2100m RL
2000m RL
1900m RL



Black Shales and Sandstones

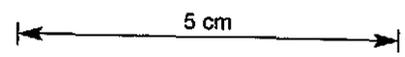
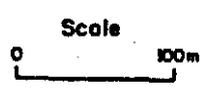
Tenneco DDH No. 2 (1971) Stopped in No. 1 Lode?

Mines Dept. DDH (1431) 1.1m t.w.

TH16
3.0m t.w.
at 0.077% Sn
0.57% As
0.12% Cu

proj. 37m to No. 1 Lode
altered dolomitic lithologies
proj. 73m to No. 1 Lode

Dolomitic sediments in contact with Spray No. 1 Lode.



GOLD FIELDS EXPLORATION PTY. LIMITED

EL. 11/76
SPRAY MINE WORKINGS
LONGITUDINAL PROJECTION
No. 1 LODE

DRAWN BY :	Pre/PK
DRAFTSMAN :	
DATE :	3/86
REVISIONS :	
FILE NO.	

SCALE 1 5,000 Metres

FIG. 40

9.

240.9-319.3m Interbedded sandstone, shale
 319.3-325.1m Fault Zone? Badly broken, brecciated
 325.1-333.0m Interbedded sandstone, shale
 333.0-336.2m Spray No.1 Lode? Stockwork of pyrite and quartz veins in shale, sandstone
 336.2-396.7m Interbedded sandstone, shale, minor brecciation
 396.7-402.5m Intensely silicified, carbonated shale
 402.5-432.3m Quartz-carbonate stockwork in dolomitic lithologies
 432.3-450.0m Shale, lesser dolomitic sandstone.

Assays (Renison Laboratory):

333.0-336.2m (3.2m) 0.07% Sn, 0.5% As, 0.12% Cu, <0.02% Pb, Zn, Bi.
 382.3-382.8m (0.5m) 0.10% Sn, 0.4% As, 0.21% Cu, 0.16% Pb, 0.03% Zn, <0.001% Bi

Comments:

This hole almost succeeded in doing what it set out to do by intersecting the Spray No.1 Lode 61m above the upper contact of the dolomitic sediments. The hole failed to intersect the No.1 Lode directly in contact with the dolomitic sediments because:

- (1) the north dip of the dolomitic sediments proved to be slightly steeper than had been hoped for.
- (2) the No.1 Lode steepened unexpectedly beneath the deepest level in the mine (No.6). In designing the hole, it was assumed that the lode would dip steeply west at about the angle observed between the No.2 and No.6 levels (see Figure 41 and plan attached to drillhole log); instead, it is nearly vertical below the No.6 level.

The No.1 Lode intersection is quite interesting in that it is devoid of lead, zinc and silver but anomalous in tin, arsenic and copper. This is good evidence that the Spray vein system is zoned with depth and may be expected to become increasingly stanniferous at deeper levels. It therefore remains possible that

carbonate replacement tin mineralization is present where the lode is in contact with the dolomitic sediments at around 1980m R.L. and below (see Figure 40). Unfortunately, TH16 was blocked after the rods and casing were removed from the hole as it proved impossible to line it with PVC casing; consequently the down-hole EM planned here never eventuated, and so it was not possible to establish whether any sulfide-rich carbonate replacement ore is present at depth or not.

D.D.H. TH17

Collar Co-ordinates (AMG): 5,359,619mN; 359,890mE
 Azimuth (AMG): 277°
 Inclination: -63°
 Depth: 308.3m
 Commenced: 12/10/85
 Completed: 30/10/85

Abbreviated Log:

0.0- 53.7m	Deeply weathered ?dolomitic sediments
53.7-192.4m	Interbedded quartzites and shales, minor brecciation
197.4-211.1m	Silicified, dolomitic quartzite and shale, partly brecciated
211.1-239.4m	Black shale, lesser quartzite, partly brecciated
239.4-254.2m	Silicified, dolomitic quartzite and shale, partly brecciated
254.2-256.7m	<u>Pyritic breccia</u>
256.7-308.3m	Interbedded quartzites and shales, partly brecciated.

Assays (Renison Laboratory):

Only limited assaying was justified on this hole. Unfortunately, all results were poor, the highest tin result being 0.02% between 58.5 and 59.5m.

Comments:

The results of this hole suggest that the source of the EM anomaly was graphitic shale (see Appendix 6, petrophysical results). Magnetic susceptibility readings

017

on the core (Appendix 7) failed to provide any explanation for the residual magnetic anomaly; it therefore likely that the residual anomaly is the result not of a discrete source but rather of a small variation in the magnetic susceptibility or surface geometry of the source of the major anomaly.

4.1.6 Discussion

The results of the various programs described above have significantly downgraded the exploration potential of the Stonehenge Grid, apart from the immediate vicinity of the Spray Mine. Of the six holes now completed on the grid, only one, TH16, has even obtained significantly anomalous values of tin.

The features that attracted exploration interest into the Stonehenge Grid area initially were:

- (1) Its proximity to the Queen Hill cluster of tin orebodies.
- (2) The presence of a major aeromagnetic anomaly comparable to (although significantly larger than) the Queen Hill aeromagnetic anomaly.
- (3) A thick sequence of dolomitic sediments which could have been replaced by stanniferous sulfide mineralization.
- (4) The presence of numerous base metal-silver mineralized veins which are the outward expression of a granite-related hydrothermal system and which could become stanniferous at depth.
- (5) Substantial structural deformation of the Oonah Formation (which underlies most of the grid), including numerous faults.

It was thought that the major magnetic anomaly could reflect the hornfelsed margin of a buried granitic stock and represent the centre of a discrete tin mineralized system, separate from Queen Hill. Given the very poor tin assay results from surface geochemistry and drillholes and the lack of much obvious granite-related alteration mineralogy (e.g.

tourmaline, axinite, etc.), it now seems likely that any such system is probably too deep to explore except by a very expensive program of stratigraphic drilling. What is more likely is that the Stonehenge area lies on the southern side of a single, large hydrothermal system centred around Queen Hill. It comes as no surprise, therefore, that the best tin results obtained to date have been found at depth beneath the Spray Mine near the northern E.L. boundary.

Unfortunately, one effect of the drill hole TH16 result was to demonstrate that, at their shallowest, the dolomitic sediments are 200m below the plain level, which places an upper RL limit on the location of any carbonate replacement tin ore. If the centre of the tin mineralized system on the Spray No.1 structure lies directly beneath the centre of the lead-silver orebody exploited in the workings, then the upper RL limit of carbonate replacement tin mineralization could well be more than 300m below the plain level. Given the current state of the world tin market, it is likely that any tin orebodies found at such depths would have to be exceptionally high grade and large - even by Western Tasmanian standards - to justify a new mining operation in the foreseeable future.

4.2 Magnetic Anomaly South-West of the Stonehenge Grid

Following the recommendation of Komyschan et al. (1984), an attempt was made at a ground magnetic traverse over the magnetic anomaly south-west of the Stonehenge Grid. Unfortunately the thickness of regrowth vegetation there defeated this effort. Ground magnetic data collected on this traverse are attached in Appendix 3.

No further investigations of this anomaly are now considered worthwhile, however, because:

- (1) Our experience on the Stonehenge Grid and a review of the aeromagnetic picture in the general Trial Harbour-Zeehan

area both strongly suggest that the source of this anomaly is a basic to ultrabasic intrusive.

- (2) Stream geochemical results from the drainage area including this aeromagnetic anomaly were poor. Again on the basis of our experience on the Stonehenge Grid, it is unlikely that any tin orebody is present within several hundred metres of the surface here without some "leakage" of tin values above it; the latter would undoubtedly have generated a significant stream geochemical tin anomaly. Thus, as with the Stonehenge Grid, it is difficult to argue for further exploration of this anomaly as any orebody which might be present here is probably too deep to be a viable economic proposition.

5. CONCLUSIONS

Given the results of our exploration efforts on the eastern section of E.L.11/76 over the past five years, there is now little chance of finding any carbonate replacement tin orebodies there within several hundred metres of the surface. In the light of the current turmoil in world tin markets, it is unlikely that a more deeply buried carbonate replacement tin orebody would be economic to mine in the foreseeable future.

The western section of the E.L. is prospective for skarn tin deposits. Given the substantial metallurgical problems associated with such mineralization, these are not considered a viable exploration target at this time.

In conclusion, therefore, no further tin exploration can be justified on this E.L. unless the present difficulties in the tin market are resolved in a favourable way. Consequently, no recommendations for future work are made in this report.

6. REFERENCES

Komyshan, P., 1985: Trial Harbour 1984/85. Gold Fields Exploration Internal Memorandum, 3p.

Komyshan, P., Cartwright, A.J. and Roberts P.A., 1984: E.L.11/76, Trial Harbour Area, Annual Report for 1983/84. Gold Fields Exploration, Unpublished Report, 40p.

APPENDIX 1

EXPENDITURE FOR THE PERIOD NOVEMBER, 1984 TO FEBRUARY, 1986

APPENDIX 1EXPENDITURE - 16 MONTHS TO FEBRUARY, 1986

	\$
1. Salaries, Wages, On Costs	25,223
2. Travel, Accommodation, etc.	277
3. Consultants and Contractors	28,399
4. Assaying Costs	4,308
5. Drilling	48,570
6. Stores and Supplies	1,008
7. Vehicles, Plant and Equipment	2,670
8. Land Acquisition	875
9. Office and Lab. Costs	291
	<hr/>
Total	\$ 111,621
	<hr/>

024

APPENDIX 2

STONEHENGE GRID - SAMPLE DESCRIPTIONS AND ASSAYS

025

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 11/76 Trial Harbour
1:250,000 SHEET:

PROSPECT: Stoneenge
TYPE OF SAMPLE: Pan-splinters

SAMPLE STORAGE REQ'D:
SAMPLE PREP. REQ'D:

LABORATORY: Analabs
ANALYSIS REQ'D:

DATE DISPATCHED: Dec 1984
DATE RECEIVED: Jan 1985

SAMPLE NUMBER	LOCATION		Depth	Horizon	DESCRIPTION	ANALYSES							
						Sn	As	Cu	Pb	Zn			
14301	600 ^N	3025 ^E	.3"	C	Blue Grey weathered rock frags + clay	45	75	20	30	40			
02	↑	3050 ^E	1.2"	B	Brige micc. clay - some frags	15	25	5	10	15			
03		3075 ^E	.5"	B	" " " " " "	9	8	<5	10	5			
04		3100 ^E	.5"	C	Blue Grey rock chips + clay	5	3	<5	20	10			
05		3125 ^E	.3"	C	Blue Grey rock chips	9	<3	<5	20	5			
06		3150 ^E	.3"	C	" " " " weathered chip	9	<3	<5	20	5			
07		3175 ^E	1.2"	C	Blue grey weathered rock chips	4	<3	<5	35	5			
08		3200 ^E	.7"	B	Blue grey micc. clay + some frags	8	<3	<5	55	5			
14309	600 ^N	3225 ^E	.7"	C	Blue grey weathered rock chips	<3	<3	<5	105	5			
14310	400 ^N	3300 ^E	1.0"	C	Blue grey weathered rock chips	3	<3	<5	45	5			
11	↑	3275 ^E	.5"	C	Blue grey rock chips weathered chip	5	<3	<5	20	5			
12		3250 ^E	.2"	B/C	" " " " + greyish clay	7	<3	<5	10	5			
13		3225 ^E	1.0"	C	" " " " + weathered chips	3	3	<5	20	5			
14		3200 ^E	.7"	C	" " " " " "	<3	<3	<5	15	5			
15		3175 ^E	.4"	C	" " " " " "	5	<3	<5	20	5			
16		3150 ^E	1.2"	C	Blue grey weathered rock chips + clay	30	<3	10	50	5			
17		3125 ^E	.6"	C	Blue grey rock chips + clay	7	35	15	170	10			
18		3100 ^E	.5"	C	Blue grey rock chips + clay weathered	8	<3	<5	50	5			
19		3075 ^E	.5"	C	Blue grey rock chips - weathered rock	7	<3	<5	235	5			
20		3050 ^E	.3"	C	" " " " " "	9	3	<5	145	5			
14321	400 ^N	3025 ^E	.5"	C	" " " " " "	5	<3	<5	10	5			

043026

026

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 11/76 ^{TRIAL} ~~HAZELLE~~ PROSPECT: STONEHENGE
 TYPE OF SAMPLE: ~~TELLURIDE~~ ^{TELLURIDE}

SAMPLE STORAGE REQ'D:
 SAMPLE PREP. REQ'D:

LABORATORY: Analabs
 ANALYSIS REQ'D:

DATE DISPATCHED: Dec 1989
 DATE RECEIVED: Jan 1989

SAMPLE NUMBER	LOCATION		Depth	Horizon	DESCRIPTION	ANALYSES				
						Sn	As	Cu	Pb	Zn
14322	200 ^N	3025 ^E	16"	C	Blue Grey rock chips - weathered chips	15	5	<5	155	5
23	↑	3050 ^E	16"	Rk	" " " " " " " " ^{clay} weathered (sieve)	5	<3	<5	20	5
24		3075 ^E	14"	Rk	" " " " " " " " ^{clay} weathered (sieve)	<3	<3	<5	50	5
25		3100 ^E	9"	C	Blue Grey rock chips - weathered chips	7	<3	<5	80	5
26		3125 ^E	5"	C	" " " " " " " "	20	<3	<5	35	5
27		3150 ^E	4"	C	" " " " " " " "	4	<3	<5	65	5
28		3175 ^E	17"	C	" " " " " " " "	30	<3	<5	220	5
29		3200 ^E	16"	C	" " " " " " " "	10	<3	5	65	5
14330		3225 ^E	9"	C	" " " " " " " "	5	<3	5	75	5
31		3250 ^E	7"	C	" " " " " " " "	20	30	30	80	5
32		3275 ^E	2-4"	C	Blue Grey weathered rck	25	3	5	150	5
33		3300 ^E	1-3"	C	Blue Grey rock chips - weathered chips	25	<3	<5	75	5
34		3325 ^E	14"	C	" " " " " " " "	4	<3	<5	75	5
35	↓	3350 ^E	13"	C	" " " " " " " "	7	<3	<5	50	10
36	200 ^N	3375 ^E	16"	C	Blue Grey rock chips - weathered chips	3	<3	<5	25	5
37	BASELINE	3400^E	1-0"	C	Blue Grey rock chips or layers. light grey	8	20	<5	40	5
38	↑	3425 ^E	1-0"	B	light grey, fragments - chips in grey clay	6	3	<5	15	5
39		3400 ^E	7"	C	Blue Grey rock chips - grey sandy clay	9	<3	<5	25	5
40		3375 ^E	7"	C	" " " " " " " "	5	3	<5	25	5
41	↓	3350 ^E	9"	C	Dark blue Grey rock chips " "	3	3	10	40	5
14342	BASELINE	3325 ^E	3"	B	light grey float, frags - chips in grey clay	7	4	<5	15	5

043027

027

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: **P. ASHTON**
 DATE DISPATCHED: **Dec 1984**
 DATE RECEIVED: **Jan 1985**

PROJECT: **EL/11/70** ^{TRAIL} ~~HATFIELD~~ PROSPECT: **STONEHENGE**
 TYPE OF SAMPLE: **Rock, cluge**

SAMPLE STORAGE REQ'D:
 SAMPLE PREP. REQ'D:
 LABORATORY: **Analabs**
 ANALYSIS REQ'D:

SAMPLE NUMBER	LOCATION		DEPTH	DESCRIPTION	ANALYSES				
					S ₂	A ₂	CU	Pb	Zn
14343	BASELINE	3200 ^E	0.6"	C Blue-grey rock chips + weathered chips	5	<3	15	45	5
44	↑	3275 ^E	0.5"	B large white flint, fine chips in grey clay	<3	3	<5	5	5
45		3250 ^E	0.7"	C Black grey rock chips + blue grey weathered chips	9	3	<5	70	20
46		3225 ^E	0.9"	B grey clay + white chips + flint	6	<3	<5	230	5
47		3200 ^E	0.6"	B " " " " " "	7	<3	<5	385	5
48		3175 ^E	1.3"	C Dark silty grey rock chips + weathered chips	7	3	<5	15	5
49		3150 ^E	0.8"	C Blue-grey rock chips + weathered chips	4	6	<5	5	5
50		3125 ^E	0.8"	C " " " " " "	20	6	<5	5	5
14351		3100 ^E	1.2"	C " " " " " " ^{silty clay}	10	80	65	1700	180
52		3075 ^E	0.6"	C " " " " " "	15	10	20	440	250
53	V	3050 ^E	1.1"	C Blue-grey rock chips + weathered chips	10	<3	<5	140	5
54	BASELINE	3025 ^E	0.7"	C " " " " " "	7	<3	5	885	3
55	BASELINE								
14355	200 ^S	3025 ^E	0.5"	C Blue-grey rock chips + weathered chips	8	<3	<5	495	5
56	↑	3050 ^E	0.9"	C " " " " " "	<3	<3	<5	140	5
57	200 ^S	3075 ^E	0.4"	C " " " " " "	6	<3	<5	35	5
58		3100 ^E	0.4"	B white flint chips + grey clay ^{on white clay}	30	4	<5	35	10
59		3125 ^E	0.7"	C Blue-grey rock chips + weathered chips ^{fragments}	9	<3	<5	255	5
60		3150 ^E	0.9"	C " " " " " " ^{chips + white clay}	7	6	<5	190	5
61	V	3175 ^E	0.7"	C " " " " " " ^{weathered chips}	5	<3	<5	40	5
14362	200 ^S	3200 ^E	0.4"	A/B large white sand chips + grey clay ^{clay}	3	3	<5	5	10

043028

020

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 1176 TRIAL HIREWORK. PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Dec 1984

1:250,000 SHEET:

TYPE OF SAMPLE: Rock-chips

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: Jan 1985

SAMPLE NUMBER	LOCATION		Depth Horizontal	DESCRIPTION	ANALYSES							
					S ₂	A ₅	C ₂	Pb	Zn			
14363	200 ^s	3225 ^E	1-3"	C Blue Gray rock chips + weathered chips	15	7	80	60	5			
64	↑	3250 ^E	0.8"	C Black rock chips + Dark blue-gray chips	8	5	5	10	5			
65		3275 ^E	1-1"	C " " " " " " " "	10	43	10	255	20			
66		3300 ^E	0.6"	C Dark blue-gray rock chips + weathered chips	4	43	45	25	10			
67		3325 ^E	1-3"	C " " " " " " " "	25	7	45	85	10			
68		3350 ^E	0.5"	B White chips + frags in grey clay	43	4	45	15	10			
69		3375 ^E	0.4"	B Sandy Tan clay + Qtz + white (Siderite?)	5	43	45	125	5			
70		3400 ^E	0.5"	C Blue grey rock chips + weathered chips	6	43	45	35	5			
71		3425 ^E	1-0"	C " " " " " " " "	7	6	55	60	5			
72		3450 ^E	0.9"	B White chips + frags in grey clay	5	5	45	20	10			
73	↓	3475 ^E	0.5"	B " " " " " " " "	43	4	45	45	5			
14374	200 ^s	3500 ^E	0.6"	B " " " " " " " "	5	10	45	3	5			
14375	400 ^s	3575 ^E	0.4"	C White chips in grey clay	43	43	45	45	5			
76	↑	3550 ^E	0.2"	C Blue grey rock chips + weathered chips	3	43	45	40	10			
77		3525 ^E	0.3"	C " " " " " " " "	15	4	45	80	20			
78		3500 ^E	0.6"	C/B Blue grey rock chips + white frags	9	43	45	80	10			
79		3475 ^E	0.4"	C Blue grey rock chips in blue grey clay	5	43	45	45	10			
80		3450 ^E	1-0"	C Blue grey rock chips in khaki grey clay	43	43	45	35	5			
81		3425 ^E	0.5"	C Blue grey rock chips + weathered chips	43	43	45	45	10			
82	↓	3400 ^E	0.4"	B/C White chips + frags in blue grey clay	5	43	45	45	5			
14383	400 ^s	3375 ^E	1-2"	C Blue grey rock chips + weathered chips	5	43	45	45	5			W

043029

029

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: FL/11/76 ^{TRIA} _{WARRIOWAY}

PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Dec 1984

1:250,000 SHEET:

TYPE OF SAMPLE: POWER AUGER

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: Jan 1985

SAMPLE NUMBER	LOCATION		Depth	Description	ANALYSES				
					Sn	As	Cu	Pb	Zn
14384	400 ^S	3350 ^E	1.2"	C Silver blue grey rock chips & weathered chips	9	<3	<5	10	5
85	↑	3325 ^E	.2"	Alb Qtzite chips & beige clay	4	<3	<5	<5	5
86		3300 ^E	.8"	C Blue grey rock chips & weathered chips	7	<3	<5	10	5
87		3275 ^E	.8"	C " " " " " "	<3	<3	<5	15	5
88		3250 ^E	.8"	C " " " " " "	3	<3	<5	30	5
89		3225 ^E	.2"	B/C Alb Qtzite chips & frags	<3	3	<5	<5	5
90		3200 ^E	.2"	B/C " " " " " "	5	4	<5	<5	10
91		3175 ^E	.8"	C Blue grey rock chips & weathered chips	<3	<3	<5	10	5
92		3150 ^E	.4"	C " " " " " "	9	<3	<5	35	5
93		3125 ^E	.4"	C " " " " " "	8	15	10	170	10
94		3100 ^E	.4"	C " " " " " "	<3	3	<5	125	5
95		3075 ^E	.5"	C " " " " " "	6	<3	<5	55	10
96	↓	3050 ^E	.5"	C " " " " " "	35	8	5	50	10
97	400 ^S	3025 ^E	.7"	B Alb Qtzite chips & frags	15	4	<5	50	10
98	600 ^S	3025 ^E	.5"	B " " " " " "	<3	<2	<5	<5	5
14399	↑	3050 ^E	1.0"	B/C Blue grey rock chips in blue grey clay	7	8	15	360	85
14400		3075 ^E	.8"	C Blue grey to black grey rock chips & weathered chips	7	2	<5	30	<5
401		3100 ^E	.6"	C Blue grey rock chips (shale chips) & Qtzite frags	<3	<2	<5	30	10
402		3125 ^E	.6"	C Grey brown sand & rock chips & frags	<3	<2	<5	<5	10
403	↓	3150 ^E	.6"	B/C Alb Qtzite chips & frags in khaki grey sandy clay	<3	<2	<5	<5	10
404	600 ^S	3175 ^E	.8"	C Blue grey rock chips & weathered chips	<3	<2	5	20	15

043030

030

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT EL 1176 TRIA HARBOUR. PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Jan 1985

1:250,000 SHEET:

TYPE OF SAMPLE: *Tool Cuttings*

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: " "

SAMPLE NUMBER	LOCATION		Depth	Horizon	DESCRIPTION	ANALYSES				
						Sn	As	Cu	Pb	Zn
14405	600S	3200E	-5m	B	Qtzite chips & frags in grey sandy clay	<3	3	<5	<5	10
06	↑	3225E	-7m	C	Grey rock chips (shale) & grey weathered chips	4	<2	<5	90	5
07		3250E	1-5m	B	Qtzite chips & frags in grey sand	<3	<2	<5	5	5
08		3275E	1-4m	B	Qtzite chips & frags in grey beige sandy clay	3	2	5	5	5
09		3300E	-5m	C	Blue grey rock chips & chalc grey clay weathered	<3	<2	5	30	10
14410		3325E	-5m	C	" " " " & weathered chips	<3	<2	5	60	10
11		3350E	1-0m	C	" " " " " " " "	3	<2	5	35	5
12		3375E	-4m	C	" " " " (Qtzite) & chalc grey weathered calc	3	<2	5	20	5
13		3400E	1-3m	B	Qtzite frags in orange grey clay	<3	<2	5	10	10
14		3425E	1-4m	B	Qtzite frags & chips in grey muddy clay	<3	<2	5	20	10
15		3450E	1-0m	B	" " in grey gritty mud	<3	<2	<5	5	10
16		3475E	-5m	B	" " in grey clay	<3	<2	<5	10	5
17		3500E	-5m	B	" " " " " "	<3	<2	<5	5	10
18		3525E	1-0m	B	" " " " " "	<3	<2	<5	10	10
19		3550E	-2m	A/B	Qtzite & Qtz chips & soil	<3	<2	<5	5	10
14420		3575E	-6m	B	Qtzite chips & frags	<3	<2	<5	5	5
21		3600E	-3m	B	" " " "	7	<2	<5	30	10
22	√	3625E	-7m	C	Blue grey rock chips (weathered Qtzite?) ^{weathered chips}	4	<2	20	170	10
23	600S	3650E	-4m	B	Qtzite chips & frags	3	<2	<5	45	10
24	800S	3700E	-4m	R/C?	Qtzite chips in beige sand	<3	<2	<5	35	10
14425	800S	3675E	-6m	C	Blue grey rock chips & weathered chips	4	<2	5	95	10

043031

031

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL/11176 TRIAL
HARDWARE

PROSPECT: STONEMENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Jan 1985

1:250,000 SHEET:

TYPE OF SAMPLE: POWER AWLER

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: " "

SAMPLE NUMBER	LOCATION		Depth Horizon	DESCRIPTION	ANALYSES								
					Sn	As	Cu	Pb	Zn				
14426	800S	3650E	-8m	C Blue Grey rock chips + weathered chips	<3	<2	<5	225	15				
27	↑	3625E	-1.2m	C " " " " " " " "	5	<2	25	235	15				
28		3600E	-6m	C " " " " " " " "	<3	<2	5	50	10				
29		3575E	-6m	C " " " " " " " "	4	<2	5	45	15				
14430		3550E	-1.8m	C Blue Grey + Black rock chips in ^{khaki} matrix	3	41	45	75	40				
31		3525E	-1.1m	C Blue grey rock chips + weathered chips	<3	<2	5	65	15				
32		3500E	-7m	C " " " " " " " "	<3	<2	<5	15	15				
33		3475E	-1.1m	C " " " " " " " "	<3	<2	5	25	10				
34		3450E	-1.0m	C " " " " ^{shale} " " " "	<3	<2	5	50	10				
35		3425E	-2m	C Blue Grey rock chips (almost outcrop)	<3	<2	5	45	10				
36		3400E	-7m	C? Orange khaki grey sand with orange stained ^{shale} chips	<3	<2	<5	10	10				
37		3375E	-1.1m	C Grey rock chips + weathered chips	<3	<2	5	35	10				
38		3350E	-1.3m	C Blue grey rock chips + " "	<3	<2	5	60	5				
39		3325E	-7m	C " " " " " " " "	<3	<2	10	80	10				
14440		3300E	-6m	C? Orange khaki grey sand with orange stained ^{shale} chips	<3	9	5	5	10				
41		3275E	-3m	C Blue grey rock chips + weathered chips	<3	<2	5	25	5				
42		3250E	-1.1m	C? shaly ^{qtzite?} Blue grey chips + weathered chips	<3	<2	10	60	10				
43		3225E	-7m	C Blue grey rock chips + weathered chips	6	<2	10	65	5				
N 44		3200E	-6m	C? ^{qtzite} chips + grey sandy clay weathered ^{qtzite}	<3	<2	<5	10	10				
45	↓	3175E	-6m	C Blue grey rock chips + weathered chips	4	<2	5	75	5				
14446	800S	3150E	-3m	C " " " " (almost outcrop)	<3	<2	5	95	10				

043032

032

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 1176 TRIAL HARBOUR PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Jan 1985

1:250,000 SHEET:

TYPE OF SAMPLE: Power Auger

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: " "

SAMPLE NUMBER	LOCATION		Depth	Horizon	DESCRIPTION	ANALYSES				
						Sn	As	Cu	Pb	Zn
14447	800S	3125E	0.6m	C	Blue Grey rock chips & weathered chips	3	<2	10	145	15
48	↑	3100E	0.3m	C	" " " " " " " "	<3	<2	5	25	20
49		3075E	0.8m	C	" " " " " " " "	4	<2	5	60	30
14450		3050E	0.6m	C	Qtzite chips (blue grey)	3	<2	<5	20	15
51		3025E	0.2m	C	" " (" " " " " " " "	<3	<2	<5	80	15
52		3000E	0.6m	B/C?	" " in dark grey mud.	<3	<2	<5	45	10
53		2975E	0.7m	C	Blue grey rock chips & weathered chips	<3	<2	<5	220	10
54		2950E	0.6m	C	Bluish Blue grey " " " " " "	<3	<2	15	255	20
55		2925E	0.7m	C	grey " " " " " "	5	<2	<5	55	10
56		2900E	0.6m	C	Blue grey " " " " " "	<3	<2	<5	530	15
57		2875E	0.2m	C	Grey " " " " " "	<3	<2	<5	15	10
58		2850E	0.9m	C	Blue grey " " " " " "	38	53	15	70	30
59	↓	2825E	0.4m	C?	Qtzite chips.	9	22	5	20	15
14460	800S	2800E	0.6m	C	Blue grey rock chips & weathered chips.	<3	<2	<5	45	10
14461	1000S	2600E			outcrop Qtzite chips.	<3	<2	10	45	15
62	↑	2625E	0.7m	C	Blue grey rock chips in Trackside cutting	<3	<2	5	10	10
63		2650E	0.6m	C	Dark grey " " & weathered chips.	<3	41	30	270	15
64		2675E	0.6m	C	Blue grey rock chips (shaly Qtzite?) & weathered chips.	<3	<2	<5	5	5
65		2700E	0.9m	C	" " " " " " & weathered chips.	<3	<2	5	65	15
66	↓	2725E	0.3m	C	" " " " " " " "	<3	<2	<5	15	10
14467	1000S	2750E	0.4m	C	Black " " " " " "	<3	<2	5	145	15

043033

033

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 1176 ^{TRIM} PROSPECT: Stonehenge.
 HARBOUR. TYPE OF SAMPLE: Power Auger

SAMPLE STORAGE REQ'D:

LABORATORY: Anabab

DATE DISPATCHED: Jan 1955

1:250,000 SHEET:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: "

SAMPLE NUMBER	LOCATION		Depth Horizon	DESCRIPTION	ANALYSES				
					Sn	Zn	Cu	Pb	Zn
14468	1000 ^S	2775 ^E	.7' C	Blue Grey rock chips & weathered chips	<3	<2	10	90	10
69	↑	2800 ^E	.7' C	" " " " " "	<3	<2	5	45	10
14470		2825 ^E	.6' C	Blue Black Grey " " " "	4	<2	<5	50	15
71		2850 ^E	.6' C	Blue Grey " " " "	5	<2	5	40	10
72		2875 ^E	.8' C	Blue Grey Black " " " "	3	<2	5	95	10
73		2900 ^E	.7' C	Black rock chips & " "	<3	<2	<5	30	5
74		2925 ^E	.6' C	Blue grey - " " " "	<3	<2	5	100	10
75		2950 ^E	.7' C	" " black " " " "	4	<2	5	35	10
76		2975 ^E	.7' C?	Khaki sand & Qtzite chips.	<3	<2	<5	5	10
77		3000 ^E	.7' C	Grey rock chips & weathered chips	9	<2	<5	45	10
78		3025 ^E	.6' C	Blue grey " " " "	<3	<2	<3	10	10
79		3050 ^E	.7' B/C	Qtzite frags & chips	<3	<2	<5	<5	10
14480		3075 ^E	outcrop	Qtz & Qtzite chips.	<3	<2	<5	<5	5
81		3100 ^E	.6' B/C	Qtz & Qtzite chips & frags.	<3	<2	<5	15	5
82		3125 ^E	.5' C	Dark blue grey rock chips & weathered chips.	<3	<2	20	40	15
83		3150 ^E	.8' C	" " " " " " yellowish clay above.	<3	56	65	275	30
84		3175 ^E	1.3' C	Blue grey " " " "	9	<2	<5	40	10
85		3200 ^E	1.3' C	" " " " " " + yellowish brown weathered chips	<3	35	175	65	5
86		3225 ^E	.5' C	" " " " " " weathered chips	<3	<2	5	100	10
87	V	3250 ^E	.6' C	Khaki grey " " " "	<3	<2	5	245	5
14488	1000 ^S	3275 ^E	.5' C	Blue grey " " " "	<3	<2	<5	40	10

043034

034

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON
 DATE DISPATCHED: Jan 1985
 DATE RECEIVED: "

PROJECT: EL 1176 TRIAL HARBOUR PROSPECT: STONEHENGE
 1:250,000 SHEET: TYPE OF SAMPLE: Lower Ages

SAMPLE STORAGE REQ'D: LABORATORY: Analabs
 SAMPLE PREP. REQ'D: ANALYSIS REQ'D:

SAMPLE NUMBER	LOCATION	Depth	Horizon	DESCRIPTION	ANALYSES						
					Sn	Pb	Cu	Zn			
14489	1000S	3300E	.6" C	Blue grey rock chips + weathered chips	<3	<2	5	15	10		
14490	↑	3325E	.4" C?	Qtzite chips + weathered Qtzite	<3	<2	<5	5	10		
91		3350E	.5" B/C	Qtzite chips + grey sand / weathered Qtzite	<3	<2	<5	15	10		
92		3375E	1.0" C	shaly Qtzite chips in khaki weathered	<3	<2	5	30	10		
93		3400E	1.0" C	Blue grey rock chips + weathered chips	<3	<2	5	40	10		
94		3425E	.5" B/C	Qtzite chips in orangey grey sand	3	<2	<5	15	5		
95		3450E	1.2" C	Silvery blue grey rock chips + weathered chips	3	<2	25	75	10		
96		3475E	.9" B	Qtzite frags in grey mud (poor recovery)	<3	<2	<5	<5	5		
97		3500E	.7" B/C?	Qtzite chips + powdered sandy Qtzite	<3	<2	<5	5	5		
98		3525E	.9" B/C?	" " " " " "	<3	<2	<5	35	10		
14499		3550E	outcrop in creek	Blue grey shale chips	3	<2	5	35	5		
14500		3575E	.6" C	Blue grey rock chips + weathered chips	4	<2	5	25	5		
01		3600E	.6" B/C?	Qtzite chips + frags / powdered sandy Qtzite	<3	<2	<5	<5	10		
02		3625E	.7" C	Blue grey rock chips + weathered chips	<3	<2	40	60	10		
03		3650E	.9" B/C?	Qtzite chips + powdered sandy Qtzite	<3	<2	<5	<5	5		
04		3675E	1.1" B	Blewing gritty mud + Qtzite frags (poor recovery)	<3	<2	<5	<5	10		
05		3700E	.7" B	" " " " Conglomerate frags (recovery)	<3	<2	<5	<5	5		
06		3725E	.9" B/C?	Pinky grey Conglomerate sand / frags	<3	<2	<5	<5	10		
07	V	3750E	.9" B/C?	Pinky brown " " "	<3	<2	30	15	5		
14508	1000S	3775E	.7" C	Blue grey rock chips + weathered chips	<3	<2	<5	20	5		

043035

035

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON.

PROJECT: EL 1176 TRIAL HARBOUR

PROSPECT: STONEHENGE
TYPE OF SAMPLE: Powder Auger

SAMPLE STORAGE REQ'D:

LABORATORY: Anal Chem

DATE DISPATCHED: Jan. 1985

1:250,000 SHEET:

TYPE OF SAMPLE: Powder Auger

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: " " "

SAMPLE NUMBER	LOCATION		Depth Horizon	DESCRIPTION	ANALYSES								
					Sn	As	Cu	Pb	Zn				
14509	1200S	3850E	.8" B/C?	Pinky grey Conglomerate with site frags.	<3	<2	5	40	10				
14510	↑	3825E	.8" B/C?	" " " gritty sand " "	<3	<2	<5	<5	10				
11		3800E	.7" B/C?	Khaki " Conglomerate gritty sand.	<3	<2	<5	60	10				
12		3775E	.6" B/C?	Pinky " Conglomerate chips + gritty sand.	<3	<2	10	5	5				
13		3750E	.6" B	" " " " " "	3	<2	<5	65	10				
14		3725E	.4" B	" " " " " "	<3	<2	<5	5	10				
15		3700E	.9" B/C?	" " " " " "	<3	<2	<5	5	10				
16		3675E	1-4" C	Blue grey sticky clay + weathered shale chips	<3	4	10	15	69.5				
17		3650E	1-1" C	Blue rock chips " " "	6	<2	55	50	15				
18		3625E	1.0" C	Blue grey " " " "	7	<2	10	40	10				
19		3600E	.8" C	grey " " " (white upper?) pieces chips.	<3	<2	5	100	5				
14520		3575E	.4" C	Blue grey rock chips " " "	<3	<2	<5	15	10				
21		3550E	.7" C	" " " " weathered chips	4	<2	<5	15	10				
22		3525E	1.0" C	" " " " " "	<3	<2	5	5	10				
23		3500E	.7" B/C	Pinky grey gritty sand + Conglomerate chips	<3	<2	5	10	20				
24		3475E	.6" C	Blue grey rock chips + weathered chips.	<3	<2	5	15	10				
25		3450E		outcrop in creek. blue grey rock chips.	<3	<2	5	15	3				
26		3425E	.9" C	Khaki grey rock chips + weathered chips.	6	<2	<5	15	20				
27		3400E	.4" C	grey rock chips " " "	<3	<2	<5	5	5				
28	↓	3375E	1-6" C	" " " " " "	<3	<2	5	15	5				
14529	1200S	3350E	1.0" C	Blue grey " " " " "	<3	<2	5	15	5				

043036

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. ASHTON

PROJECT: EL 1176 TRAIL
HARDWARE PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs

DATE DISPATCHED: Jan 1985

1:250,000 SHEET:

TYPE OF SAMPLE: POWER PULVER.

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: "

SAMPLE NUMBER	LOCATION		Depth Horizon	DESCRIPTION	ANALYSES							
					Sn	As	Cu	Pb	Zn			
14530	1200 ^s	3325 ^E	1-0" C	Blue grey rock chips + weathered chips	<3	<2	20	15	10			
31	↑	3300 ^E	.9" C	" " " " " " " "	3	<2	5	15	5			
32		3275 ^E	1-1" C	Green grey " " " " " "	<3	<2	10	<5	10			
33		3250 ^E	.4" C	Blue grey " " " " " "	<3	3	10	5	5			
34		3225 ^E	.7" C	Black grey " " " " " "	<3	<2	30	25	5			
35		3200 ^E	1-4" C	Blue grey " " " " " "	4	<2	20	45	<5			
36		3175 ^E	.7" C	" " " " " " " "	<3	<2	10	50	5			
37		3150 ^E	.8" C	Blue grey (shaly white?)	<3	<2	5	50	<5			
38		3125 ^E	.3" C	" " " (shaly white?)	4	<2	<5	5	15			
39		3100 ^E	.3" C	White chips (outcrop)	<3	<2	<5	<5	5			
14540		3075 ^E	.9" C	Blue grey rock chips + weathered chips	<3	<2	5	55	5			
41		3050 ^E	.7" C	" " " " " " " "	<3	<2	5	5	5			
42		3025 ^E	1-0" C	" " " (shaly quartz?)	<3	<2	<5	5	5			
43		3000 ^E	1-1" C	Brown grey powdered rock + weathered chips (shaly quartz?)	<3	<2	<5	<5	5			
44		2975 ^E	.4" C	" " " (shaly quartz?)	<3	<2	<5	5	5			
45		2950 ^E	.4" C	Blue grey rock chips + powdered chips (shaly quartz?)	5	<2	<5	5	5			
46		2925 ^E	.6" C	Brown sandy weathered quartz + quartzite fragments	<3	<2	<5	<5	10			
47		2900 ^E	.7" C	" " " " " " " "	<3	<2	<5	<5	5			
48		2875 ^E	.5" C	Quartzite chips (grey)	<3	<2	<5	<5	<5			
49	V	2850 ^E	1-0" C	Qtz chips in weathered white (grey) quartzite (low soil rock)	<3	<2	<5	10	5			
14550	1200 ^s	2825 ^E	.3" C	Quartzite chips *	<3	<2	5	<5	5			

043037

0500

038

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P. KOMYSHAN

PROJECT: EL 11/76

PROSPECT: STONEHENGE

SAMPLE STORAGE REQ'D:

LABORATORY: RENISON

DATE DISPATCHED: Oct '84 - Dec '84

1:250,000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES					
				Sn	As	WO ₃	Cu	Pb	Zn
9777	Grubbs Mine (N.W. adit)		dump - brn granitic material & veins by galena	<10	270	70	75	3.0%	440
9778	" " " "		" dark green ^{base} " fine-grained matrix & my folds	<10	140	40	5	1.3%	800
9779	" " (SW adit)		chips of wall fedit entrance brn gossanous rock.	<3	3	<13	115	1400	540
9780	5,359, 730N	357, 950E	(2) Roger Poltrocho East East end of 129 sample	20	140	50	50	7500	3690
9781	5,360, 350N	357, 960E	(4) " " Dump Boss Mine	40	50	10	20	320	40
9782	5,360, 400N	357, 180E	(2) " " " Boss East Lode	30	30	<10	20	350	150
9783	5,360, 180N	358, 410E	(2) " " " Britannia Mine	280	630	950	150	8700	6.95%
9784	5,360, 340N	358, 610E	(7) " " " " " "	70	90	90	20	4370	1.05%
9785	5,360, 380N	358, 110E	(5) " " " Limestone Constock Mine	<10	<10	<10	10	160	270
9786	5,360, 000N	357, 460E	(10) " " " Dump - Prospect adit on Constock	<10	<10	<10	20	240	110
9787	5,359, 700N	357, 020E	(13) " " " Dump - TLE No. 1 Lode	10	100	20	25	1320	210
9788	5,359, 400N	358, 930E	(23) " " " Martens No. 1 Adit	10	60	20	360	700	410
9789	5,359, 520N	358, 840E	(30) " " " " No. 2 "	<10	<10	10	15	50	40
9790	5,358, 820N	359, 060E	(34) " " " Tasmania Mine	10	60	20	50	1810	220
9791	5,358, 750N	360, 080	(37) " " " Grubb's Mine	30	2240	150	60	1230	2.27%
9792	5,358, 700N	358, 090E	(15) " " " T.L.E No. 2 Lode	30	40	<10	60	870	2190
9793	5,358, 560N	358, 180E	(18) " " " Stonehenge Mine	10	210	30	1860	5500	2340
10548	N.W. 1/4 200 S		dump quartz/galena in quartzite	30	360	130	50	21200	
10549	" "		" pyrite & siderite, galena & sphalerite	80	690	170	35	21800	2520
14593			" SILVER DUKE quartzite & g/l & no py	<10	60	30	60	430	210
14594			o/c " " pyrite slake & sulphur stains	20	10	30	10	340	40

043039

APPENDIX 3STONEHENGE GRID - GROUND MAGNETICS DATA - EASTERN GRID EXTENSIONS,MAGNETIC ANOMALY S.W. OF STONEHENGE GRID

GROUND MAGNETOMETER SURVEY

PAGE NO:

040

LOCATION: Nubeena Grid. Line 600N

DATE: 2/1/85

MAGNETOMETER: Geometric 816

OPERATOR:

BASE STATION LOCATION: 3000E, 450N
(62582 Y)

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2600E	4.00	62611	+29	62640	
		609		638	
25	4.02	606		635	
		605	+28	633	
50	4.05	604		632	
		600		628	
75	4.07	595		623	
		593		621	
2700	4.08	589		617	
		584		612	
25	4.10	586		614	
		584		612	
50	4.12	579		607	
		578	+29	607	
75	4.14	576		605	
		576		605	
2800	4.15	570		599	
		566		595	
25	4.17	566		595	
		565	+27	592	
50	4.23	562		589	
		561		588	
75	4.25	566		593	
		564		591	
2900	4.26	559		586	
		553		580	
25	4.28	551	+26	577	
		551		577	
50	4.29	551		577	
		542		568	
75	4.31	540		566	
		537		563	
3000	4.33	537	+25	562	
		537		562	

042

GROUND MAGNETOMETER SURVEY

U4J043
PAGE NO:

LOCATION: Nubeena Grid 400N

DATE: 24/1/85- 25/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: TL / WH

BASE STATION LOCATION: 3000E 450N
(62582 8)

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2600 E	9.38	62693	+16	62709	25/1/85
		687		703	
25	9.40	683		699	
		678		694	
50	9.43	680	+17	697	
		674		691	
75	9.45	668		685	
		662		679	
2700 E	9.47	659		676	
		653	+16	660	
75	9.49	650		666	
		647		653	
50	9.50	643		659	
		637		653	
75	9.51	633		649	
		629		645	
2800	9.52	626	+16	642	
XXXXXX					24/1/85
2800 E	4.04	62617	+28	645	
		613		641	
25	4.07	610		638	
		606		634	
50	4.09	603		631	
		599		627	
75	4.12	597		625	
		593	+29	622	
2900 E	4.16	591		620	
		587		616	
25	4.19	585	+27	612	
		582		609	
50	4.22	579		606	
		575		602	
75	4.25	573		600	
		568		595	

GROUND MAGNETOMETER SURVEY

043045
PAGE NO:044
LOCATION: 11ubeena Grid 200 N

DATE: 25/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: WH

BASE STATION LOCATION: 3000 E , 450 N
(625828)

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2600 E	10.25	62755	+21	62776	
		743		764	
25	10.27	739		760	
		735	+22	757	
50	10.29	732		754	
		731		753	
75	10.31	730		752	
		728		750	
2700 E	10.34	722		744	
		716		738	
25	10.37	710		732	
		703		725	
50	10.39	695		717	
		686		708	
75	10.41	681		703	
		677		699	
2800 E	10.42	674		696	
		666	123	689	
25	10.44	660		683	
		655		678	
50	10.45	649		672	
		643		666	
75	10.47	639		662	
		633	124	657	
2900 E	10.48	629		653	
		624		648	
25	10.49	619		643	
		615		639	
50	10.50	609		633	
		605		629	
75	10.51	602		626	
		596		620	
3000 E	10.53	591	126	617	
		587		613	

046

GOLD FIELDS EXPLORATION PTY. LIMITED

043047
PAGE NO:

GROUND MAGNETOMETER SURVEY

LOCATION: Nobeena Grid 00

DATE: 25/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: WM

BASE STATION LOCATION: 3000E, 450N
(625828)

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3450 E	11.55	62483	+28	62511	
		483		511	
25	11.56	486		514	
		488		516	
3400 E	11.57	490		518	
		495	+29	524	
75	11.59	496		525	
		497		526	
50	12.01	501		530	
		504		533	
25	12.03	507		536	
		511		540	
3300 E	12.04	513		542	
		516		545	
75	12.05	521		550	
		521		550	
50	12.06	525		554	
		530		559	
25	12.08	532		561	
		534		563	
3200 E	12.09	537		566	
		541		570	
75	12.11	545		574	
		553		582	
50	12.13	556	+30	586	
		558		588	
25	12.14	563		593	
		562		592	
3100 E	12.15	567		597	
		578		608	
75	12.17	588		618	
		588	+29	617	
50	12.20	590		619	
		595		624	
25	12.21	595		624	
3000 E	12.24	603	+30	633	
		603		633	

047

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 200 S

DATE: 7/3/85

MAGNETOMETER: Geometrics 916

OPERATOR: R.W

BASE STATION LOCATION: 3000E 450N
62582 8

043048

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3250 E	12:21	62526	+39	62565	
		518		557	
75	12:24	512		551	
		514		553	
3300 E	12:26	511		550	
		511		550	
25	12:28	505		544	
		500		539	
50	12:30	501		540	
		499		533	
75	12:32	508		547	
		494		533	
3400 E	12:34	496		535	
		498		537	
25	12:36	485		524	
		484		523	
50	12:37	485		524	
		475		514	
75	12:40	477		516	
		474		513	
3500 E	12:42	470	+39	509	

048

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 200 S

DATE: 7/3/85

MAGNETOMETER: Geometric #16

OPERATOR: R.W

BASE STATION LOCATION: 3000 E 450 N
625828

043049

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2400 F.	11-15	62943	+31	62974	
		938		969	
25	11-16	933		964	
		933		964	
50	11-18	928	+33	961	
		927		960	
75	11-21	918		951	
		913		946	
2500 E	11-24	901	+34	935	
		896		930	
25	11-25	890		924	
		885		919	
50	11-27	880		914	
		871		905	
75	11-28	863		907	
		868		902	
2600 E	11-31	872		906	
		857		886	
25	11-33	845	+35	880	
		821		856	
50	11-35	821		856	
		808		843	
75	11-39	796	+36	832	
		790		826	
2700 E	11-42	777		813	
		772		808	
25	11-43	761		797	
		747		783	
50	11-45	739		775	
		723		769	
75	11-46	719		755	
		707		743	
2800 E	11-48	709	+37	746	
		701		738	

GOLD FIELDS EXPLORATION PTY. LIMITED

049

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 200 S

DATE: 7/3/85

MAGNETOMETER: Geometric 816

OPERATOR: R.W

BASE STATION LOCATION: 3000 E 450N
62582 X

043050

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2825E	11:44	62701	+37	62738	
		701		738	
50	11:51	681		718	
		677		714	
75	11:52	663		700	
		658		695	
3000 E	11:54	654		691	
		650		687	
25	11:56	645		682	
		635		672	
50	11:57	632		669	
		623	+38	661	
75	12:00	618		656	
		610		648	
3000 E	12:02	605		643	
		598		636	
25	12:04	591		629	
		590		628	
50	12:06	591		629	
		588		626	
75	12:07	583		621	
		580	+39	619	
3100 E	12:09	576		605	
		565		604	
25	12:11	560		599	
		556		595	
50	12:12	551		590	
		558		597	
75	12:14	556		595	
		534		573	
3200 E	12:16	528		567	
		529		568	
25	12:18	525		564	
		526		565	

GOLD FIELDS EXPLORATION PTY. LIMITED

043052

050

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 400 S

DATE: 7/3/85

MAGNETOMETER: Geometrics 816

OPERATOR: R.W

BASE STATION LOCATION: 3000 E, 450N
(625828)

043051

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3575 E	13.52	62458	+39	62497	
		460	+38	498	
50	13.54	460		498	
		461		499	
25	13.57	461		499	
		466	+36	502	
3000 E	13.59	470		506	
		471		507	
75	14.01	472		508	
		479	+35	514	
50	14.04	481		516	
		484		519	
25	14.06	486		521	
		492	+36	528	
3400 E	14.08	490		526	
		490		526	
75	14.09	491		527	
		494		530	
50	14.11	498		534	
		497		533	
25	14.13	502	+35	537	
		501		536	
3800 E	14.15	506		541	
		507	+34	541	
75	14.20	511		545	
		515		549	
50	14.22	516		550	
		520	+33	553	
25	14.24	527		560	
		529		562	
3200 E	14.26	532		565	
		538		565	
75	14.28	536		569	
		543		576	

051

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 4002

DATE: 7/3/85

MAGNETOMETER: Geometrics 816

OPERATOR: R.W

BASE STATION LOCATION: 3000 E, 450N
(62582.8)

043053

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3250 E	14.29	62545	+33	62598	
		553		586	
25	14.30	551		584	
		556		589	
3100 E	14.31	557		590	
		558		591	
75	14.32	561		594	
		560	-34	594	
50	14.34	566		600	
		575		609	
25	14.36	580		614	
		583		617	
3000 E	14.38	589		623	
		595		629	
75	14.40	600		634	
		606		640	
50	14.41	610		644	
		616		650	
25	14.43	626	+33	659	
		629		662	
2900 E	14.44	632		665	
		644	+31	675	
75	14.57	647		678	
		656	+30	686	
50	14.59	663		693	
		666		696	
25	15.00	672		702	
		678		708	
2800 E	15.02	684		714	
		690	+29	719	
75	15.04	696		725	
		706		735	
50	15.05	713		742	
		721		750	

052

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 400S

DATE: 7/3/85

MAGNETOMETER: Geometrics 816

OPERATOR: RW

BASE STATION LOCATION: 3000E, 450N
(625828)

043054

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2725E	15.06	62725	129	62754	
		735		764	
2700E	15.08	744	129	772	
		751		779	
75	15.10	764		792	
		770		798	
50	15.11	776		804	
		790	126	816	
25	15.14	800		826	
		62382			
2600E	15.17	629			} Mine Dump & metal (Gambb's mine)
		818	+25	843	
75	15.20	834		864	
		847		877	
50	15.22	853		883	
		867	123	890	
25	15.24	871		894	
		879		902	
2500E	15.26	883		906	
		885	122	907	
75	15.29	890		912	
		892		914	
50	15.32	896		918	
		893	+20	913	
25	15.36	897		917	
		897		917	
2400E	15.38	898	+19	917	

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

053

LOCATION: Nubeena Grid 600 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: WM

BASE STATION LOCATION: 3800 E, 450 N
(625828)

043055

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3650 E	4.05	62465	+23	62488	
		462		485	
25	4.06	461		484	
		460		483	
3600 E	4.07	464		487	
		469		492	
75	4.09	474		497	
		469		482	
50	4.10	469		482	
		473		496	
25	4.12	473		496	
		476		499	
3500 E	4.13	478		501	
		476		499	
75	4.14	472		495	
		481		504	
50	4.16	477		500	
		479		502	
25	4.18	484	124	508	
		481		505	
3400 E	4.24	481	+23	504	
		486		509	
75	4.26	491		514	
		490		513	
50	4.28	500		523	
		499		522	
25	4.30	501		524	
		497		520	
3300 E	4.31	499		522	
		511		534	
75	4.32	509		532	
		512	+2.2	534	
50	4.34	505		527	
		523		545	

054

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 600S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: WH

BASE STATION LOCATION: 3000E, 450N
(625828)

043056

tation	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3225E	4.36	62530	+22	62552	
		508		520	
3200E	4.38	525	+21	546	
		524		545	
75	4.40	525		546	
		520		541	
50	4.45	526		547	
		538		559	
25	4.47	544		565	
		543		564	
3100E	4.49	546		567	
		550		571	
75	4.51	552		573	
		559		580	
50	4.53	556	+14	575	
		561		580	
25	4.55	567		586	
		569		588	
3000E	4.56	572		591	
		579		598	
75	4.57	583		602	
		585	+18	603	
50	4.58	576		594	
		587		605	
25	5.00	593		611	
		597		615	
2900E		600		618	
		606		624	
75	5.07	613		631	
		619		637	
50	5.08	622		640	
		628		646	
25	5.09	632		650	
		640	+15	650	

056

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 800 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: T. C.

BASE STATION LOCATION: 3000 E 450N
(62582 8)

043058

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3700E	4.35	62451	+22	62473	
		446		468	
75	4.37	444		466	
		448	+21	469	
50	4.39	451		472	
		450		471	
25	4.41	453		474	
		447		468	
3600E	4.45	449		470	
		448		469	
75	4.48	450		471	
		452		473	
50	4.50	456		477	
		458		479	
25	4.51	461		482	
		461		482	
3500E	4.53	456	+19	475	
		459		478	
75	4.56	466		485	
		464		483	
50	4.58	462	+18	480	
		471		489	
25	4.59	473		491	
		476		494	
3400E	5.01	479		497	
		473		491	
75	5.03	481		499	
		479		497	
50	5.05	482		500	
		482		500	
25	5.07	488		506	
		484		502	
3300E	5.11	485		503	
		483		501	

057

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 800 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: T.C.

BASE STATION LOCATION: 3000 E 450N
(625828)

043059

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3275E	5.13	62483	+17	62500	
		487		504	
50	5.15	490		507	
		488		505	
25	5.17	493		510	
		494	+16	510	
3000 E	5.19	499		515	
		502		518	
75	5.21	499		515	
		502		518	
50	5.23	500	+18	518	
		505		523	
25	5.24	507		525	
		508		526	
3100 E	5.26	504		527	
		515		533	
75	5.29	518		536	
		515		533	
50	5.31	522		540	
		525		542	
25	5.33	527	+17	544	
		529		546	
3000 E	5.35	527		544	
		535		552	
75	5.38	536	+14	550	
		535		549	
50	5.40	544		558	
		542		556	
25	5.42	554		568	
		568		582	
2900 E	5.44	556		570	
		557		571	
2875 E	5.47	559		573	
		558	+16	574	

LOCATION: 1000 S Nubarna Grid

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: TL

BASE STATION LOCATION: 3000 E, 450N

043061

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2600E	11.54	62517	+45	62562	
		517		562	
25	11.57	516		561	
		512		557	
50	12.00	512		557	
		510		555	
75-	12.01	507		552	
		506	+46	552	
2700E	12.04	502		548	
		498		544	
25	12.06	497		543	
		496		542	
50	12.08	495		541	
		493		539	
75	12.11	492		538	
		491		537	
2800E	12.13	492		538	
		491		537	
25	12.15	490		536	
		484		530	
50	12.17	482		528	
		479	+50	529	
75	12.19	477		527	
		459		509	
2900E	12.22	449		499	
		466	+46	512	
25	12.26	462		508	
		466	+47	513	
50	12.29	464		511	
		464		511	
75	12.31	464		511	
		463		510	
3000E	12.34	457		504	
		459		506	

060

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nabeena Grid 1000 SDATE: 30/1/85MAGNETOMETER: Geometrics 8.6OPERATOR: TLBASE STATION LOCATION: 3000 E , 450N
(625828)

043062

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3025E	12.36	62457	+47	62504	
		454	+49	503	
50	12.39	454		503	
		452		501	
75	12.43	445	+47	492	
		446		493	
3100E	12.47	443		400	
		445	+46	401	
25		445		401	
		443	+47	490	
50	12.56	439		486	
		437		484	
75	12.58	437		484	
		434		481	
3200E	1.00	432		489	
		435		482	
25	1.03	432	+45	477	
	1.13	437	+43	480	
50	1.14	433		476	
		437		480	
75	1.17	440		483	
		443	+42	485	
3300E	1.19	432		475	
		430		472	
25	1.21	427		469	
		429		471	
50	1.23	431	+43	474	
		423		466	
75	1.24	417		460	
		424		467	
3400E	1.25	421		464	
		421		464	
25	1.26	419		462	
		415		458	

GOLD FIELDS EXPLORATION PVT. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

061

LOCATION: Nubeena Grid 1000 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: TL

BASE STATION LOCATION: 3000E, 450N
62582 Y

043063

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3450E	1.27	62418	+43	62461	
		419	+44	463	
75	1.29	416		460	
		412		456	
3500E	1.31	408		442	
		411		455	
25	1.32	409		453	
		407		451	
50	1.33	408	+42	450	
	2.55	425	+35	460	
75	2.56	422		457	
		421		456	
3600E	2.57	423		458	
		425	+33	458	
25	2.59	427		460	
		429		462	
50	3.01	423		456	
		430		463	
75	3.03	425	+31	456	
		426		457	
3700E	3.05	429		460	
		427		458	
25	3.08	429	+30	459	
		430		460	
50	3.10	428		458	
		432		462	
3775E		433		463	

GOLD FIELDS EXPLORATION PTY. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

062

LOCATION: Nubeena Grid 1200 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 816

OPERATOR: WM

BASE STATION LOCATION: 3000 E, 450N
(62582 8)

043064

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3450E	12.44	62419	+46	62465	
		418		464	
75	12.50	421		467	
		418		464	
3500 E	12.52	416		462	
		419	147	466	
25	12.54	418		465	
		419		466	
50	12.55	417		464	
		419		466	
75	12.56	420		467	
		422		469	
3600	12.57	420		467	
		419		466	
25	12.59	420		467	
		420		467	
50	1.02	422		469	
		426	+45	471	
75	1.03	423		468	
		424		469	
3700	1.05	425		470	
		429		474	
25	1.06	422		467	
		426		471	
50	1.07	418		463	
		425	+43	468	
75	1.08	422		465	
		425		468	
3800	1.09	426		469	
		432		475	
25	1.11	429		472	
		435		478	
50	1.13	425	+43	468	

GOLD FIELDS EXPLORATION PTY. LIMITED

063

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 1200 S

DATE: 30/1/85

MAGNETOMETER: Geometrics 8.6

OPERATOR: WM

BASE STATION LOCATION: 3000 E, 450 N
(625828)

043065

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
3025 E	12.21	62446	+50	62496	
		448		498	
3050	12.23	447	+46	493	
		445		491	
75	12.25	444		490	
		446		492	
100 E	12.26	447		493	
		445	+47	492	
25	12.31	445		492	
		442		489	
50	12.32	438		485	
		439		486	
75	12.34	437		484	
		439		486	
3200 E	12.35	438		485	
		434		481	
25	12.36	434		481	
		433		480	
50	12.37	432		479	
		433	+49	492	
75	12.38	435		484	
		434		483	
3300 E	12.39	432		481	
		433		482	
25	12.41	435		484	
		431		480	
50	12.43	435		484	
		432		481	
75	12.44	429		478	
		428		477	
3400 E	12.46	429		478	
		432		481	
25	12.47	421		470	
		423	+27	470	

064

GOLD FIELDS EXPLORATION PTT. LIMITED

GROUND MAGNETOMETER SURVEY

PAGE NO:

LOCATION: Nubeena Grid 1200 S

DATE: 30/1/85

MAGNETOMETER: Geometric 816

OPERATOR: WH

BASE STATION LOCATION: 3000 E, 450 N
(625828)

043066

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
2600 E	11.58	62 475	145	62 520	
		472		517	
2625	12.00	471		516	
		471		516	
50	12.02	468		513	
		468	146	514	
75	12.03	469		515	
		471		517	
2700 E	12.04	465		511	
		464		510	
25	12.06	463		509	
		462		508	
50	12.07	463		509	
		464		510	
75	12.08	464		510	
		463		509	
2800 E	12.10	462		508	
		463		509	
25	12.11	462		508	
		460		506	
50	12.12	462		508	
		459		505	
75	12.14	458		504	
		459		505	
2900	12.15	456		502	
		460		506	
25	12.16	456		502	
		454		500	
50	12.17	453		499	
		452	+ 50	502	
75	12.19	454		504	
		447		497	
3000	12.20	440		490	
		447		497	

LOCATION: Stonehenge Grid 600E

DATE: 1985

MAGNETOMETER:

OPERATOR: PK

BASE STATION LOCATION: None

043067

Station	Time	Magnetic Reading	Base Reading	Corrected Reading	Cultural Features
20E / 150S		62595			
200S		571			
250S		561			
300S		62537			
bearing 205° (magnetic):					
20m		62528			
40m		511			
60m		498			
80m		484			
100m	2.38 pm.	472			
120m		470			Stonehenge? 124 to 145m Creek
145m		454			
160m		62451			
16m bearing 200° (magnetic):					
180m		62446			
200m		447			
220m		435			
240m		436			
260m		429			
280m		424			
300m		422			
320m	3.00 pm	425			
340m		424			
360m		427			
380m		429			
400m		430			
420m		435			
440m		441			
460m		449			
480m		454			
500m	3.08 pm	462			Chert float
520m		473			" "
540m		481			" "
560m		62493			

067

APPENDIX 4

MITRE GEOPHYSICS REPORT ON INTERPRETATION OF EM37 RESULTS

STONEHENGE GRID

060

2536A



MITRE GEOPHYSICS PTY LTD

MINERAL EXPLORATION AND ENGINEERING CONSULTANTS

DUGGS LANE ELLIOTT TASMANIA 7325 PHONE 004-363143

INTERPRETATION OF THE EM37 SURVEY OVER
THE STONEHENGE GRID, E.L. 11/76.

for

Gold Fields Exploration Pty Ltd

by

Dr J.R. Bishop

043070

GF/MG85/12
Sept., 1985

069



043071

CONTENTS

List of Figures	2
Summary	3
Introduction	4
Exploration Target and Geological Setting	4
Exploration History	4
EM37 Survey Details	5
EM37 Interpretation	5
Conclusions and Recommendations	6
References	8

070



043072

LIST OF FIGURES

This report is Appendix 4 to the report by Roberts (1986) and the figure numbers below refer to that report.

- Figures 19-37. Composite profiles (1:2,000 scale).
- Figure 38. Magnetic contour plan (1:5,000 scale).
- Figure 39. EM37 interpretation (1:5,000 scale).



SUMMARY

An EM37 survey over the Stonehenge grid defined a number of conductive zones. Correlation with drill-hole results suggests that most, if not all, of these zones are caused by graphitic shales and/or (weathered) fault zones.

One poorly defined, but isolated response occurs in close proximity to a possible magnetic source (a so-called 'residual' body defined by interpreting the difference between the observed values and the response from a large, deep-seated model). Given this association and the lack of any other prospective anomalies arising from the survey, it is recommended that a target 200m below 2000E/400N be tested by drilling.



INTRODUCTION

The Stonehenge grid lies immediately to the south of the Queen Hill, Zeehan tin mineralisation. The area contains several sequences of carbonates and is being actively explored for a similar style of deposit.

The lease, which includes the old SPL 129, is held by Renison Ltd, but the exploration program is now being managed by Gold Fields Exploration. This report interprets the results of an EM37 survey carried out over the Stonehenge grid in December, 1984.

EXPLORATION TARGET AND GEOLOGICAL SETTING

The rocks underlying the Stonehenge grid include sediments and spilites of the PreCambrian Donah Formation and sediments and basic volcanics of the Cambrian Dundas Group. The area is strongly faulted and the detailed geology is poorly understood.

The stanniferous sulphide deposits at Queen Hill occur within the Donah Formation and a similar style of pyrite replacement of carbonates, with possibly some pyrrhotite, is being sought at Stonehenge. Such deposits should be conductive and may be magnetic.

The detection of such a deposit at Stonehenge is exacerbated by the presence of large areas of conductive overburden -clays formed by weathering of carbonates -and by conductive graphitic shales. Also, the magnetic map is dominated by the response from a large buried body; presumed to be a basic intrusive (contrary to the opinion expressed in Bishop, 1983).

There are a number of silver-lead-zinc fissure lodes on the E.L. which were mined around the turn of the century. Although most of these contain negligible amounts of tin, upto 0.12% tin has been assayed from the Spray mine (in the north-east corner of the lease) and it has been postulated that other lodes may "become stanniferous with depth" (Komysan et al, 1984).

EXPLORATION HISTORY

The first geophysical work by Renison Ltd was a Dighem survey in 1982. This outlined a number of conductive zones in the northern half of the Stonehenge grid which were interpreted as reflecting sequences of graphitic shales (Bishop, 1982).

A VLF survey located most of the Dighem responses as well as defining several weaker zones not detected by the Dighem. In early 1983 a gradient array IP survey recorded low resistivities over clays on the northern side of the grid and defined a number of chargeable zones. These have been ascribed to graphite and/or disseminated pyrite within the sediments (Bishop, 1983).



A detailed ground magnetic survey, carried out in late 1982, confirmed the broad, deep-seated anomaly defined by the Mines Dept (1981) aeromagnetic survey (and the Dighem survey). This data was analysed for residual anomalies which might represent (shallower) pyrrhotite mineralisation. One possible body was defined at approximately 200m beneath 2000E/400N (Bishop, 1984). (Other bodies, interpreted to lie directly above the deep source, were not considered as prospective, although they were covered by the EM37 survey.)

A total of four drill holes have been completed on the Stonehenge grid, plus a fifth on the recent eastern extension to the grid. These holes have confirmed the presence of faulted and folded carbonate-bearing sediments and demonstrated that the area is prospective for replacement tin mineralisation. A summary of all of the previous exploration is given in Komyshan et al (1984).

EM37 SURVEY DETAILS

The survey was carried out by Geotrex in December, 1984. A total of five separate loops were used to partially cover the grid between 800E and 2600E. A 50m station spacing was used and only the vertical component was measured.

Loop 1 covered lines 800E to 1300E and was designed to test the area around the western, shallower magnetic anomaly (described in Bishop, 1983). Loops 2 to 5 covered lines 1600E to 2600E and included the main magnetic anomaly and its northern flank (known to contain sequences of carbonates).

Because of the conductive conditions, the profiles from loops 2 and 3 have also been presented using a 'continuous normalisation' as well as the usual 'point normalisation'. Continuous normalisation emphasises responses at a distance from the loop.

EM37 INTERPRETATION

A large number of responses were obtained. The positions of these have been plotted in Figure 1 and the channels on which the anomalies can be recognised, are indicated#. Many of the responses can be correlated from line to line and the resulting zones have been labelled alphabetically.

 * The continuous normalisation was derived by dividing the point normalised values by a theoretical field value (the recorded field value being considered too unreliable) for each station.

The EM37 system records the decay over 20 channels: from 0.01msec at channel 1 ('early time') to 7msec at channel 20 ('late time') using a 25Hz repetition rate. The better the conductor, the better the response at late times.



A number of the zones overlie drillholes and these responses can be explained from the drill logs. Although no survey was carried out over line 1500E, the sequence of weathered fault zone, black shales and second fault zone intersected by DDH Th14 can be used to explain the source of zone A which has been interpreted as a single zone from line 800E to line 2100E. Zone F, which may be an offset continuation of zone A, passes over DDH's Th13 & Th15; again black shales and faults may be used to explain the responses. Zone H has been explained by the faults and black shales intersected by DDH Th12. It is noted that all three of these zones, as well as the others to which similar sources are ascribed, were 'good' conductors, with recognisable responses at late times. Only some of the responses within these zones showed a migration of the cross-overs which is indicative of a thick conductor.

There were no 'good' single-line or, more prospectively, limited strike length conductors. Most of the single-line or uncorrelated responses to the south of the baseline have either a very low amplitude and/or rapid decay. The anomaly at 2600E/375S, apparently coincident with Grubb's workings, may be of interest.

A single-line anomaly was picked at 2000E/375E. Although a dubious response (it may merely be a migration of the response from one conductive zone (D) to the next (A)), it is sufficiently close to the possible magnetic source interpreted to lie beneath 2000E/400N to be of interest. This response, which is only evident on the continuous normalisation profile, is too close to the adjacent responses to permit any quantitative interpretation.

Other isolated responses such as occur at 1800E/625N and 1300E/175N possibly have as much EM merit, however they lack any other complementary geophysical evidence (although the geochemistry at 1800E/625N is quite anomalous).

CONCLUSIONS AND RECOMMENDATIONS

A number of conductive zones have been interpreted. Drillholes distributed across the grid indicate that clays, fault zones and black shales are probably the source of most, if not all, responses.

An isolated response, sandwiched between two zones, is of interest since it is in near-coincidence with a magnetic anomaly interpreted from the residual of the observed data minus the modelled deep source. The existence of this 'residual' body is quite problematical and is not a firm foundation upon which to build an interpretation, however a buried body is the target and only subtle responses should be expected. The composite profile for this line shows a local chargeability high (to about 35mv/v), but along-line values are higher. There is little encouragement from the geochemistry, but "gossanous float" has been observed near 400N.



The target for the drill-hole is about 200m below 2000E/400N. None of the geophysical methods indicate the local dip and thus no recommendation is made concerning the drill direction. Since the target is only poorly defined, every effort should be made to conduct a down-hole EM survey after drilling, to test the surrounding volume of ground.

The response over Grubb's workings at 2600E/375S was only partially defined by the southern loop (Tx 4), but was not evident on the northern loop which fully covered the area (presumably because of poor coupling). The anomaly could be properly evaluated by re-surveying the area (including adjacent lines) using a southern loop with its leading edge at about 700S.

It was stated in the report by Komysan et al (1984) that the best tin values have been found in the north-east corner of the grid, trending north-west through the old Spray mine. It is suggested that consideration should be given to covering this area with an EM37 survey.

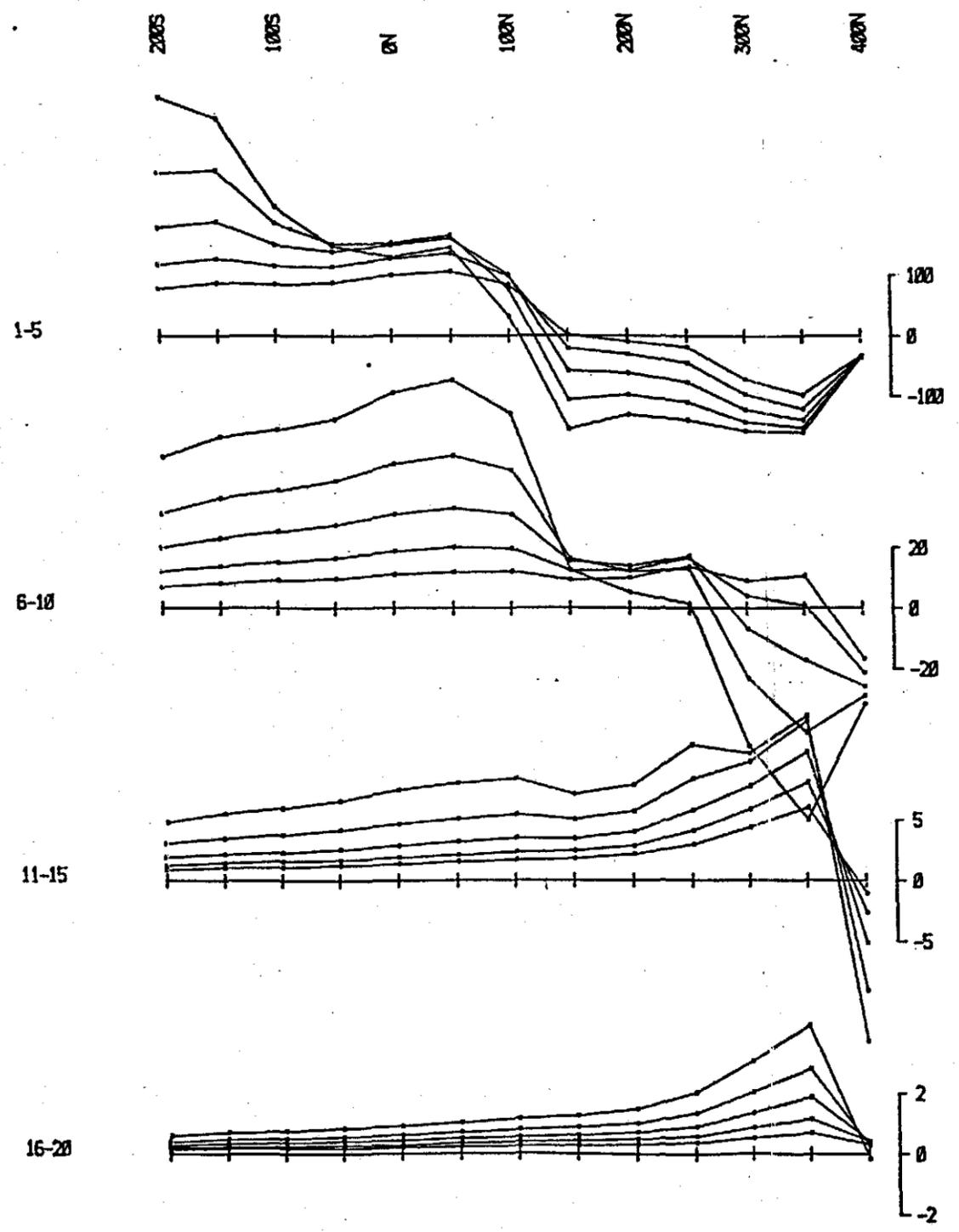
J.R. Bishop
Sept., 1985.



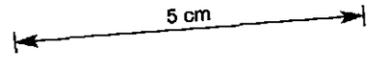
REFERENCES

- Bishop, J.R., 1982. A report on the Dighem survey over the Stonehenge area, SPL 129. Mitre Geophysics report 82/15 for Renison Ltd.
- Bishop, J.R., 1983. A report on the geophysical surveys over the Stonehenge grid, SPL 129. Mitre Geophysics report 83/04 for Gold Fields.
- Bishop, J.R., 1984. Stonehenge residual magnetic analysis, in: Komyshan, P., Cartwright, A.J. and Roberts, P.A., 1984. E.L. 11/76 Trial Harbour area annual report for 1983/84 (appendix 6).
- Komyshan, P., Cartwright, A.J. and Roberts, P.A., 1984. E.L. 11/76, Trial Harbour area annual report for 1983/84.
- Roberts, P.A., 1986. E.L. 11/76, Trial Harbour area: progress report December, 1984 to February, 1986. Gold Fields company report.

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

TX LOOP SIDES : 00250S 01300E
 : 00550S 00600E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 04/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 65-1847
--	---	------------------------

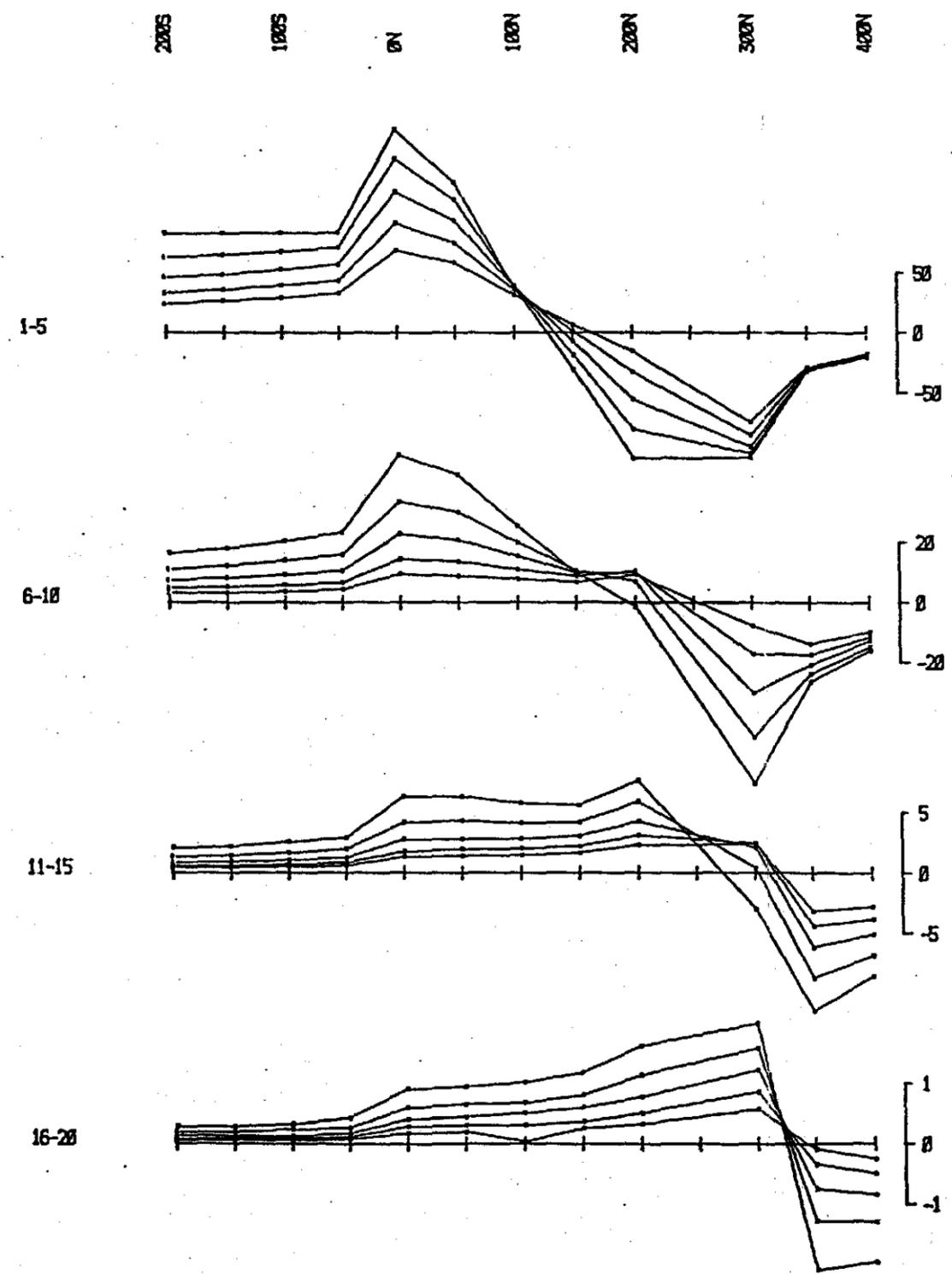
CLIENT : GOLD FIELDS EXP.
PROJECT : STONE HENGE
AREA : TRIAL HARBOUR
LINE : 00000E Z
TX LOOP : 1

043079

077

043080

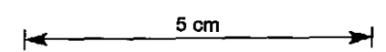
VERTICAL COMPONENT \dot{B} (Z)



nanovolt per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



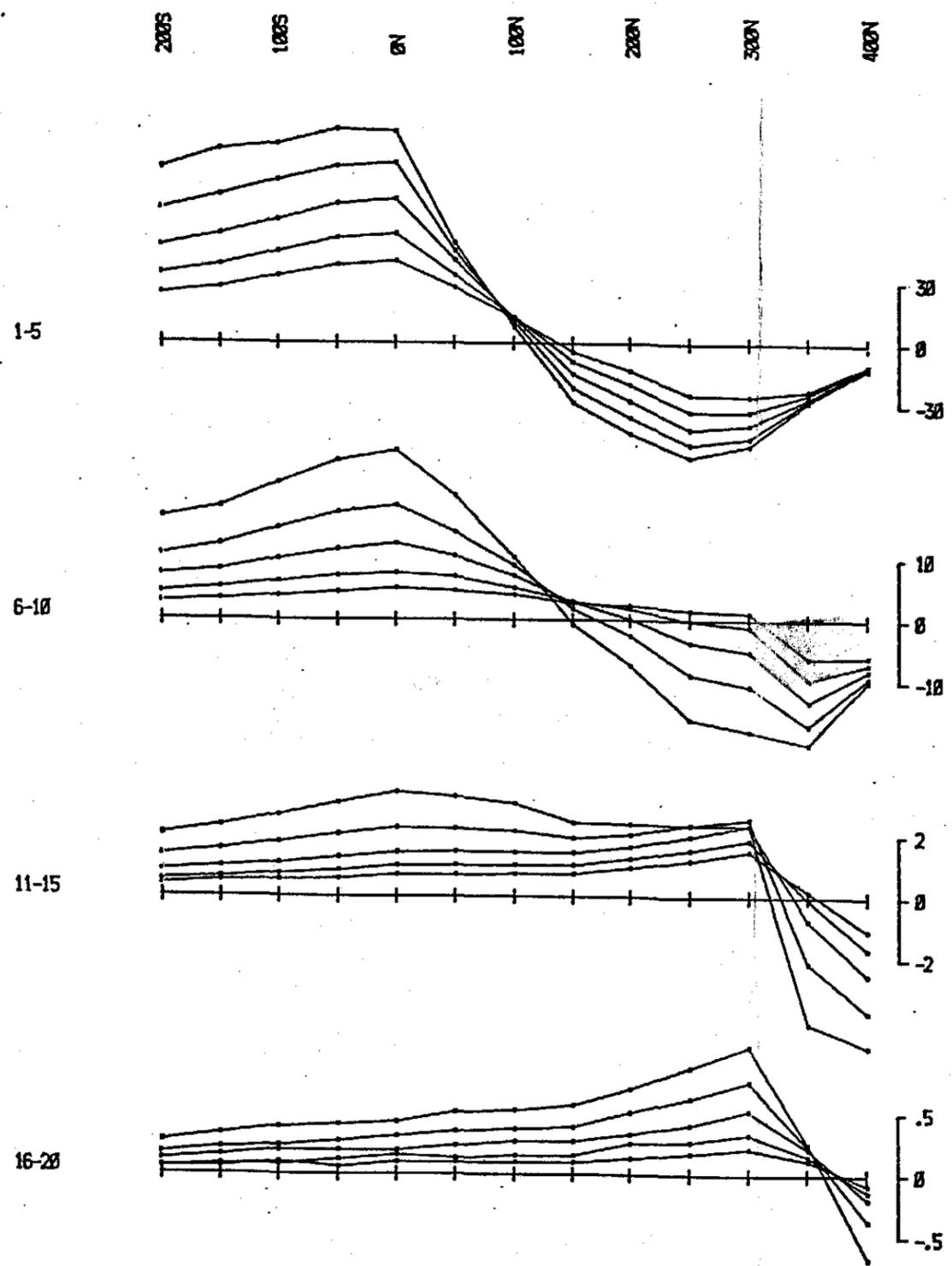
TX LOOP SIDES : 00250S 01300E
 : 00550S 00800E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 04/12/1984

G E O	SURVEYED AND COMPILED BY GEO TERREX PTY. LTD.	PROJECT NO. 85-1647
	CLIENT : GOLD FIELDS EXP. PROJECT : STONE HENGE AREA : TRIAL HARBOUR LINE : 00900E Z	

043081

079

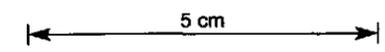
VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



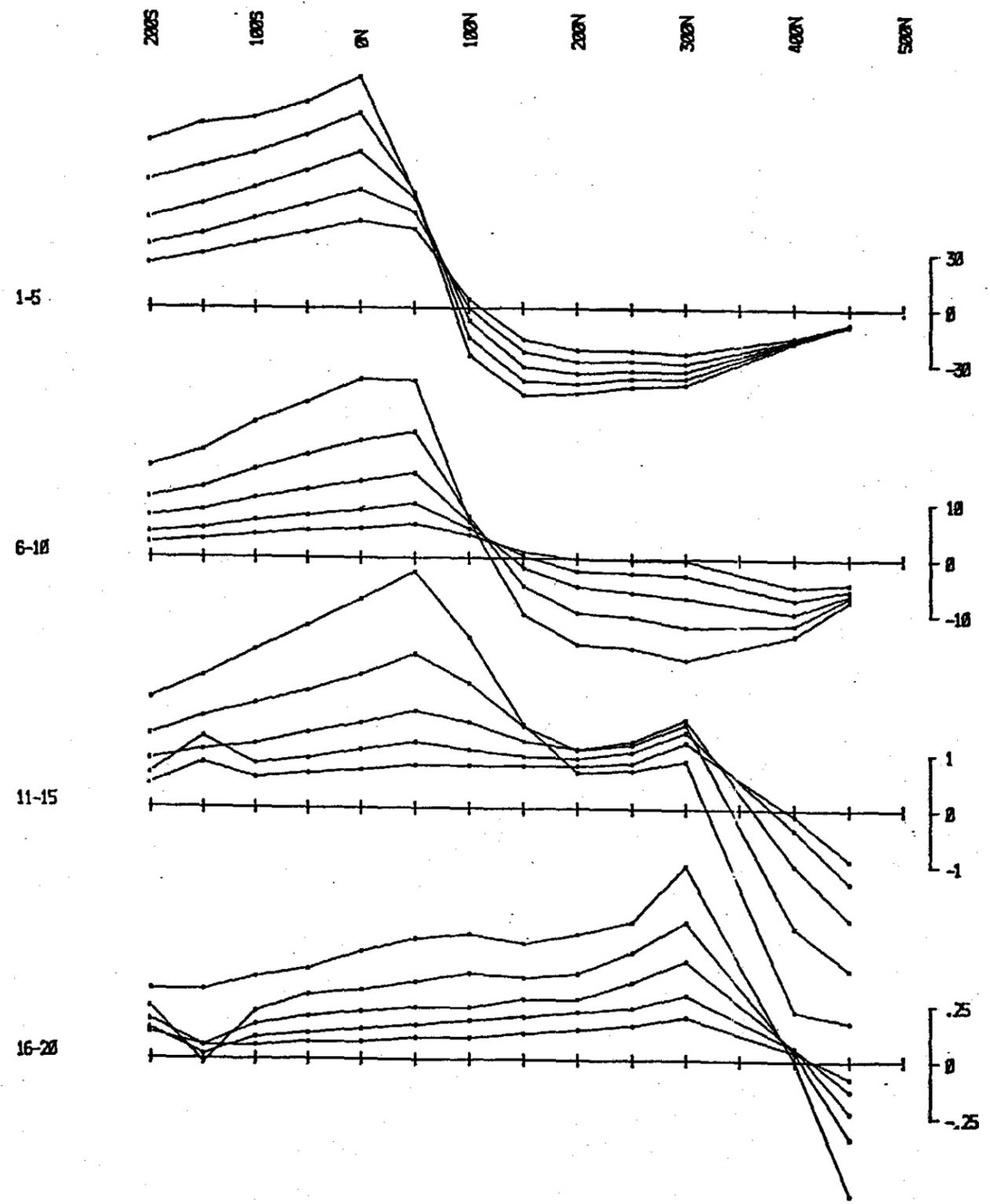
TX LOOP SIDES : 00250S 01300E
 : 00550S 00800E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 84/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONE HEDGE AREA : TRIAL HARBOUR LINE : 01000E Z TX LOOP : 1	

080

043082

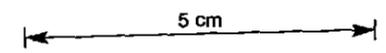
VERTICAL COMPONENT \dot{B} (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



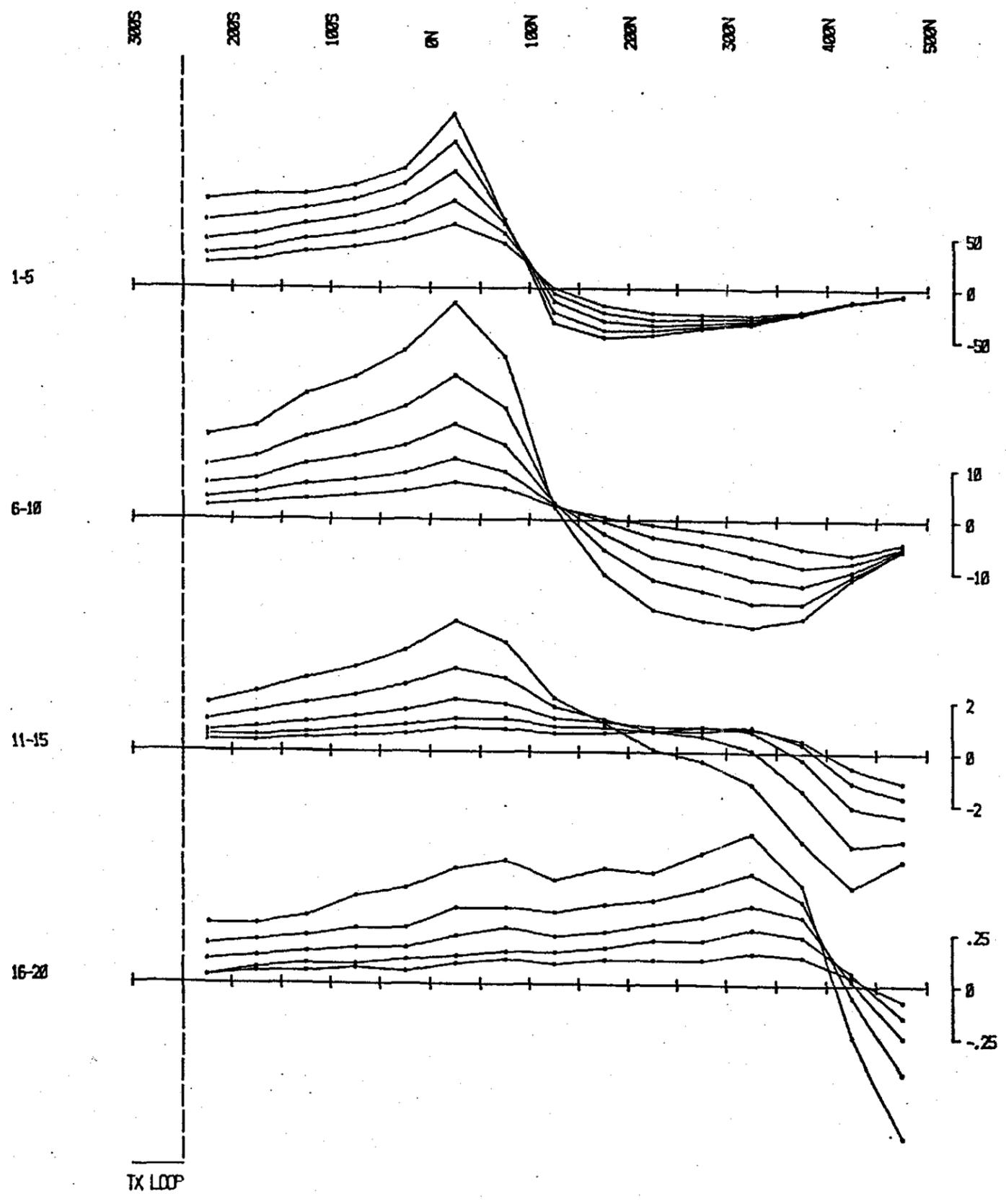
TX LOOP SIDES : 00250S 01300E
 : 00550S 00800E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 04/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 65-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONE HENGE AREA : TRIAL HARBOUR LINE : 01100E Z	

180
081

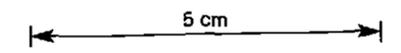
043083

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



nanovolts per amp metre squared

TX LOOP SIDES : 00250S 01300E
 : 00550S 00800E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 04/12/1984

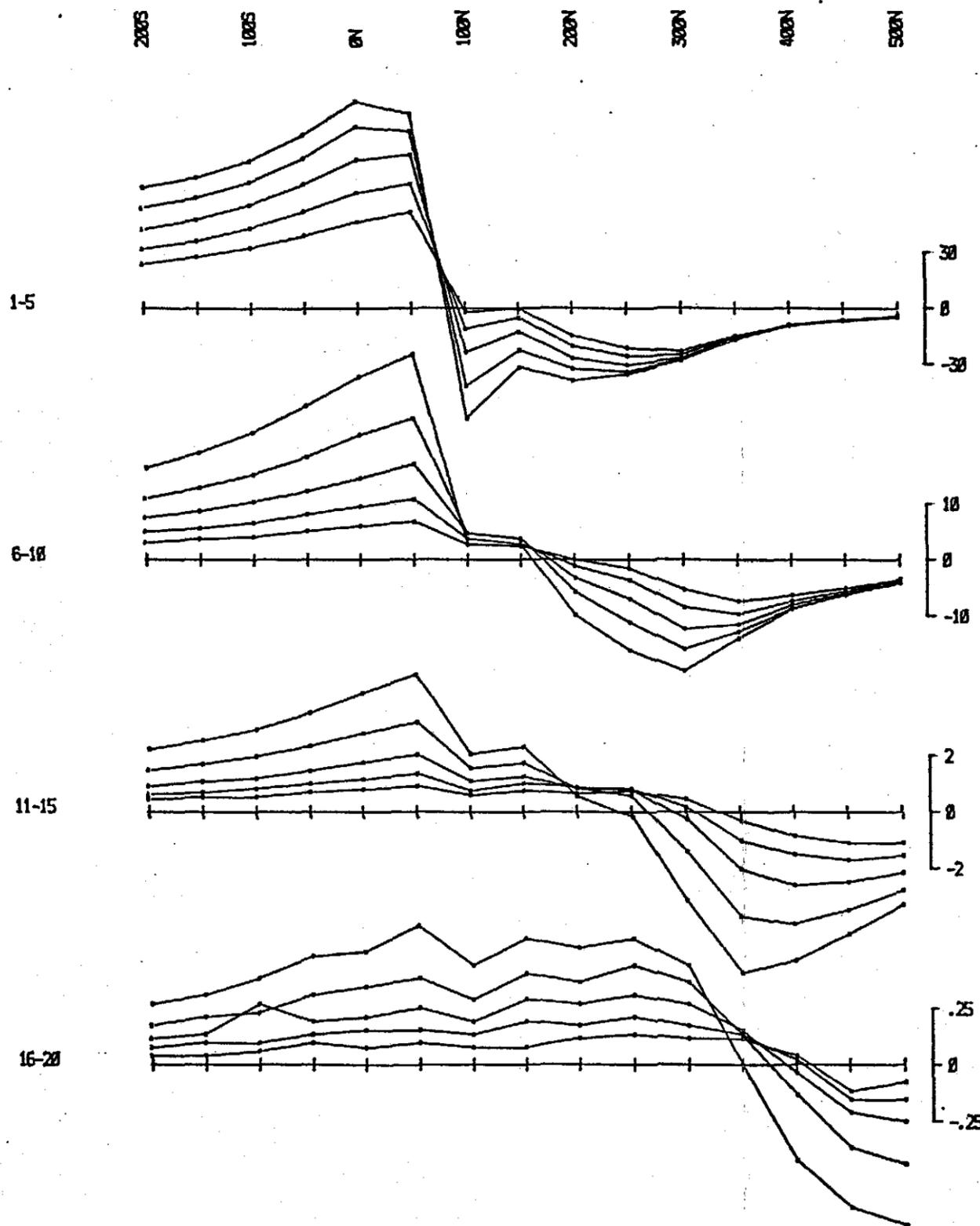
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONE HENCE
AREA : TRIAL HARBOUR
LINE : 01200E Z

043084

082

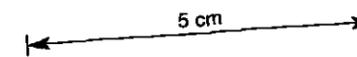
VERTICAL COMPONENT \dot{B} (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



TX LOOP SIDES : 00250S 01300E
 : 00550S 00800E
TX LOOP SIZE : 500 m X 300 m
TX TURN OFF TIME : 315 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 15.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SDCH
DATE : 04/12/1984



SURVEYED AND COMPILED BY
GEDTERREX PTY. LTD.

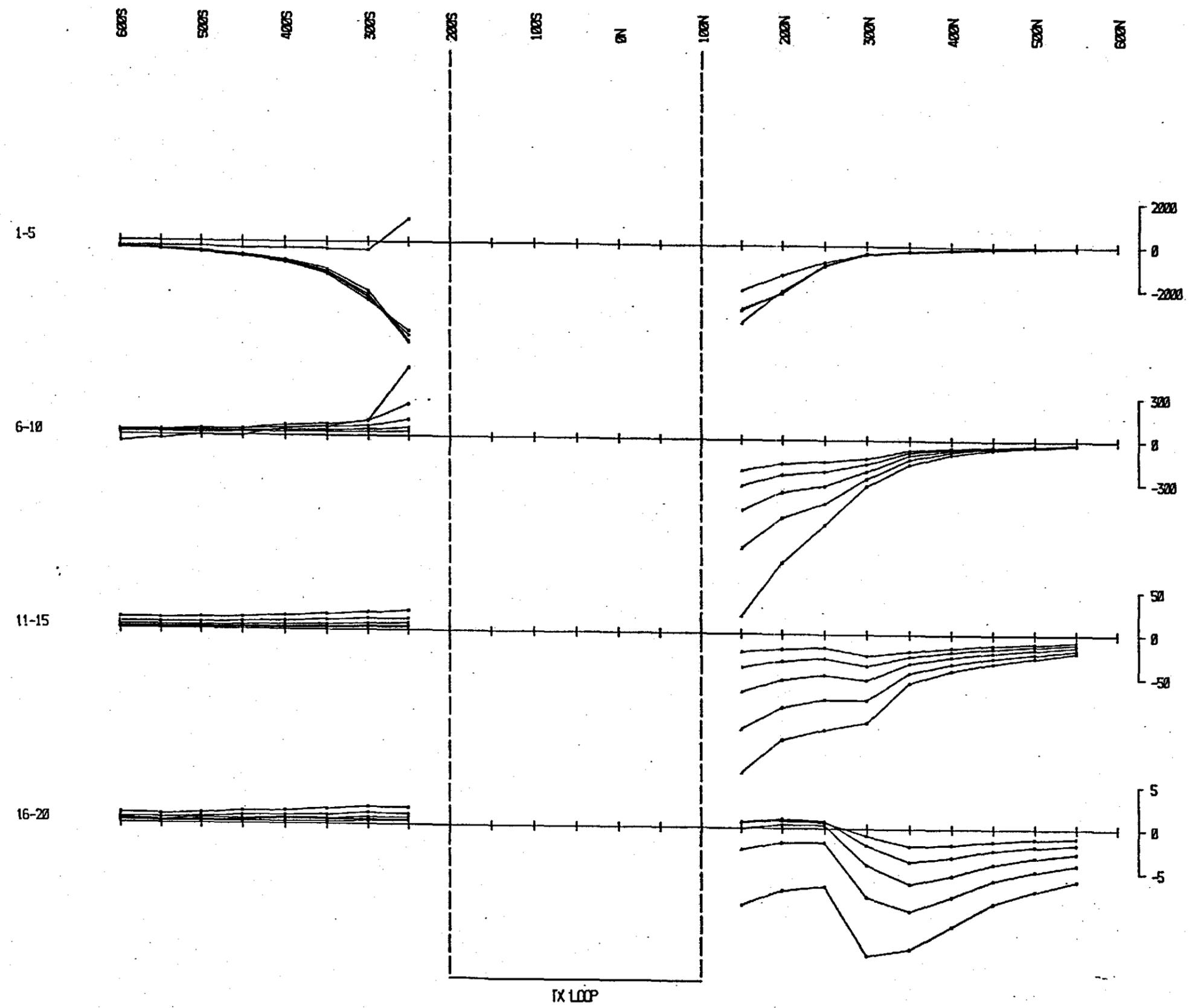
PROJECT NO.
65-1647

CLIENT : GOLD FIELDS EXP.
PROJECT : STONE HENCE
AREA : TRIAL HARBOUR
LINE : 01300E 2
TX LOOP : 1

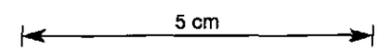
043085

06 088

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared



EM-37

FIXED TRANSMITTER SURVEY

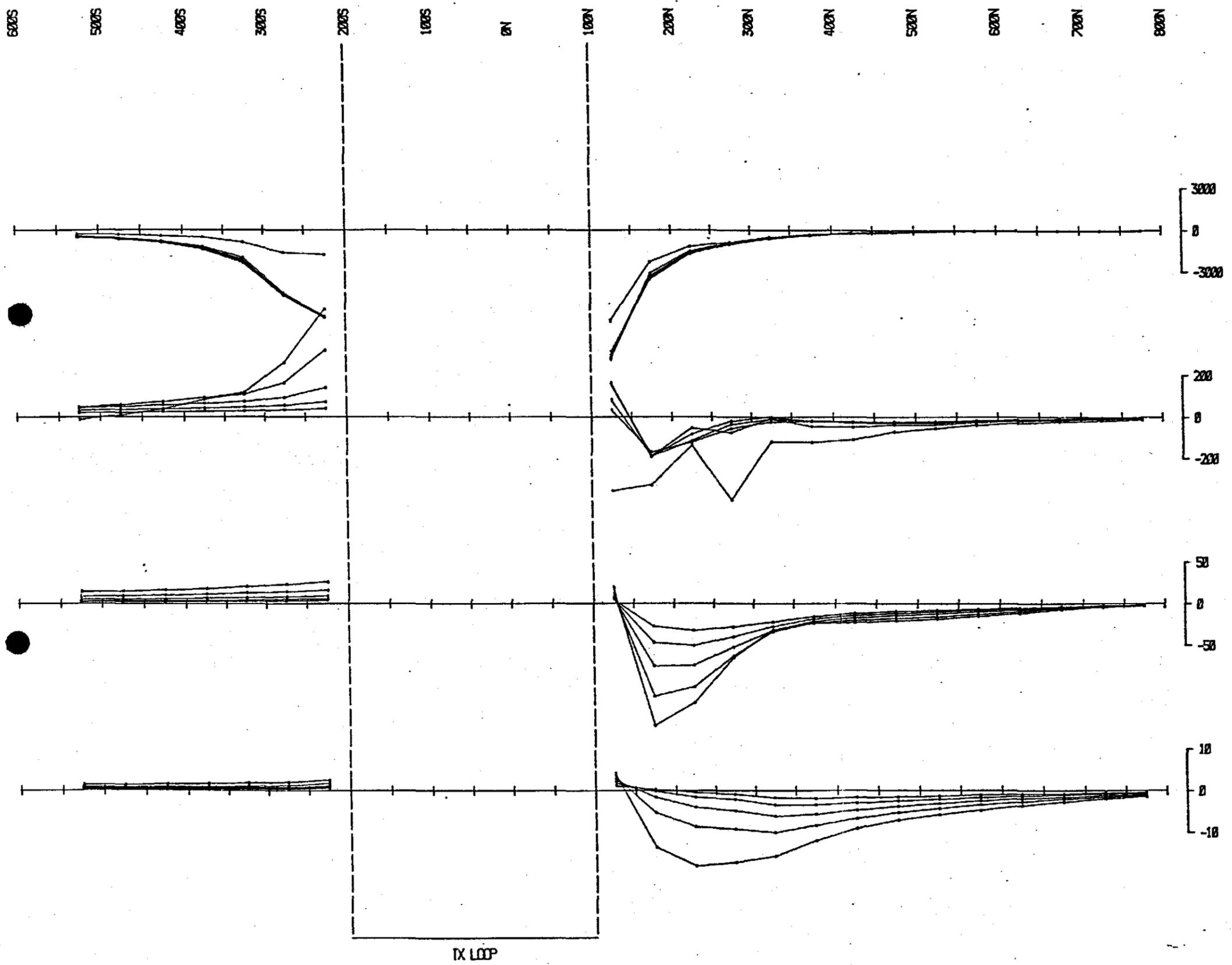
ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 160 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 8.2 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 06/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONE HENCE AREA : TRIAL HARBOUR LINE : 02100E . Z TX LOOP : 2	

CLIENT : GOLD FIELDS EXP.
PROJECT : STONE HENCE
AREA : TRIAL HARBOUR
LINE : 02100E . Z
TX LOOP : 2

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

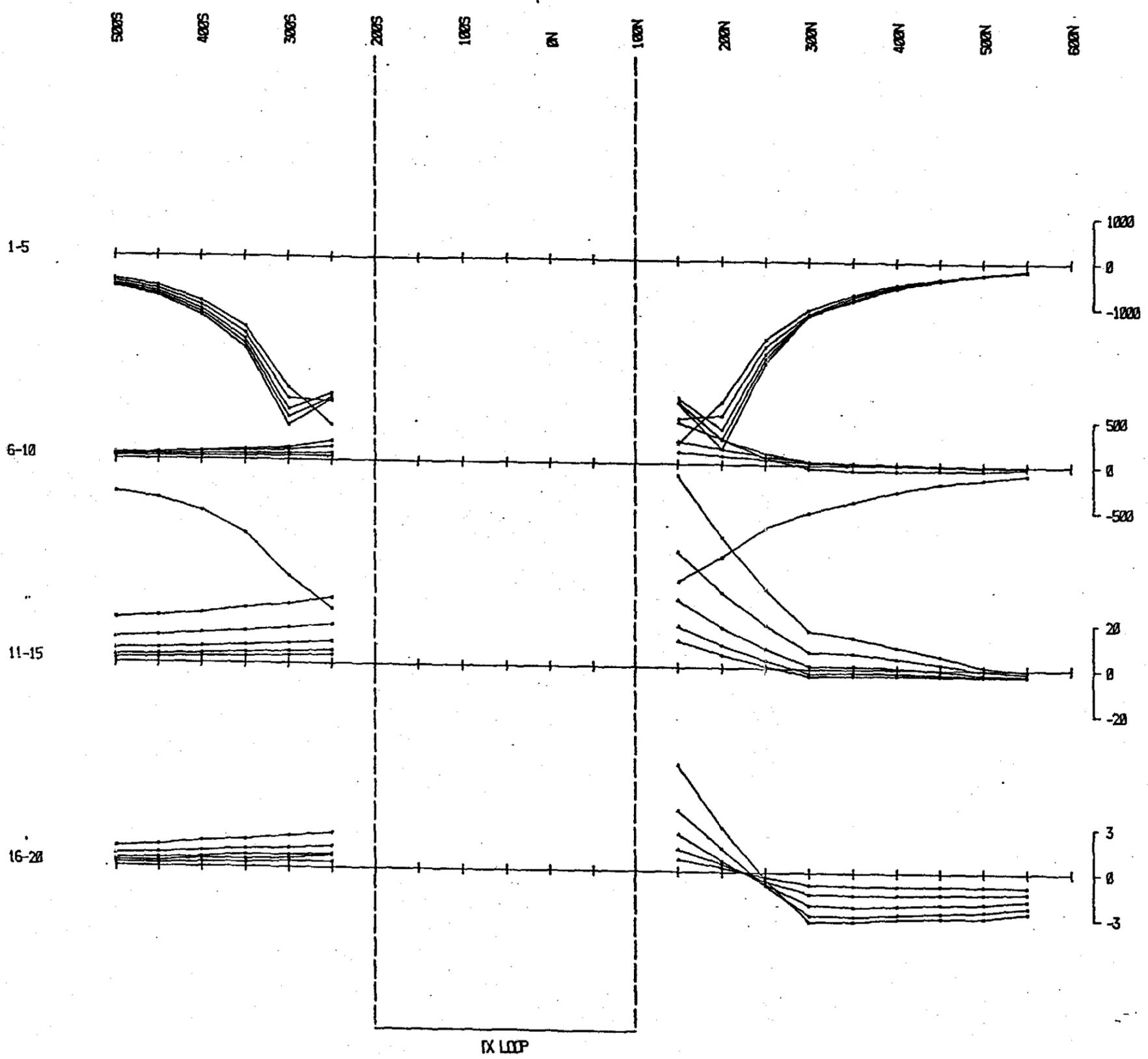
nanovolts per amp metre squared

TX LOOP SIDES : 00100N 02600E
 : 00200S 02600E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 180 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 8.2 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 06/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJ. 85-

CLIENT : GOLD FIELDS EXP.
PROJECT : STONE HENGE
AREA : TRIAL HARBOUR
LINE : 02200E . 2
TX LOOP : 2

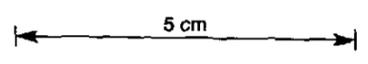
VERTICAL COMPONENT \dot{B} (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (\dot{B})



TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 160 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 8.2 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SDCH
DATE : 06/12/1984

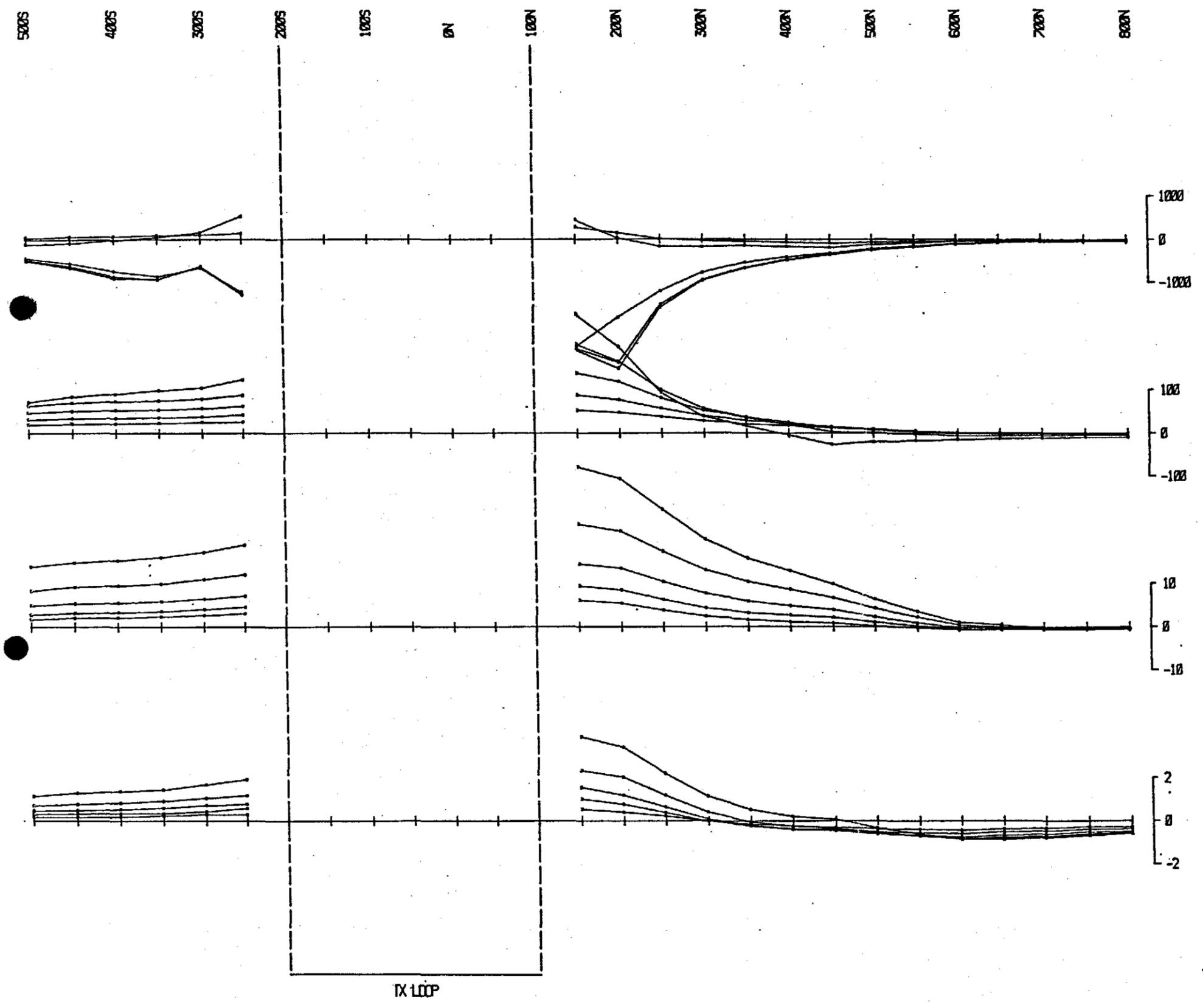
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONE HENGE
AREA : TRIAL HARBOUR
LINE : 02300E Z
TX LOOP : 2

043088

06 031

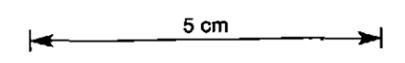
VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED IN
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



nanovolts per amp metre squared

TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E

TX LOOP SIZE : 600 m X 300 m

TX TURN OFF TIME : 210 microseconds.

FIRST GATE TIME : 88.5 microseconds.

CURRENT : 10.0 amps

FREQUENCY : 25 Hz.

INTEGRATION TIME : 256 cycles

SYNC MODE : CRYSTAL

HORIZONTAL SCALE : 1:5000

SURVEYED BY : SDCH

DATE : 09/12/1984

	SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.	PROJECT N 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE

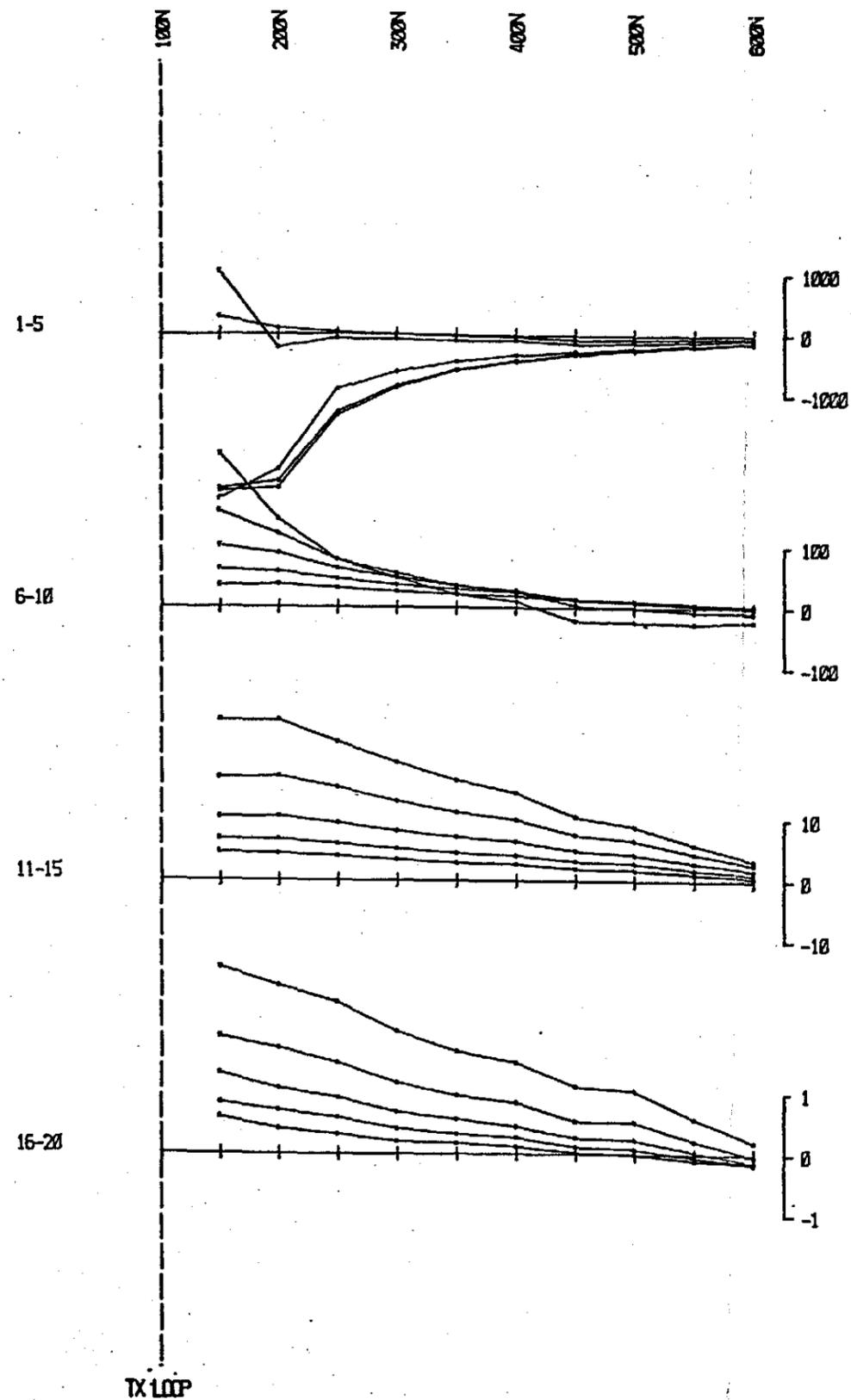
AREA : TRIAL HARBOUR

LINE : 02400E Z

TX LOOP : 2

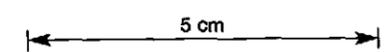
092

VERTICAL COMPONENT $\dot{B} (Z)$



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



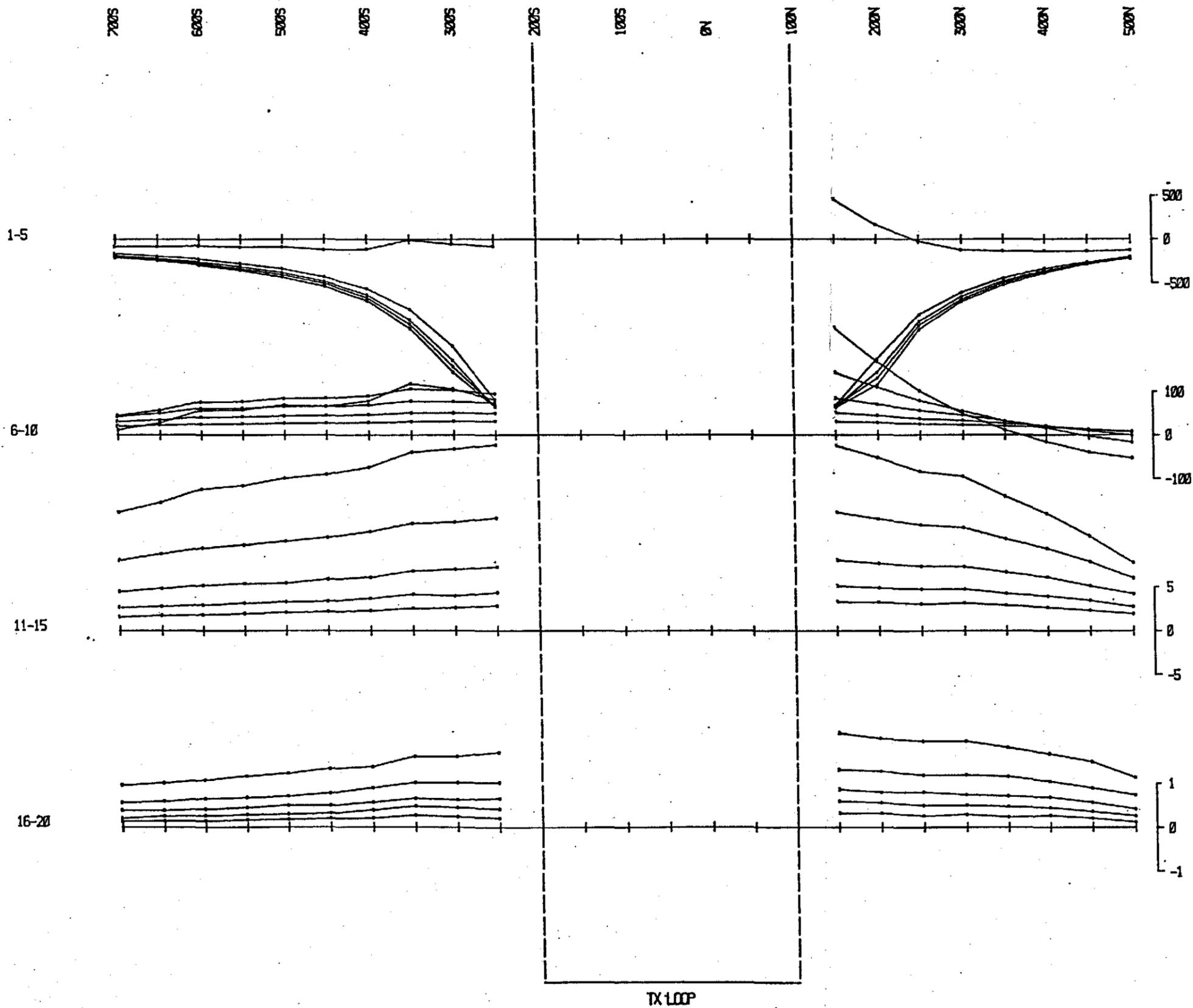
nanovolts per amp metre squared

TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 10.0 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 09/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1647
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 02500E . . . Z
TX LOOP : 2

VERTICAL COMPONENT B (Z)



043050

093

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

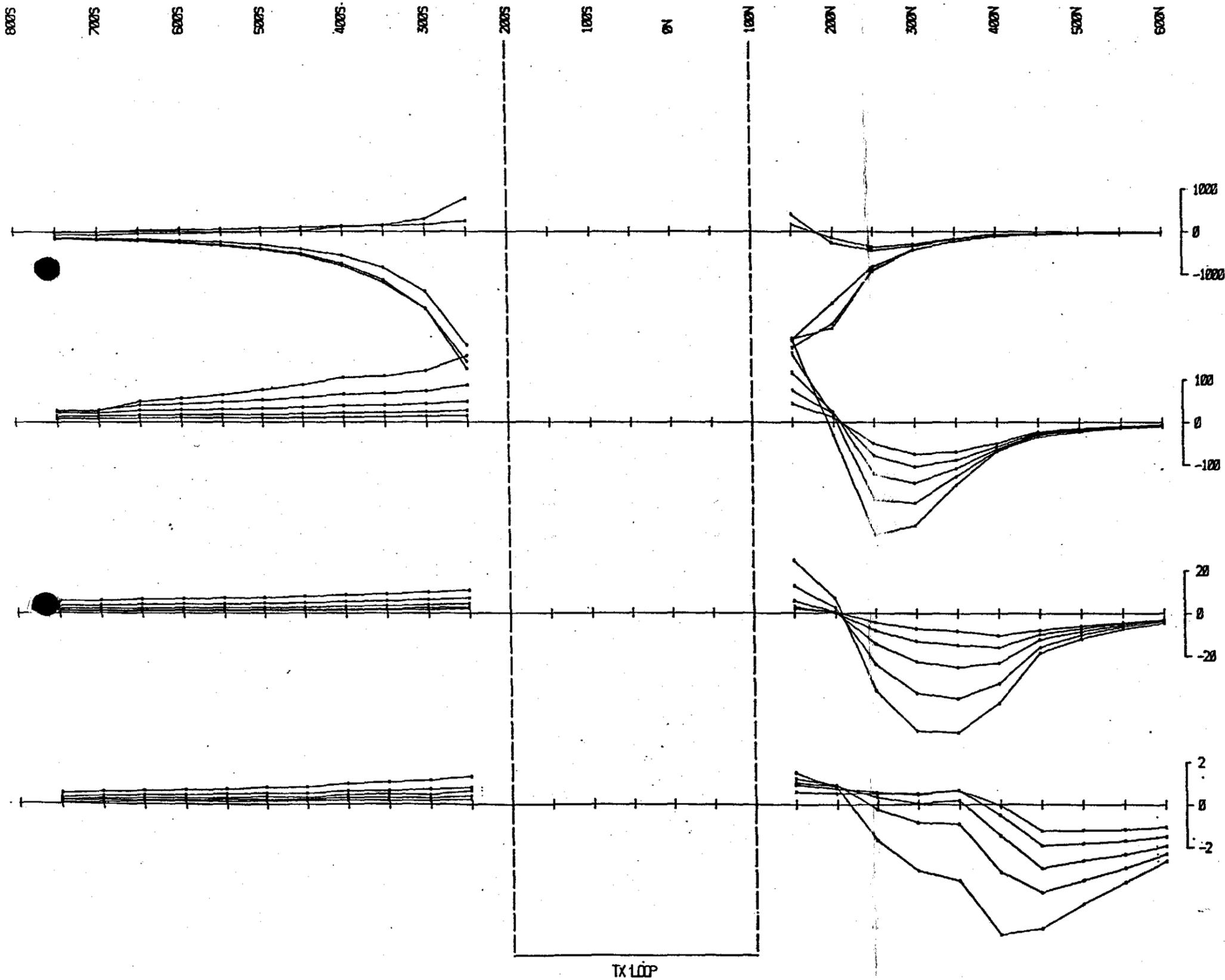
5 cm

nanovolts per amp metre squared

TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E
 TX LOOP SIZE : 600 m X 300 m
 TX TURN OFF TIME : 215 microsecs.
 FIRST GATE TIME : 88.5 microsecs.
 CURRENT : 10.0 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SOCH
 DATE : 08/12/1984

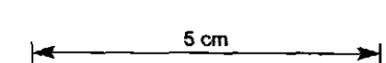
	SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.	PROJECT NO. 65-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 02600E Z TX LOOP : 2	

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



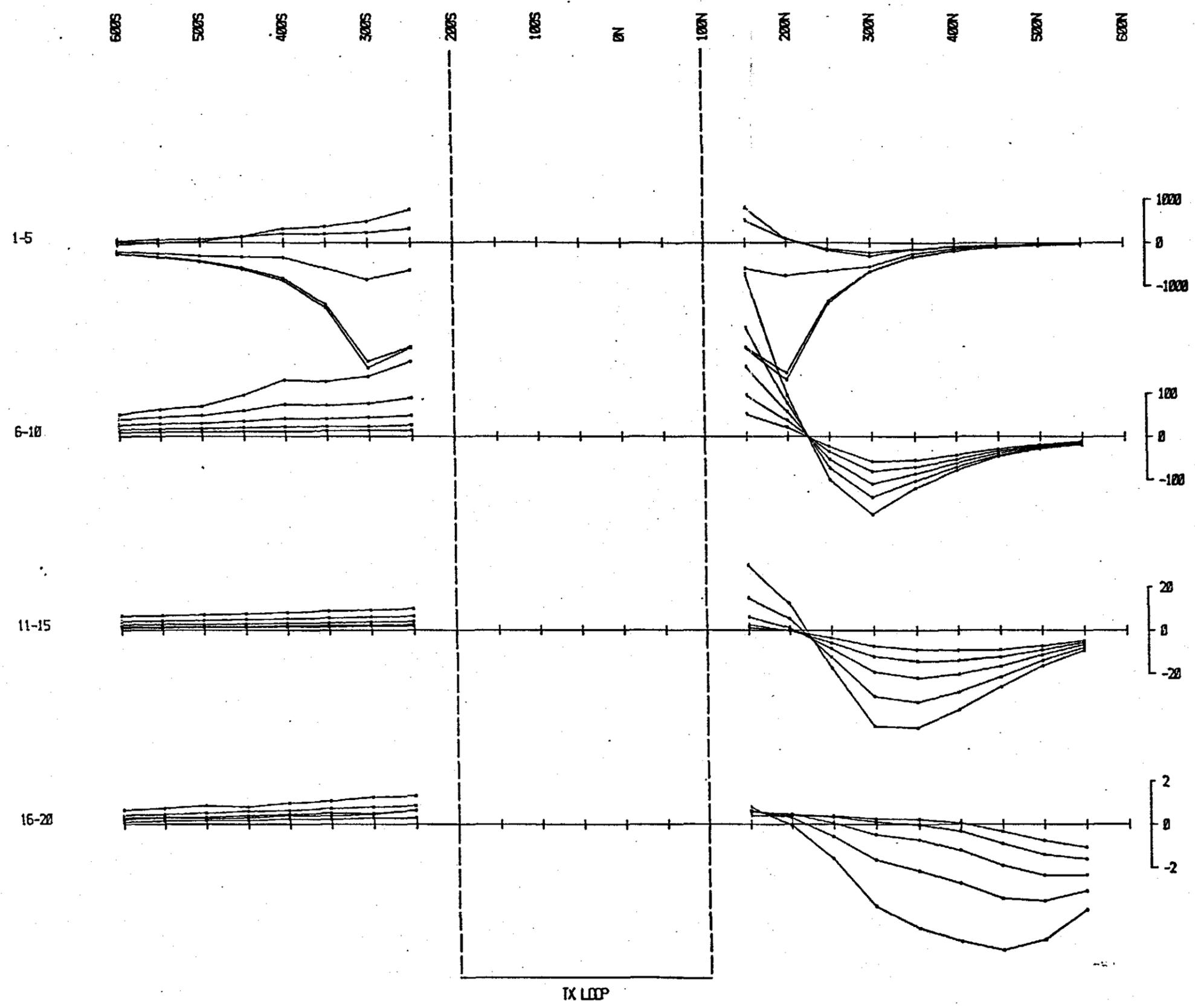
nanovolts per amp metre squared

TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 177 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SDCH
DATE : 10/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.		PROJECT N 85-1847
	CLIENT : GOLD FIELDS EXP.		

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 01600E 2
TX LOOP : 3

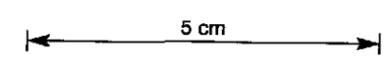
VERTICAL COMPONENT \dot{B} (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

nanovolts per amp metre squared

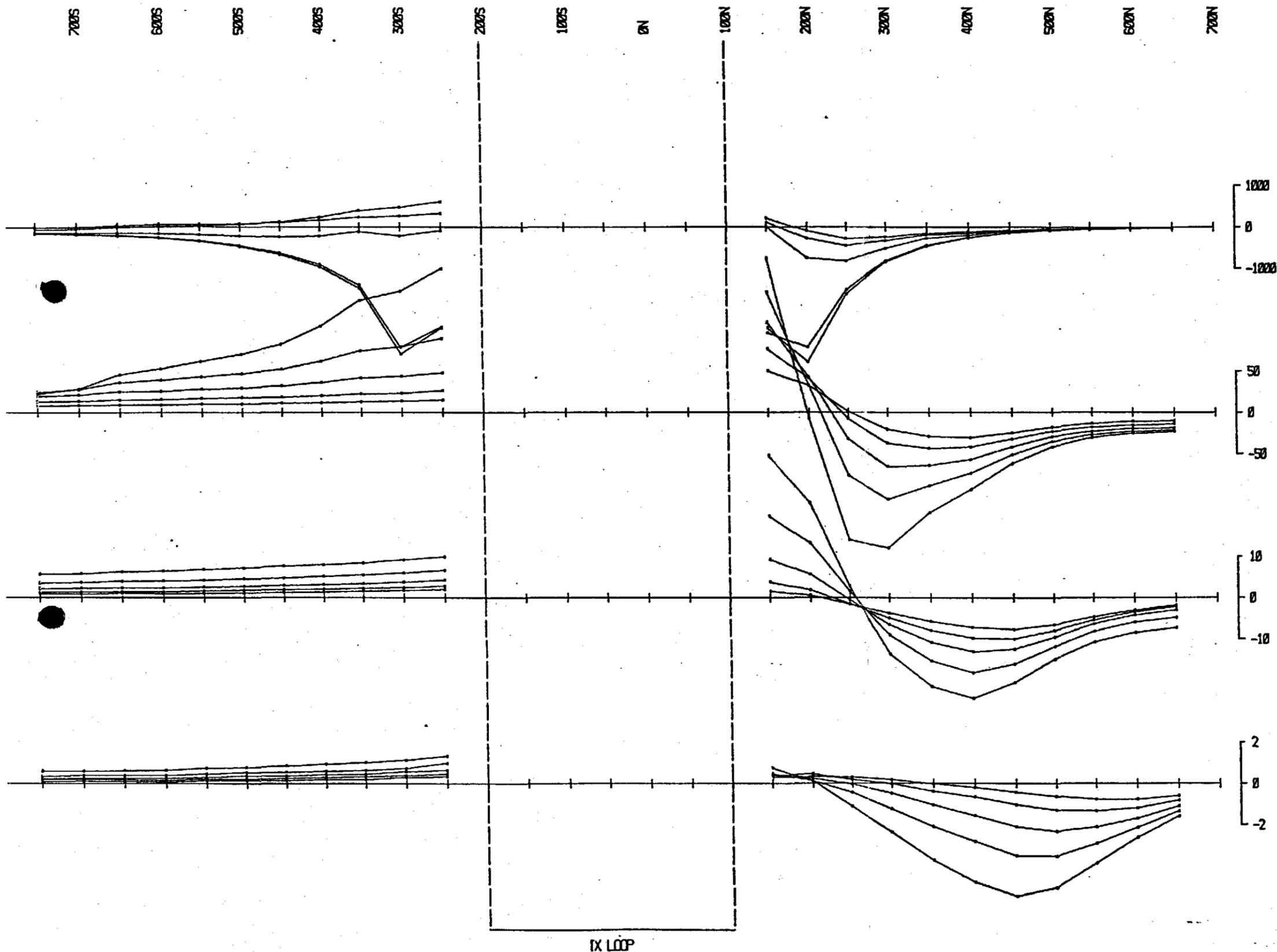


TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 177 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 10/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT :	STONEHENGE
AREA :	TRIAL HARBOUR
LINE :	01700E Z
TX LOOP :	3

VERTICAL COMPONENT B (Z)



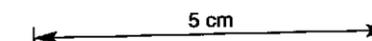
EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCE SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared



TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
 TX LOOP SIZE : 400 m X 300 m
 TX TURN OFF TIME : 177 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 10.6 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SDCH
 DATE : 10/12/1984

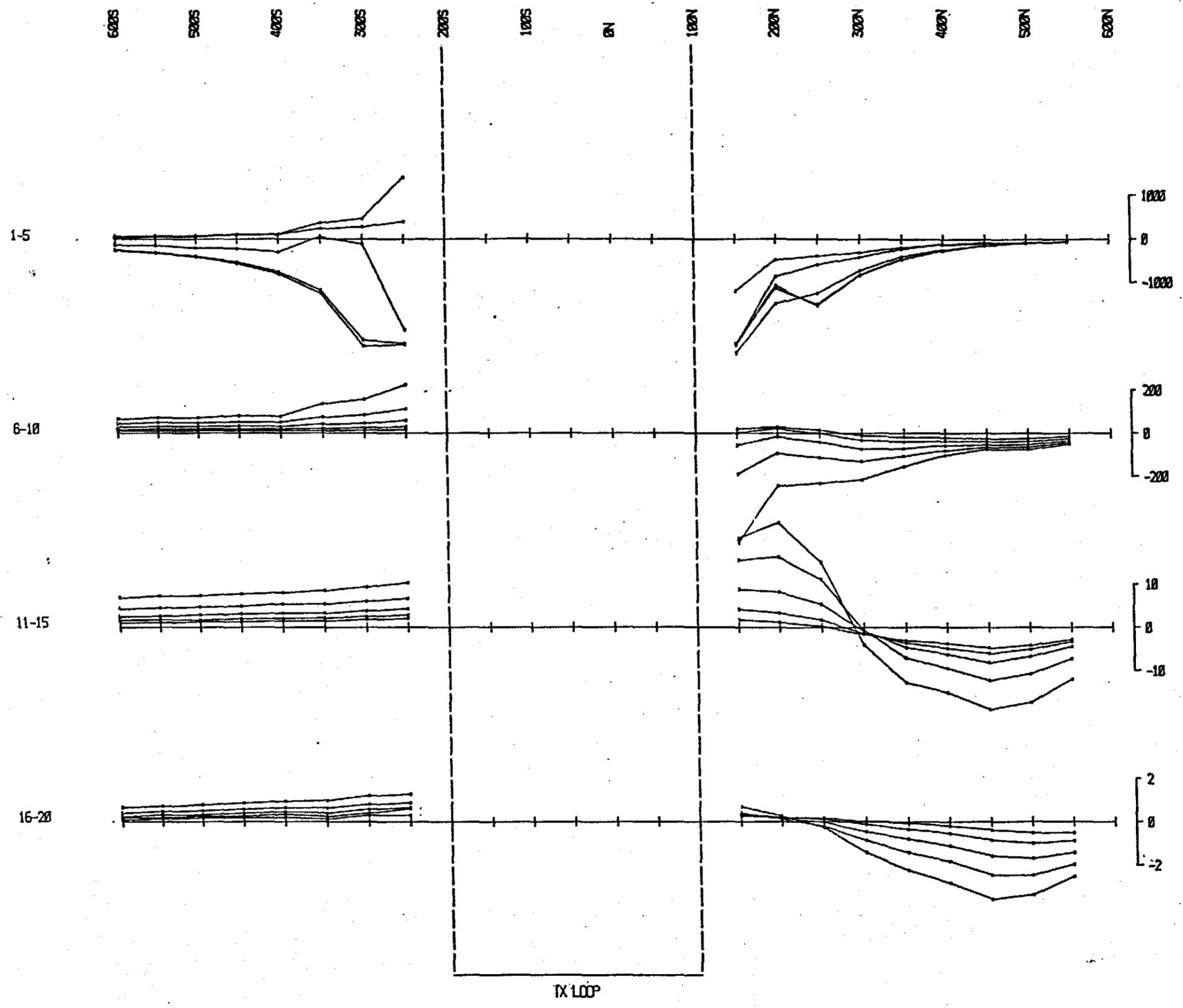
	SURVEYED AND COMPILED BY	PROJEC
	GEOTREX PTY. LTD.	85-16

CLIENT : GOLD FIELDS EXP.
 PROJECT : STONEHENG
 AREA : TRIAL HARBOUR
 LINE : 01600E Z
 TX LOOP : 3

043094

04 086

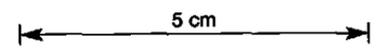
VERTICAL COMPONENT \dot{B} (Z)



EM-37
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared



TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 177 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 10.6 amp
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 10/12/1984

G D	SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.	PROJECT NO. 65-1647
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 01900E Z
TX LOOP : 3

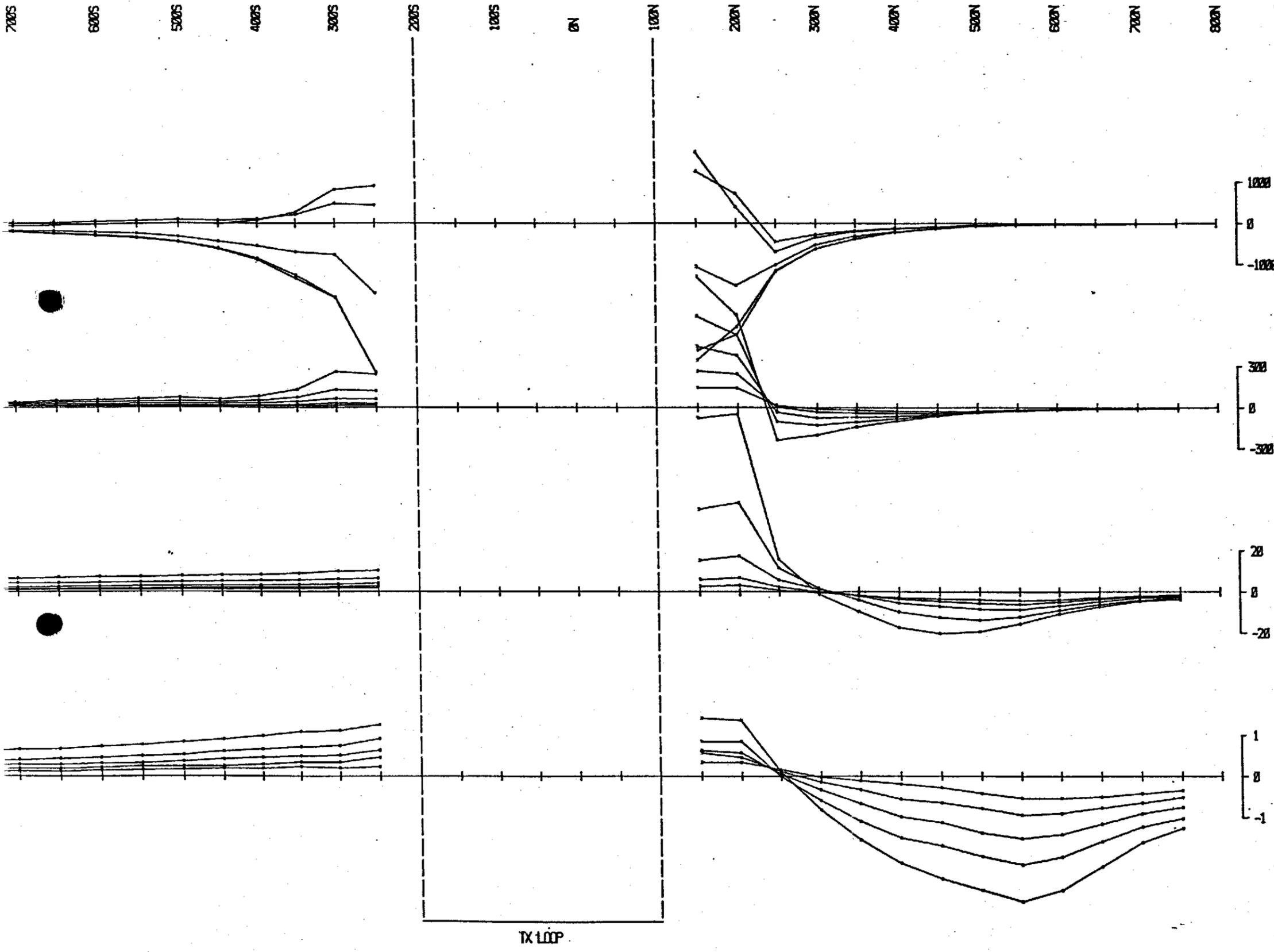
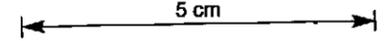
VERTICAL COMPONENT. B (Z)

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared



TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E

TX LOOP SIZE : 400 m X 300 m

TX TURN OFF TIME : 177 microseconds.

FIRST GATE TIME : 88.5 microseconds.

CURRENT : 10.6 amps

FREQUENCY : 25 Hz.

INTEGRATION TIME : 256 cycles

SYNC MODE : CRYSTAL

HORIZONTAL SCALE : 1:5000

SURVEYED BY : SDCH

DATE : 09/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT N 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE

AREA : TRIAL HARBOUR

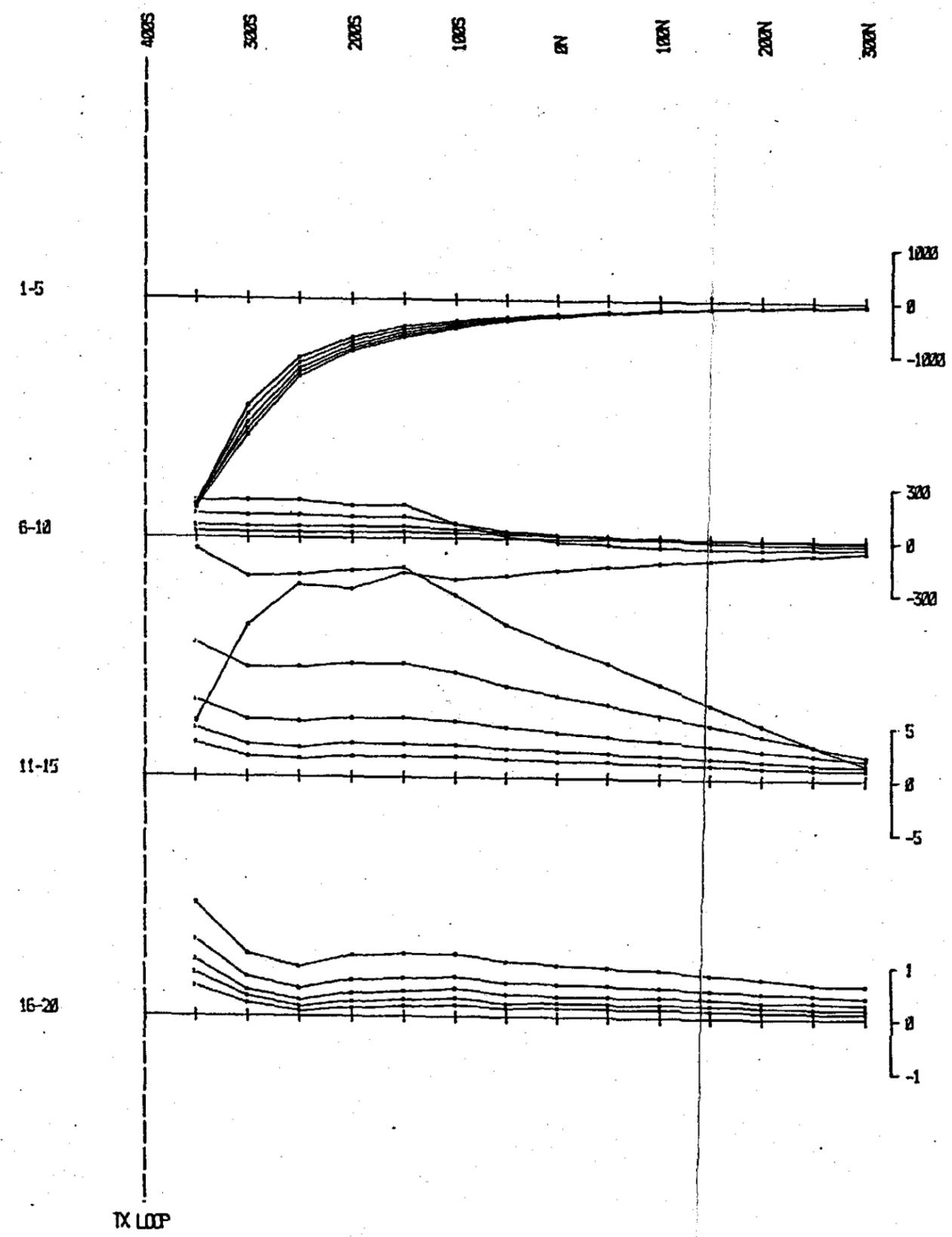
LINE : 02000E 2

TX LOOP : 3

043096

00.104

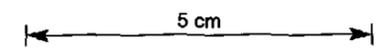
VERTICAL COMPONENT \dot{B} (Z)



nanovolt per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

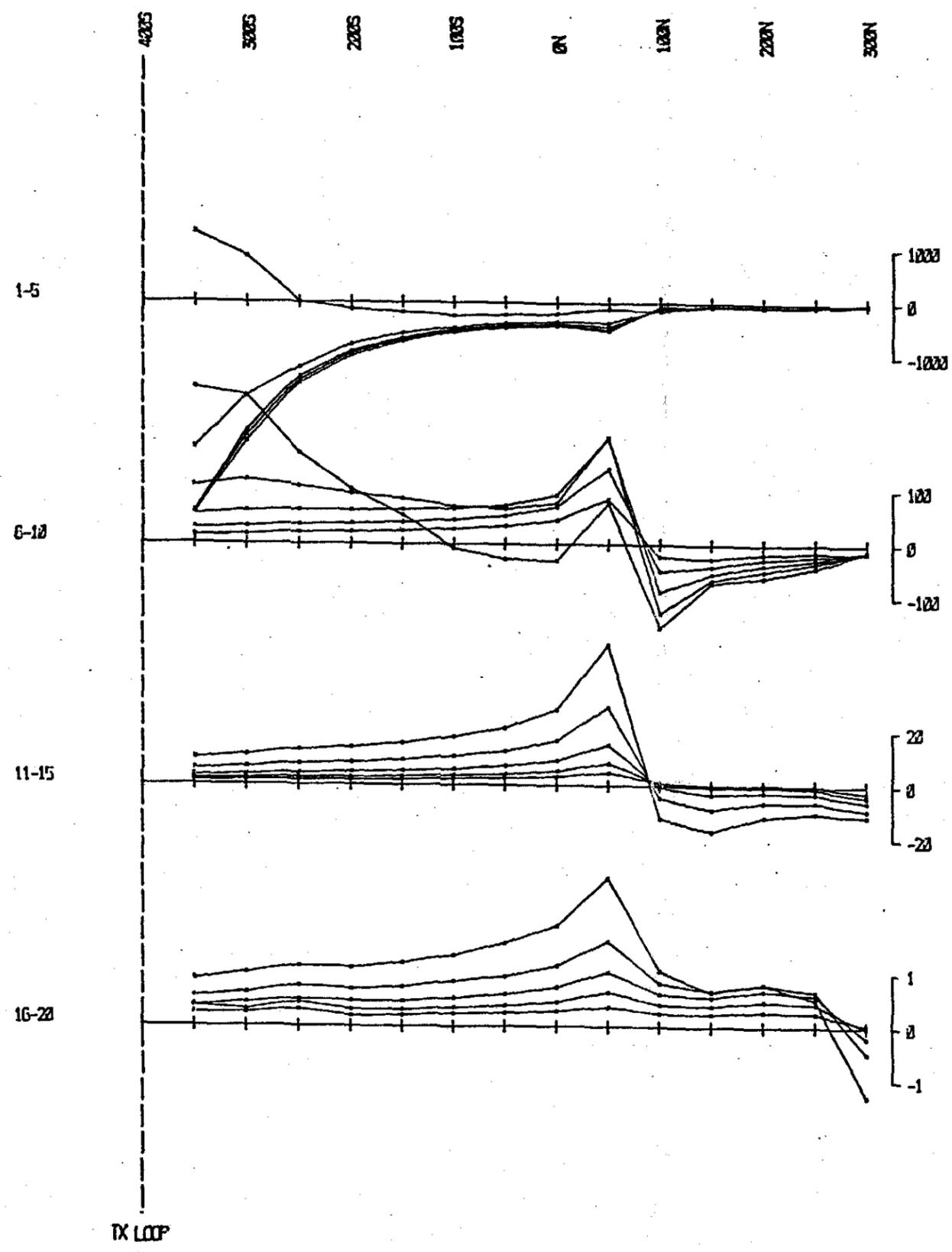
ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (\dot{B})



TX LOOP SIDES : 004005 02600E
 : 007005 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 9.7 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 236 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SD
DATE : 12/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 02000E Z TX LOOP : 4	

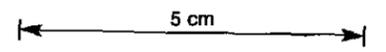
VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

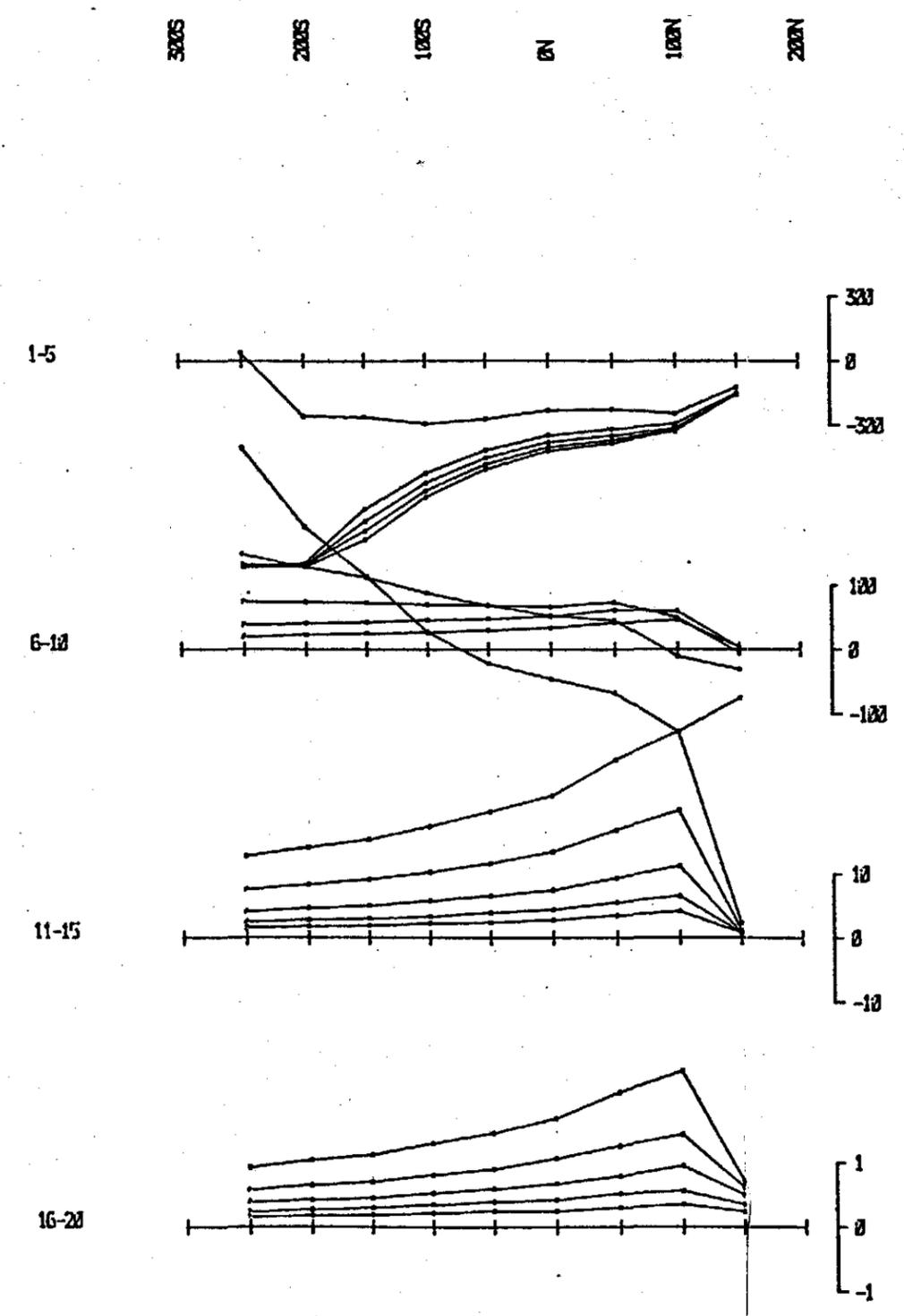


TX LOOP SIDES : 004005 02000E
 : 007005 02200E
 TX LOOP SIZE : 600 m X 300 m
 TX TURN OFF TIME : 210 microseconds
 FIRST GATE TIME : 99.5 microseconds
 CURRENT : 9.7 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 250 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SD
 DATE : 12/12/1984

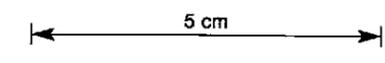
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
---	---	------------------------

CLIENT : GOLD FIELDS EXP.
 PROJECT : STONEHENGE
 AREA : TRIAL HARBOUR
 LINE : 02100E Z
 TX LOOP : A

VERTICAL COMPONENT \dot{B} (Z)



nanovolts per amp metre squared



EM-37
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

TX LOOP SIDES : 00400S 02600E
 : 00700S 02200E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microsecs.
FIRST GATE TIME : 93.5 microsecs.
CURRENT : 9.7 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SD
DATE : 12/12/1964

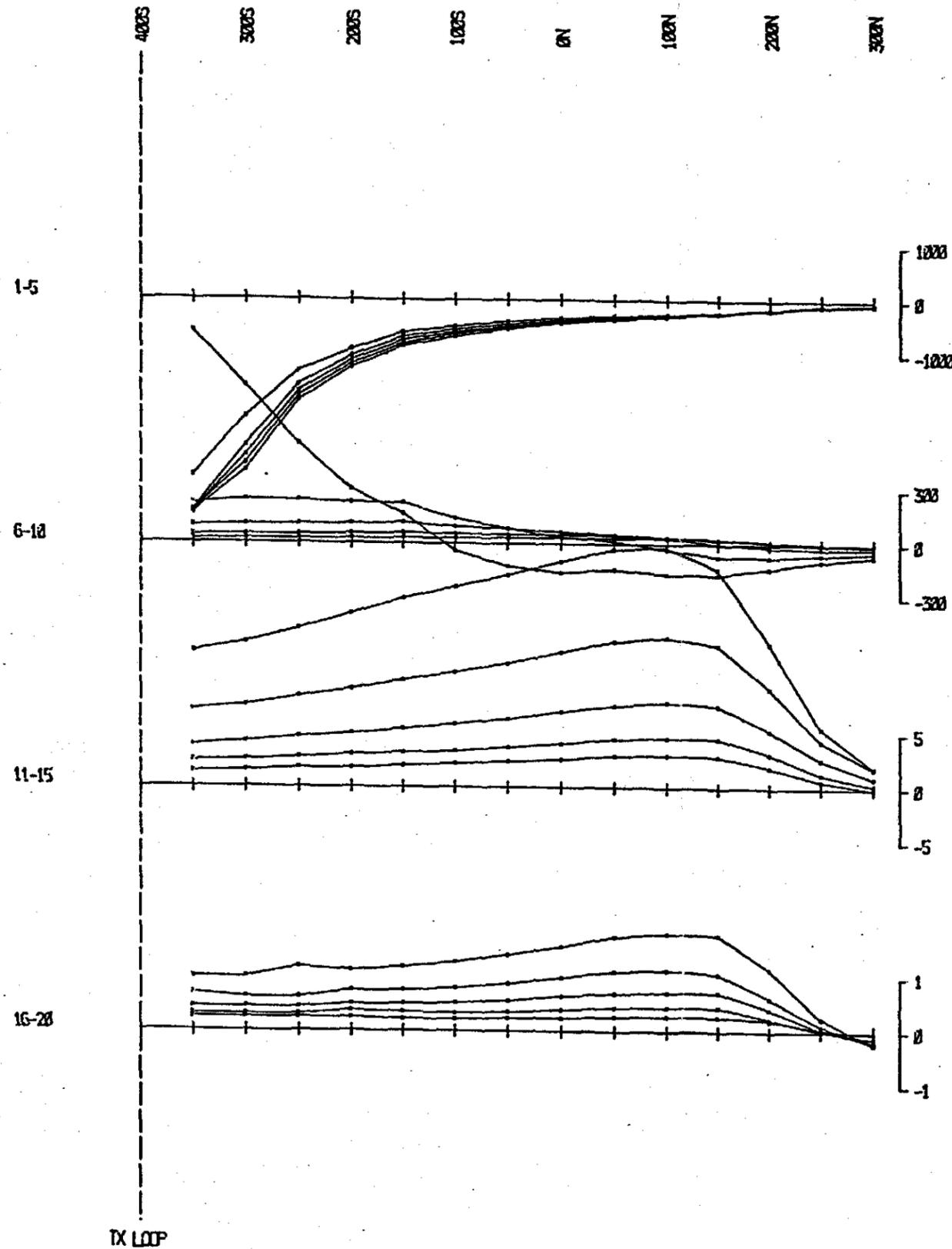
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 02200E Z
TX LOOP : 4

043099

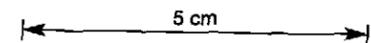
101

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



nanovolts per amp metre squared

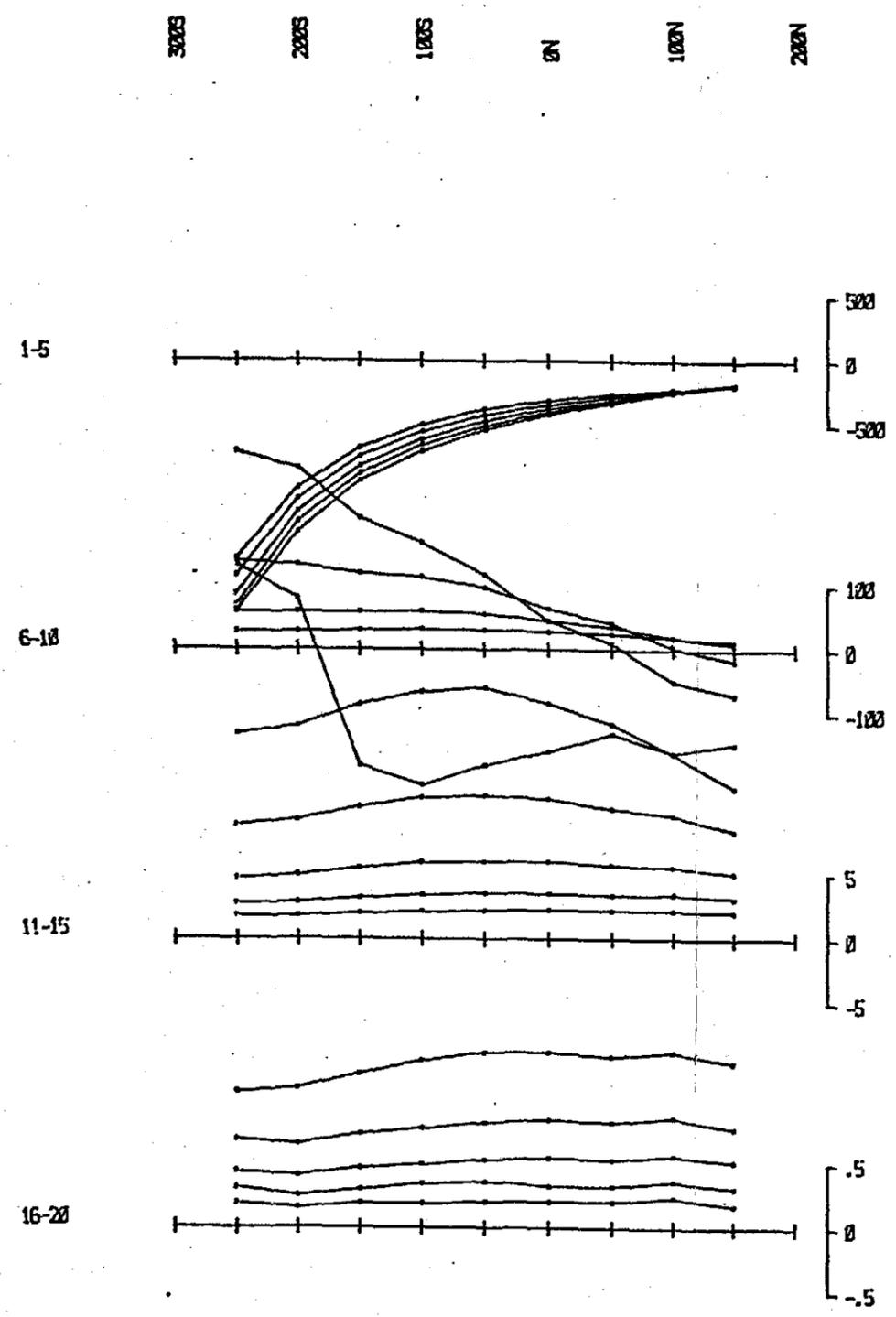
TX LOOP SIDES : 004205 02020E
 : 007205 02020E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 9.7 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SD
DATE : 12/12/1984

 SURVEYED AND COMPILED BY
GEOTREX PTY. LTD. PROJECT NO.
05-1047

CLIENT : GOLD FIELDS EXP.
PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 02300E Z
TX LOOP : 4

043100

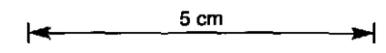
VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

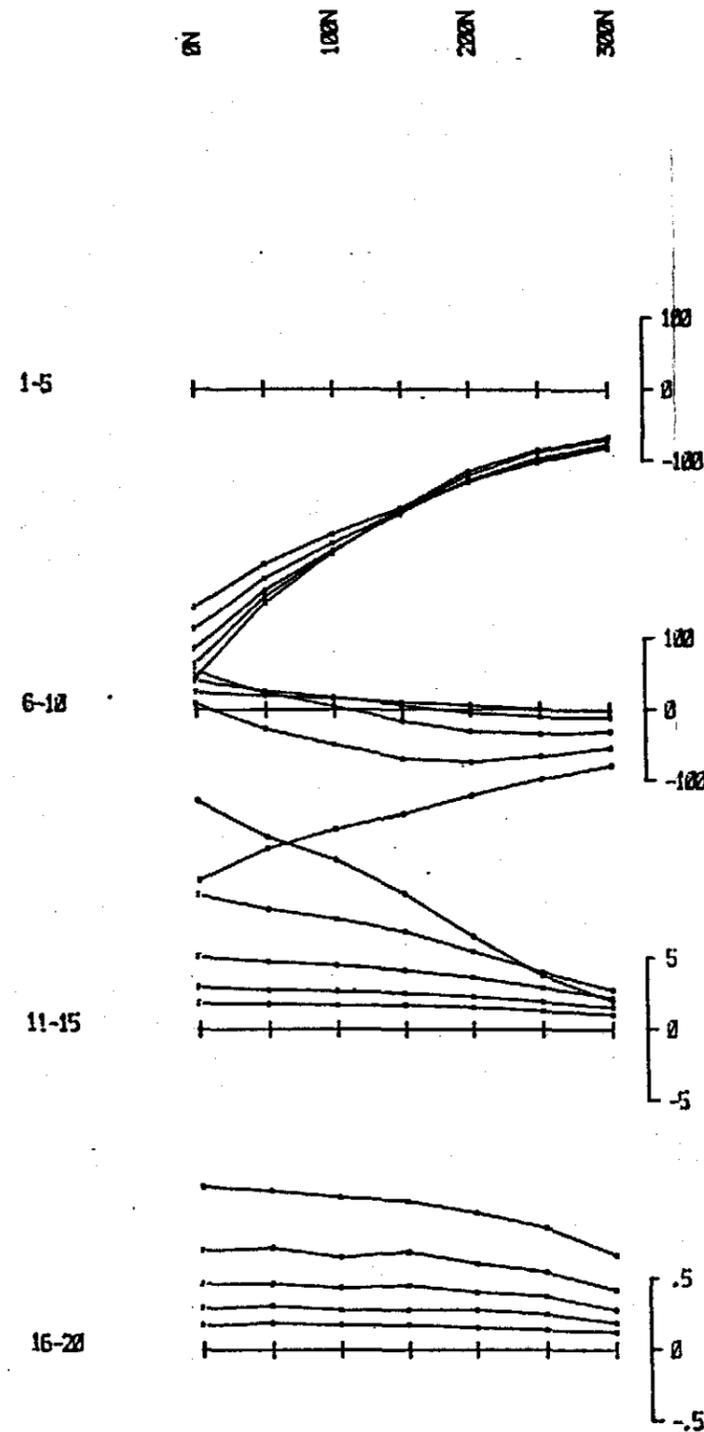


TX LOOP SIDES : 00400S 02600E
 : 00700S 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 9.7 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SD
DATE : 12/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT	: STONEHENG
AREA	: TRIAL HARBOUR
LINE	: 02400E . Z
TX LOOP	: 4

VERTICAL COMPONENT \dot{B}_z

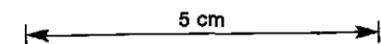


nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (\dot{B})



TX LOOP SIDES : 00400S 02600E
 : 00700S 02200E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 9.7 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SD
DATE : 12/12/1984

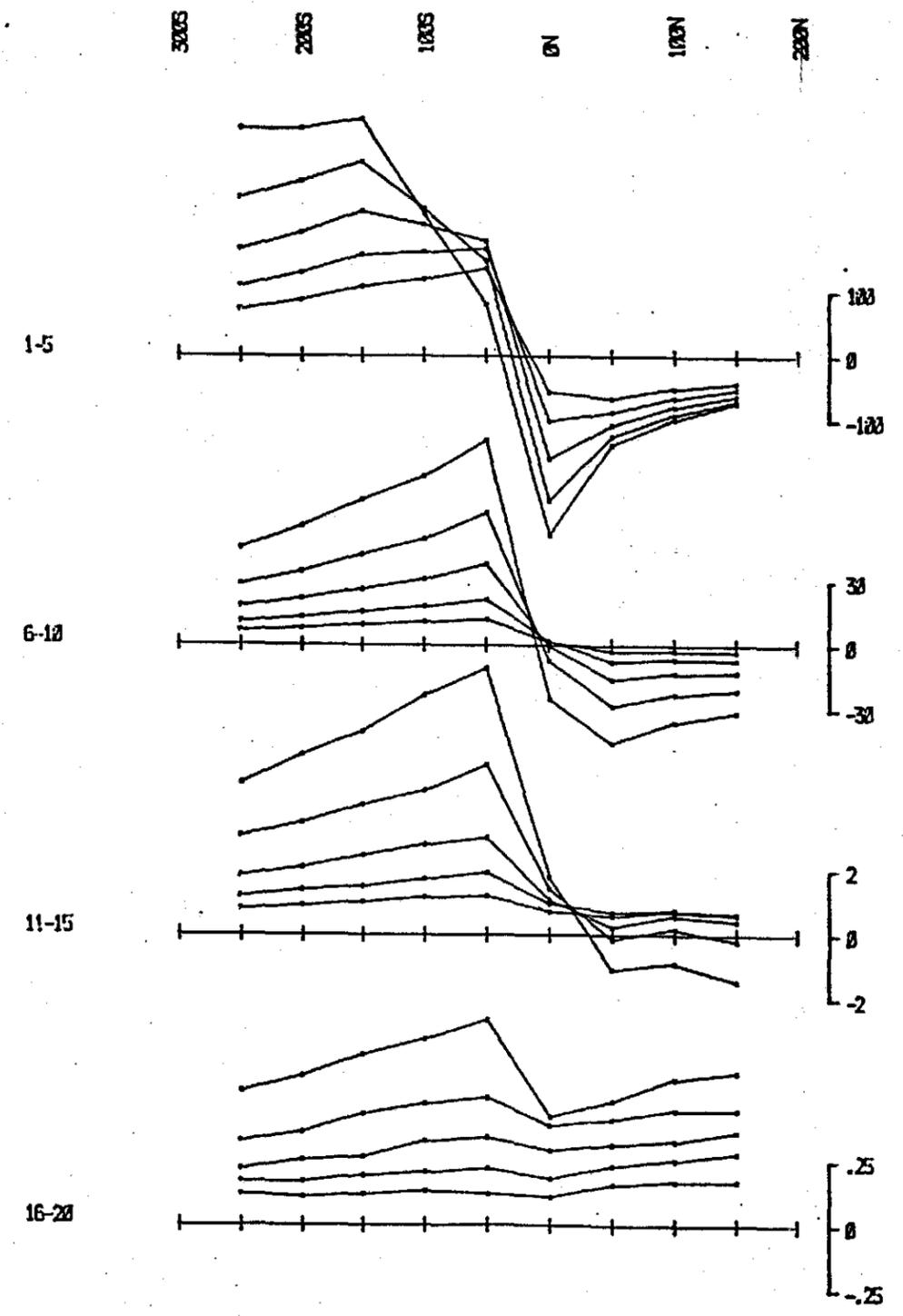
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 02500E Z
TX LOOP : 4

043102

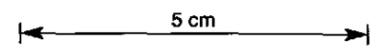
00 094

VERTICAL COMPONENT $\dot{B} (Z)$



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (Z)



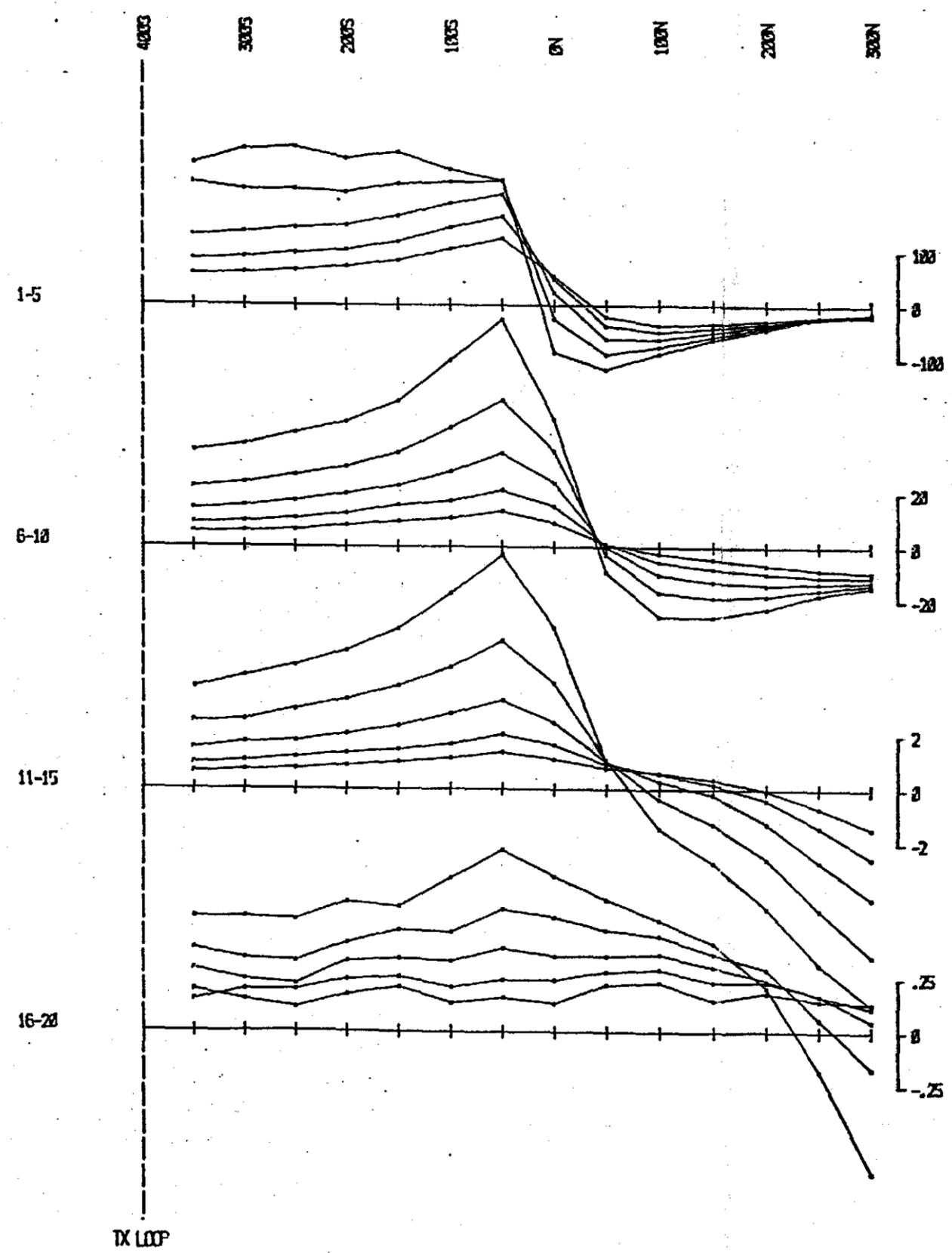
nanovolts per amp metre squared

TX LOOP SIDES : 00420S 02200E
 : 00720S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 205 microsecs.
FIRST GATE TIME : 89.5 microsecs.
CURRENT : 12.5 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 250 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : 500H
DATE : 15/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 01E00E Z TX LOOP : 5	

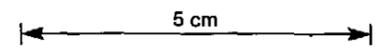
043103

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (E)



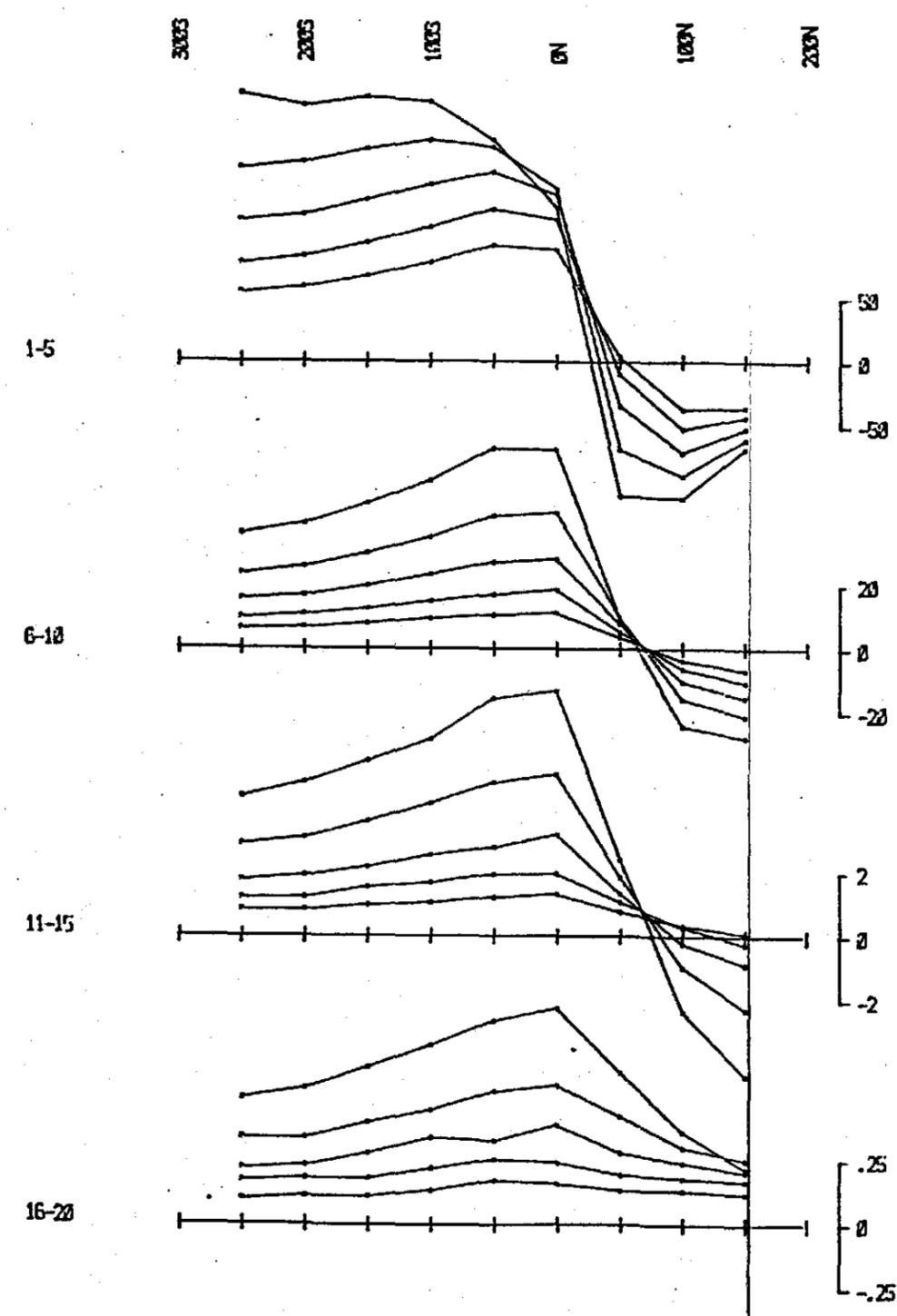
nanovolts per amp metre squared

TX LOOP SIDES : 024205 02200E
: 027205 01620E
TX LOOP SIZE : 420 m X 320 m
TX TURN OFF TIME : 205 microsecs.
FIRST GATE TIME : 89.5 microsecs.
CURRENT : 12.5 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 15/12/1994

	SURVEYED AND COMPILED BY GEDTERREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 01720E Z TX LOOP : 5	

043104

VERTICAL COMPONENT B (Z)

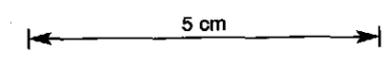


nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B-dot)



TX LOOP SIDES : 00430S 02200E
 : 00700S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 205 microseconds.
FIRST GATE TIME : 99.5 microseconds.
CURRENT : 12.5 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 250 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 15/12/1994

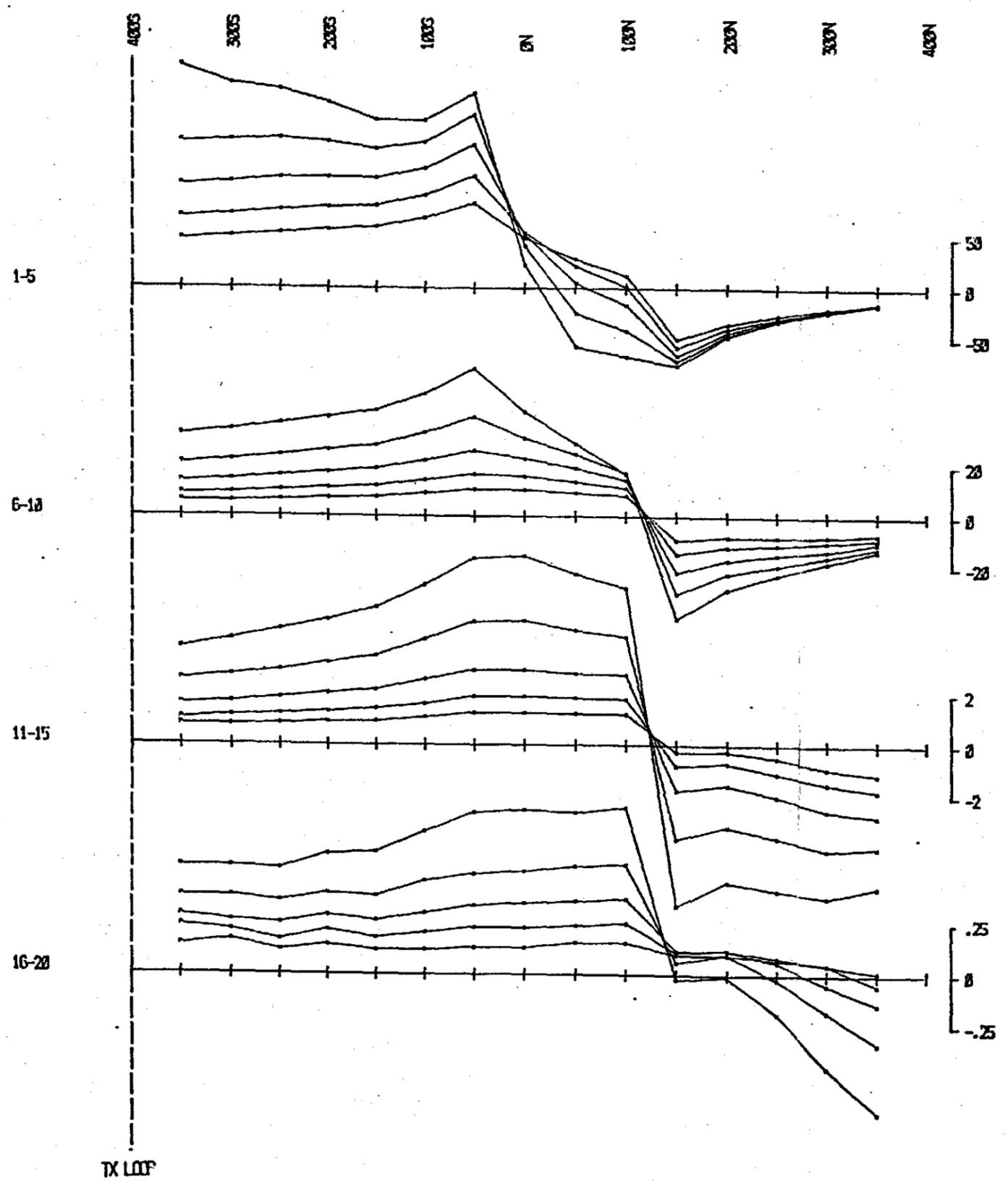
	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTERREX PTY. LTD.	85-1847

CLIENT : GOLD FIELDS EXP.
PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 01300E Z
TX LOOP : 5

043105

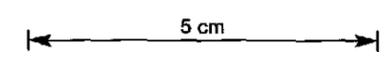
097

VERTICAL COMPONENT B (Z)



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



nanovolts per amp metre squared

TX LOOP SIDES : 034205 02200E
 : 007725 01000E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 205 microseconds.
FIRST GATE TIME : 99.5 microseconds.
CURRENT : 12.5 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 250 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 15/12/1994

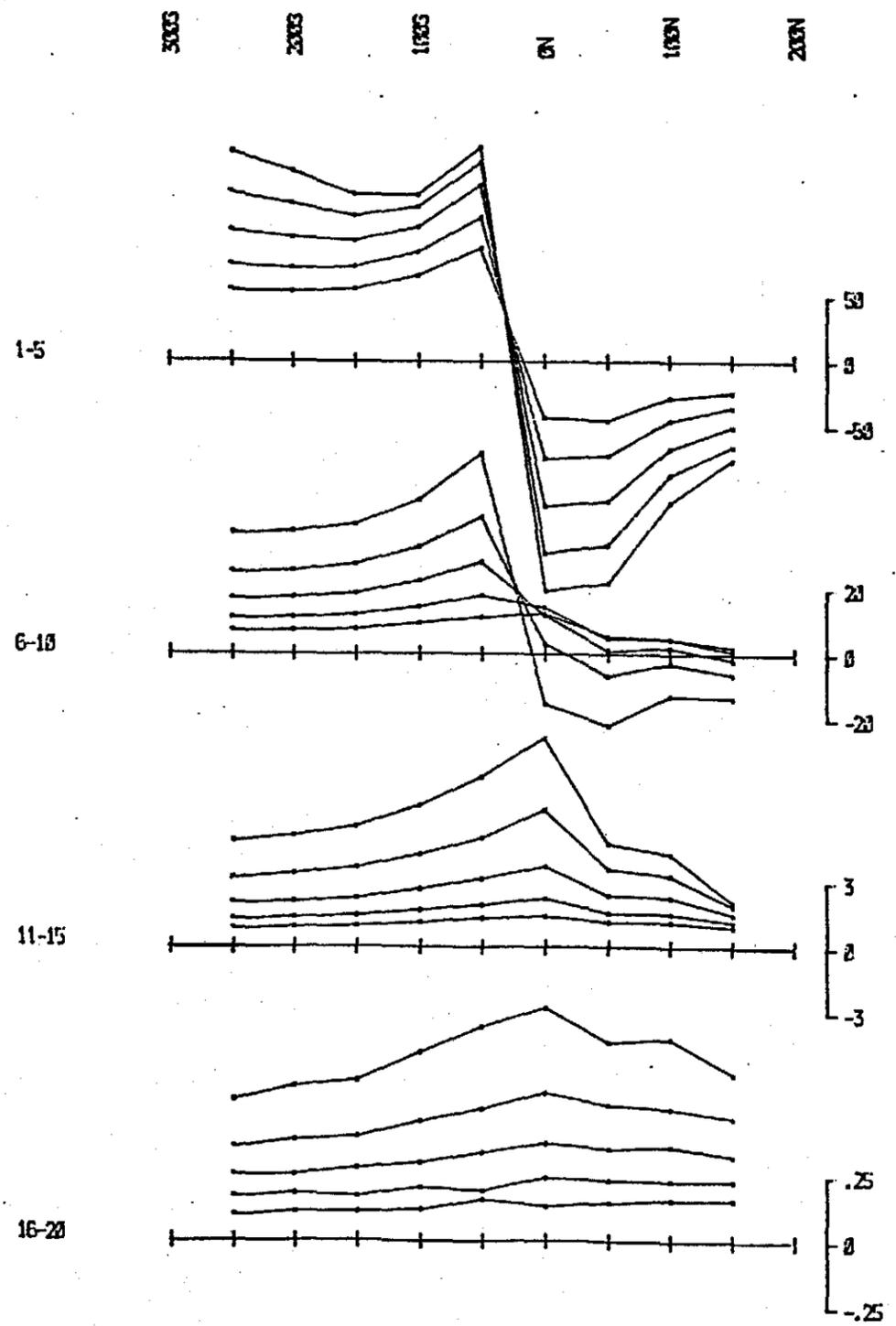
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 05-1847
	CLIENT : GOLD FIELDS EXP.	

PROJECT	: STONEHEDGE
AREA	: TRIAL HARBOUR
LINE	: 01300E Z
TX LOOP	: 5

098

043106

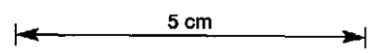
VERTICAL COMPONENT \dot{B}_z



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

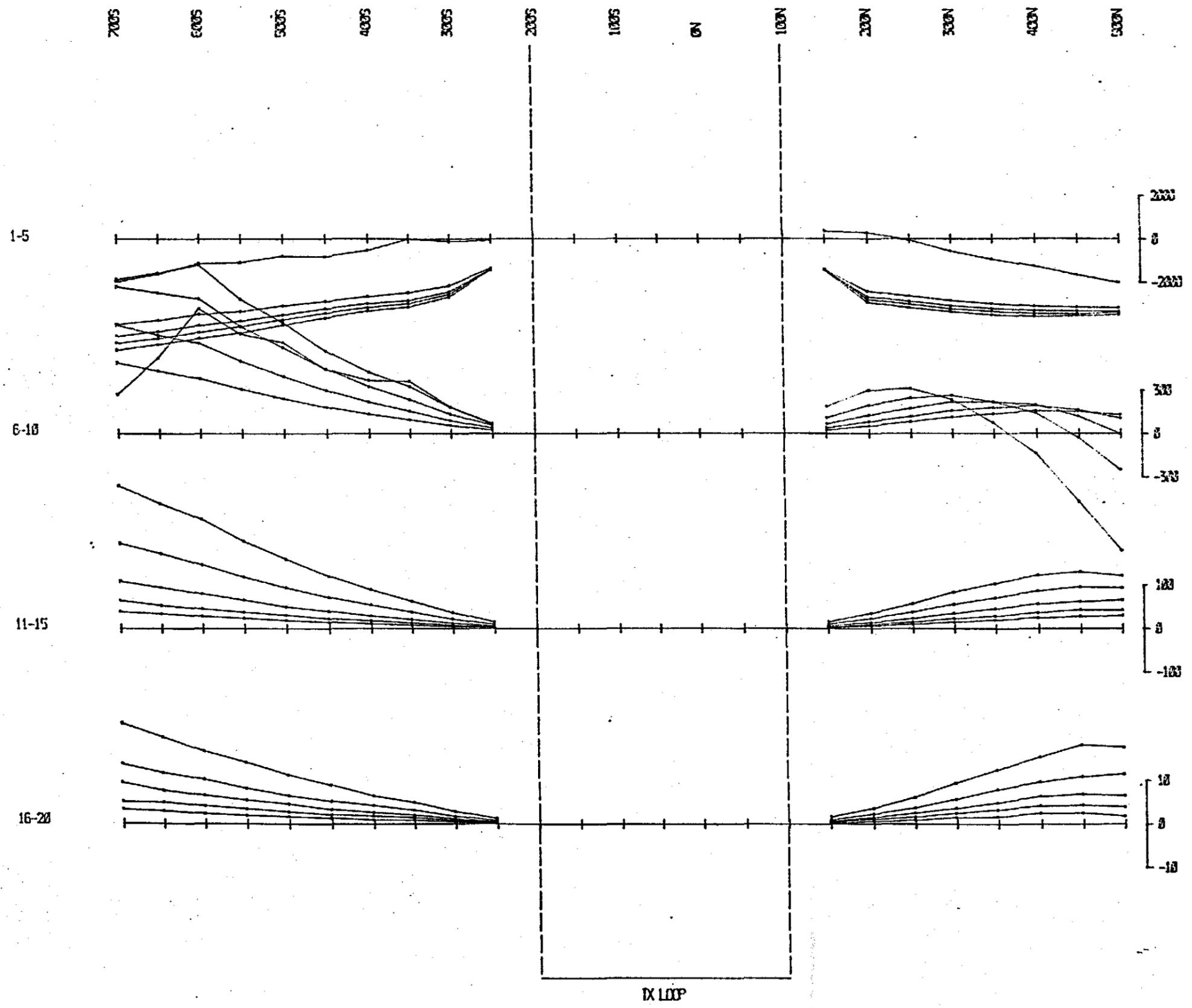


TX LOOP SIDES : 004005 02000E
 : 007005 01000E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 205 microseconds
FIRST GATE TIME : 99.5 microseconds
CURRENT : 12.5 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 15/12/1994

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 95-1947
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 02000E Z TX LOOP : 5	

043107

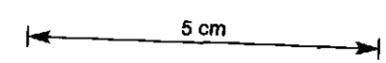
VERTICAL COMPONENT $\dot{B}(z)/H_p$



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
 TIME DERIVATIVE OF FLUX DENSITY (\dot{B})
 P CONTINUOUS NORMALIZATION



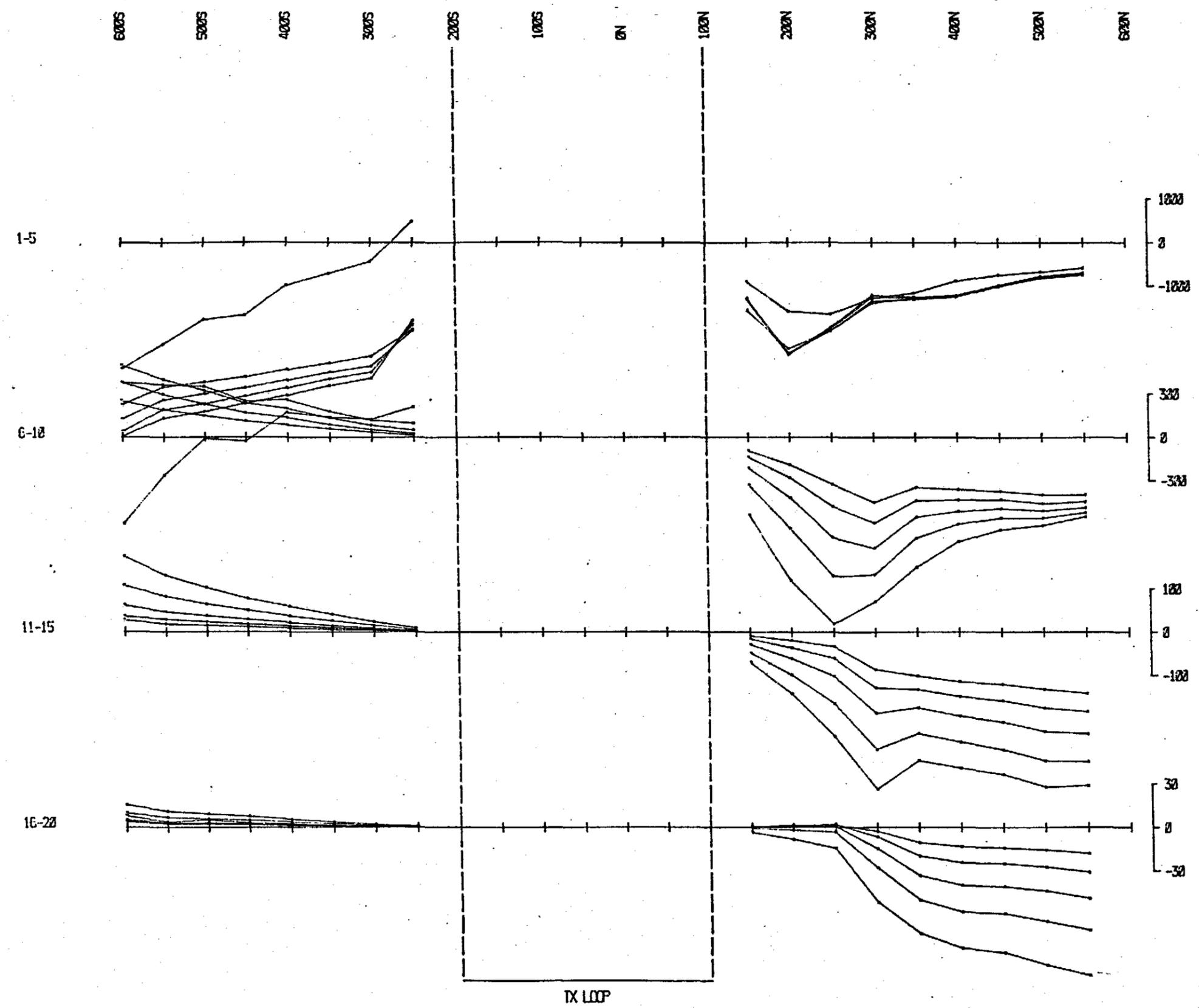
microvolts per amp metre

TX LOOP SIDES : 00100N 02000E
 : 00200S 02000E
 TX LOOP SIZE : 600 m X 300 m
 TX TURN OFF TIME : 215 microseconds.
 FIRST GATE TIME : 93.5 microseconds.
 CURRENT : 10.0 amp.
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SOCH
 DATE : 09/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 02000E 2 TX LOOP : 2	

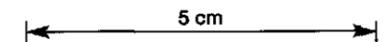
TX LOOP

VERTICAL COMPONENT $\dot{B}(Z)/H_p$



EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)
P CONTINUOUS NORMALIZATION



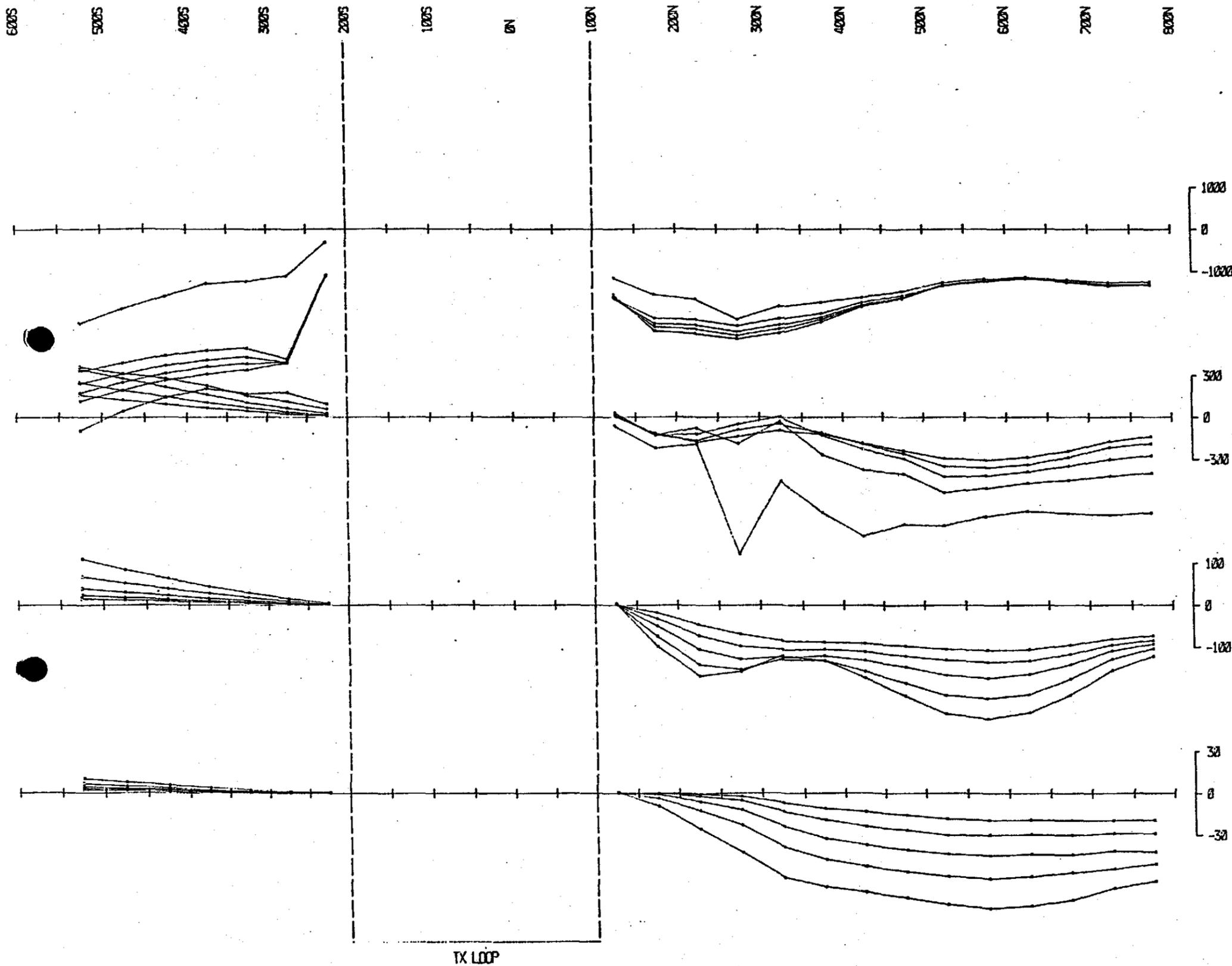
microvolts per amp metre

TX LOOP SIDES : 00100N 02600E
 : 00200S 02200E
TX LOOP SIZE : 620 m X 300 m
TX TURN OFF TIME : 150 microseconds.
FIRST GATE TIME : 99.5 microseconds.
CURRENT : 9.2 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 250 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 06/12/1994

 SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
---	------------------------

CLIENT : GOLD FIELDS EXP.
PROJECT : STONE HENGE
AREA : TRIAL HARBOUR
LINE : 02100E Z
TX LOOP : 2

VERTICAL COMPONENT $\dot{B}(Z)/H_p$



043109

00(11)

EM-37

FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

P CONTINUOUS NORMALIZATION

microvolts per amp metre

5 cm

TX LOOP SIDES : 00100N 02600E
: 00200S 02000E

TX LOOP SIZE : 600 m X 300 m

TX TURN OFF TIME : 180 microseconds.

FIRST GATE TIME : 88.5 microseconds.

CURRENT : 8.2 amps

FREQUENCY : 25 Hz.

INTEGRATION TIME : 256 cycles

SYNC MODE : CRYSTAL

HORIZONTAL SCALE : 1:5000

SURVEYED BY : SDCH

DATE : 06/12/1984

	SURVEYED AND COMPILED BY	PROJECT
	GEOTREX PTY. LTD.	85-1E

CLIENT : GOLD FIELDS EXP.

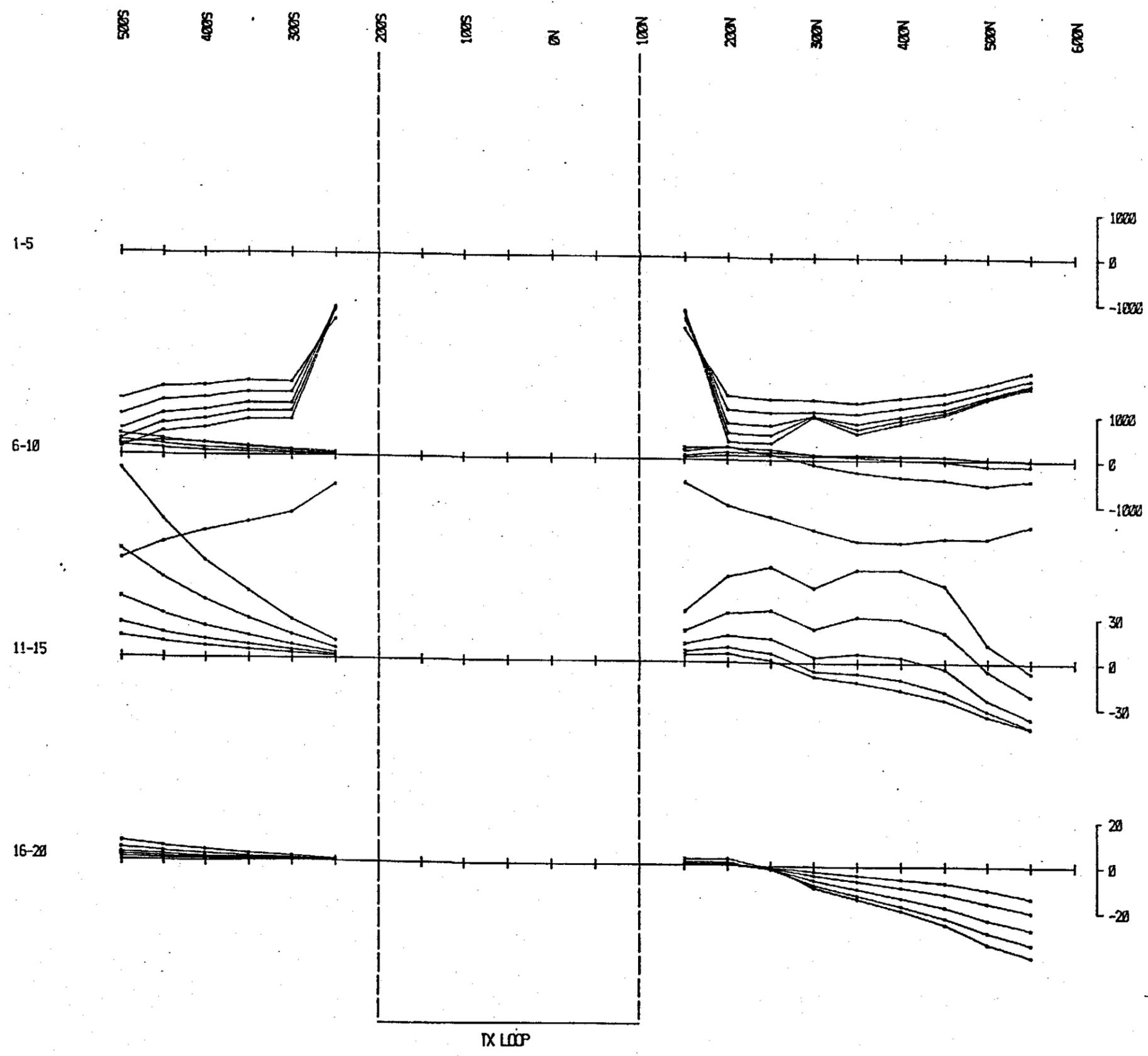
PROJECT : STONE HENGE

AREA : TRIAL HARBOUR

LINE : 02200E Z

TX LOOP : 2

VERTICAL COMPONENT $\dot{B}(Z)/H_p$



EM-37

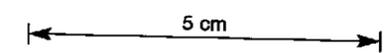
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

P CONTINUOUS NORMALIZATION

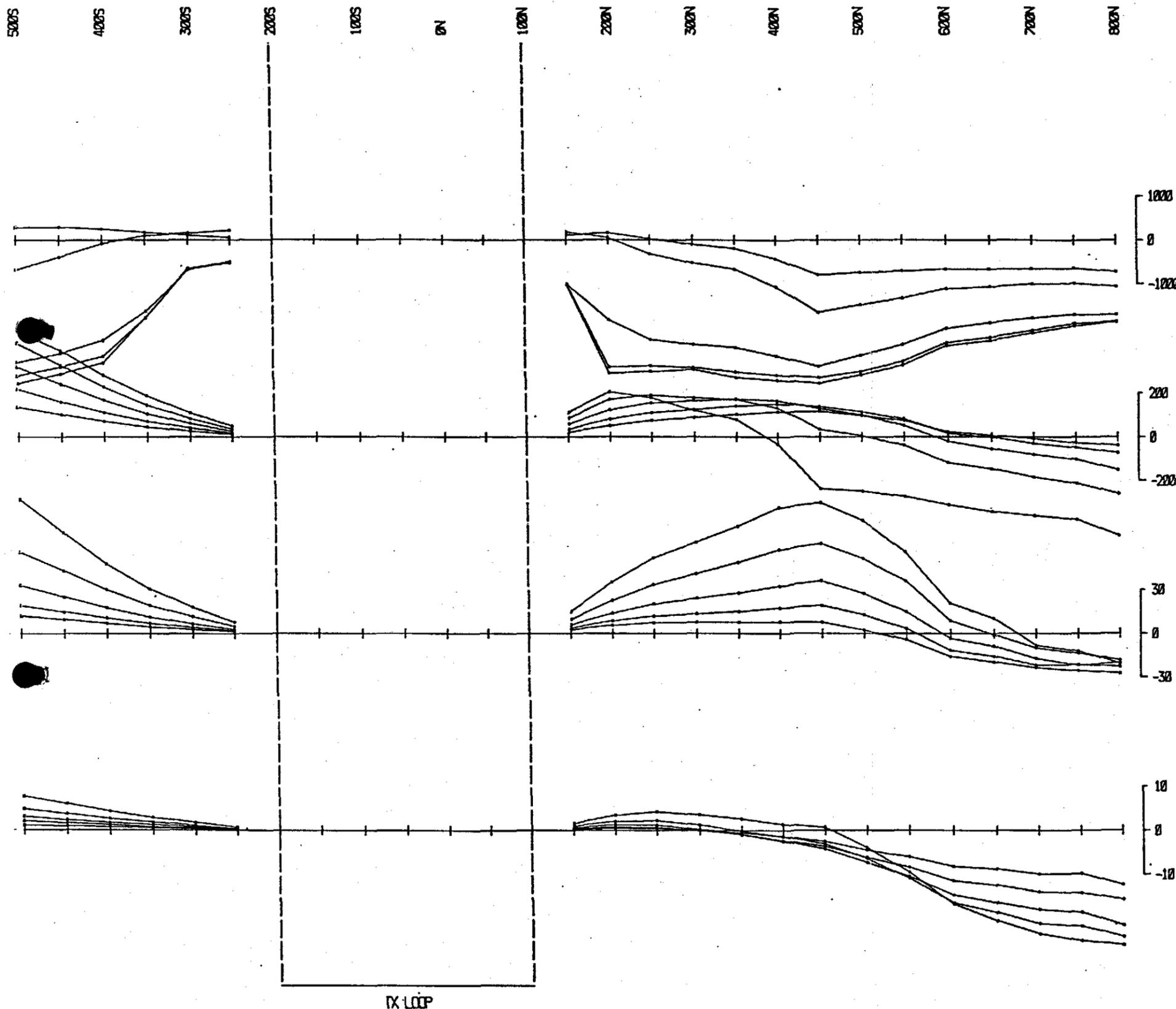
microvolts per amp metre



TX LOOP SIDES : 00100N 02000E
 : 00200S 02000E
 TX LOOP SIZE : 600 m X 300 m
 TX TURN OFF TIME : 180 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 8.2 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SDCH
 DATE : 06/12/1994

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONE HENCE AREA : TRIAL HARBOUR LINE : 02300E Z TX LOOP : 2	

VERTICAL COMPONENT $\dot{B}(Z)/H_p$

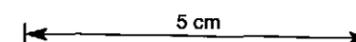


EM-37
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

P CONTINUOUS NORMALIZATION



microvolts per amp metre

TX LOOP SIDES : 00100N 02600E
: 00200S 02000E
TX LOOP SIZE : 600 m X 300 m
TX TURN OFF TIME : 210 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 10.0 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 09/12/1984

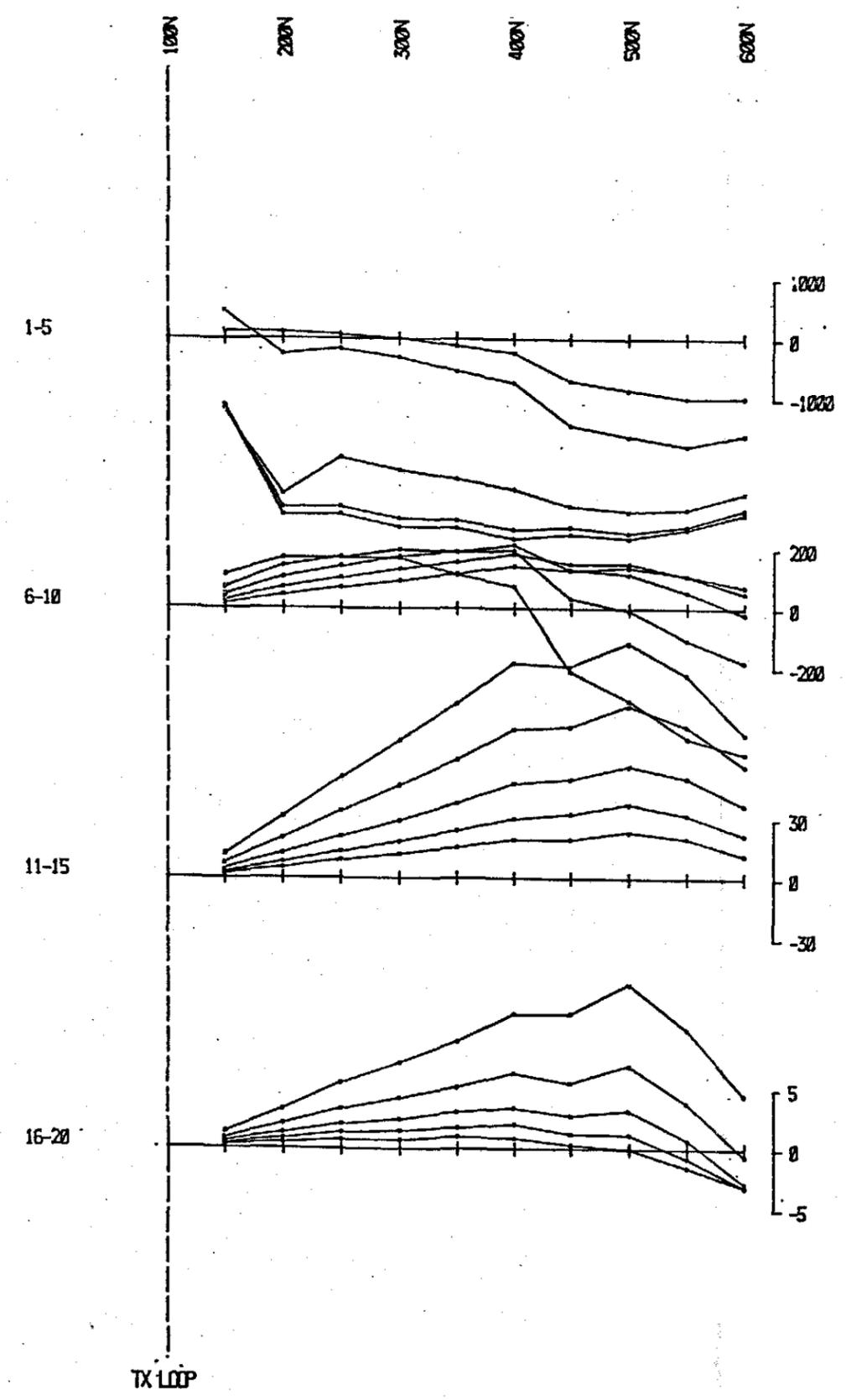


SURVEYED AND COMPILED BY
GEOTREX PTY. LTD.

PROJECT NO.
85-1047

CLIENT : GOLD FIELDS EXP.
PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : - 02400E . Z
TX LOOP : 2

VERTICAL COMPONENT $B(z)/H_p$



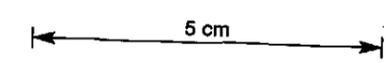
EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

P CONTINUOUS NORMALIZATION

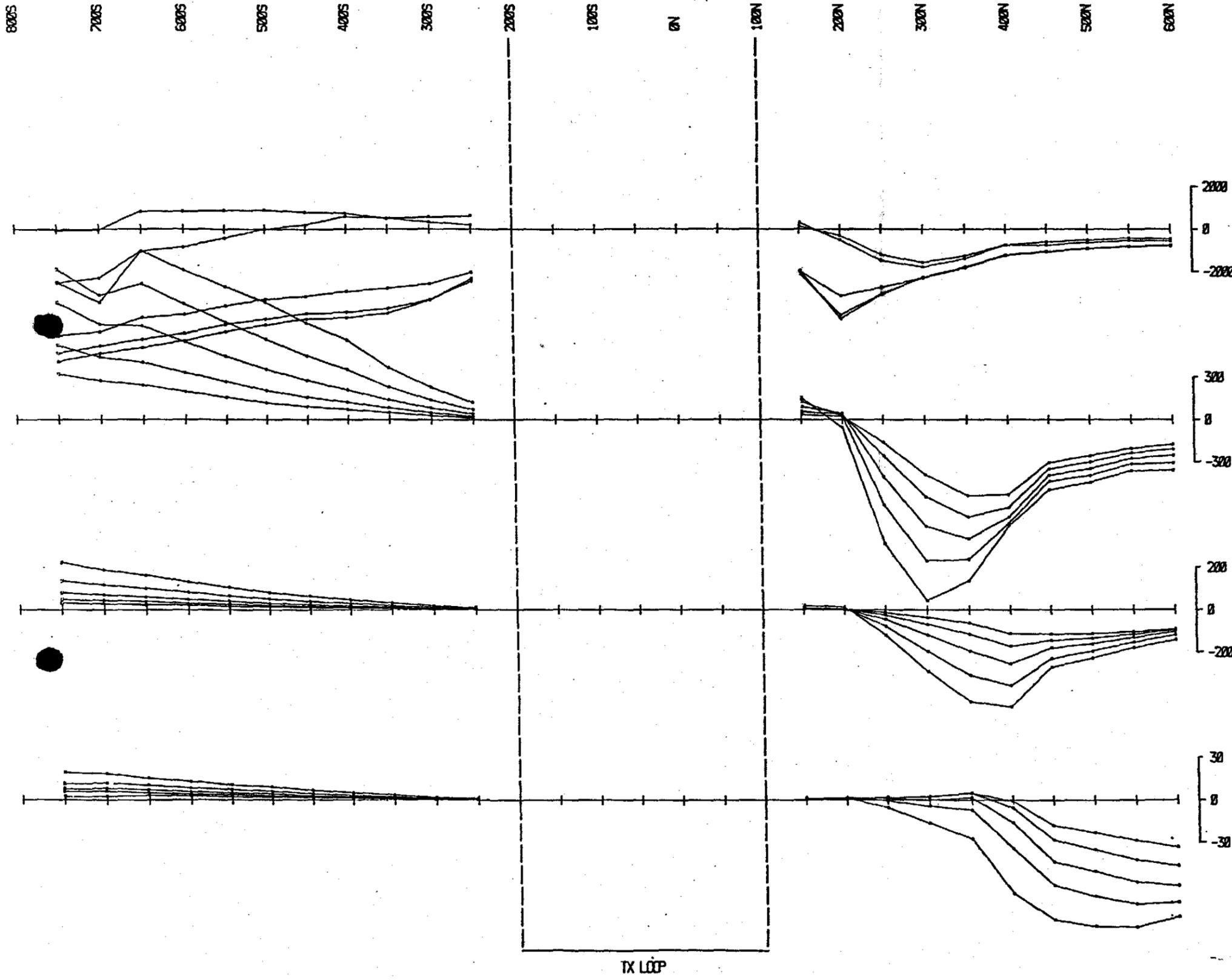


microvolts per amp metre

TX LOOP SIDES : 00100N 02600E
 : 00200S 02000E
 TX LOOP SIZE : 600 m X 300 m
 TX TURN OFF TIME : 210 microseconds
 FIRST GATE TIME : 88.5 microseconds
 CURRENT : 10.0 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SOCH
 DATE : 09/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENG AREA : TRIAL HARBOUR LINE : - 02500E . Z TX LOOP : 2	

VERTICAL COMPONENT $\dot{B}(Z)/H_p$



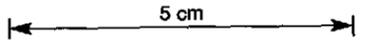
EM-37

FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

P CONTINUOUS NORMALIZATION



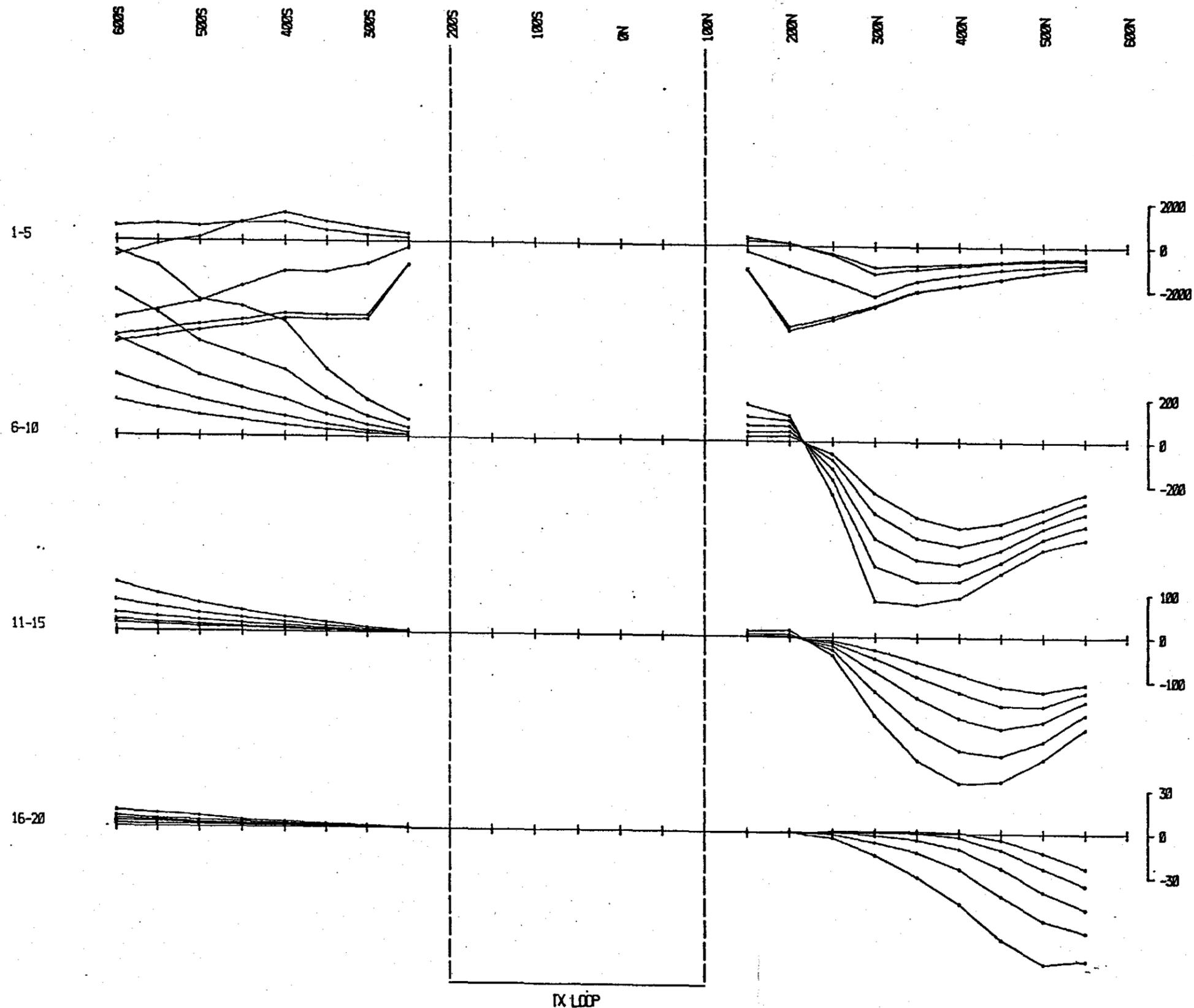
microvolts per amp metre

TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
 TX LOOP SIZE : 400 m X 300 m
 TX TURN OFF TIME : 177 microsecs.
 FIRST GATE TIME : 88.5 microsecs.
 CURRENT : 10.6 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SDCH
 DATE : 10/12/1984

	SURVEYED AND COMPILED BY	PROJECT NO
	GEOTREX PTY. LTD.	85-1847

CLIENT : GOLD FIELDS EXP.
 PROJECT : STONEHENGE
 AREA : TRIAL HARBOUR
 LINE : 01600E Z
 TX LOOP : 3

VERTICAL COMPONENT $\dot{B}(Z)/H_p$



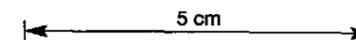
microvolts per amp metre

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

P CONTINUOUS NORMALIZATION



TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 177 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 10/12/1984

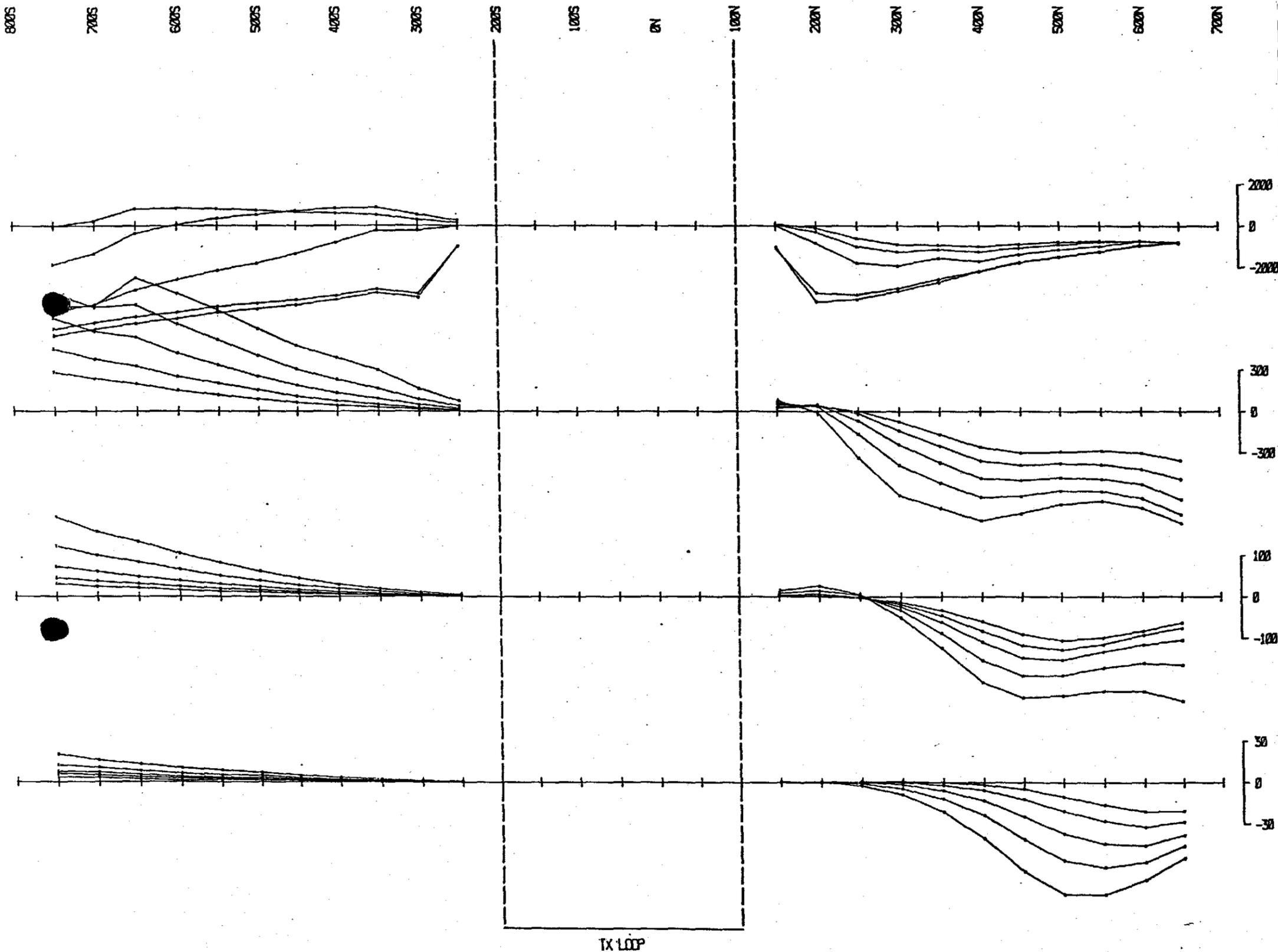


SURVEYED AND COMPILED BY
GEOTREX PTY. LTD.

PROJECT NO.
85-1847

CLIENT : GOLD FIELDS EXP.
PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 01700E Z
TX LOOP : 3

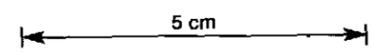
VERTICAL COMPONENT $\dot{B}(Z)/H_p$



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED SECONDARY FIELD
 TIME DERIVATIVE OF FLUX DENSITY (\dot{B})
 P CONTINUOUS NORMALIZATION



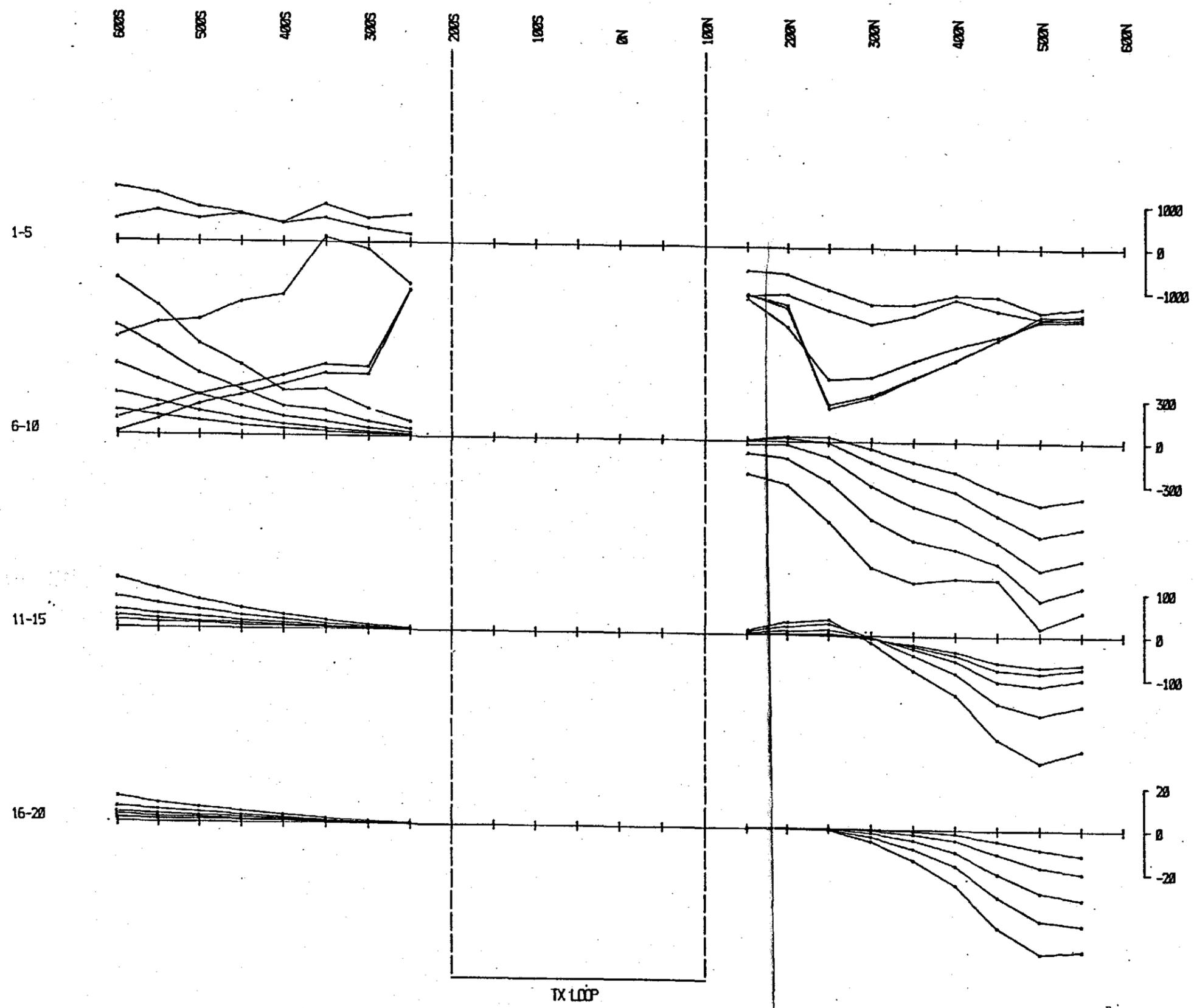
microvolts per amp metre

TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
 TX LOOP SIZE : 400 m X 300 m
 TX TURN OFF TIME : 177 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 10.6 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SOCH
 DATE : 10/12/1984

	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.		PROJ 85-

CLIENT : GOLD FIELDS EXP.
 PROJECT : STONEHENGE
 AREA : TRIAL HARBOUR
 LINE : 01800E 2
 TX LOOP : 3

VERTICAL COMPONENT $B(Z)/H_p$

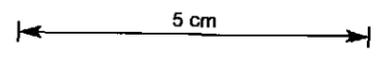


043116

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
 TIME DERIVATIVE OF FLUX DENSITY (B)
 P CONTINUOUS NORMALIZATION

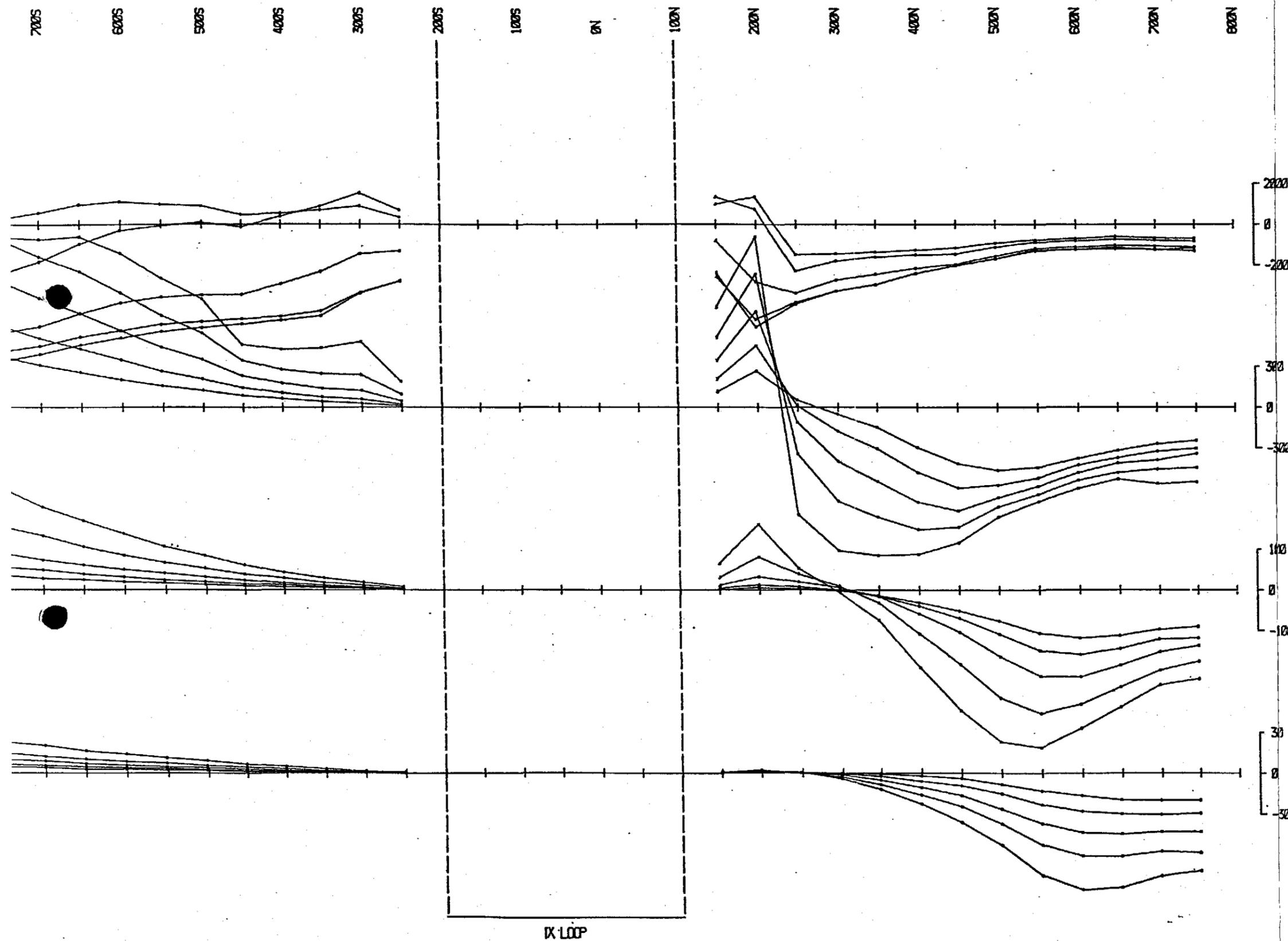


microvolts per amp metre

TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
 TX LOOP SIZE : 400 m X 300 m
 TX TURN OFF TIME : 177 microsecs.
 FIRST GATE TIME : 88.5 microsecs.
 CURRENT : 10.6 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 256 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SOCH
 DATE : 10/12/1984

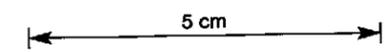
	SURVEYED AND COMPILED BY GEOTREX PTY. LTD.	PROJECT NO. 85-1847
	CLIENT : GOLD FIELDS EXP. PROJECT : STONEHENGE AREA : TRIAL HARBOUR LINE : 01900E Z TX LOOP : 3	

VERTICAL COMPONENT $B_z(z)/H_p$



EM-37
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)
P CONTINUOUS NORMALIZATION



microvolts per amp metre

TX LOOP SIDES : 00100N 02000E
 : 00200S 01600E
TX LOOP SIZE : 400 m X 300 m
TX TURN OFF TIME : 177 microsecs.
FIRST GATE TIME : 88.5 microsecs.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 256 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SOCH
DATE : 09/12/1984

	SURVEYED AND COMPILED BY GOLDER PTY. LTD.		PROJEC 85-1E
	CLIENT : GOLD FIELDS EXP.		

PROJECT : STONEHENGE
AREA : TRIAL HARBOUR
LINE : 02000E Z
TX LOOP : 3

APPENDIX 5MITRE GEOPHYSICS REPORT ON INTERPRETATION OF UTEM RESULTSGRUBBS MINE AREA, STONEHENGE GRID

117

043119

2536B



MITRE GEOPHYSICS PTY LTD

MINERAL EXPLORATION AND ENGINEERING CONSULTANTS

BUGGS LANE ELLIOTT TASMANIA 7325 PHONE 004-363143

REPORT ON A UTEM SURVEY OVER GRUEB'S WORKINGS,
STONEHENGE GRID (E.L. 11/76).

for

Gold Fields Exploration Pty Ltd

by

Dr J.R. Bishop

GF/MG86/02
March, 1986.



SUMMARY

The follow-up UTEM survey over Grubb's workings defined a poor, unprospective response over the workings.

A more conductive response was recorded some 275m to the north of Grubb's (at 2600E/100S). However the data here is apparently degraded by noise and the anomaly is not considered good enough to constitute a drill target in its own right.

-----#-----
LIST OF FIGURES

This report is Appendix 5 to the report by Roberts (1986) and the figure numbers below refer to that report.

Figure 39. Interpretation of UTEM survey over Grubb's Workings (1:5,000 scale).

- UTEM profiles for lines: 2400E; 2600E; 2800E & 3000E (1:2,500 scale).



INTRODUCTION

A poorly defined anomaly was recorded over Grubb's workings during an EM37 survey of the Stonehenge grid (Bishop, 1985). A UTEM survey was commissioned to confirm and better define this anomaly. This report interprets the results from that survey.

EXPLORATION TARGET AND GEOLOGIC SETTING

The expected type of target is a Queen Hill or Severn-style tin deposit. That is, a pyrite or pyrrhotite hosted, cassiterite-stannite deposit within calcareous shales of the Pre-Cambrian Oonah Formation.

Such a deposit, depending on the amount of pyrrhotite, would probably be a good, but not an excellent, conductor. And if buried, it may or may not give a magnetic response. (There is no discernible magnetic response over Grubb's workings.)

EXPLORATION HISTORY

A summary of all exploration carried out on the Stonehenge grid up to 1984 is given by Komysan et al (1984). The geophysical surveys have been reported by Bishop, 1982 (Dighem survey); 1983 (IP and VLF); 1984 (interpretation of residual magnetics); and 1985 (EM37 survey).

SURVEY DETAILS

The survey was carried out by Lamontagne Geophysics in November, 1985. A single loop of 300m by 600m was laid out to the south of the workings and four lines, 200m apart, were read at 25m intervals (the length of line varying between 550m and 775m).

The vertical component only was read, at a base frequency of 26Hz. The results were plotted as continuously normalised profiles at 1:2,500 scale.

INTERPRETATION

The anomalies interpreted from the UTEM survey were generally in good agreement with those picked from the earlier EM37 survey (see Figure 1). In particular, the UTEM survey recorded a response over Grubb's workings in the same location as the EM37 survey (ie, at 2600E/375S).

The UTEM anomaly over Grubb's is not well-defined and is only recognisable on the early channels (9 to 7); ie, a very



poor and unprospective conductor is indicated. No quantitative interpretation has been attempted.

The 'best' anomaly recorded by the survey is at 2600E/100S. This also coincides with an EM37 survey response. The UTEM response is recognisable down to channel 2, however the decay curve is not consistent with that expected from induction of a finite (or semi-finite) body and I believe that the response may, at later times, be degraded by noise.

A fault or fracture is a likely source for this response, however if there is complementary geological or geochemical interest in this immediate area, then the UTEM does give a definite target:

location:	2600E/100S.
Strike length:	400m plus (interpreted to correlate with poorer responses to the east, but not to correlate with adjacent responses to the west: ie, ?cross-cutting fault).
Depth Extent:	large [*]
Depth to top:	25m to 50m [‡]
Dip:	?
Conductance:	?

CONCLUSIONS AND RECOMMENDATIONS

The UTEM survey over Grubb's Workings gave a better response than that recorded by the EM37 survey, however I do not consider it to be a prospective anomaly.

The survey recorded one anomaly, at 2600E/100S, which persisted to late times. A confident quantitative interpretation was not achieved for this response (due to ?noise at late time) and other criteria (geology; geochemistry) are required before drilling can be recommended. (Comparing this response with previous geophysical surveys, it has near-coincidence only with a VLF zone; shown in the anomaly compilation map (Bishop, 1983).)

J.R. Bishop
March, 1986

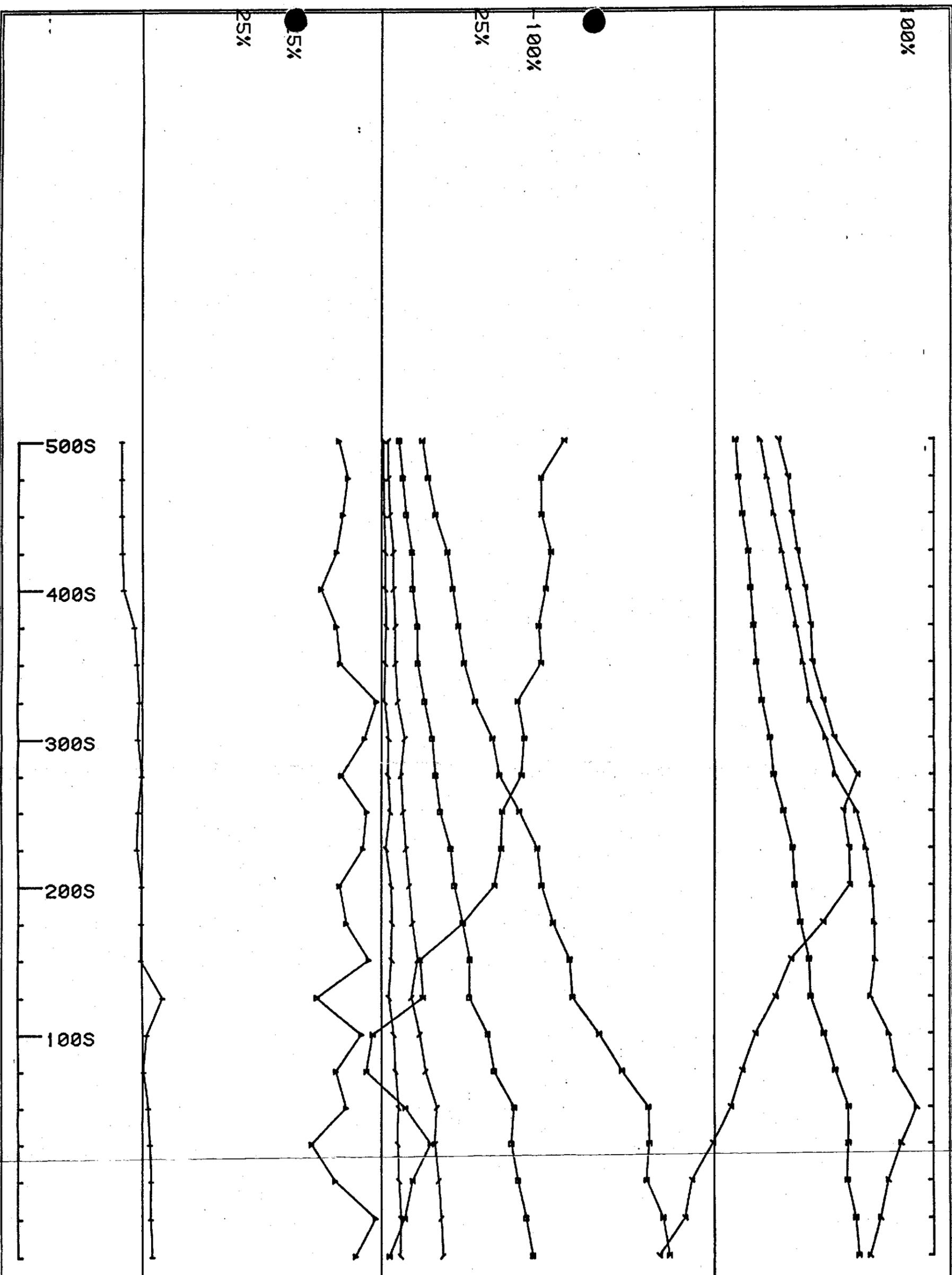
* Persistent negative section of response.

‡ Depending on the model and the data channels used.

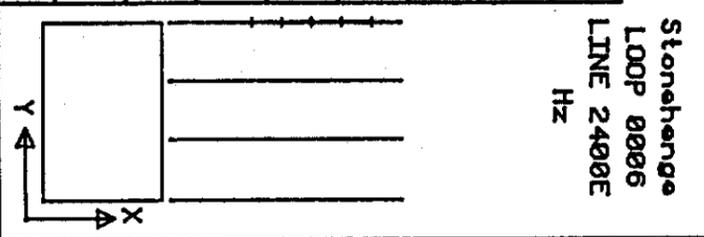


REFERENCES

- Bishop, J.R., 1982. A report on the Dighem survey over the Stonehenge area, SPL 129. Mitre Geophysics report 82/15 for Renison Ltd.
- Bishop, J.R., 1983. A report on the geophysical surveys over the Stonehenge grid, SPL 129. Mitre Geophysics report 83/04 for Gold Fields.
- Bishop, J.R., 1984. Stonehenge residual magnetic analysis, in: Komysan, P., Cartwright, A.J. and Roberts, P.A., 1984. E.L. 11/76 Trial Harbour area annual report for 1983/84 (appendix 6).
- Bishop, J.R., 1985. Interpretation of the EM37 survey over the Stonehenge grid, E.L. 11/76. Mitre Geophysics report 85/12 for Gold Fields.
- Komysan, P., Cartwright, A.J. and Roberts, P.A., 1984. E.L. 11/76 Trial Harbour area annual report for 1983/84 Gold Fields company report.
- Roberts, P.A., 1986. E.L. 11/76, Trial Harbour area: progress report December, 1984 to February, 1986. Gold Fields company report.

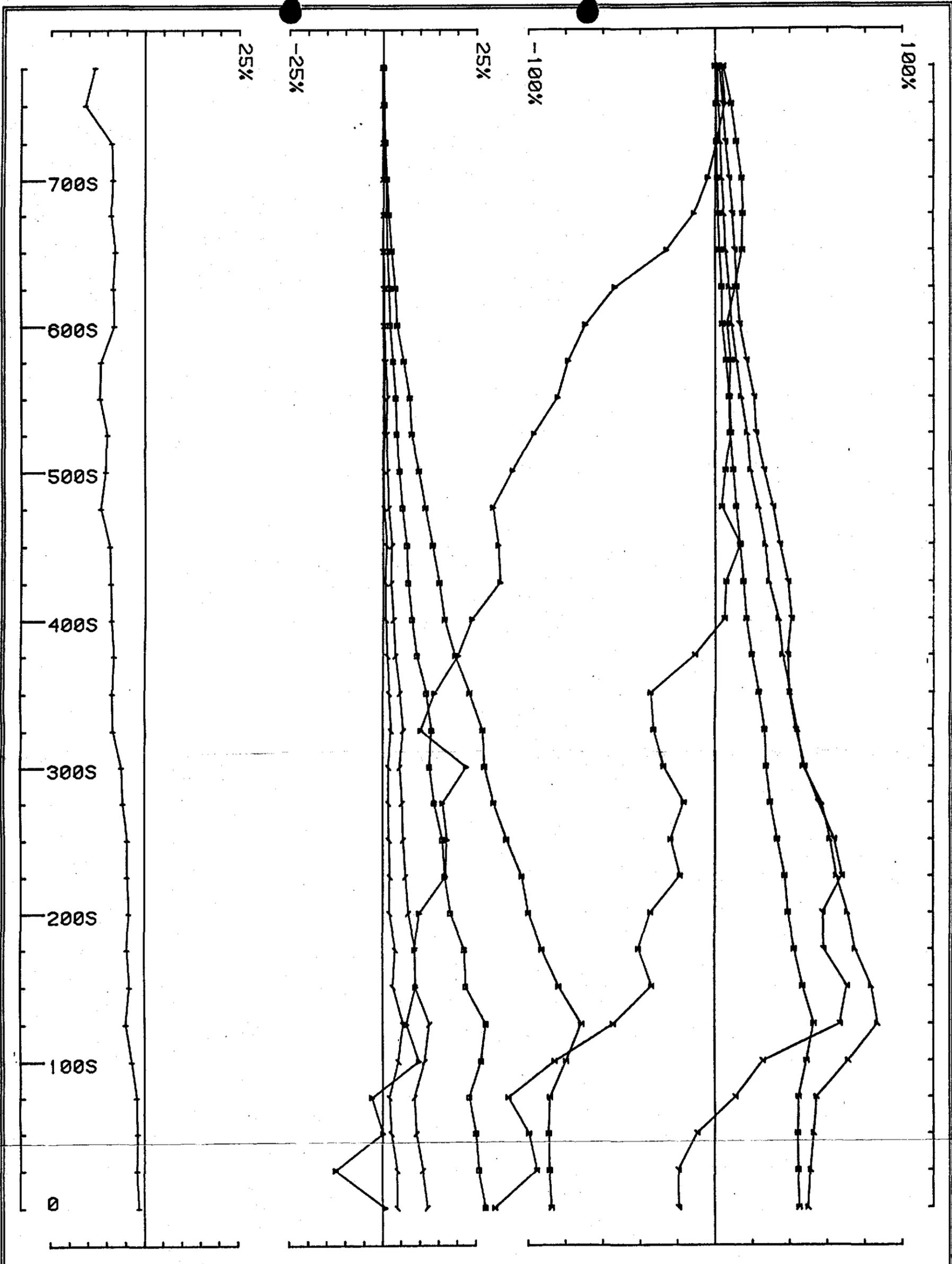


LAMONTAGNE GEOPHYSICS UTEM SURVEY Job 8507
 AREA :- Stonehenge
 CLIENT :- Goldfields CREW :- PMM GDM
 L2400E Hz COMPONENT BASE FREQ :- 26.230HERTZ
 SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

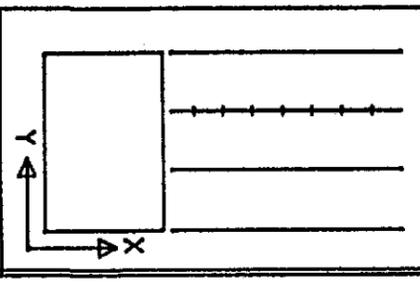


043124

122

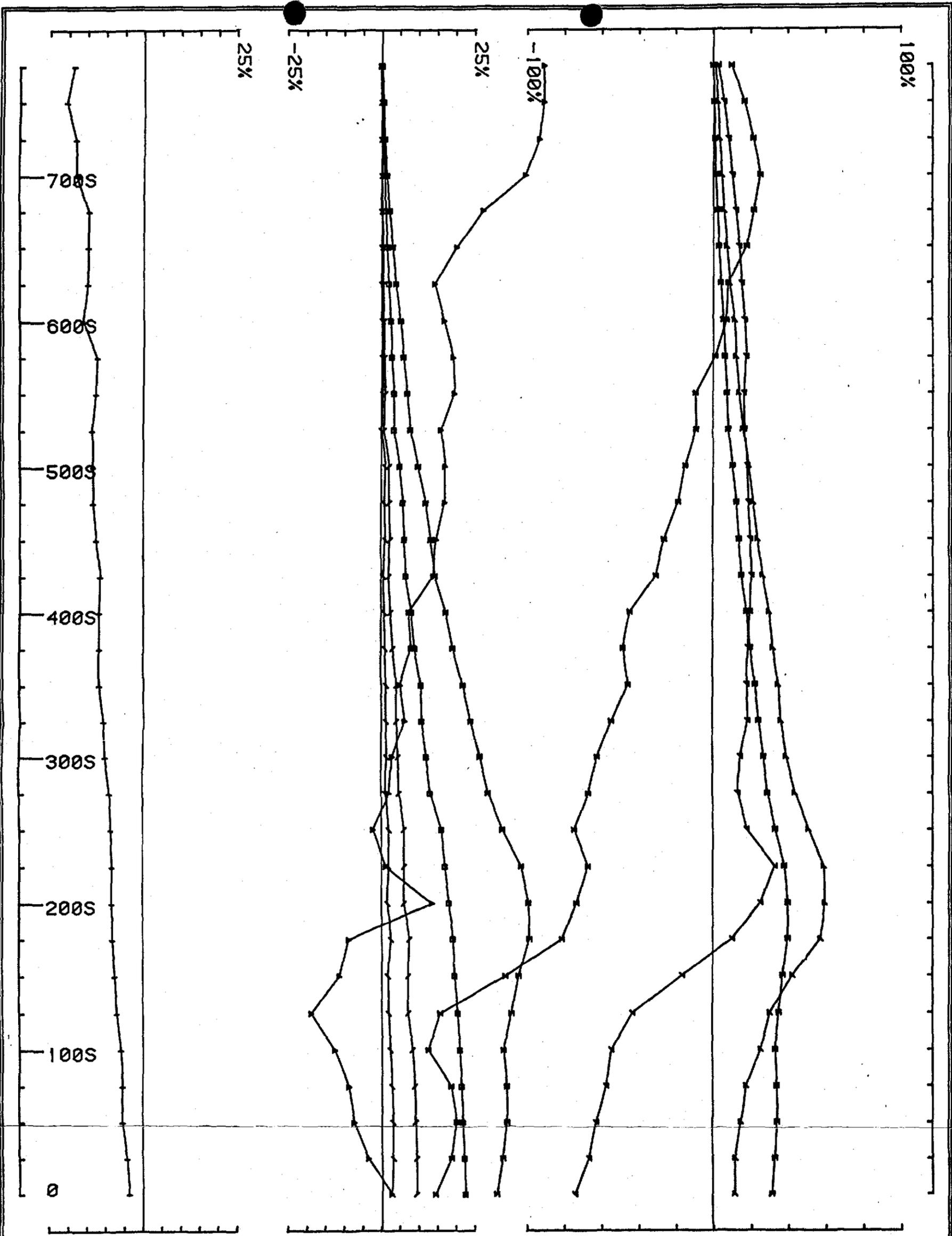


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
 AREA :- Stonehenge
 CLIENT :- Goldfields CREW :- PMM GDM
 L2600E Hz COMPONENT BASE FREQ :- 26.230HERTZ
 SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

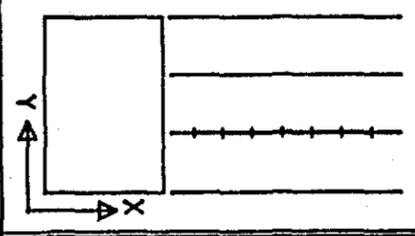


Stonehenge
 LOOP 0006
 LINE 2600E
 Hz

043125

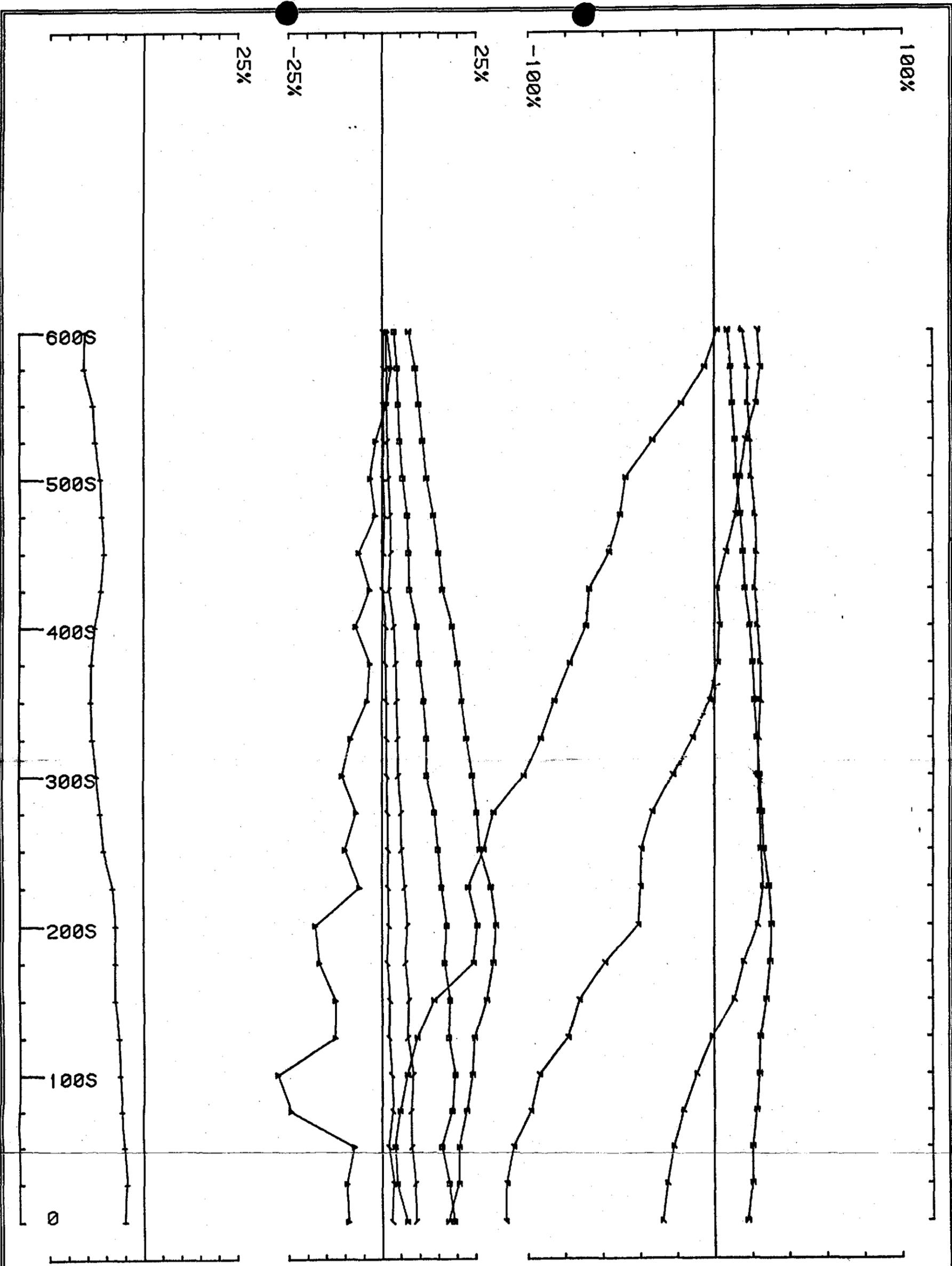


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
 AREA :- Stonehenge
 CLIENT :- Goldfields CREW :- PMM GDM
 L2800E Hz COMPONENT BASE FREQ :- 26.230HERTZ
 SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

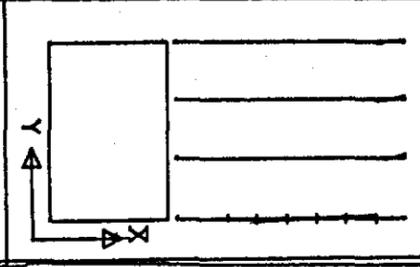


Stonehenge
 LOOP 0006
 LINE 2800E
 Hz

043126



LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
 AREA :- Stonehenge
 CLIENT :- Goldfields CREW :- PMM GDM
 L3000E Hz COMPONENT BASE FREQ :- 26.230HERTZ
 SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Stonehenge
 Loop 0006
 Line 3000E
 Hz

126

APPENDIX 6

MITRE GEOPHYSICS REPORT ON INTERPRETATION OF DOWNHOLE EM RESULTS

D.D.H. TH17



DOWN-HOLE ELECTROMAGNETIC SURVEY OF DDH TH17
STONEHENGE GRID (E.L. 11/76).

INTRODUCTION

A down-hole electromagnetic (DHEM) survey was carried out down DDH TH17 in February, 1986. A Sirotem system was used, recording at 5m intervals with the standard time-base.

Two square loops, 100m x 100m, were used for the survey. These have been designated the North and South loops (see Figure 39*).

RESULTS

The results obtained were disappointing; no responses indicative of potentially economic off-hole mineralisation were recorded (see attached profiles).

Both loops showed the effect of steel casing left in the hole between 21m and 75m. On the log from the South loop, the response above 90m (ignoring the effect of the casing) is a broad negative and this probably reflects the near-surface weathered calcareous sediments (shown by the IP survey to be moderately conductive). It may instead (or also) be due to graphitic shales logged in the interval 66m to 200m. There were no other responses on this log.

On the log from the North loop, there is no evidence of the shallower (stratigraphic) conductor, however there is a definite, negative trending, anomaly centred at 250m. 2.5m of pyritic breccia was intersected at 255m and this may be the cause of the response, although core tests suggest that the sulphides are not as conductive as the black shales (see attached table). Unfortunately tin values were extremely low and I have therefore not made any attempt to determine any parameters of the conductor. However the response is only local: ie, a large off-hole source is not indicated.

J.R. Bishop

J.R. Bishop
March, 1986

* in: Roberts, P.A., 1986. E.L. 11/76, Trial Harbour area: progress report December, 1984 to February, 1986. Gold Fields company report.



STONEHENGE GRID
PETROPHYSICAL MEASUREMENTS

Samples: Core from DDH TH17.

Measured by: Prof. D.W. Emerson, Uni. of Sydney.

Date: Feb., 1986.

SAMPLE No.	DEPTH (m)	MAGNETIC SUSCEPTIBILITY cgs x 10 ⁻⁶	POROSITY (%)	DRY BULK DENSITY t/c.m.	RESISTIVITY* ohm-m	RESISTIVITY† ohm-m	IP EFFECT [‡] milliradians	PETROLOGY
22/1	184	20-30	0.5	2.77	6.1-4.5	1405	63	black shales
22/2	229.5	30-80	1.1	2.80	6.1	257	109	black shales
22/3	255.5	70-100	0.5	3.48	0.3	223	201	massive sulphides
22/4	258.1	10	0.7	2.76	0.3-0.4	29	105	black shales

Comment

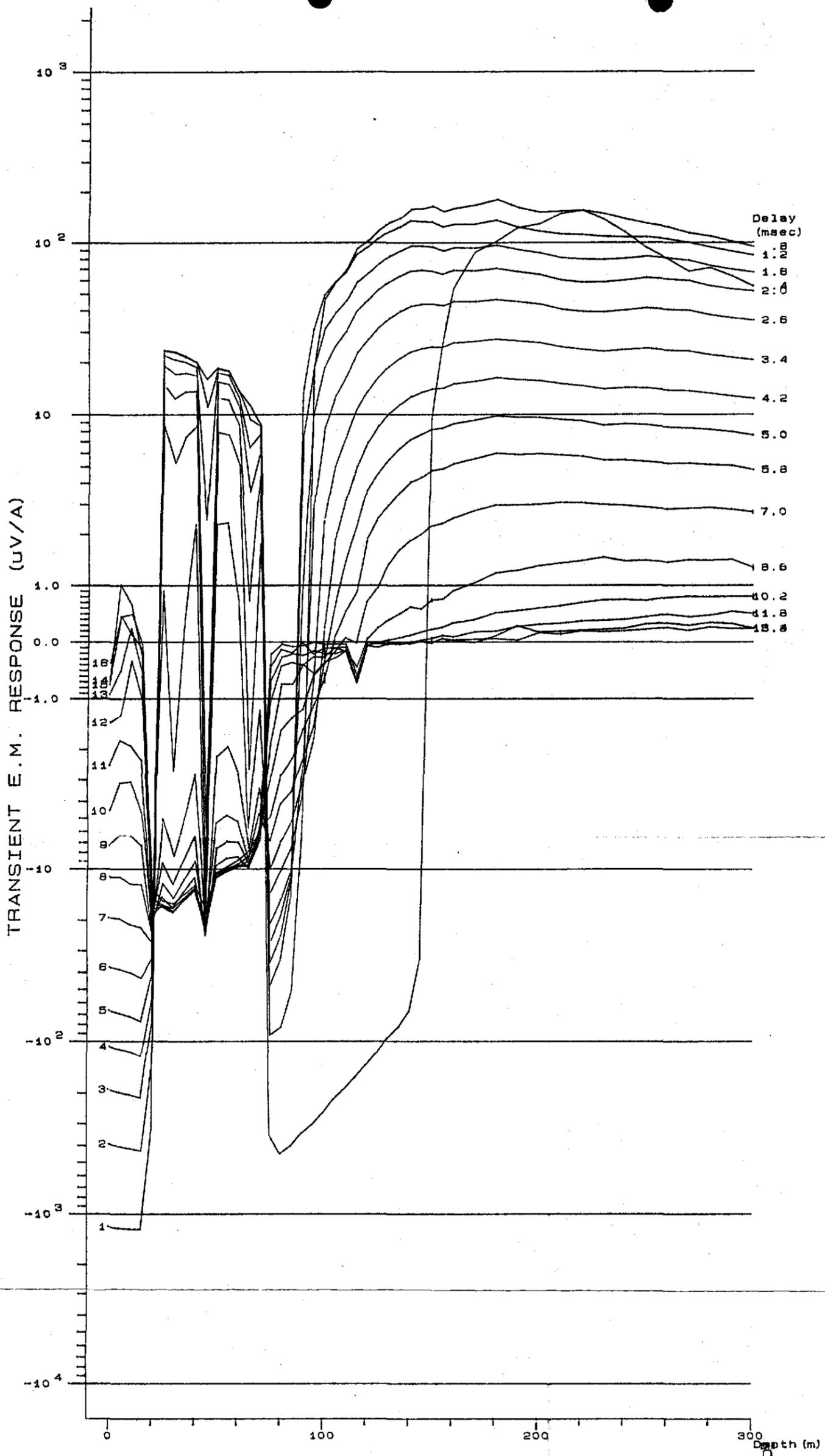
The conductivity of the black shales is variable, but can be considerably higher than that of the sulphide intersection. The sulphides are more chargeable and have a significantly higher density.

Note the discrepancies between measuring the resistivity galvanically (ie, as in IP) and inductively (ie, as in EM).

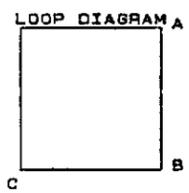
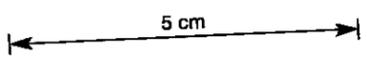
* measured inductively at 2.5 MHz.

† measured galvanically at 0.1 Hz.

‡ The parameter measured is phase angle. 10mr is approximately equivalent to 1PFE. Multiply by 6.0 (+/-) to convert to chargeability (mv/v).



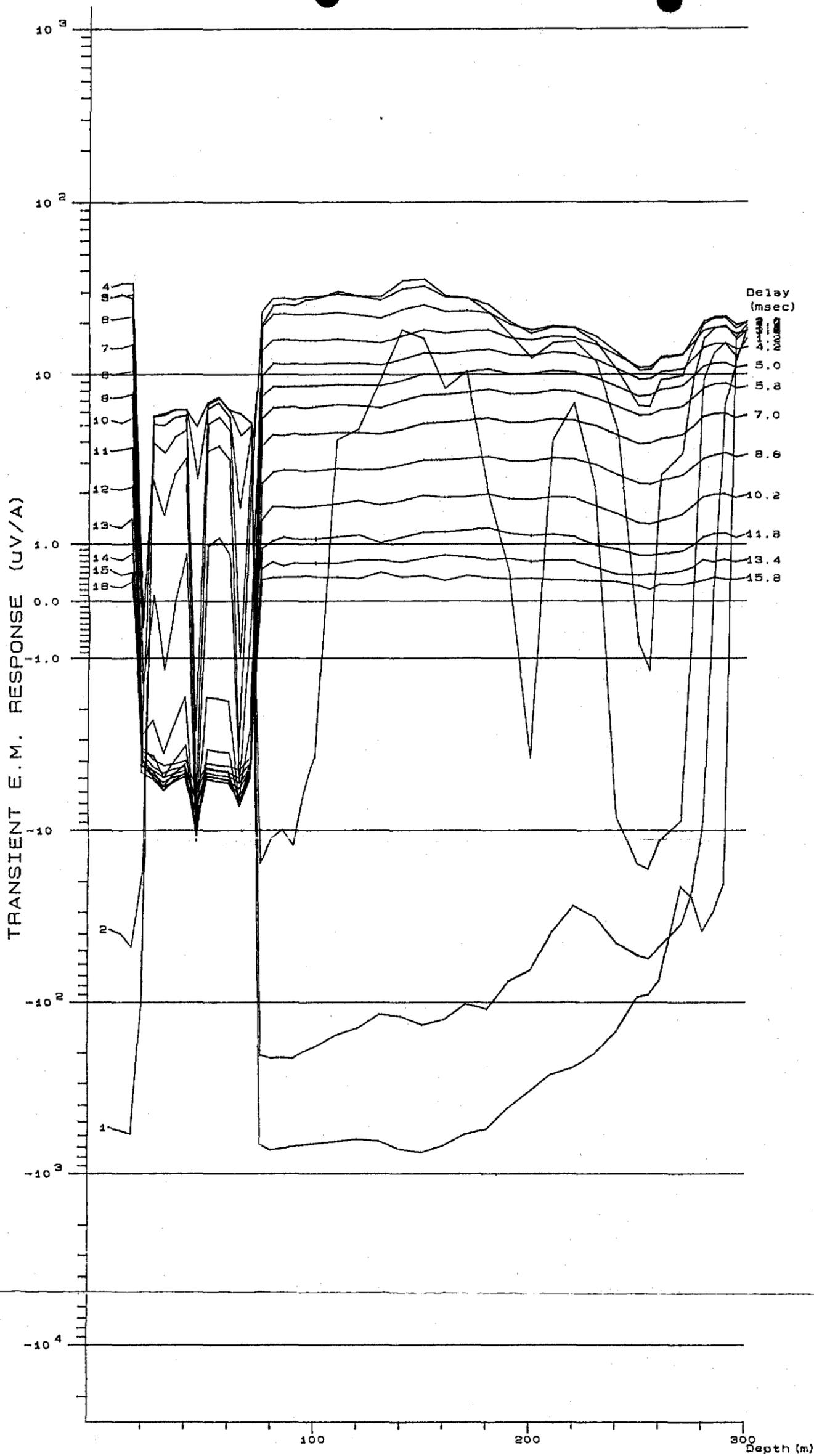
GOLDFIELDS EXPLORATION PTY.LTD.
 ZEEHAN TASMANIA
 STONEHENGE (JOB NO.613B)
 HOLE TH-17 10.2 AMPS
 SIROTEM Survey by SOLO Geophysics & Co. 16/ 2/86
 SOLO hole ref.507 Reading interval 5.0 m
 SCALE 1 : 2000 Loop size : 100 m
 LOOP configuration : Drill hole
 Plotted : 10:58 PM 3/ 4/86



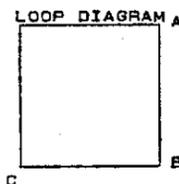
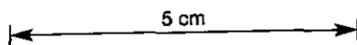
- A = (325N, 2200E)
- B = (225N, 2200E)
- C = (225N, 2100E)
- DH= (420N, 2100E)



043131
130



GOLDFIELDS EXPLORATION PTY.LTD.
 ZEEHAN TASMANIA
 STONEHENGE (JOB NO.613B)
 HOLE TH-17 12.8 AMPS
 SIROTEM Survey by SOLO Geophysics & Co. 16/ 2/86
 SOLO hole ref.508 Reading interval 5.0 m
 SCALE 1 : 2000 Loop size : 100 m
 LOOP configuration : Drill hole
 Plotted : 11:02 PM 3/ 4/86



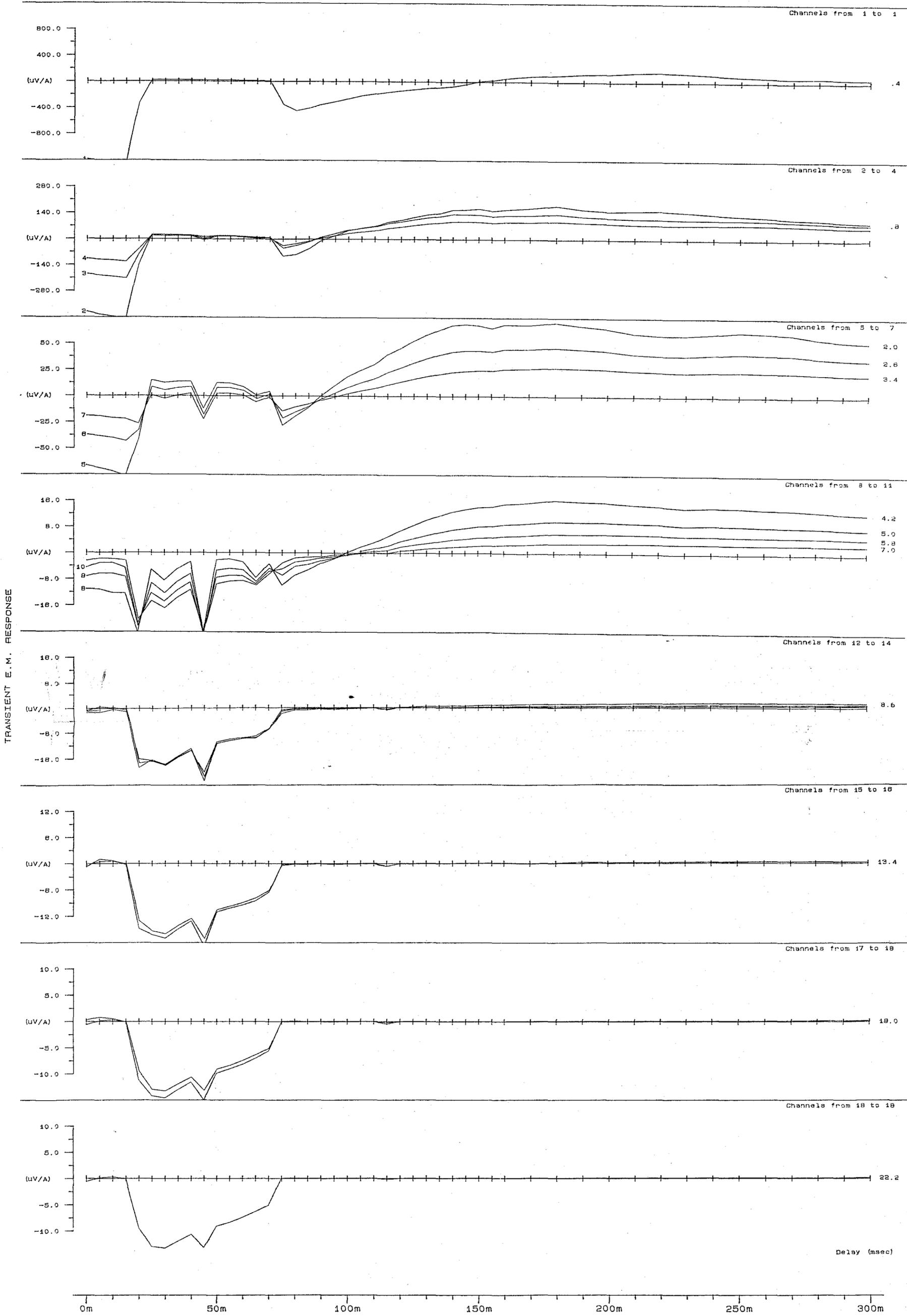
A = (550N, 1800E)
 B = (450N, 1800E)
 C = (450N, 1800E)
 DH = (420N, 2100E)

HO

SOLO

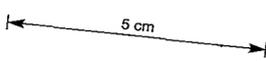
043132

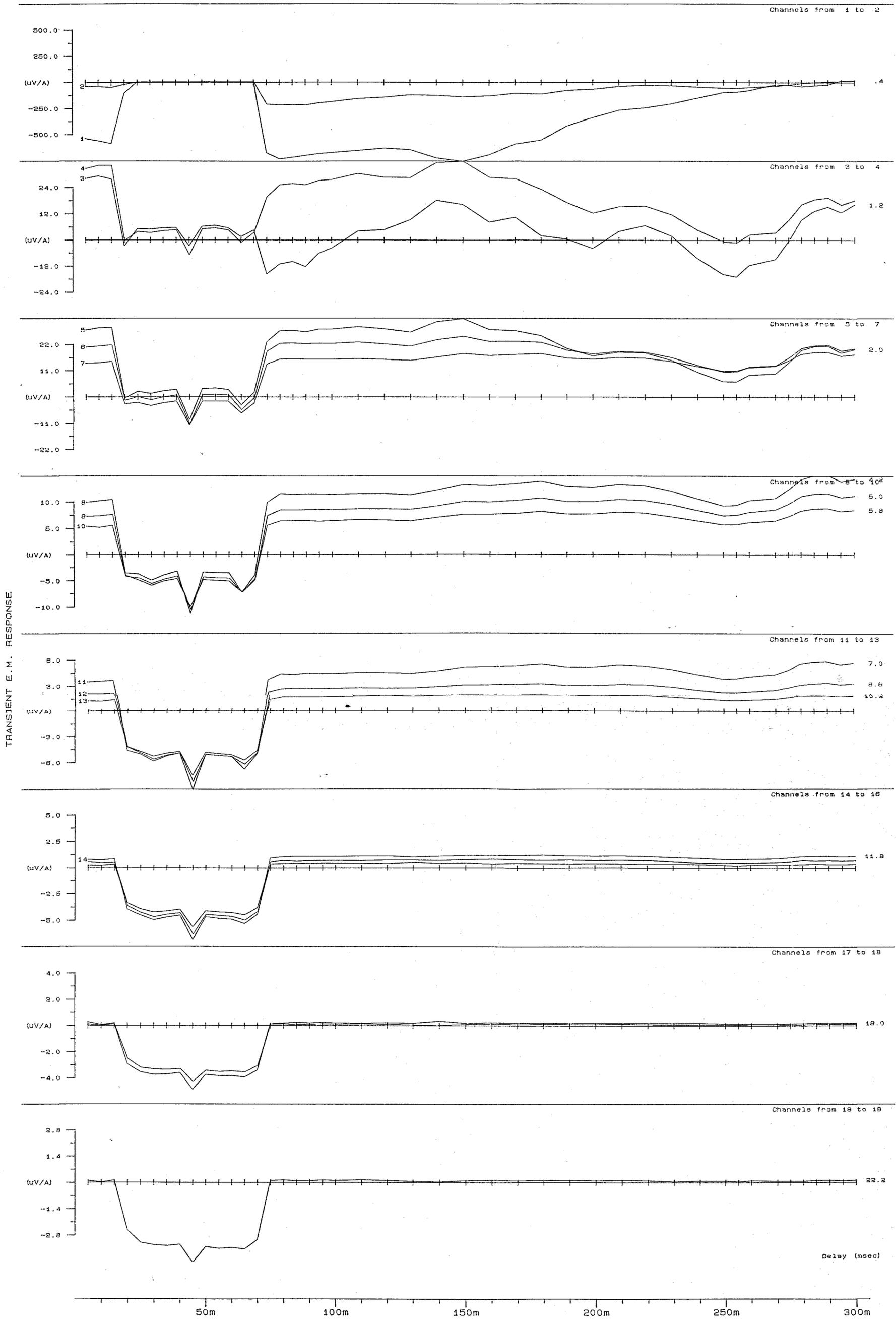
129



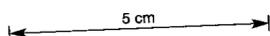
TRANSIENT E.M. RESPONSE

GOLDFIELDS EXPLORATION PTY.LTD.
 ZEEHAN TASMANIA
 STONEHENGE (JOB NO.613B)
 HOLE TH-17 10.2 AMPS
 SIRTEM Survey by SOLO Geophysics & Co.
 SOLO hole ref.507 Reading interval 5 m
 SCALE 1 : 1000 Loop size : 100 m
 LOOP configuration : Drill hole
 Plotted : 11:15 PM 3/ 4/86





GOLDFIELDS EXPLORATION PTY.LTD.
 ZEEHAN TASMANIA
 STONEHENGE (JOB NO.613B)
 HOLE TH-17 12.8 AMPS
 SIROTEM Survey by SOLO Geophysics & Co.
 SOLO hole ref.508 Reading interval 5 m
 SCALE 1: 1000 Loop size: 100 m
 LOOP configuration: Drill hole
 Plotted: 11:28 PM 3/ 4/86

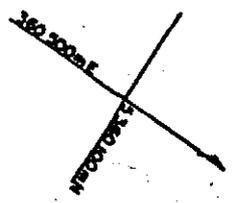
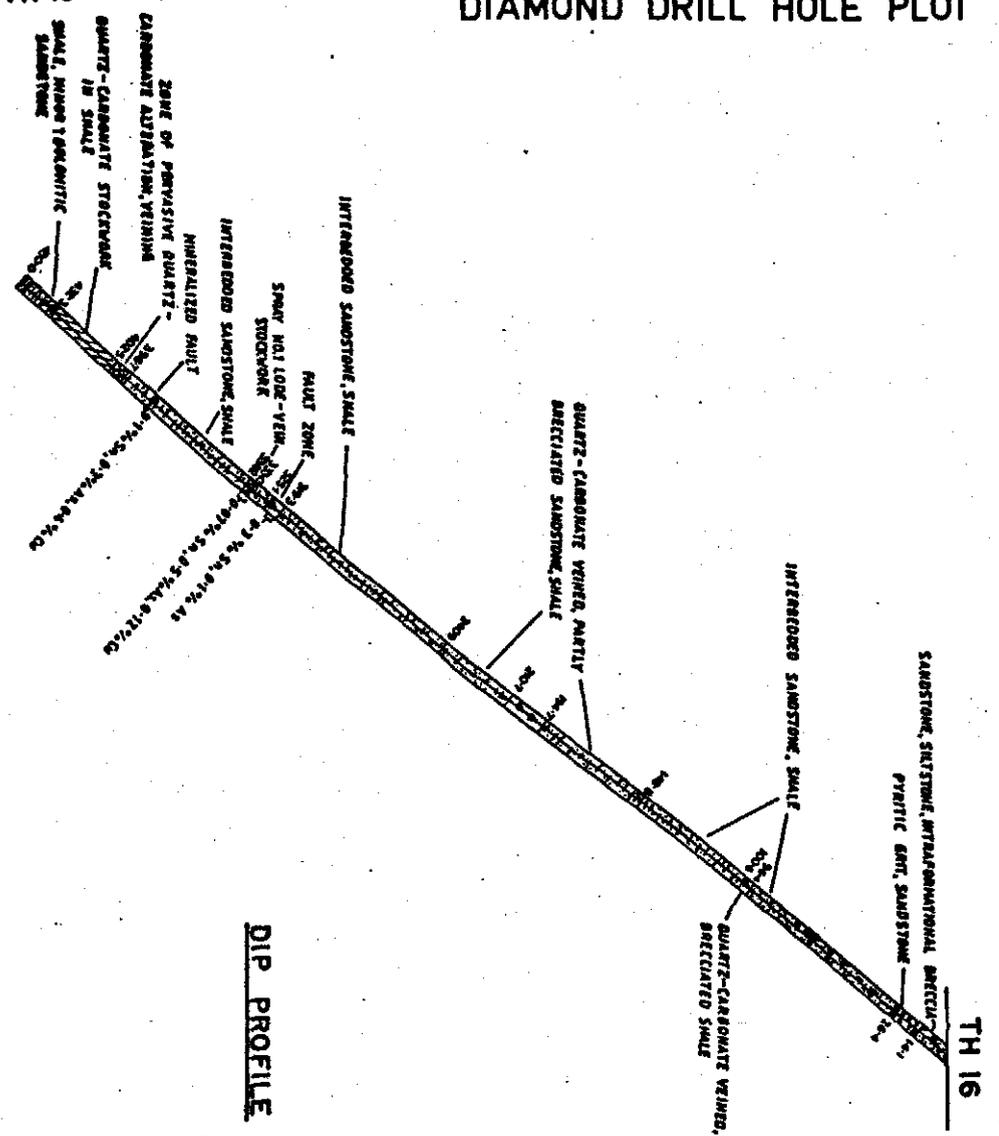
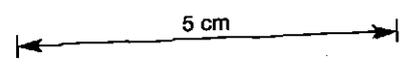


APPENDIX 7DIAMOND DRILL LOGS, TH16 AND TH17

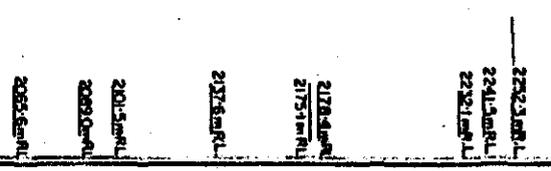
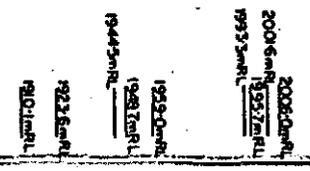
HOLE NO. TH 16

GOLD FIELDS EXPLORATION PTY. LIMITED DIAMOND DRILL HOLE PLOT

SCALE 1:



DIP PROFILE



GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 136

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA																
From	To	m	%		Sample No.	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi							
0.0	4.6	3.8	83	<u>SILTSTONE</u> Dark grey, laminated, BCA's 10-30°. Badly broken on bedding, joints and irregular fractures. 0.8m core loss. Includes: 3.6 - 4.6m Includes minor ?syn-sedimentary brecciation and fault textures.																	
4.6	12.0	5.3	72	<u>INTRAFORMATIONAL BRECCIA</u> Grey, yellow grey, comprises rip-up clasts of dark grey shale, ranging from 1 cm x 1 mm to >20 cm x 5 cm in size, set in a matrix of micaceous sandstone and abundant, rounded grit-sized (2 mm average) clasts of quartz and shale. Badly broken in part. 2.1m core loss. <u>Mineralization:</u> minor clasts of fine grained pyrite and pyritic shale, locally remobilized(?) into rare veins of quartz + coarser grained pyrite.																	
12.0	14.1	1.8	86	<u>SANDSTONE, MINOR SHALE</u> Pale yellow (weakly limonite stained) micaceous, massive sandstone. Average grain size 0.1 mm. Includes laminated black shale section, last 20 cm with BCA's of ~20°. Broken, 0.3m core loss.																	
14.1	26.4	11.0	89	<u>PYRITIC GRIT, SANDSTONE</u> Pale grey-brown and yellow-brown (limonite stained). Dominantly mineralized grit down to 19.5m, thereafter dominantly sandstone. Pyritic grit comprises 1-4 mm rounded clasts of pyrite, pyritic black shale, sandstone and quartzite, plus some voids (ex-pyrite or ex-carbonate), set in a white, siliceous matrix. Sandstone is fine grained, micaceous (muscovite), faintly bedded, BCA's 5-25°. Includes thin "horizons" of small (average 5mm x 0.5 mm) rip-up clasts and sandy, matrix-supported pyritic grit. Minor irregular quartz veins throughout.	2201	14.1	16.1	60	0.01	<0.1	0.01	0.04	0.06	0.003							
					2202		17.1	90	0.01	<0.1	<0.01	0.02	0.06	0.005							
					2203		18.1	95	<0.01	<0.1	0.01	0.08	0.40	0.001							
					2204		19.5	93	0.01	<0.1	0.01	0.04	0.04	0.002							

043138

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 2

137

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No.	From	To	Rec. %										
				Largely competent core. Includes:														
				19.5 - 20.8m: Intraformational breccia, similar to breccia at 4.6 - 12.0m except clasts are smaller, more densely packed and all are individually contorted.														
26.4	34.6	7.1	87	<u>QUARTZ-VEINED BLACK SHALE</u>														
				Largely massive black shale. Numerous irregular quartz veins. Finely mottled texture and rare boudinaged pyritic beds (1 - 2 cm thick) suggest BCA's of 5 - 30°. Badly broken on slicken-sided, graphitic fracture surfaces. 1.1m core loss.														
34.6	38.1	3.5	100	<u>VERY FINE GRAINED SANDSTONE</u>														
				Pale grey-brown, faintly bedded, BCA's 30 - 45°. Minor veins of quartz and veinlets of sideritic carbonate. Competent core.														
38.1	43.5	5.3	98	<u>SILTSTONE AND SHALE</u>														
				Laminated grey siltstone and black shale (average bed thickness 5 mm) for first 0.9m. Beyond there, becomes more massive and/or disrupted/weakly brecciated by quartz and yellow quartz-siderite(?) veinlets, minor thin dykes(?) of black shale squeezed in along fractures in siltstone. Includes minor bands of massive fine grained pyrite 3 - 5 cm thick bottom 3m of intersection, and some remobilized coarser grained pyrite associated with quartz and carbonate veins. BCA's vary 0 - 70°, average 50°. Core broken along graphitic fractures. 0.1m core loss. Includes:														
				43.5m Two, thin (2 - 5 mm) galena veins.														

043139

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 3

138

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No.	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi				
43.5	96.4	52.9	100	INTERBEDDED SANDSTONES, SHALES AND SILTSTONES	2205	43.3	45.3	100	0.01	0.3	<0.01	0.25	0.03	0.004				
					2206	45.3	47.3	100	0.01	<0.1	<0.01	<0.01	0.01	0.002				
				Sandstones pale grey, finer grained sediments dark grey. Sandstones very fine grained and generally massive, locally micaceous. Finer grained sediments laminated. Sandstone and shale finely interbedded in places (laminae 1 - 10 mm). Folded, minor brecciation and microfaults; black shale locally injected along fractures in sandstone. Thin veins (1 - 10 mm) of white quartz ± yellow (?) sideritic carbonate; also very thin, dark-blue grey siliceous veins 43.5 - 48.6m. ?Graded bedding, younging down-hole at 54.6m. BCA's:	2207	47.3	48.6	100	0.01	<0.1	0.01	<0.01	0.01	<0.001				
				43.5 - 49.5m 10-30°														
				49.5 - 63.0m 60-80°														
				63.0-69.5m 0-60° (folded, one overturn observed at 68.4m)														
				69.5 - 72.5m 30-45°														
				72.5 - 77.6m 70-85°														
				77.6 - 87.5m Partly contorted, disrupted by brecciation. Average ~ 60°														
				87.5 - 91.1m 65-90°														
				91.1 - 94.4m Contorted, 0-60°														
				94.4 - 96.4m 50-80°														
				Generally fairly competent - breaks on joints, quartz veins and bedding. Traces of ?syngenetic pyrite in both sandstone and shale. Includes:														
				58.9 - 60.2m: Breccia, looks intraformational, however veins largely in sandstone clasts and usually terminate on contact with black shale matrix.	2208	77.1	78.1	100	0.01	<0.1	0.01	<0.01	0.01	<0.001				
					2209		79.1	100	0.01	<0.1	0.01	0.01	0.01	<0.001				
					2210		80.1	100	0.01	<0.1	0.01	0.05	0.01	<0.001				
					2211		81.1	100	0.01	<0.1	0.01	<0.01	0.04	<0.001				
				77.1 - 83.3m: Zone of relatively intense quartz/carbonate veining with local tectonic brecciation. Minor syngenetic and vein pyrite.	2212		82.1	100	0.01	<0.1	0.01	0.01	0.02	<0.001				
					2213		83.3	100	0.01	<0.1	0.01	0.01	0.02	<0.001				

043140

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 4

135

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No	From	To	Rec. %	S _n	As	Cu	Pb	Zn	Bi				
96.4	100.6	3.6	86	QUARTZ/CARBONATE VEINED AND BRECCIATED SHALE	2214	96.4	97.4	100	0.01	<0.1	0.01	<0.01	0.01	<0.001				
					2215	97.4	98.4	100	0.01	<0.1	0.01	0.01	0.01	<0.001				
				Zone of white quartz/yellow sideritic carbonate veining and brecciation. Minor pyrite. Partly badly broken. 0.6m core loss.	2216	98.4	99.4	50	0.01	<0.1	0.01	0.01	0.02	<0.001				
					2217	99.4	100.6	92	0.01	0.2	0.01	0.01	0.02	<0.001				
100.6	148.8	48.2	100	INTERBEDDED SANDSTONE AND SHALE														
				Essentially the same as 43.5 - 96.4m except generally less brecciated, contorted and quartz/carbonate veined, except in top 10m. Generally competent core - breaks on bedding and, less frequently, joints, veins. BCA's:														
				100.6 - 111.0m Contorted, 0-70°														
				111.0 - 120.1m 45-90°, average 60°														
				120.1 - 121.7m Folded 0-60°, one definite overturn at 120.3m														
				121.7 - 148.8m 50-85°, average 60°														
				Includes:														
				107.5 - 109.9m: Relatively intense quartz/carbonate veining with traces of base metal sulfides and pyrite and minor brecciation.	2218	107.5	108.5	100	0.02	<0.1	<0.01	0.01	0.02	<0.001				
					2219	108.5	109.9	100	0.03	<0.1	0.02	0.01	0.05	<0.001				
148.8	240.9	87.8	95	QUARTZ/CARBONATE VEINED, PARTLY BRECCIATED SANDSTONE/SHALE														
				Interbedded pale grey, very fine grained sandstone and black partly graphitic shale. Pervasively veined by white to grey quartz and carbonate veinlets and including a series of brecciated zones (detailed below). Occasional thicker (>1 cm) white quartz veins. Apart from intensity of veining/brecciation, similar to 43.5 - 96.4m. BCA's:														
				154.5 - 159.2m 45-85°														
				163.3 - 165.1m 40-50°														
				165.1 - 170.9m Folded, 0-80°														
				170.9 - 180.0m 70-85°														

043141

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 5

140

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA															
From	To	m	%		Sample No	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi						
				180.0 - 182.9m	Folded, disrupted by brecciation, 0-50°															
				184.6 - 187.2m	60-70° (faint bedding)															
				190.6 - 194.7m	0-25°															
				213.0 - 220.4m	Contorted, disrupted by brecciation, generally around 0°															
				220.4 - 231.1m	As above, but averaging 40°															
				231.1 - 235.5m	As above, but averaging 80°															
				Regular breaks on bedding, joints, both of which are commonly graphitic. 4.3m core loss generally associated with soft breccias. Includes:																
				148.8 - 152.1m	Zone of intense veining and brecciation; angular sandstone clasts in shale matrix.															
				159.2 - 159.4m	Breccia as above.															
				161.3 - 164.1m	White quartz veining and breccia similar to 58.9 - 60.2m, i.e. looks intraformational, however veins largely in sandstone clasts and terminate on contacts with black shale matrix.															
				181.5 - 181.8m	White quartz veined breccia with puggy shale matrix.															
				183.5 - 184.2m	Badly broken zone, 0.4m core loss probably due to veins of black pug.															
				190.1 - 192.7m	Badly broken zone. BCA's around 0°. Comprises black graphitic shale with puggy interbeds. 0.4m core loss.															
				2220	201.5	203.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001							
				2221		205.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001							

043142

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 6

141

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA									
From	To	m	%		Sample No	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi
				194.7 - 210.7m: Zone of intense brecciation and veining, 0.9m core loss	2222	216.0	218.0	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001
					2223		220.0	85	0.01	<0.1	<0.01	<0.01	0.01	<0.001
					2224		222.0	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001
				210.7 - 240.9m: As above but less intense with intervals of unaffected sediments. 1.6m core loss. From	2225		224.0	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001
				214.0 to 234.0m, the core is patchily limonite stained (ex-minor sulfides).	2226		226.0	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001
					2227		228.0	90	0.01	<0.1	<0.01	<0.01	0.01	<0.001
240.9	396.7	149.2	96	INTERBEDDED GREY SHALES AND SANDSTONE										
				Relatively monotonous, compared to rest of hole, interbedded dark grey shales and pale grey, fine grained sandstone. Shales are graphitic and there are graphitic bedding partings in sandstones. Local very fine grained syngenetic pyrite in blacker shales. Minor quartz-carbonate veining throughout. Broken on bedding planes and lesser joints; graphitic bedding plane breaks become very numerous 330 - 360m. 6.6m core loss concentrated in two major broken zones. Some confusion about actual core loss because core block markers show an additional metre between 326.8 and 328.8m; it is assumed that the error was made between 319.3 and 321.0m where there is an apparent loss of 1.2m (alternatively it is possible that all depths from 328.8m to the end of the hole are 1.0m out). Locally strong cleavage development. BCA's:										
				240.9 - 250.5m 30-75°, average 50°										
				- 254.0m 0-15°										
				- 316.1m 30-70°, average 50°										
				- 324.6m Contorted, disrupted by brecciation										
				- 362.0m 60-90°, average 80°										
				- 396.7m 0-50°, partly contorted and disrupted by brecciation										
				Includes:										
				280.5 - 281.8m: Partly badly broken zone, locally sheared and weak sulfide mineralization (limonite staining) associated with quartz veins. 0.55m core loss.										

043143

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 7

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA										
From	To	m	%		Sample No.	From	To	Rec %	Sn	As	Cu	Pb	Zn	Bi	Sn (check Revision Method)
				283.6 - 283.7m: Pyritic grit horizon with clasts of massive pyrite.											
				293.5 - 298.2m: Zone including several thicker sideritic carbonate (% quartz) veins, up to 4 cm thick, associated with minor pyritic breccias. VCA's generally 0-30°. Last 0.5m most strongly mineralized.	2228	293.5	294.5	100	0.02	<0.1	<0.01	<0.01	<0.01	<0.001	
					2229		295.5	85	0.02	<0.1	0.01	0.01	0.01	<0.001	
					2230		297.7	100	0.02	<0.1	0.01	<0.01	0.01	<0.001	
					2231		298.2	100	0.03	0.4	0.02	0.01	0.01	<0.001	
				311.2 - 316.1m: Zone of frequent, thick quartz veins (<15 cm) with irregular contacts and including slivers of black shale, hosted by sandstone.	2232	316.6	318.6	100	0.02	<0.1	<0.01	0.02	<0.01	<0.001	50
					2233		319.6	75	0.02	<0.1	<0.01	<0.01	0.01	<0.001	80
				319.3-325.1m: ?Fault zone. Badly broken throughout. 2.0m core loss. Heavy quartz, lesser carbonate veining, minor pyrite. Probably largely brecciated; core in such small fragments, generally, that this is unclear but some breccia textures seen in larger pieces. Intense carbonate veining seen in 3m interval above this zone.	2234		321.6	58	0.03	<0.1	<0.01	0.01	0.01	<0.001	210
					2235		323.6	90	0.04	0.2	0.01	0.01	0.01	<0.001	340
				333.0 - 336.2m: Stockwork of pyrite and quartz veins and veinlets in partly silicified shale and lesser sandstone. Pyrite locally massive with minor chalcopyrite.	2236	333.0	334.0	100	0.10	0.3	0.38	<0.01	0.03	<0.001	990
					2237		335.0	100	0.03	<0.1	<0.01	<0.01	0.01	0.002	200
					2238		336.2	100	0.07	1.0	0.01	0.01	0.01	0.003	630
				366.0 - 382.8m: Partly sheared/brecciated throughout with abundant fine carbonate veins and culminating in a fault pug at 382.3 - 382.4m and a zone of carbonate-quartz-pyrite (chalcopyrite) veining thereafter.	2239	382.3	382.8	100	0.10	0.4	0.21	0.16	0.03	<0.001	880
				390.7 - 396.7m: Increasingly broken and brecciated towards bottom contact. 2.8m core loss.											
				Lower Contact sharp at 70°.											

043144

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 8

143

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA											
From	To	m	%		Sample No.	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi	Ag	Au
396.7	402.5	5.8	100	SPRAY NO.1 LODE? *												
				Intensely silicified and carbonated ?fine grained sediment	2240	394.7	396.7	75	0.01	<0.1	<0.01	0.01	0.01	0.001		20
				with traces of weak fine grained pyrite mineralization near	2241		397.7	100	0.02	<0.1	<0.01	<0.01	<0.01	<0.001		<10
				lower contact, where breccia textures are apparent.	2242		398.7	100	0.03	<0.1	0.50	0.01	0.01	<0.001		100
				Yellow vein material; sediment remnants are pale green-yellow.	2243		399.7	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		60
				Contacts marked by colour change. Fairly competent core, breaks	2244		400.7	100	0.03	<0.1	<0.01	<0.01	0.01	0.001		240
				on irregular fractures.	2245		401.7	100	0.03	<0.1	<0.01	0.01	0.01	<0.001		230
					2246		402.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001		80
				Lower contact marked by 2.5 cm wide pyritic breccia at 60°												
				to c.a.												
				Petrology samples: 396.8m, 398.6m.												
402.5	432.3	29.8	100	QUARTZ-CARBONATE STOCKWORK	2247	402.5	404.5	100	0.02	<0.1	<0.01	<0.01	0.01	<0.001		160
					2248		406.5	100	0.02	<0.1	<0.01	<0.01	0.01	<0.001		170
				Zone of intense quartz-carbonate stockwork veining of laminated	2249		408.5	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		
				pale green-grey shale. Locally totally silicified. BCA's	2250		410.5	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		
				where visible 0-80°, generally <15°. Competent core - breaks	2251		412.5	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		
				on irregular fractures.	2252		414.5	100	0.01	<0.1	<0.01	<0.01	0.01	0.003		
					2253		416.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001		
				Petrology Samples: 417.7m, 422.8m.	2254		418.5	100	0.01	<0.1	<0.01	0.01	0.01	<0.001		
					2255		420.5	100	0.02	<0.1	<0.01	<0.01	0.01	<0.001		
					2256		422.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001		
					2257		424.5	100	0.01	<0.1	0.09	<0.01	0.01	<0.001		
					2258		426.5	100	0.01	<0.1	<0.01	<0.01	0.01	<0.001		
					2259		428.5	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		
					2260		430.5	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001		
					2261		432.3	100	0.02	<0.1	<0.01	<0.01	0.01	<0.001		
				* Note: Not now interpreted as Spray No.1 lode												
				P.R. March, 1986.												

043143

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 11/76

HOLE NUMBER: TH16

Page: 9

144

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No.	From	To	Rec. %										
432.3	435.6	3.3	100	<u>BLACK SHALE</u>														
				Laminated, contorted, graphitic black shale. Minor quartz-carbonate veining. Minor pyrite mineralization.. BCA's average 30°.														
				<u>Lower Contact</u> is a brecciated "mixture" of shale and underlying lithology.														
435.6	448.3	12.7	100	<u>SHALE AND ?DOLOMITIC SANDSTONE</u>														
				Lithology similar to 402.5 - 432.3m except much less veined and with interbeds of a pale grey granular unit which looks like a carbonate but does not effervesce on application of acid, and contains very fine grained disseminated pyrite. Intensely veined and brecciated near upper and lower contacts. Competent core. BCA's 15-35°.														
				<u>Petrology Sample:</u> 441.6m.														
448.3	450.0	1.7	100	<u>CONTORTED GREY SHALE</u>														
				Finely laminated. In places, "lamination" looks like a cleavage. BCA's 0-60°. Broken on bedding surfaces and joints. Minor quartz-carbonate veining.														
				<u>449.6 - 449.8m:</u> Includes ?phenocrysts of quartz ± carbonate? - could be dismembered vein material?														
				<u>Petrology Sample:</u> 449.7m														
				<u>END OF HOLE</u>														

043146

GOLD FIELDS EXPLORATION PTY LIMITED
DRILL CORE RECORD

147
HOLE NO: TH16
STATE : TAS.

REPORT CMS 85/10/27

Six drill core samples from TH 16 in the Trial Harbour E.L. were received for petrological examination. Representative thin-sections were prepared and examined together with the respective offcuts, with carbonate stain tests performed as warranted. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite consists of variably veined and altered sedimentary rocks, including psammitic, pelitic and dolomitic variants.

The major alteration feature comprises sideritic carbonation, variously vein-controlled and/or metasomatic, with semi-ubiquitously associated secondary quartz and barite. The Fe-carbonate, where metasomatic, is clearly dolomite-replacive with broad affinities to the marginal Fe-carbonation zones at Renison. Temporally, the bulk of alteration postdates a weak tectonic fabric, but detail in some rocks is obscured by subsequent stress and brecciation effects.

Minor pre-carbonation tourmaline metasomatism is evident locally and enhances a marginal contact alteration interpretation. Altered rocks appear unmineralised apart from disseminated recrystallized syngenetic pyrite.

D. Cowan, B. Sc.

T 872/TH 16 - 396.8 m (T.S. 54771)

This rock may be classified as a breccia.

Major features comprise randomly sized and variably stressed quartz and sideritic carbonate grains and carbonate-quartz composite aggregates with vein-type characteristics. These features are accompanied by subordinate contorted clasts of sericitic pelite and quartzose silty to fine sandy pelite with zones of fine-grained quartz-siderite rock, apparently representing selectively altered impure dolomite interbeds.

The rock is cemented with fine-grained to microcrystalline carbonate films with interspersed zones of mylonitised pelite and more or less pervasively disseminated fine angular (granulated) quartz grains.

Fine pyrite euhedra are disseminated throughout the pelite clasts and appear to represent a (recrystallized) syngenetic component, although locally remobilised into secondary stringers. Traces of barite are present as micro-inclusions in the brecciated vein-quartz(-carbonate) component.

T 873/TH 16 - 398.6 m (T.S. 54772)

This sample represents a veined, altered and fractured to brecciated calcareous pelite.

The host rock exhibits a crenulated and boudinaged banded phyllitic fabric and consists largely of fine-grained sideritic carbonate and semi-sericitic white mica with relatively minor silt-sized quartz. Relict features are consistent with a calcareous, slightly quartzose silty pelite, grading into an impure limestone (or dolomite). This rock is very incipiently carbonaceous and pyritic and exhibits sporadic discontinuous stressed veinlets of barite and carbonate.

The vein-like mass (hand specimen) is a breccia essentially similar to that at 396.8 m. This zone includes semi-mylonitised clasts of pelite interspersed with irregular patches and clasts of sideritic carbonate with subordinate partly intergrown vein-type quartz, sporadic clasts of sideritic carbonate-stained, cherty, microcrystalline quartz (altered dolomitic chert), silt- to sand-sized quartz grains and sporadic patches and laths of barite intergrown with the (brecciated) carbonate vein component. As at 396.8 m, the matrix consists of microcrystalline carbonate with interspersed zones of mylonitised, carbonate-stained sericitic pelite. Thinly disseminated fine pyrite appears as "mechanical inclusions" in the breccia or, elsewhere, hosted by the carbonated pelite and chert components.

T 874/TH 16 - 417.7 m (T.S. 54773)

This rock may be categorised as a veined and altered argillaceous orthoquartzite.

The host rock consists of a weakly bedded, moderately to well sorted framework of fine to medium sand-sized subangular quartz grains with a semi-sericitic white mica cement. The framework is incipiently recrystallized. The sericitic matrix includes a little cherty microcrystalline quartz. Detrital apatite, zircon, sericitic quartz grains, sericite pellets, leucogenic semi-opaques

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

HOLE NO: TH16
STATE : TAS.

and muscovite flakes are accessory clastic components.

Sericite aggregates are weakly but variably and semi-pervasively stained with fine-grained (mean 20 μ) dark green schorl. These mild metasomatic (tourmalinisation) effects predate development of irregular discontinuous veinlets and millimetric-scale replacive aggregates of sideritic carbonate and fine-grained quartz.

In contrast to the T 872 and T 873 samples, the vein/replacive assemblage is devoid of barite and does not reflect the late stress and brecciation effects.

T 875/TH 16 - 422.8 m (T.S. 54774)

This rock may be classified as an altered pelite and consists of fine to semi-sericitic white mica and microcrystalline sideritic carbonate in varying proportions with subordinate quartz as weakly corroded relict detrital silt-sized grains. Quartz exhibits a banded distribution in sub- to millimetric-scale siltstone and silty shale units with intercalated planar to lensoid relatively massive shale units. Siderite is more or less pervasive, but is concentrated in the silty units, with a bedded distribution consistent with altered (Fe-metasomatised or "sideritised") dolomite.

This rock includes thinly dispersed spongy siliceous pyritic lenses and stringers, representing mildly boudinaged diagenetic nodules and veinlets. Sporadic concordant to low-angle discordant, incipiently stressed siderite-quartz veinlets appear broadly contemporaneous with a weak concordant slaty cleavage. A late, relatively massive, high-angle discordant, weakly displacive siderite vein is essentially unstressed.

T 876/TH 16 - 441.6 m (T.S. 54775)

This sample represents an essentially unaltered dolomitic psammopelite.

The sectioned area includes a weakly bedded sandstone unit in contact with a laminated pelite. The sandstone is quartzose (orthoquartzitic) with a moderately sorted framework of fine to medium sand-sized subangular quartz grains supplemented by minor clasts of sericitic shale, chert and dolomitic chert, muscovite flakes and accessory zircons, tourmaline and leucoxenitic semi-opaques. A prominent mildly corrosive dolomite matrix includes a little semi-sericitic white mica and minor accessory proportions of microgranular quartz.

The pelite is similar to that at 422.8 m, but is relatively finely laminated with an alternation of weakly graded quartzose dolomitic siltstone and silty to massive shale units with interspersed partings of impure (quartzose, silty) dolomite. Graded bedding indicates the sequence "youngs" towards the (overlying) sandstone unit. Both facies exhibit a weak bedding concordant slaty cleavage and include thinly disseminated pressure-shadowed pyrite subhedra concentrated in contact-marginal zones.

The pelite is essentially unaltered in contrast to the sideritised pelite at 422.8 m. Sporadic discordant intersecting veinlets of ankeritic carbonate with subordinate to minor quartz and accessory proportions of barite are present in the sandstone. These features are unstressed.

Rare fine-scale films and impregnations of sideritic carbonate, essentially restricted to the sandstone, predate, and are weakly displaced by, the slaty cleavage.

T 877 / TH 16 - 449.7 m (T.S. 54776)

This rock may be classified as an impure dolomite.

The major constituent is fine sparry to microgranular ankeritic dolomite, weakly but more or less pervasively stained with ultrafine carbonaceous matter. Accessory traces of fine silt-sized detrital quartz and muscovite are present and thin partings of carbonaceous matter are dispersed throughout the rock.

The whitish spots (hand specimen) consist of semi-fibrous microcrystalline quartz and represent boudinaged and segmented diagenetic veinlets. These features are displaced by a weak tectonic cleavage, enhanced by slip planes aligned with the carbonaceous partings.

General features are consistent with a dolomitised impure limestone. In contrast with the associated samples, this rock is devoid of alteration features apart from the shearing effects.

D. Cowan, B. Sc.

043148

**GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD**

HOLE NO : TH 17
STATE : TASMANIA

148

PROJECT	E.L. 11/76	PURPOSE To test a subtle, combined EM/magnetics response located at 2000E/400N on the Stonehenge Grid. The source of the responses was modelled to be 200m below the surface.
DESIGNED BY	P.A. Roberts	
LOGGED BY	P.A. Roberts	
COMMENCED	12/10/85	
COMPLETED	30/10/85	

LOG SUMMARY	0.0 - 53.7m Deeply weathered calcareous sediments
GENERAL COMMENTS	- 197.4m Interbedded quartzites and shales, minor brecciation
	- 211.1m ?silicified, ?dolomitic quartzite and shale, partly brecciated
	- 239.4m Black shale, lesser quartzite, partly brecciated
	- 254.2m ?silicified, ?dolomitic quartzite and shale, partly brecciated
	- 256.7m Pyritic breccia
	-308.3m Interbedded quartzites and shales, partly brecciated

SSAY SUMMARY

INTERVAL												COMMENTS	
From	To												

LOCATION

NORTHING	5359619.2
EASTING	359890.1
R L	2262.3*
GRID	AMG
LENGTH	308.3m

HOLE CONDITION

SIZE	
Hole Size	Depth
HQ	0.0-75.0
NQ	75.0-
	308.3m

SIGNIFICANT CORE LOSS INTERVALS		
From	To	% Lost
0.0	57.2m	82

POOR GROUND CONDITION ZONES		
From	To	Condition
0.0	61.7m	Weathered calcareous lithologies including clay, cavities
66.7	197.4m)
211.2	237.3m) Locally badly broken
256.7	274.7m) graphitic shales
289.8	296.2m)

HOLE CONDITIONS AFTER COMPLETION
54m of HQ casing stuck in the hole between 21 and 75m. All hole lined with white PFC casing, with slotted lengths between 254 and 266m.

*R.L. + 2000m

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY			INTERVAL			VERTICAL		HORIZONTAL		SURVEY			INTERVAL			VERTICAL		HORIZONTAL	
Depth	Bearing	Dip	From	To	Distance	D.Sin.Dip	R.L.	D.Cos.Dip	Prog.Total	Depth	Bearing	Dip	From	To	Distance	D.Sin.Dip	R.L.	D.Cos.Dip	Prog.Total
0.0m	276.7°	-63.2°	0.0	5.0	5.0	4.5	2257.8	2.3	2.3										
5.0m	*276.1°	-61.4°	5.0	30.0	25.0	22.0	2235.8	12.0	14.3										
30.0m	273.5°	-62.0°	30.0	69.5	39.5	34.9	2200.9	18.5	32.8										
69.5m	272.5°	-61.2°	69.5	109.0	39.5	34.6	2166.3	19.0	51.8										
109.0m	274.5°	-57.4°	109.0	148.5	39.5	33.3	2133.0	21.3	73.1										
148.5m	276.0°	-55.3°	148.5	187.5	39.0	32.1	2100.9	22.2	95.3										
187.5m	277.0°	-53.4°	187.5	227.0	39.5	31.7	2069.2	23.5	118.8										
227.0m	278.5°	-53.0°	227.0	271.5	44.5	35.5	2033.7	26.8	145.6										
271.5m	280.0°	-52.9°	271.5	308.3	36.8	29.4	2004.3	22.2	167.8										
308.3m	Assumed value																		

043150

149

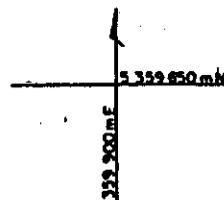
043151



SCALE 1:

5 cm

PLAN VIEW



5 359 619.2 mN
333 900 mE

TH17

2262.3 mRL

DEEPLY WEATHERED CALCAREOUS
SEDIMENTS

2215.0 mRL

INTERBEDDED QUARTZITES & SHALES,
MINOR BRECCIATION

TSILICIFIED DOLOMITIC QUARTZITE &
SHALE, PARTLY BRECCIATED

2093.2 mRL

BLACK SHALE, LESSER QUARTZITE,
PARTLY BRECCIATED

2082.2 mRL

TSILICIFIED DOLOMITIC QUARTZITE
& SHALE, PARTLY BRECCIATED

2059.5 mRL

PYRITIC BRECCIA

2047.7 mRL

2045.7 mRL

INTERBEDDED QUARTZITES &
SHALE, PARTLY BRECCIATED

2004.3 mRL

DIP PROFILE

GOLD FIELDS EXPLORATION PTY. LIMITED
DIAMOND DRILL HOLE PLOT

HOLE NO. TH 17

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 1

150

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA															
From	To	m	%		Sample No.	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi						
0.0	53.7	6.4	12	DEEPLY WEATHERED CALCAREOUS SEDIMENTS																
				Probably largely ex-carbonate, now converted to clay and cavity, hence 47.3m core loss (between 19.7 and 28.7m, no core recovered at all). Generally very badly broken. BCA's, where visible, 30-60°. Recovered lithologies in intersection (not necessarily representative of gross geology):																
				0.0-10.7m White, v.f.g. quartz sandstone with minor siltstone (0.45m recovered)																
				10.7-19.7m Brecciated, very pale greenish grey siltstone, held together by a stockwork of fine quartz veins, locally limonite stained (2.35m recovered).																
				19.7-28.7m No core																
				28.7-38.2m Yellow-brown, interbedded siltstones and ex-calcareous shales. Latter converted to clay. Bedded (2.0m recovered).																
				38.2-44.7m Yellow-grey, brown, bedded ex-calcareous siltstones. Limonitic, porous (0.95m recovered).																
				44.7-53.7m Siltstone to very fine grained sandstone, brown, white. Latter is soft, sometimes porous (i.e. ex-calcareous), locally criss-crossed by a network of fine quartz veinlets (2.9m recovered).																
53.7	60.5	4.55	67	BRECCIA																
				Clasts are buff to pale green-grey v.f.g. sandstone and siltstone. Matrix is quartz ± pyrite. Becomes more pyritic and	2265	58.5	59.5	100	0.02	<0.1	<0.01	0.01	0.14	<0.001						
				core becomes more competent 58.5-60.5m. Above 58.5m, core very broken with 2.25m core loss. Brecciation becomes progressively less intense, bottom 0.5m.	2266	59.5	60.5	100	0.01	<0.1	<0.01	<0.01	0.07	<0.001						

043152

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 15

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA														
From	To	m	%		Sample No.	From	To	Rec. %											
50.6	66.7	6.1	100	<p><u>INTERBEDDED SANDSTONE AND SILTSTONE</u></p> <p>White v.f.g. sandstone and pale green-grey siltstone. Finely interbedded. Porous, pitted down to 65.5m (i.e. lower limit of weathering), dolomitic and carbonate veined below that point. BCA's vary 60-85°, averaging ~70°. Badly broken first 1.1m, more competent below that point but broken on joints and bedding. Minor quartz veining.</p> <p>Sharp contact at 30° to c.a. discordant to bedding.</p>															
66.7	197.4	129.6	99	<p><u>INTERBEDDED QUARTZITE AND SHALE</u></p> <p>Quartzite is pale grey, v.f.g., locally micaceous, shale is dark grey to black, very graphitic; finely interbedded. Minor pyrite, partic. top 5m, syngenetic, disseminated and in blebs, and veinlets, commonly associated with sandy beds. Very minor quartz and carbonate veining. Quartz-only veins tend to be relatively thick (2-20 cm), whereas quartz-carbonate veins are thinner, more irregular. Broken on graphitic bedding planes, joints, throughout, locally badly broken. Core loss 1.1m. Points of interest BCA's:</p> <p><u>66.7-74.7m</u> Folded, bedding partly disrupted by brecciation, 0-40°, average ~20°.</p> <p><u>74.7-99.7m</u> 30-60°, average ~45°. One fold overturn noted at 86.4m. Minor microfaulting, shearing.</p> <p><u>99.7-110.6m</u> Folded, bedding partly disrupted by microfaults, brecciation, quartz-carbonate veining with traces pyrite, galena, 0-70°, average ~30°.</p> <p><u>110.6-129.4m</u> 20-40°, average ~30°.</p>															

043153

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 3

152

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA															
From	To	m	%		Sample No.	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi						
				129.4-140.0m	0-40°, average ~10°.															
				140.0-158.2m	60-90°, average ~75°, minor folds including overturns at 146.1, 149.7m; disrupted by kink bands, minor brecciation and shearing.															
				158.2-167.5m	30-60°, average 45°.															
				167.5-168.9m	0-70°, disrupted by minor folding.															
				168.9-174.2m	40-60°, average 45°.															
				174.2-189.2m	0-15°, except where disrupted by minor folding, average 5°.															
				189.2-189.8m	White quartz vein, contacts average ~20°.															
				189.8-197.4m	BCA's variable 10-70°, disrupted by minor folding, shearing. Increasingly sheared and pyritic towards bottom contact.															
				Contact discordant to bedding at 45° to c.a.																
97.4	200.2	2.8	100	BRECCIATED, SILICIFIED ?CARBONATE	T2297	196.4	197.4	100	0.01	<0.1	<0.01	0.04	0.03	<0.001						
					T2267	197.4	198.4	100	0.01	<0.1	<0.01	<0.01	0.02	<0.001						
					T2268		199.4	100	0.01	<0.1	<0.01	<0.01	0.02	<0.001						
				Pale gray-brown, hard. Pyritic and siliceous clasts set in a siliceous, partly pyritic matrix. Mineralization and shearing/brecciation strongest near upper contact, weakening downwards. Pervasively veined by quartz.	T2269		200.2	100	0.02	<0.1	<0.01	0.01	0.02	<0.001						
				Petrology sample 197.6m.																
				Gradational lower contact.																

043154

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 153

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi				
200.2	211.1	10.9	100	<u>?SILICIFIED ?DOLOMITIC QUARTZITE/SHALE</u>														
				Pale grey quartzite interbedded with thin(1-3mm) layers of pale grey-green shale. Veined by quartz, locally brecciated by veins. Becomes massive, more intensely veined and weakly pyritic near lower contact; traces of disseminated pyrite elsewhere in the intersection, more intense pyrite with quartz/ carbonate vein at 208.65-208.75m. BCA's 0-45°, average 35°. Competent core - breaks on bedding.														
				Petrology sample 201.5m.														
				Lower contact sharp, irregular at 25° to c.a.														
211.1	222.6	11.5	100	<u>INTENSELY VEINED/BRECCIATED QUARTZITE/SHALE</u>														
				Grey, mottled. Mixture of pale grey quartzite, dark grey, partly silicified shale. Pervasively quartz veined and sheared with veining predating (i.e. crosscut by) shearing. Locally layered - probably shearing, at 20-40° to c.a. Includes sections of pyritic black shale at 219.6-220.1m and 221.1-221.2m. Generally competent core, except at upper and lower contacts, where badly broken.														
222.6	237.3	14.7	100	<u>QUARTZ-VEINED BLACK SHALE</u>														
				Laminated, graphitic, pervasively veined by white quartz, in places ptymatically folded. Lamination locally obscured by very strong cleavage development; in the latter case, remnant bedding very strongly deformed. BCA's 20-70°, cleavage angles 0-30° to c.a. Core locally broken top 4m, otherwise competent breaks on irregular, graphitic fractures. Very fine grained disseminated pyrite throughout. Includes:														
				225.7-226.2m Pyritic breccia, similar to 197.4-200.2m.	T2270	225.7	226.2	100	0.01	<0.1	<0.01	0.10	0.04	<0.001				

043155

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 5

154

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA														
From	To	m	%		Sample No	From	To	Rec. %											
237.3	239.4	2.1	100	<p><u>BLACK SHALE BRECCIA</u></p> <p>As above but more strongly sheared, and brecciated, locally pyritic. Fragments of pale green-grey ?dolomitic shale, as well as several veins/fragments of pale yellow-grey siliceous breccia.</p> <p><u>Lower contact at ~40° to c.a.</u></p>															
239.4	254.2	15.0	100	<p><u>PARTLY BRECCIATED ?SILICIFIED, ?DOLOMITIC QUARTZITE/SHALE</u></p> <p>Similar to unit at 200.2-211.1m but more brecciated. Bedded, pale grey siliceous beds intercalated with softer, greenish grey ?dolomitic shale beds. Veined by quartz and minor carbonate throughout. BCA's vary 0-50°, averaging 30°. Bedding becomes less apparent lower 5m partly because of increasing brecciation. Core is competent, few breaks on bedding and joints. Traces of pyrite mineralization where brecciation most intense. Includes:</p> <p><u>243.1-243.8m</u> Contorted black shale, microfaulted. Probably a large breccia block.</p> <p><u>244.4-244.5m</u> Breccia comprising quartzite/dolomitic shale fragments set in a matrix of black shale.</p> <p><u>Sharp contact at ~70°.</u></p>															

043156

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 6

ULV. PRESS

155

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No	From	To	Rec. %	Sn	As	Cu	Pb	Zn	Bi				
254.2	256.7	2.5	100	PYRITIC BRECCIA	T2262	253.6	254.6	100	0.01	<0.1	<0.01	<0.01	<0.01	<0.001				
					T2263	254.6	255.6	100	0.01	<0.1	0.01	0.01	0.01	<0.001				
				Clasts and matrix of above unit (239.4-254.2m), heavily over-printed with disseminated pyrite mineralization, in places becoming semi-massive. Largely silicified and quartz-veined, lower most 20cm is comprised largely of black shale.	T2264	255.6	256.7	100	0.01	<0.1	<0.01	<0.01	<0.01	0.001				
				Petrology sample 254.9m.														
				Lower contact gradational, unit below being partly brecciated.														
256.7	274.7	17.6	98	BLACK SHALE, LESSER QUARTZITE, PARTLY BRECCIATED														
				Similar to unit at 66.7-197.4m. Interbedded black to dark grey shale and lesser pale grey quartzite. Shale is graphitic, commonly with minor syngenetic pyrite. Veined by quartz and lesser carbonate throughout. Folded, locally sheared and brecciated. BCA's vary 0-75°, average ?. Core less competent than above, several broken zones, generally in graphitic shale, notably at 267.0-269.1m. 0.4m core loss from near lower contact.														
				Includes:														
				258.8-259.0m Siliceous and calcareous pyritic breccia similar to 254.2-256.7m except less pyrite.														
				Contact on bedding break at 50° to c.a.														
274.7	289.8	15.1	100	GREY QUARTZITE														
				Massive to faintly bedded (could be foliation), pervasively veined by white quartz and pale yellow sideritic carbonate. ?BCA's vary 10-25°, average 15°. Moderately broken throughout on irregular fractures, but no core loss. Includes:														
				279.3-280.6m Interbedded with black shale.														

043157

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

159

PROJECT: TRIAL HARBOUR

HOLE NUMBER: TH.17

Page: 7

DLV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
From	To	m	%		Sample No	From	To	Rec. %										
				288.1-289.4m Interbedded with minor black shale. Badly broken on graphitic joints. Pyritic breccia and pug at 288.9-289.0m.														
289.8	308.3	18.3	99	<u>INTERBEDDED BLACK SHALE AND GREY QUARTZITE</u>														
				Partly finely interbedded, with some thicker intersections (<5m) dominantly grey quartzite. Black shale is graphitic. Veined by quartz and sideritic carbonate throughout. Variably, but largely strongly deformed throughout with minor brecciated sections. Generally badly broken in zone of maximum contortion, viz. 289.8-296.2m, more competent below the latter point. BCA's, points of interest:														
				289.8-296.0m Intensely deformed, BCA's 0-90°, average?. At 295.5-295.7m, there is a quartz-carbonate vein with minor pyrite mineralization.														
				296.0-298.0m BCA's 0-40°, average 20°.														
				298.0-300.1m No obvious BCA's, includes sheared, black shale and massive quartzite.														
				300.1-300.7m Partly brecciated, quartz fragments in a black shale matrix, includes bedded black shale with BCA's varying 30-85°.														
				300.7-303.6m Predominantly quartzite, BCA's 0-90°, average ~60°?														
				303.6-304.2m Massive white quartz vein, VCA's 40° top and ~80° bottom.														
				304.2-306.0m BCA's 50-80°, average ~70°.														
				306.0-306.5m Brecciated, sheared black shale, quartz mixture.														

0431528

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

158
HOLE No. :TH 17
STATE :TASMANIA

MAGNETIC SUSCEPTIBILITY ($\times 10^{-6}$ S.I. UNITS)

<u>Depth</u>	<u>Suscept-</u> <u>ibility</u>														
		60	120	96	130	131	140	167	90	203	150	239	225	275	100
4	150	61	100	97	70	132	180	168	130	204	135	240	150	276	130
		62	170	98	60	133	140	169	130	205	200	241	140	277	100
8	40	63	160	99	120	134	140	170	90	206	270	242	160	278	100
10	40	64	110	100	100	135	50	171	110	207	130	243	180	279	110
12	0	65	420	101	90	136	50	172	130	208	250	244	160	280	70
14	30	66	190	102	110	137	100	173	40	209	200	245	170	281	50
16	60	67	110	103	70	138	40	174	100	210	230	246	130	282	150
18	30	68	90	104	170	139	70	175	100	211	155	247	110	283	50
		69	90	105	90	140	390	176	190	212	40	248	100	284	60
		70	110	106	40	141	130	177	150	213	0	249	150	285	40
		71	120	107	50	142	120	178	200	214	0	250	160	286	40
		72	110	108	70	143	250	179	120	215	10	251	250	287	90
		73	240	109	60	144	60	180	110	216	10	252	200	288	230
30	60	74	70	110	120	145	140	181	240	217	10	253	130	289	120
		75	60	111	50	146	70	182	170	218	10	254	140	290	150
		76	40	112	60	147	160	183	140	219	10	255	500	291	100
36	30	77	120	113	170	148	120	184	120	220	10	256	210	292	100
38	80	78	110	114	30	149	150	185	120	221	10	257	100	293	230
40	30	79	80	115	110	150	170	186	70	222	10	258	10	294	130
44	20	80	80	116	340	151	100	187	30	223	10	259	120	295	40
45	50	81	130	117	120	152	60	188	50	224	10	260	80	296	300
46	0	82	90	118	70	153	120	189	60	225	10	261	60	297	180
47	10	83	230	119	50	154	120	190	200	226	1400	262	140	298	300
48	0	84	130	120	170	155	70	191	80	227	140	263	60	299	150
49	10	85	50	121	180	156	170	192	40	228	140	264	60	300	70
50	10	86	180	122	90	157	130	193	40	229	50	265	200	301	50
51	80	87	20	123	170	158	80	194	90	230	60	266	150	302	60
52	70	88	50	124	100	159	140	195	110	231	75	267	50	303	150
53	130	89	150	125	160	160	70	196	80	232	110	268	90	304	0
54	50	90	50	126	110	161	270	197	40	233	40	269	110	305	90
55	300	91	50	127	110	162	40	198	480	234	180	270	90	306	70
56	120	92	40	128	100	163	100	199	290	235	110	271	150	307	80
57	0	93	190	129	60	164	160	200	250	236	80	272	250	308	40
58	850	94	150	130	100	165	100	201	110	237	25	273	120		
59	1100	95	50			166	80	202	140	238	75	274	60		

043160

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

153
HOLE No.: TH 17
STATE : TAS

REPORT CMS 85/12/13

Three samples of drill core from DDH-TH 17 on the Stonehenge Grid were received for petrological examination. Representative thin-sections were prepared and examined together with the respective offcuts. Attached descriptions summarise the microscopic data.

Summary

All three rocks may be classified broadly as altered and veined sediments, with relict "dolomitic" quartzose pelitic characteristics consistent with Onah Formation.

The major alteration trend, complexed by carbonate-quartz veining, is sideritisation of the primary carbonate component. This may be compared with the marginal assemblage in the Renison contact-altered dolomite situation. In detail, however, these rocks are mildly altered in comparison, with no real tendency to development of pelite-metamorphic tourmaline, characteristic and pervasive within mineralised dolomitic pelite/impure dolomite zones at Renison.

D. Cowan, B. Sc.

T 878/197.6 m (T.S. 55196)
This rock may be classified broadly as an altered pelitic breccia.

Mineralogically, the rock consists of fine to microcrystalline sideritic carbonate and similarly textured quartz with subordinate semi-sericitic white mica, thinly disseminated fine-grained pyrite and accessory traces of carbonaceous matter. Texturally, it consists of random sub- to fine millimetric-scale, angular to subangular clasts of carbonate-quartz-sericite rock in a compositionally similar matrix, with both phases (i.e. clasts and matrix) representing a brecciated sediment on the basis of contorted and segmented relict bedding, enhanced by the distribution of carbonaceous matter.

The fabric is consistent with an intraformationally brecciated, primarily finely banded dolomitic carbonaceous quartzose-silty pelite. Breccia textures are, however, enhanced by an irregular network of quartz-siderite veinlets, grading into relatively massive carbonate veinlets with sporadic late crosscutting veins of medium-grained siderite. Earlier veins are mildly, and the late irregular veins incipiently, stressed.

The main alteration feature is "sideritisation" of the primary dolomite component with associated mild silicification. Trace to accessory concentrations of pyrite appear to represent a mildly recrystallized syngenetic component.

T 879/201.5 m (T.S. 55197)
This sample represents an altered dolomitic pelite, with affinities to the brecciated and similarly altered pelite at 197.6 m.

Mineralogy comprises fine-grained quartz, fine to micro-crystalline sideritic carbonate, and semi-sericitic white mica in variable but overall near-equant proportions, with accessory proportions of carbonaceous matter and minor traces of pyrite. Disharmonically microfolded sub- to millimetric-scale bedding laminations reflect an interbanding of quartzose silty and relatively massive shale, variably dolomitic and with inter-laminations of impure carbonate sediment.

Alteration is analogous to that noted in T 878, with the inferred primary dolomite component replaced by sideritic carbonate. Sporadic discontinuous irregular carbonate-quartz veinlets grade into relatively massive carbonate veinlets, include minor small clots of talc, and reflect mild stress effects.

In common with T 878, the minor accessory pyrite is fine-grained with recrystallized syngenetic characteristics.

T 880/254.9 m (T.S. 55198)
This rock is a composite of pyritic carbonate-quartz vein and altered pelite components and, dependent on meso- to macroscale relationships, may be interpreted as an intraclastic vein or, alternately, a carbonate-quartz-matrix breccia.

The vein component is medium-grained, with sideritic carbonate, varying proportions of quartz, and more or less pervasively disseminated poikilitic, sub- to euhedral pyritohedral pyrite (mean 300-350 μ), concentrated in carbonate aggregates. Sub-millimetric to centimetric-scale clasts of sediment are randomly disseminated throughout and include "sideritised" dolomitic pelite and impure cherty types, with accessory carbonaceous matter and fine to ultrafine pyrite. The pelite component is analogous to that in T 878 and T 879. Chert clasts are variably recrystallized, with varying proportions of fine siderite representing altered accessory carbonate, presumably dolomite.

Vein-quartz is locally clouded with ultrafine inclusions of colourless to pale brown tourmaline ("dravite") and may include traces of apatite. Carbonate-quartz aggregates are mildly microfractured, with minor associated granulation of the disseminated pyrite.

D. Cowan, B. Sc.

043161

APPENDIX 8

PETROLOGICAL REPORTS

LGA

043163

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. P.A. Roberts
Senior Regional Geologist
Gold Fields Exploration Pty. Ltd.
P.O. Box 835
BURNIE / TAS. 7320

12th November, 1985

REPORT CMS 85/10/27

YOUR REFERENCE:	Letter dated 22.10.1985 PAR/5504/1
DATE RECEIVED:	23rd October, 1985
SAMPLE NOS.:	T 872 - T 877
SUBMITTED BY:	P.A. Roberts
WORK REQUESTED:	Petrology

DATE: 14 NOV 1985
FILE No.: 9504/3
INITIALS: <i>R.</i>

H.W. Fander

H.W. Fander, M. Sc.

REPORT CMS 85/10/27

Six drill core samples from TH 16 in the Trial Harbour E.L. were received for petrological examination. Representative thin-sections were prepared and examined together with the respective offcuts, with carbonate stain tests performed as warranted. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite consists of variably veined and altered sedimentary rocks, including psammitic, pelitic and dolomitic variants.

The major alteration feature comprises sideritic carbonation, variously vein-controlled and/or metasomatic, with semi-ubiquitously associated secondary quartz and barite. The Fe-carbonate, where metasomatic, is clearly dolomite-replacive with broad affinities to the marginal Fe-carbonation zones at Renison. Temporally, the bulk of alteration postdates a weak tectonic fabric, but detail in some rocks is obscured by subsequent stress and brecciation effects.

Minor pre-carbonation tourmaline metasomatism is evident locally and enhances a marginal contact alteration interpretation. Altered rocks appear unmineralised apart from disseminated recrystallized syngenetic pyrite.

D. Cowan, B. Sc.

REPORT CMS 85/10/27Petrological DescriptionsT 872/TH 16 - 396.8 m (T.S. 54771)This rock may be classified as a breccia.

Major features comprise randomly sized and variably stressed quartz and sideritic carbonate grains and carbonate-quartz composite aggregates with vein-type characteristics. These features are accompanied by subordinate contorted clasts of sericitic pelite and quartzose silty to fine sandy pelite with zones of fine-grained quartz-siderite rock, apparently representing selectively altered impure dolomite interbeds.

The rock is cemented with fine-grained to microcrystalline carbonate films with interspersed zones of mylonitised pelite and more or less pervasively disseminated fine angular (granulated) quartz grains.

Fine pyrite euhedra are disseminated throughout the pelite clasts and appear to represent a (recrystallized) syngenetic component, although locally remobilised into secondary stringers. Traces of barite are present as micro-inclusions in the brecciated vein-quartz(-carbonate) component.

T 873/TH 16 - 398.6 m (T.S. 54772)This sample represents a veined, altered and fractured to brecciated calcareous pelite.

The host rock exhibits a crenulated and boudinaged banded phyllitic fabric and consists largely of fine-grained sideritic carbonate and semi-sericitic white mica with relatively minor silt-sized quartz. Relict features are consistent with a calcareous, slightly quartzose silty pelite, grading into an impure limestone (or dolomite). This rock is very incipiently carbonaceous and pyritic and exhibits sporadic discontinuous stressed veinlets of barite and carbonate.

The vein-like mass (hand specimen) is a breccia essentially similar to that at 396.8 m. This zone includes semi-mylonitised clasts of pelite interspersed with irregular patches and clasts of sideritic carbonate with subordinate partly intergrown vein-type quartz, sporadic clasts of sideritic carbonate-stained, cherty, microcrystalline quartz (altered dolomitic chert), silt- to sand-sized quartz grains and sporadic patches and laths of barite intergrown with the (brecciated) carbonate vein component. As at 396.8 m, the matrix consists of microcrystalline carbonate with interspersed zones of mylonitised, carbonate-stained sericitic pelite. Thinly disseminated fine pyrite appears as "mechanical inclusions" in the breccia or, elsewhere, hosted by the carbonated pelite and chert components.

T 874/TH 16 - 417.7 m (T.S. 54773)This rock may be categorised as a veined and altered argillaceous orthoquartzite.

The host rock consists of a weakly bedded, moderately to well sorted framework of fine to medium sand-sized subangular quartz grains with a semi-sericitic white mica cement. The framework is incipiently recrystallized. The sericitic matrix includes a little cherty microcrystalline quartz. Detrital apatite, zircon, sericitic quartz grains, sericite pellets, leucoxenic semi-opaques

and muscovite flakes are accessory clastic components.

Sericite aggregates are weakly but variably and semi-pervasively stained with fine-grained (mean 20 μ) dark green schorl. These mild metasomatic (tourmalinisation) effects predate development of irregular discontinuous veinlets and millimetric-scale replacive aggregates of sideritic carbonate and fine-grained quartz.

In contrast to the T 872 and T 873 samples, the vein/replacive assemblage is devoid of barite and does not reflect the late stress and brecciation effects.

T 875/TH 16 - 422.8 m (T.S. 54774)

This rock may be classified as an altered pelite and consists of fine to semi-sericitic white mica and microcrystalline sideritic carbonate in varying proportions with subordinate quartz as weakly corroded relict detrital silt-sized grains. Quartz exhibits a banded distribution in sub- to millimetric-scale siltstone and silty shale units with intercalated planar to lensoid relatively massive shale units. Siderite is more or less pervasive, but is concentrated in the silty units, with a bedded distribution consistent with altered (Fe-metasomatised or "sideritised") dolomite.

This rock includes thinly dispersed spongy siliceous pyritic lenses and stringers, representing mildly boudinaged diagenetic nodules and veinlets. Sporadic concordant to low-angle discordant, incipiently stressed siderite-quartz veinlets appear broadly contemporaneous with a weak concordant slaty cleavage. A late, relatively massive, high-angle discordant, weakly displacive siderite vein is essentially unstressed.

T 876/TH 16 - 441.6 m (T.S. 54775)

This sample represents an essentially unaltered dolomitic psammopelite.

The sectioned area includes a weakly bedded sandstone unit in contact with a laminated pelite. The sandstone is quartzose (orthoquartzitic) with a moderately sorted framework of fine to medium sand-sized subangular quartz grains supplemented by minor clasts of sericitic shale, chert and dolomitic chert, muscovite flakes and accessory zircons, tourmaline and leucoxenic semi-opaques. A prominent mildly corrosive dolomite matrix includes a little semi-sericitic white mica and minor accessory proportions of microgranular quartz.

The pelite is similar to that at 422.8 m, but is relatively finely laminated with an alternation of weakly graded quartzose dolomitic siltstone and silty to massive shale units with interspersed partings of impure (quartzose, silty) dolomite. Graded bedding indicates the sequence "youngs" towards the (overlying) sandstone unit. Both facies exhibit a weak bedding concordant slaty cleavage and include thinly disseminated pressure-shadowed pyrite subhedra concentrated in contact-marginal zones.

The pelite is essentially unaltered in contrast to the sideritised pelite at 422.8 m. Sporadic discordant intersecting veinlets of ankeritic carbonate with subordinate to minor quartz and accessory proportions of barite are present in the sandstone. These features are unstressed.

Rare fine-scale films and impregnations of sideritic carbonate, essentially restricted to the sandstone, predate, and are weakly displaced by, the slaty cleavage.

T 877 / TH 16 - 449.7 m (T.S. 54776)

This rock may be classified as an impure dolomite.

The major constituent is fine sparry to microgranular ankeritic dolomite, weakly but more or less pervasively stained with ultrafine carbonaceous matter. Accessory traces of fine silt-sized detrital quartz and muscovite are present and thin partings of carbonaceous matter are dispersed throughout the rock.

The whitish spots (hand specimen) consist of semi-fibrous microcrystalline quartz and represent boudinaged and segmented diagenetic veinlets. These features are displaced by a weak tectonic cleavage, enhanced by slip planes aligned with the carbonaceous partings.

General features are consistent with a dolomitised impure limestone. In contrast with the associated samples, this rock is devoid of alteration features apart from the shearing effects.

D. Cowan, B. Sc.

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

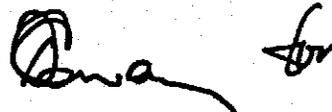
Mr. P.A. Roberts
Senior Regional Geologist
Gold Fields Exploration Pty. Ltd.
P.O. Box 835
BURNIE / TAS. 7320

13th January, 1986

DATE: 17 JAN 1986
FILE No.: 9504/3
INITIALS: <i>HR</i>

REPORT CMS 85/12/13

YOUR REFERENCE:	Letter dated 13.12.1985 PAR/9504/3
DATE RECEIVED:	18th December, 1985
SAMPLE NOS.:	T 878 - T 880
SUBMITTED BY:	P.A. Roberts
WORK REQUESTED:	Petrology


H.W. Fander, M. Sc.

REPORT CMS 85/12/13

Three samples of drill core from DDH-TH 17 on the Stonehenge Grid were received for petrological examination. Representative thin-sections were prepared and examined together with the respective offcuts. Attached descriptions summarise the microscopic data.

Summary

All three rocks may be classified broadly as altered and veined sediments, with relict "dolomitic" quartzose pelitic characteristics consistent with Onah Formation.

The major alteration trend, complexed by carbonate-quartz veining, is sideritisation of the primary carbonate component. This may be compared with the marginal assemblage in the Renison contact-altered dolomite situation. In detail, however, these rocks are mildly altered in comparison, with no real tendency to development of pelite-metasomatic tourmaline, characteristic and pervasive within mineralised dolomitic pelite/impure dolomite zones at Renison.

D. Cowan, B. Sc.

REPORT CMS 85/12/13Petrological DescriptionsDDH-TH 17T 878/197.6 m

(T.S. 55196)

This rock may be classified broadly as an altered pelitic breccia.

Mineralogically, the rock consists of fine to microcrystalline sideritic carbonate and similarly textured quartz with subordinate semi-sericitic white mica, thinly disseminated fine-grained pyrite and accessory traces of carbonaceous matter. Texturally, it consists of random sub- to fine millimetric-scale, angular to subangular clasts of carbonate-quartz-sericite rock in a compositionally similar matrix, with both phases (i.e. clasts and matrix) representing a brecciated sediment on the basis of contorted and segmented relict bedding, enhanced by the distribution of carbonaceous matter.

The fabric is consistent with an intraformationally brecciated, primarily finely banded dolomitic carbonaceous quartzose-silty pelite. Breccia textures are, however, enhanced by an irregular network of quartz-siderite veinlets, grading into relatively massive carbonate veinlets with sporadic late crosscutting veins of medium-grained siderite. Earlier veins are mildly, and the late irregular veins incipiently, stressed.

The main alteration feature is "sideritisation" of the primary dolomite component with associated mild silicification. Trace to accessory proportions of pyrite appear to represent a mildly recrystallized syngenetic component.

T 879/201.5 m

(T.S. 55197)

This sample represents an altered dolomitic pelite, with affinities to the brecciated and similarly altered pelite at 197.6 m.

Mineralogy comprises fine-grained quartz, fine to microcrystalline sideritic carbonate, and semi-sericitic white mica in variable but overall near-equant proportions, with accessory proportions of carbonaceous matter and minor traces of pyrite. Disharmonically microfolded sub- to millimetric-scale bedding laminations reflect an interbanding of quartzose silty and relatively massive shale, variably dolomitic and with inter-laminations of impure carbonate sediment.

Alteration is analogous to that noted in T 878, with the inferred primary dolomite component replaced by sideritic carbonate. Sporadic discontinuous irregular carbonate-quartz veinlets grade into relatively massive carbonate veinlets, include minor small clots of talc, and reflect mild stress effects.

In common with T 878, the minor accessory pyrite is fine-grained with recrystallized syngenetic characteristics.

T 880/254.9 m

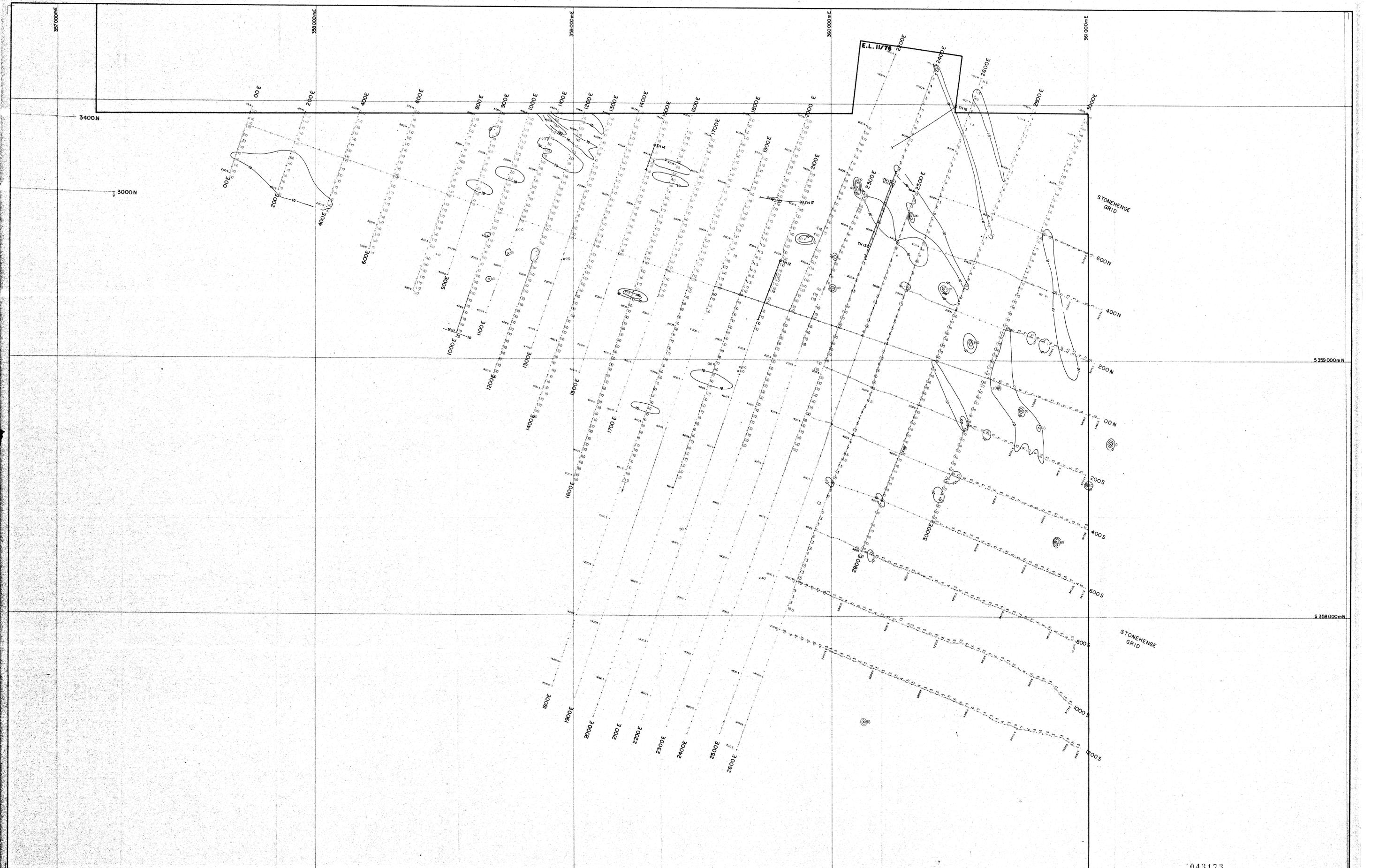
(T.S. 55198)

This rock is a composite of pyritic carbonate-quartz vein and altered pelite components and, dependent on meso- to macroscale relationships, may be interpreted as an intraclastic vein or, alternately, a carbonate-quartz-matrix breccia.

The vein component is medium-grained, with sideritic carbonate, varying proportions of quartz, and more or less pervasively disseminated poikilitic, sub- to euhedral pyritohedral pyrite (mean 300-350 μ), concentrated in carbonate aggregates. Sub-millimetric to centimetric-scale clasts of sediment are randomly disseminated throughout and include "sideritised" dolomitic pelite and impure cherty types, with accessory carbonaceous matter and fine to ultrafine pyrite. The pelite component is analogous to that in T 878 and T 879. Chert clasts are variably recrystallized, with varying proportions of fine siderite representing altered accessory carbonate, presumably dolomite.

Vein-quartz is locally clouded with ultrafine inclusions of colourless to pale brown tourmaline ("dravite") and may include traces of apatite. Carbonate-quartz aggregates are mildly microfractured, with minor associated granulation of the disseminated pyrite.

D. Cowan, B. Sc.



043173 86-2636 2/4 5357000mN

CONTOURS: 10, 50, 100
 * Rock Chip
 All other samples are Soil samples

REFERENCE TO SHEETS

ZEEHAN DV1	ZEEHAN DV2
ZEEHAN DV3	ZEEHAN DV4

GOLD FIELDS EXPLORATION PTY LIMITED

**E.L. 11/76 - STONEHENGE GRID
 BEDROCK GEOCHEMISTRY**

TIN (PPM)

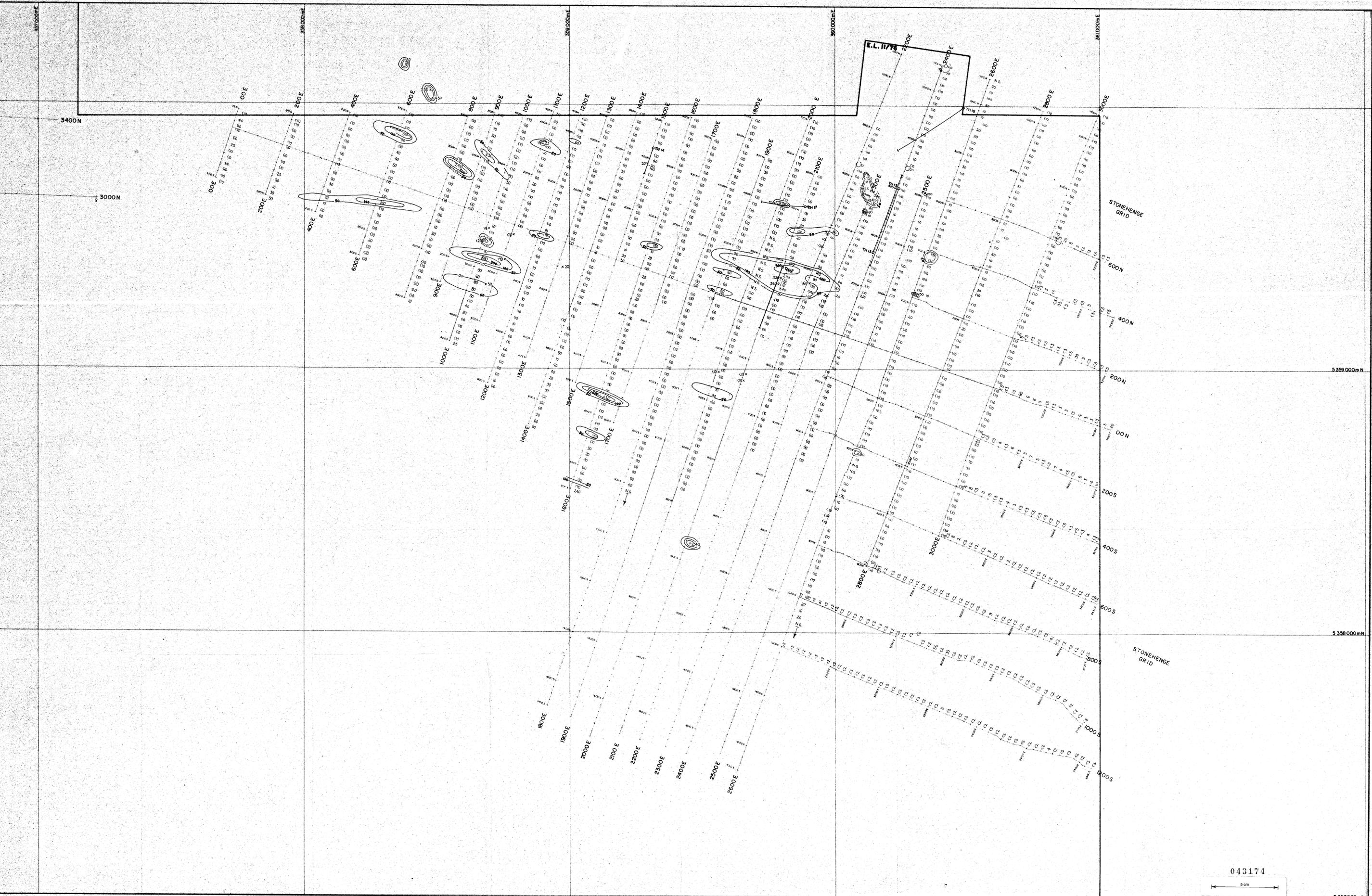
5 cm

SCALE 1:5000

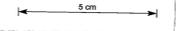
100 50 0 50 100 200 METRES

DRAWN BY	P.K.
DRAFTSMAN	EJ/EV
DATE	SEPT. 85
REVISIONS	
FILE NO.	

FIG 3



043174



CONTOURS - 50/00,300
 x Rock Chip
 All other samples are Soil samples

REFERENCE TO SHEETS

ZEEHAN D/1	ZEEHAN D/2
ZEEHAN D/3	ZEEHAN D/4

GOLD FIELDS EXPLORATION PTY LIMITED

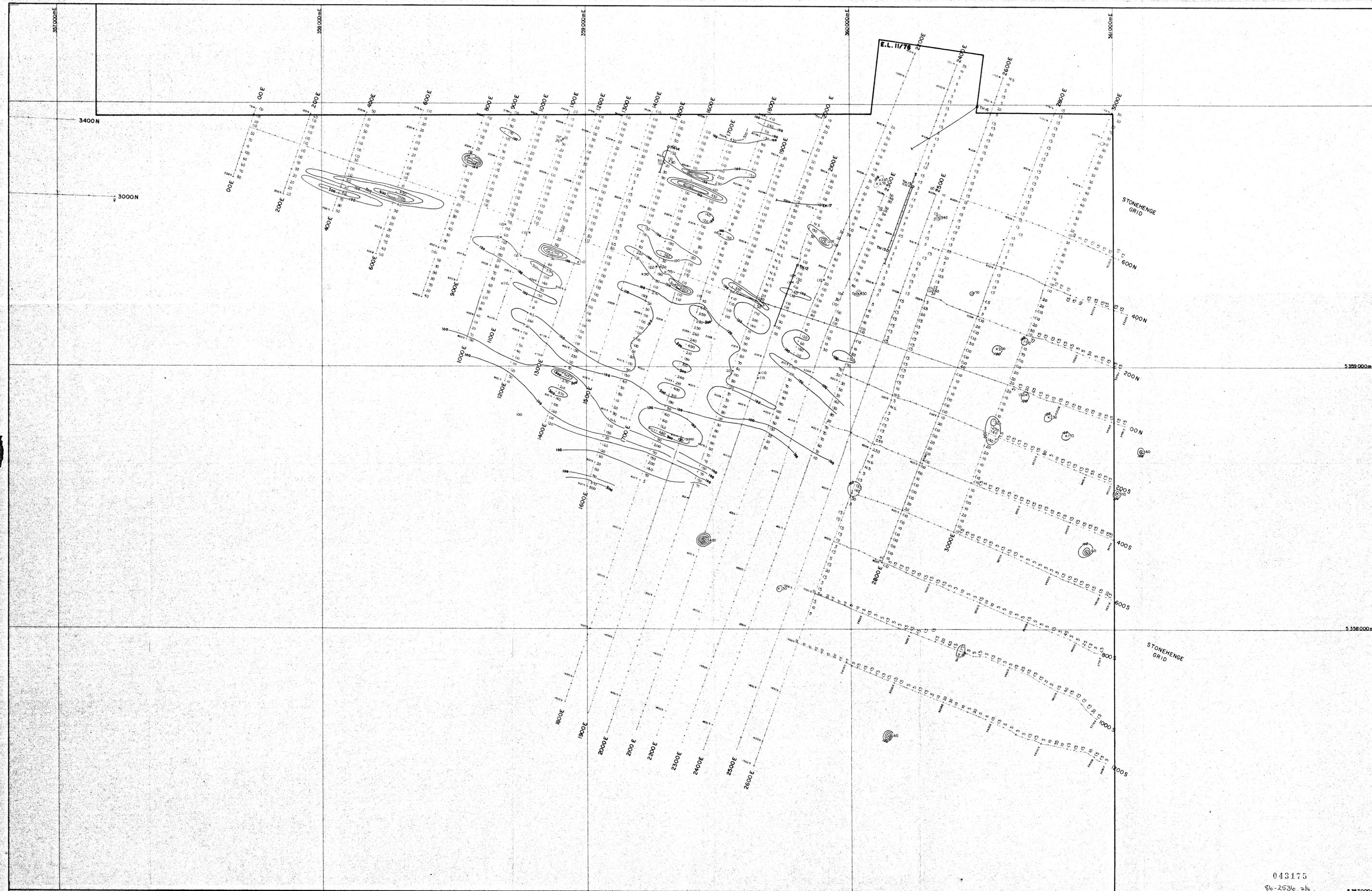
E.L. 11/76 - STONEHENGE GRID
 BEDROCK GEOCHEMISTRY

ARSENIC (P.P.M.)

5723 86-2536 2/4

SCALE 1:5000

DRAWN BY	P.K.
DRAFTSMAN	S.F.E.V.
DATE	SEPT. 85
REVISIONS	
FILE NO.	
FIG	4



043175
86-2536-1/4

5 357 000 m N

CONTOURS : 100,500,1000,2000,5000
 x Rock Chip
 All other samples are Soil samples

REFERENCE TO SHEETS

ZEEHAN DV1	ZEEHAN DV2
ZEEHAN DV3	ZEEHAN DV4

GOLD FIELDS EXPLORATION PTY LIMITED

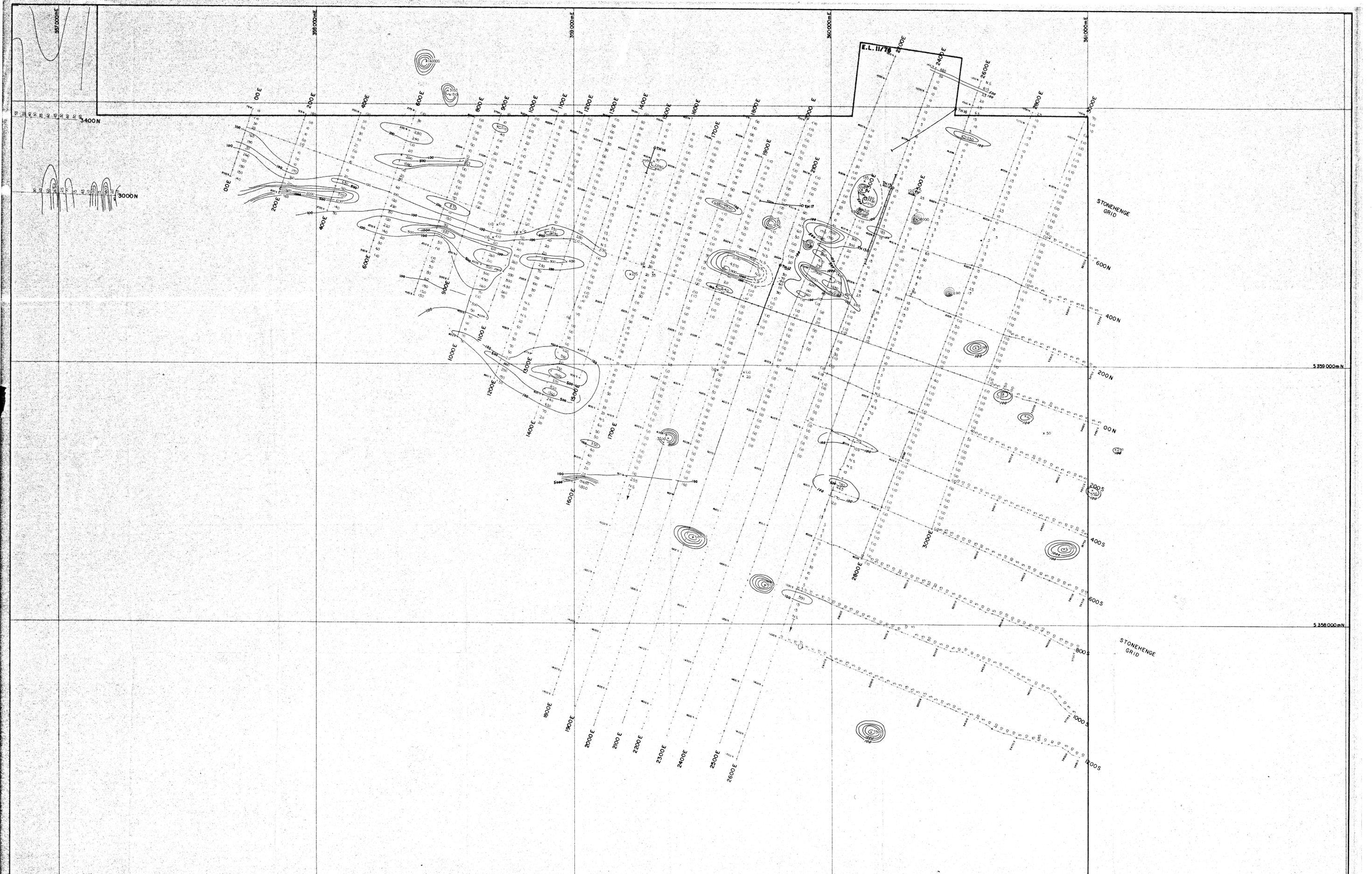
**E.L. 11/76 - STONEHENGE GRID
 BEDROCK GEOCHEMISTRY**

COPPER (P.P.M.)

5724

SCALE 1:5000

DRAWN BY RK
 DRAFTSMAN S.F.E.W.
 DATE SEPT. 82
 REVISIONS
 FILE NO.
 FIG 5



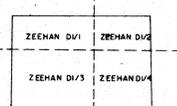
043177

5.357000m N

CONTOURS: 100, 500, 1000, 2000, 5000

x Rock Chip
 All other samples are Soil samples

REFERENCE TO SHEETS



GOLD FIELDS EXPLORATION PTY LIMITED	
E.L. 11/76 - STONEHENGE GRID	
BEDROCK GEOCHEMISTRY	
ZINC (PPM)	
5726 86-253424	
SCALE 1:5000	FIG 7

DRAWN BY	P.K.
DRAFTSMAN	S.F., E.V.
DATE	SEPT. 83
REVISIONS	
FILE NO.	



GOLD FIELDS EXPLORATION PTY LIMITED

S.P.L. 129 - STONEHENGE GRID
LINE 600 N. (2600 E - 3225 E)

SCALE 1:2000 METRES
LOOKING N.W.

DRAWN	PK
TRACED	EV
DATE	April 1985
SCALE	1:2000
FIG. NO	8



I.P. DATA

MAGNETICS

GEOCHEMISTRY

GEOLOGY

- Sn
- Cu
- Pb
- Zn
- As
- Mo

- Qiong Formation - Precambrian
- Shale
 - Siltstone
 - Sandstone

- Cambrian - Dundas Group ?
- Basic Lavas
 - Shale
 - Siltstone

- Grits
- Gossan
- Bedding
- Cleavage

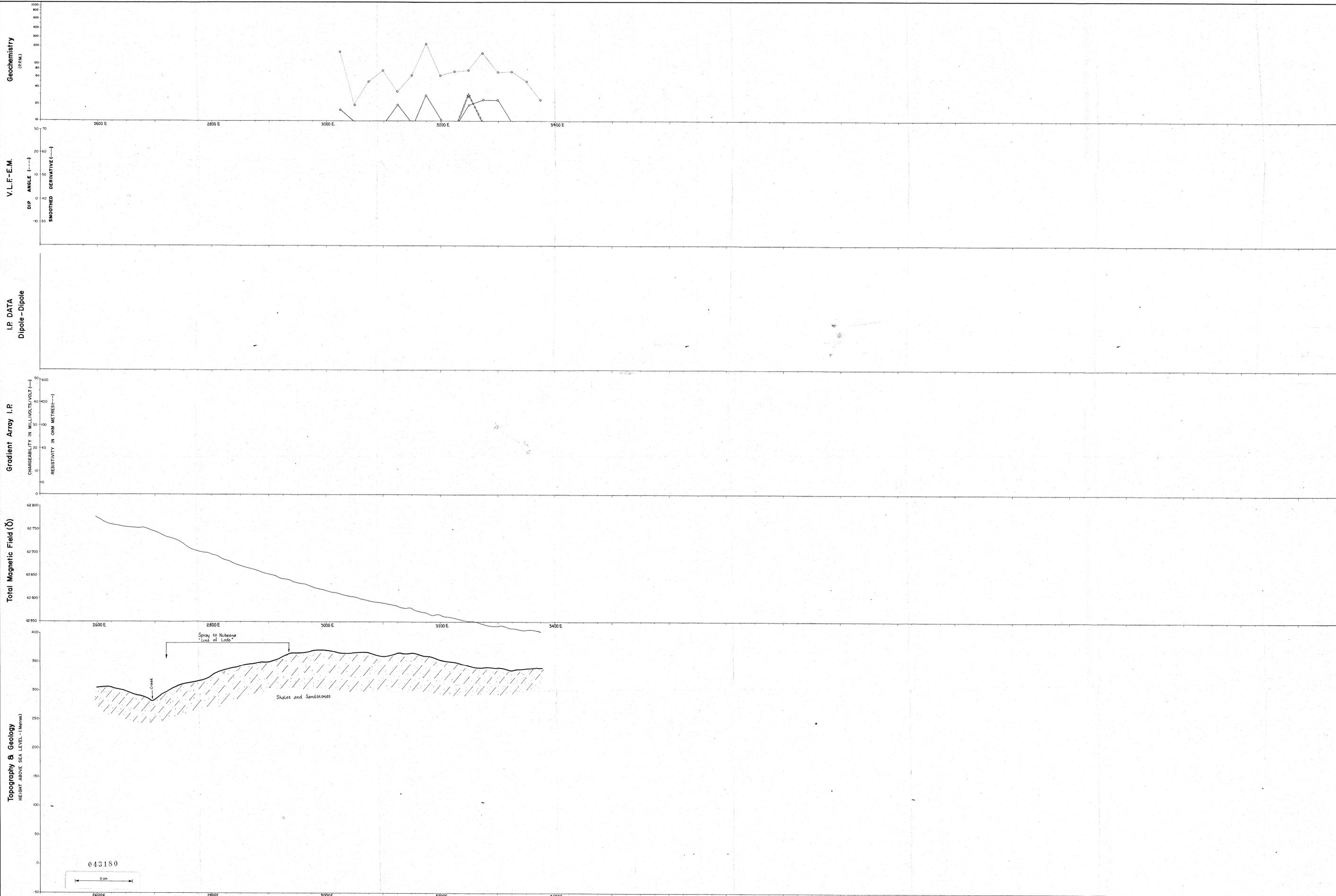
All Bearings Magnetic



GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. I29 - STONEHENGE GRID
 LINE 400 N. (2600E - 3325E)
 LOOKING N.W.
 SCALE 1:2000 METRES

96-2536 2/4	DRAWN P.K.
TRACED E.V.	
DATE April 1985	
SCALE 1:2000	
FIG. NO	
9	

I.P. DATA	MAGNETICS	GEOCHEMISTRY	GEOLOGY
		Sn Cu Pb Zn As W ₃ Mo	Devonian Formation - Precambrian Shale Siltstone Sandstone Cambrian - Dundas Group? Basic Lavas Shale Siltstone Grits Gosson Bedding Cleavage All Bearings Magnetic

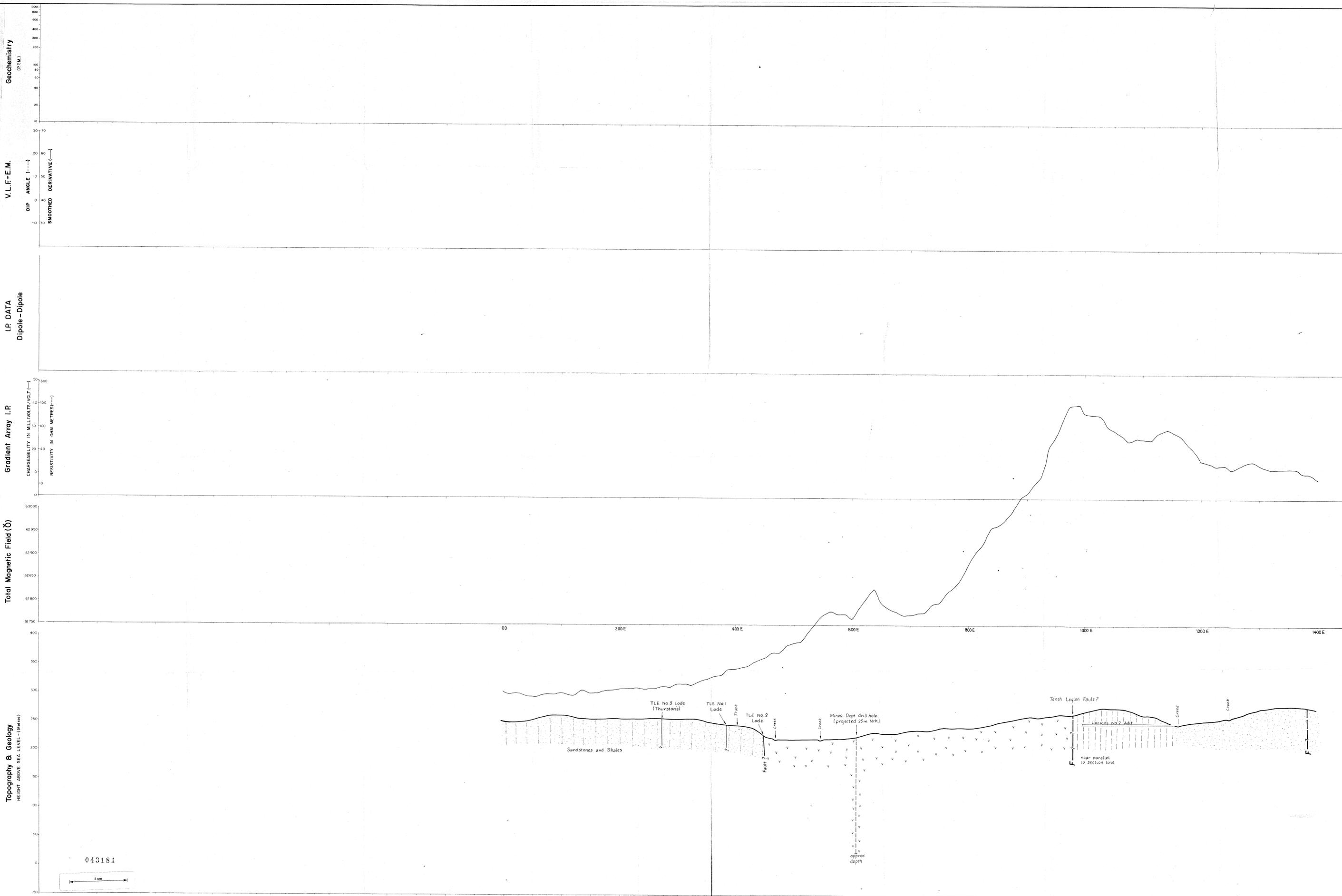


GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 200 N. (2600E-3375E)
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	EV
DATE	April 1985
SCALE	1:2000
FIG. NO	10

I.P. DATA	MAGNETICS	GEOCHEMISTRY	GEOLOGY
		Sn Cu Pb Zn As Mo	Oonah Formation - Precambrian Shale Siltstone Sandstone Combrion - Dundas Group? Basic Lavas Shale Siltstone Grits Gossion Bedding Cleavage All Bearings Magnetic

5729



043181

80-2536-24

GOLD FIELDS EXPLORATION PTY. LIMITED

DRAWN	PK.
TRACED	EV
DATE	April 1985
SCALE	1:2000
FIG. NO	

S.P.L. 129 - STONEHENGE GRID
 BASELINE 00. (00-1400 E)
 LOOKING N.W.

SCALE 1:2000 METRES

11

I.P. DATA

MAGNETICS

GEOCHEMISTRY

Sn	○
Cu	○
Pb	○
Zn	○
As	○
Wol	○
Mo	○

GEOLOGY

Qooh Formation - Precambrian

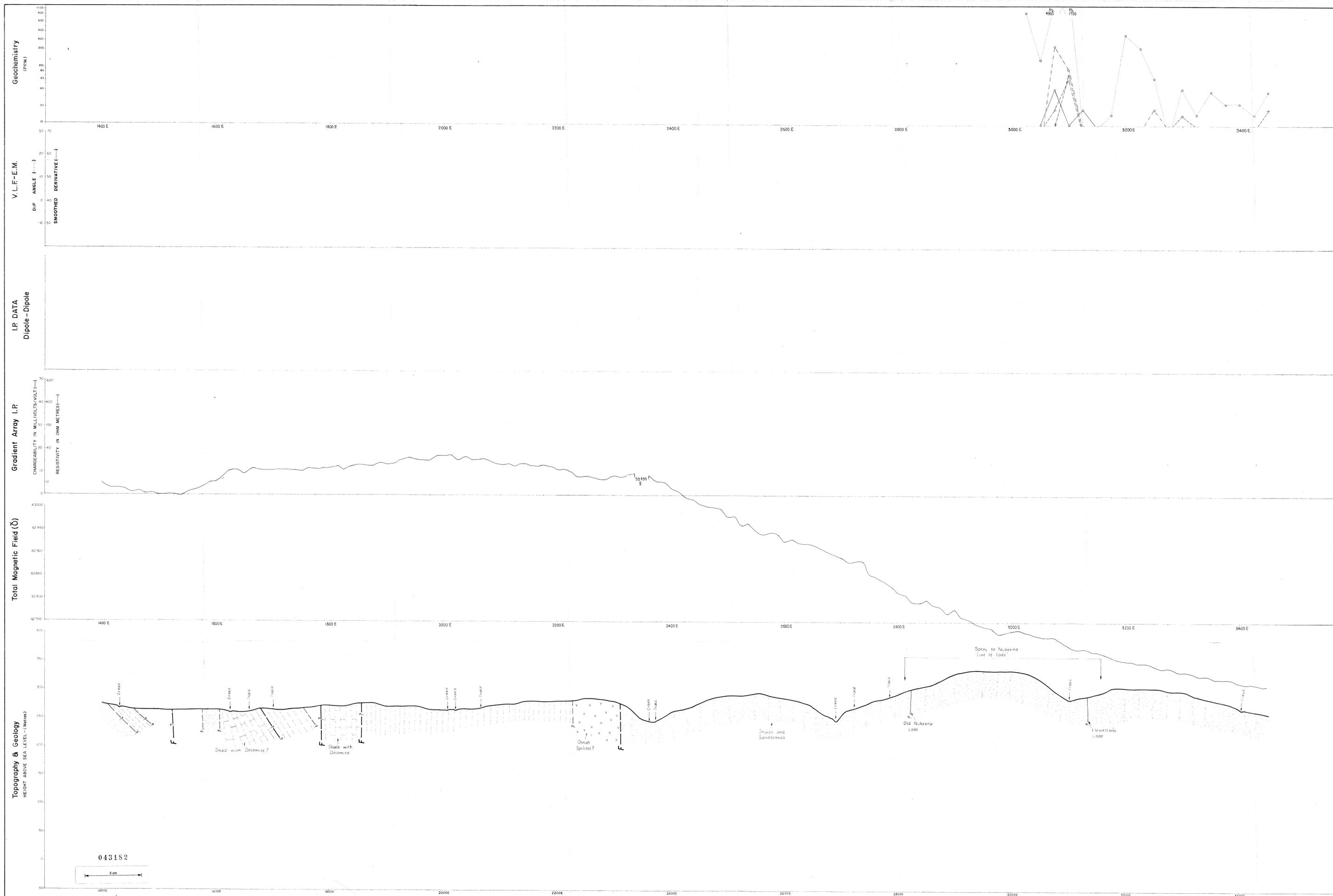
Shale	▨
Siltstone	▨
Sandstone	▨

Cambrian - Dundas Group?

Basic Lavas	▨
Shale	▨
Siltstone	▨

Grits	▨
Gossan	▨
Bedding	▨
Cleavage	▨

All Bearings Magnetic

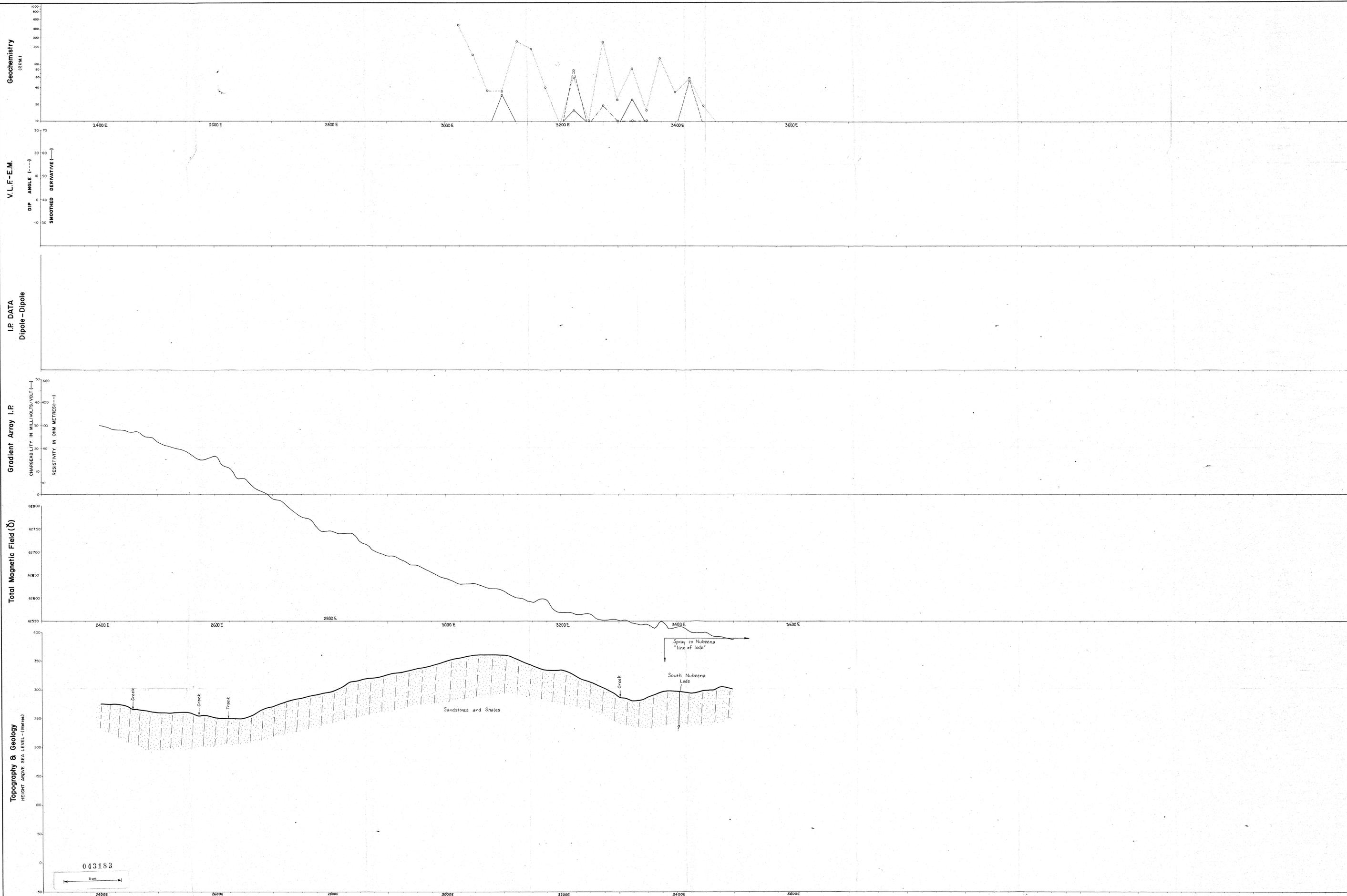


GOLD FIELDS EXPLORATION PTY. LIMITED
 S.R.L. 129 - STONEHENGE GRID
 BASELINE 00. (1400 E - 3450 E)
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	PK
TRACED	E.V.
DATE	April 1995
SCALE	1:2000
FIG. NO.	12

5731

I.P. DATA	MAGNETICS	GEOCHEMISTRY	GEOLOGY
		Sn Cu Pb Zn As Mo	Gossan Formation - Precambrian Shale Siltstone Sandstone Cambrian - Dundas Group? Basic Lavas Shale Siltstone Gossan Bedding Cleavage All Bearings Magnetic

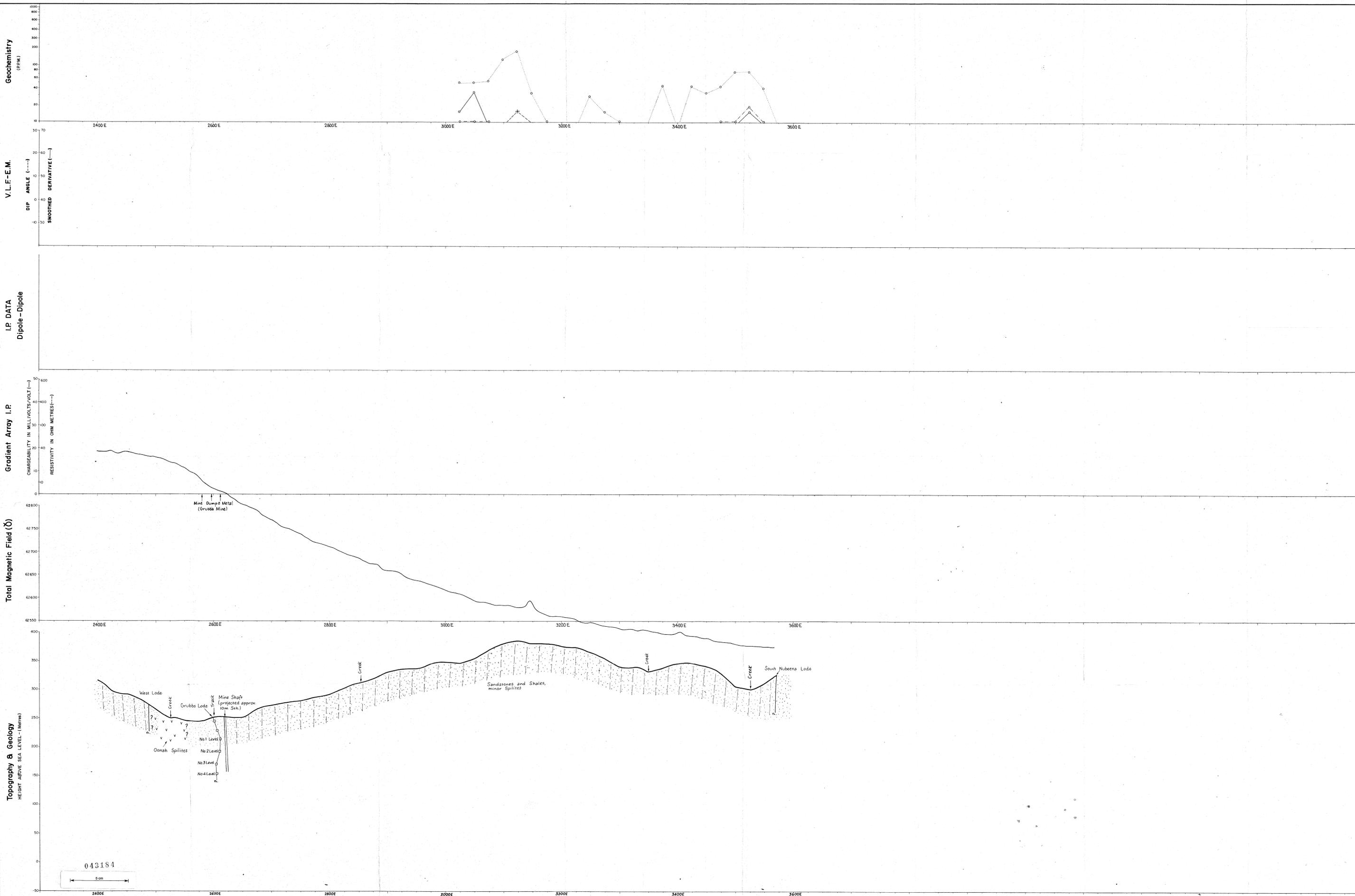


043183

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED	DRAWN	PK
	TRACED	E.V.
S.P.L. 129 - STONEHENGE GRID	DATE	April 1985
LINE 200 S. (2400E-3500E)	SCALE	1:2000
LOOKING N.W.	FIG. NO.	13
SCALE 1:2000 METRES		

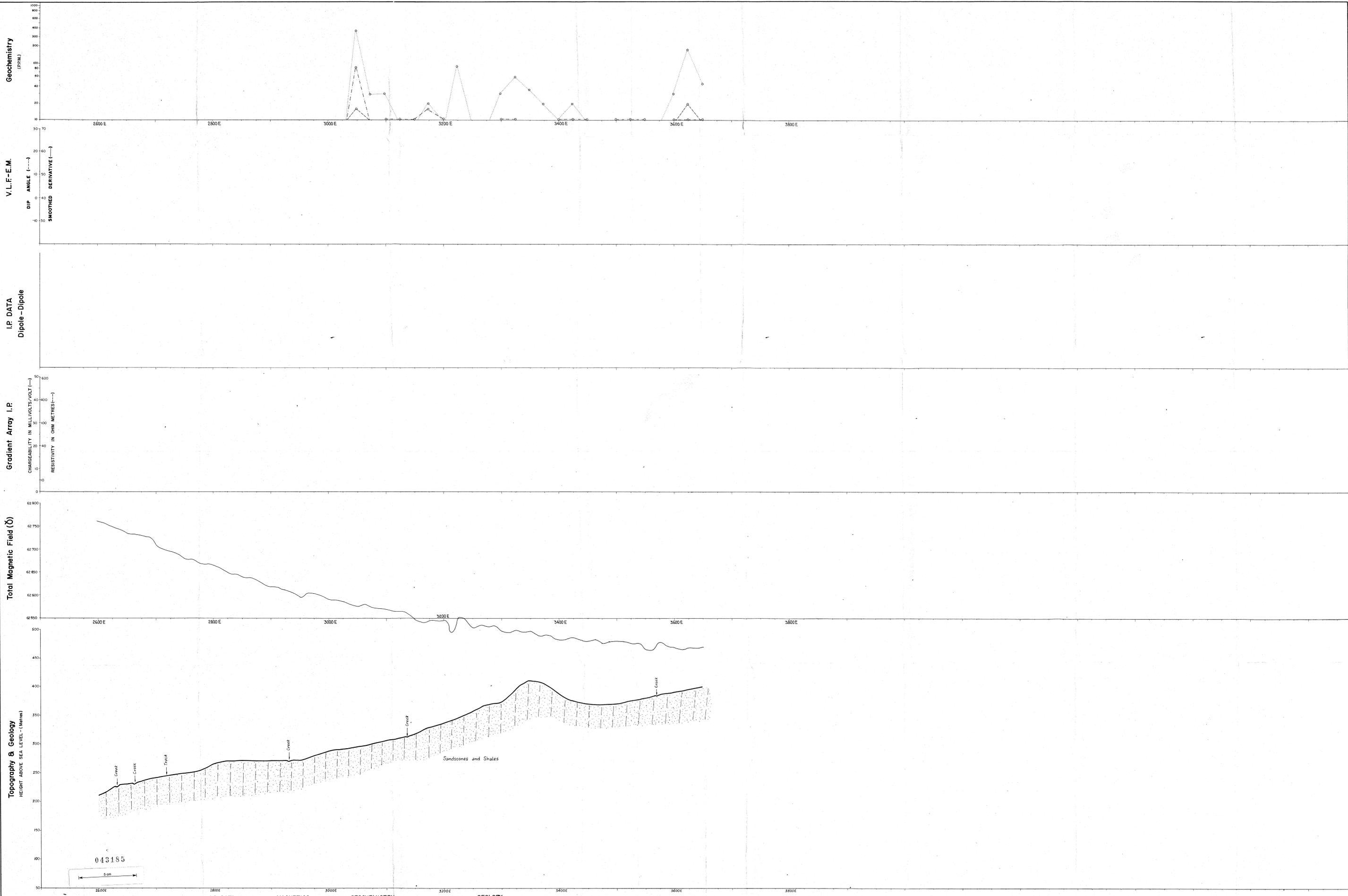
I.P. DATA	MAGNETICS	GEOCHEMISTRY	GEOLOGY
		<p>Qanah Formation - Precambrian</p> <p>Shale</p> <p>Siltstone</p> <p>Sandstone</p>	<p>Cambrion - Dundas Group ?</p> <p>Basic Lavas</p> <p>Grits</p> <p>Shale</p> <p>Siltstone</p> <p>Gossan</p> <p>Bedding</p> <p>Cleavage</p> <p>All Bearings Magnetic</p>



043184
5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED	DRAWN	PK
	TRACED	EV
S.P.L. 129 - STONEHENGE GRID	DATE	April 1985
LINE 400 S. (2400E-3575E)	SCALE	1:2000
SCALE 1:2000 METRES	FIG. NO.	14

5733

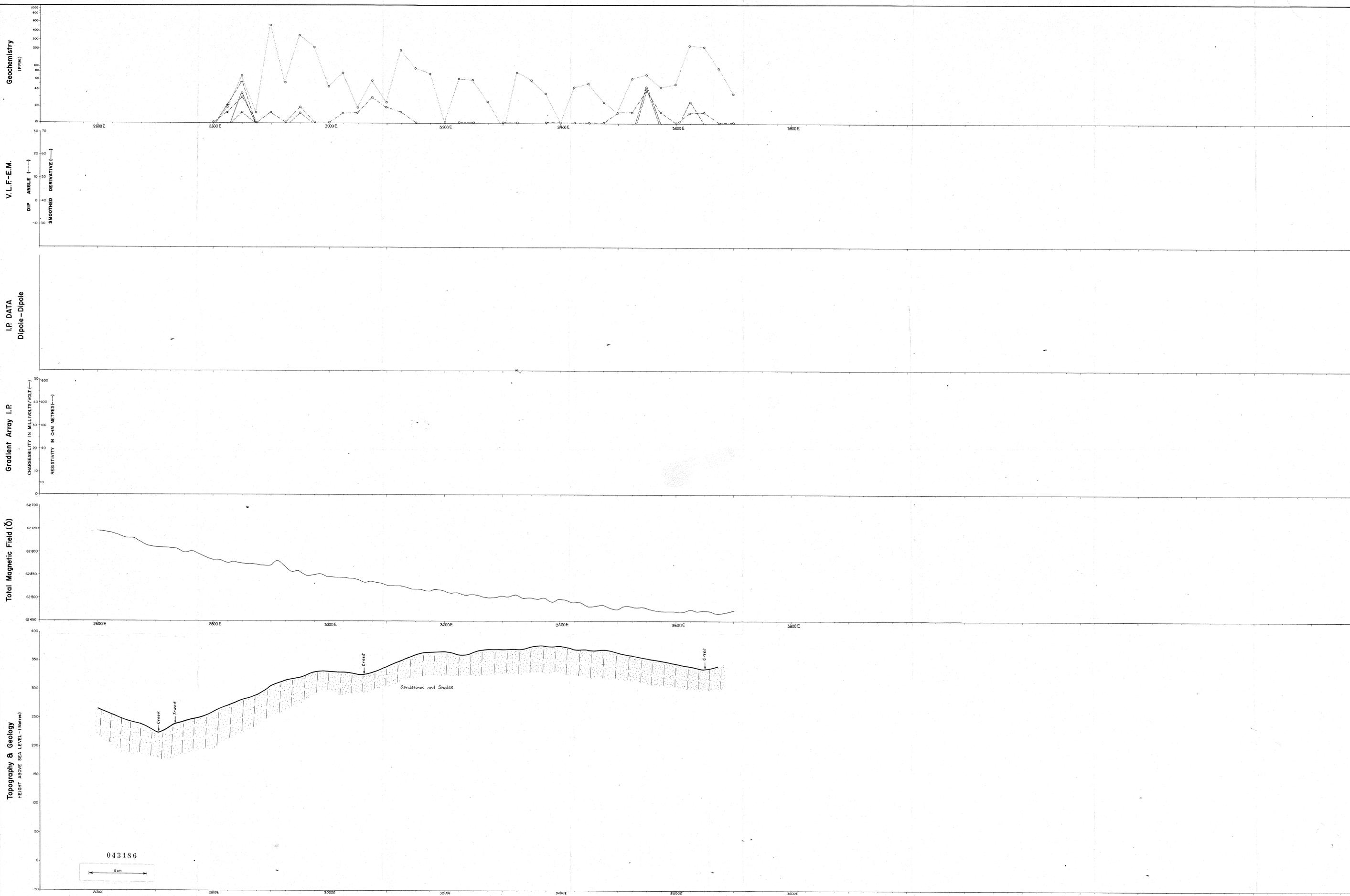


GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 600 S. (2600E-3650E)
 LOOKING N.W.
 SCALE 1:2000 METRES
 DRAWN P.K.
 TRACED E.V.
 DATE April 1985
 SCALE 1:2000
 FIG. NO
 15

96-2536-214

5734

GEOCHEMISTRY		GEOLOGY	
Sn	○	Comb. Formation - Precambrian	Shale
Cu	○	Shale	Basic Lavas
Pb	○	Siltstone	Grits
Zn	○	Sandstone	Gossan
As	○		Bedding
W3	○		Cleavage
Mo	○		All Bearings Magnetic



043186

5 cm

36-2536 3/4

GOLD FIELDS EXPLORATION PTY LIMITED

DRAWN	P.K.
TRACED	E.V.
DATE	April 1985
SCALE	1:2000
FIG. NO	16

S.P.L. 129 - STONEHENGE GRID
LINE 800 S. (2600E-3700E)
LOOKING N.W.

SCALE 1:2000 METRES

I.P. DATA MAGNETICS GEOCHEMISTRY GEOLOGY

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- W3
- Me

GEOLOGY

Oonah Formation - Precambrian

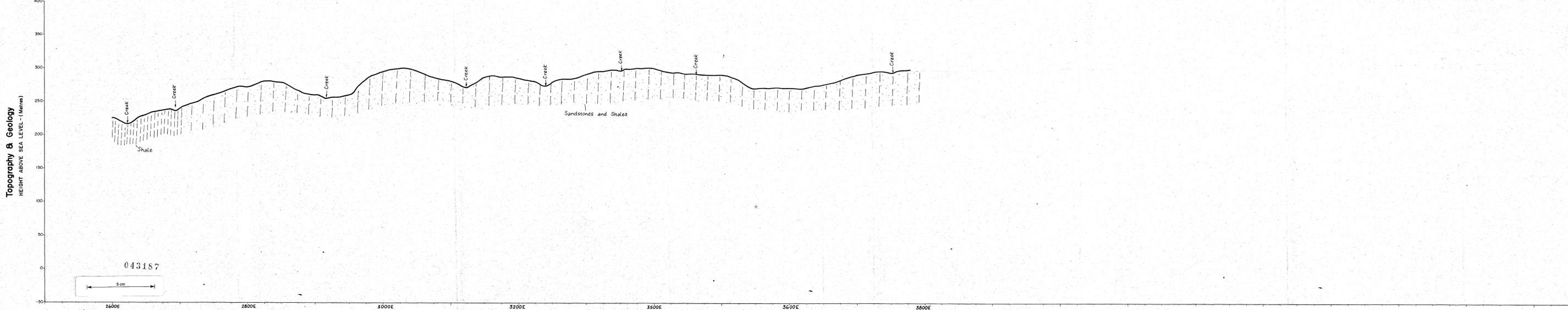
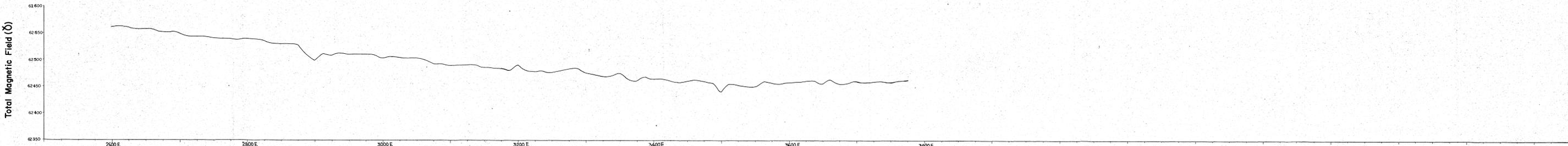
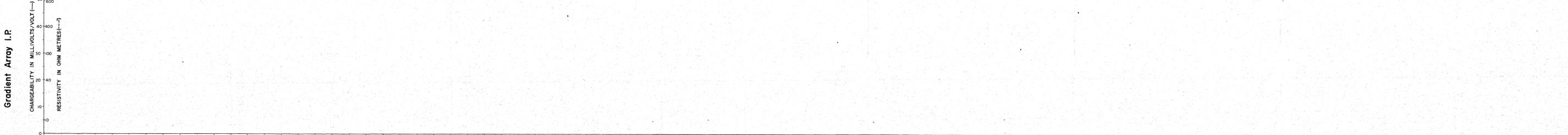
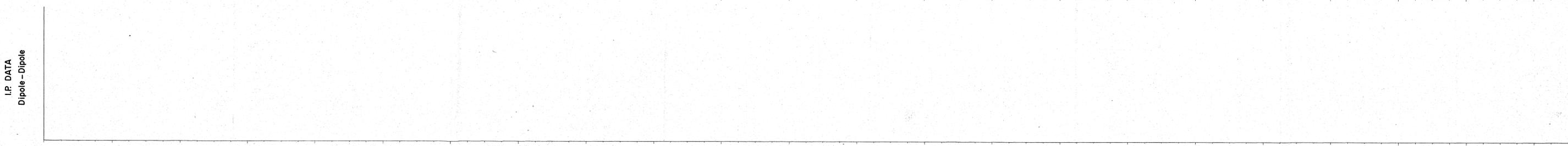
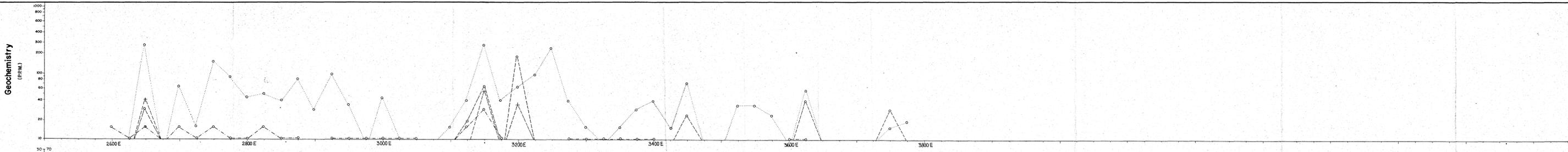
- Shale
- Siltstone
- Sandstone

Cambrion - Dundas Group?

- Basic Lavas
- Grits
- Shale
- Siltstone

Other Symbols:

- Gosson
- Bedding
- Cleavage
- All Bearings Magnetic



043187

5cm

GOLD FIELDS EXPLORATION PTY. LIMITED

DRAWN	P.K.
TRACED	E.V.
DATE	April 1985
SCALE	1:2000
FIG. NO.	17

SCALE 1:2000 METRES

LOOKING N.W.

I.P. DATA

MAGNETICS

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- Mo

GEOLOGY

Osborn Formation - Precambrian

- Shale
- Siltstone
- Sandstone

Cambrian - Dundas Group?

- Basic Lavas
- Grits
- Shale
- Siltstone

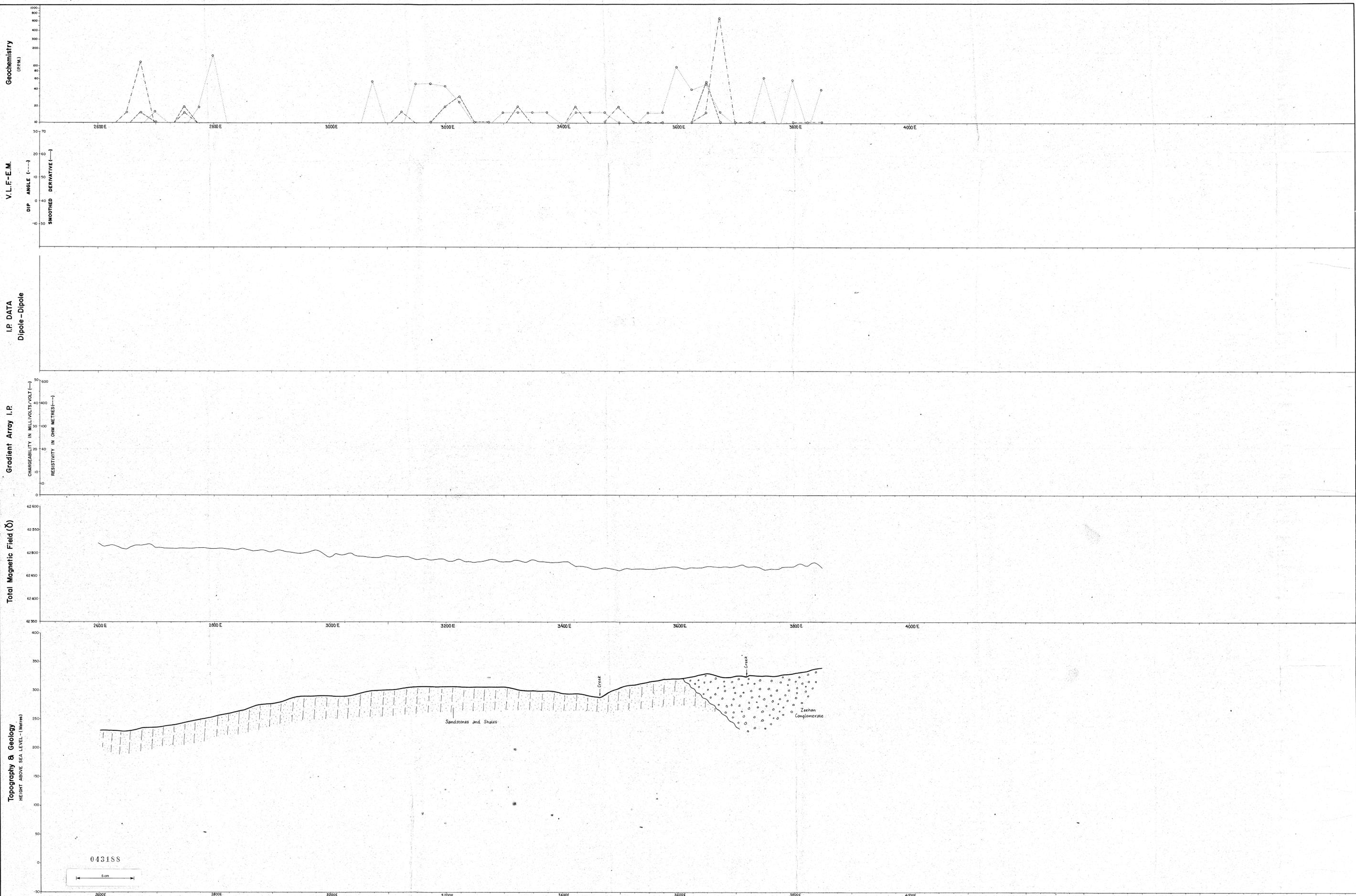
Gossan

Bedding

Cleavage

All Bearings Magnetic

5736



GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 1200 S. (2600E-3850E)
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	E.V.
DATE	April 1985
SCALE	1:2000
FIG. NO.	18

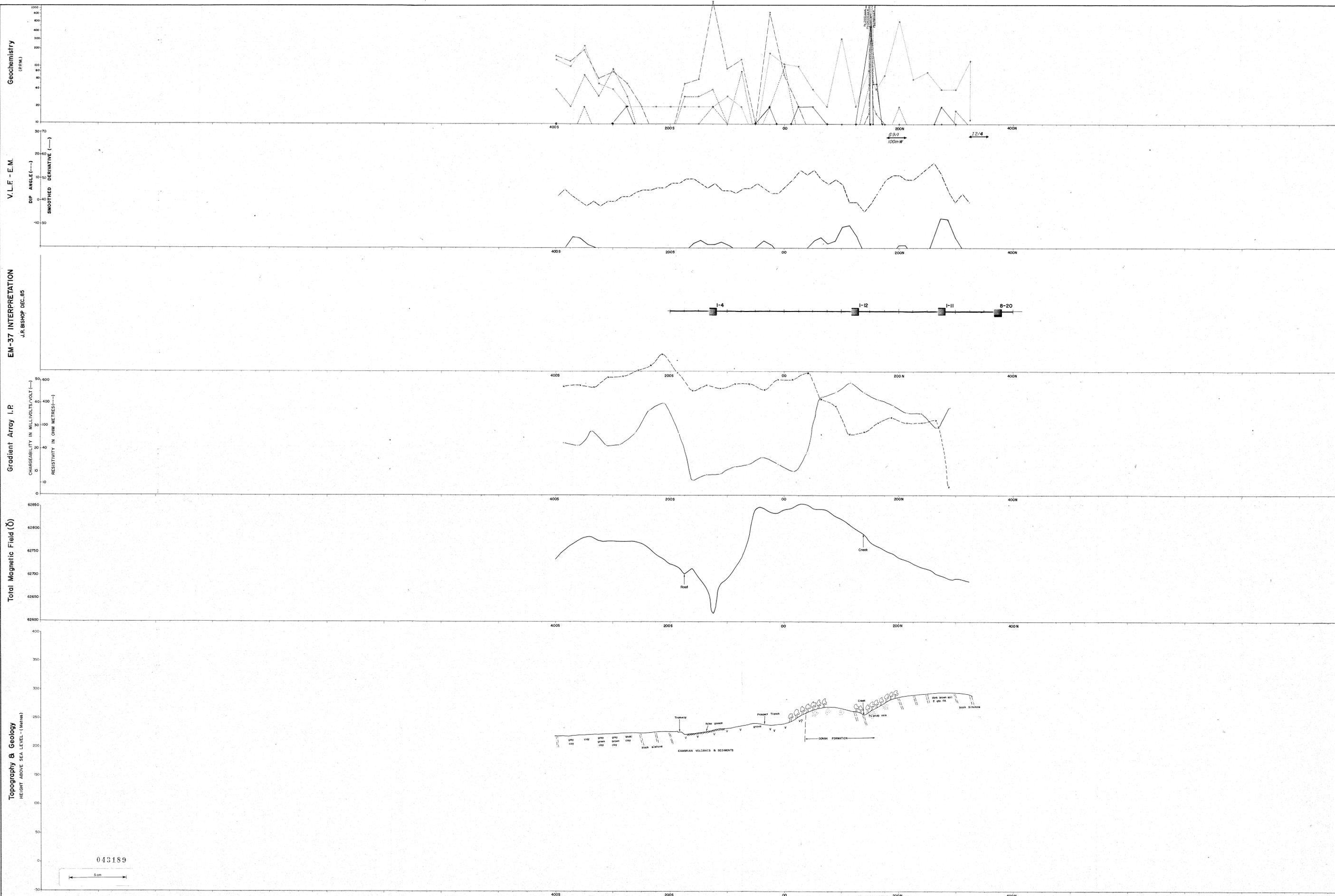
I.P. DATA MAGNETICS GEOCHEMISTRY GEOLOGY

Geochemistry: Sn, Cu, Pb, Zn, As, Mo, W, S, Se

Geology Legend:

- Qanah Formation - Precambrian
 - Shale
 - Siltstone
 - Sandstone
- Comblion - Dundas Group?
 - Basic Lavas
 - Grits
 - Shale
 - Siltstone
- Other: Gossion, Bedding, Cleavage

* All Bearings Magnetic



GOLD FIELDS EXPLORATION PTY. LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 800E
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	S.F.
DATE	FEB. 83
SCALE	1:2000
FIG. NO.	19

I.P. DATA
 MAGNETICS
 V.L.F.-E.M.
 Diphem Va / Diphem Grade
 Position

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As
Mo

Geology

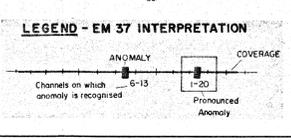
Onondaga Formation - Precambrian	Shale
	Siltstone
	Sandstone

Geology

Cambrion - Dundas Group?	Grits
	Basic Lavas
	Shale
	Siltstone

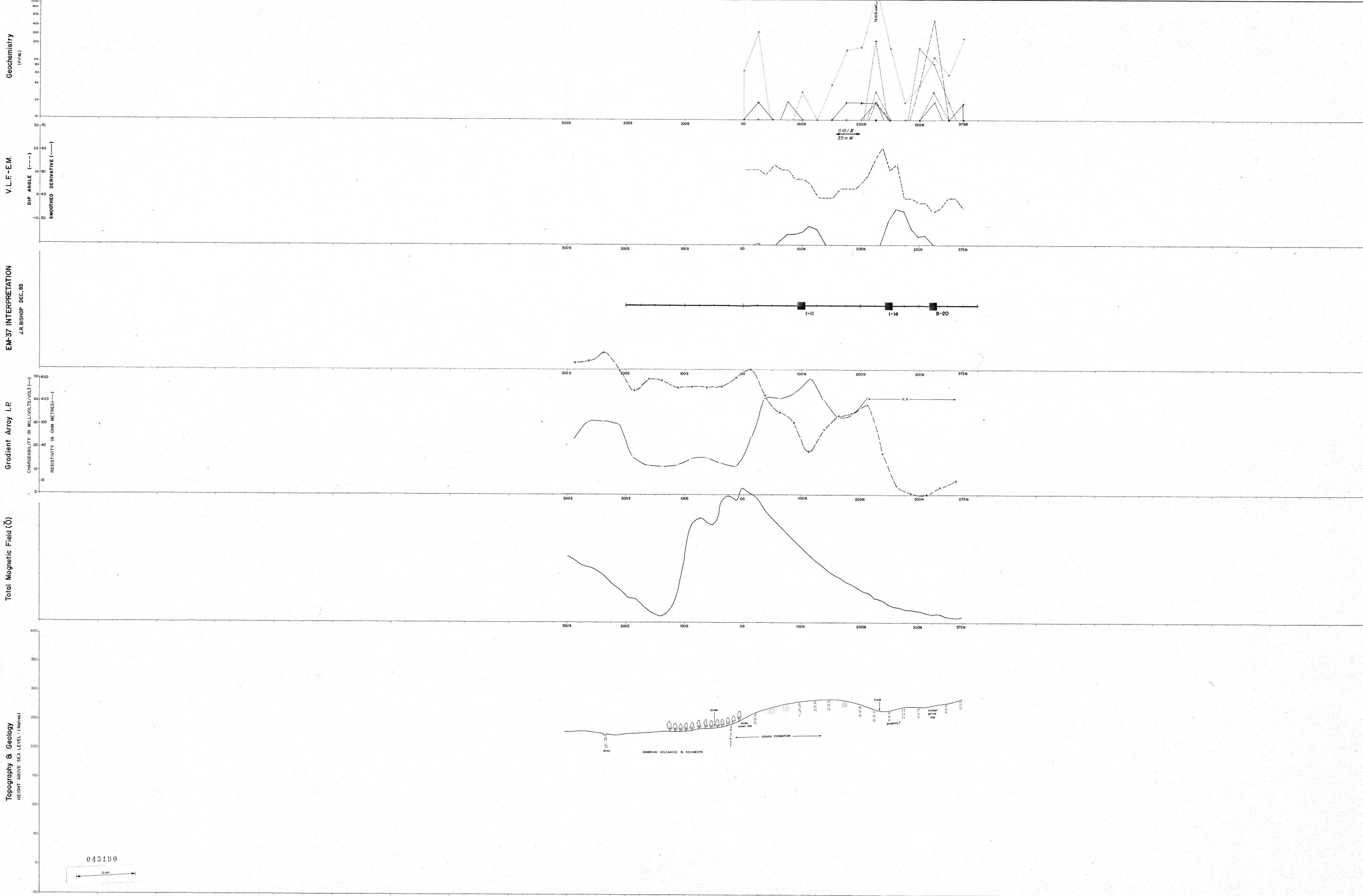
Geology

Gossan
Bedding
Cleavage
All Bearings Magnetic



EM 37 INTERPRETATION

M	200N	Strong migration of cross-over
←		Extent of migration
?		Possible anomaly
L.A.		Low amplitude response
⊗		Quantitatively interpreted anomaly
E.O.L.		Partially defined, end of line anomaly
		True position likely to be off the end of the line



043190
5m

GOLD FIELDS EXPLORATION PTY LIMITED
S.P.L. 129 - STONEHENGE GRID
LINE 900E
LOOKING N.W.
SCALE 1:2000 METRES

DRAWN	PK
TRACED	S.F.
DATE	Feb. 85
SCALE	1:2000
FIG. NO.	20

I.P. DATA
N.R. = NO READING

V.L.F.-E.M.
SCALE 1:2000 METRES
Diphen No. / Diphen Grade
Position

MAGNETICS

GEOCHEMISTRY

Sh	Shale
Cu	Siltstone
Pb	Sandstone
Zn	
As	
Wb3	
Mo	

Geology

Qonah Formation - Precambrian

Cambrion - Dundas Group?

Basic Lavas, Grits, Shale, Siltstone, Sandstone, Bedding, Cleavage, Bearings Magnetic

LEGEND - EM 37 INTERPRETATION

ANOMALY: Channels on which anomaly is recognised

COVERAGE: Pronounced Anomaly

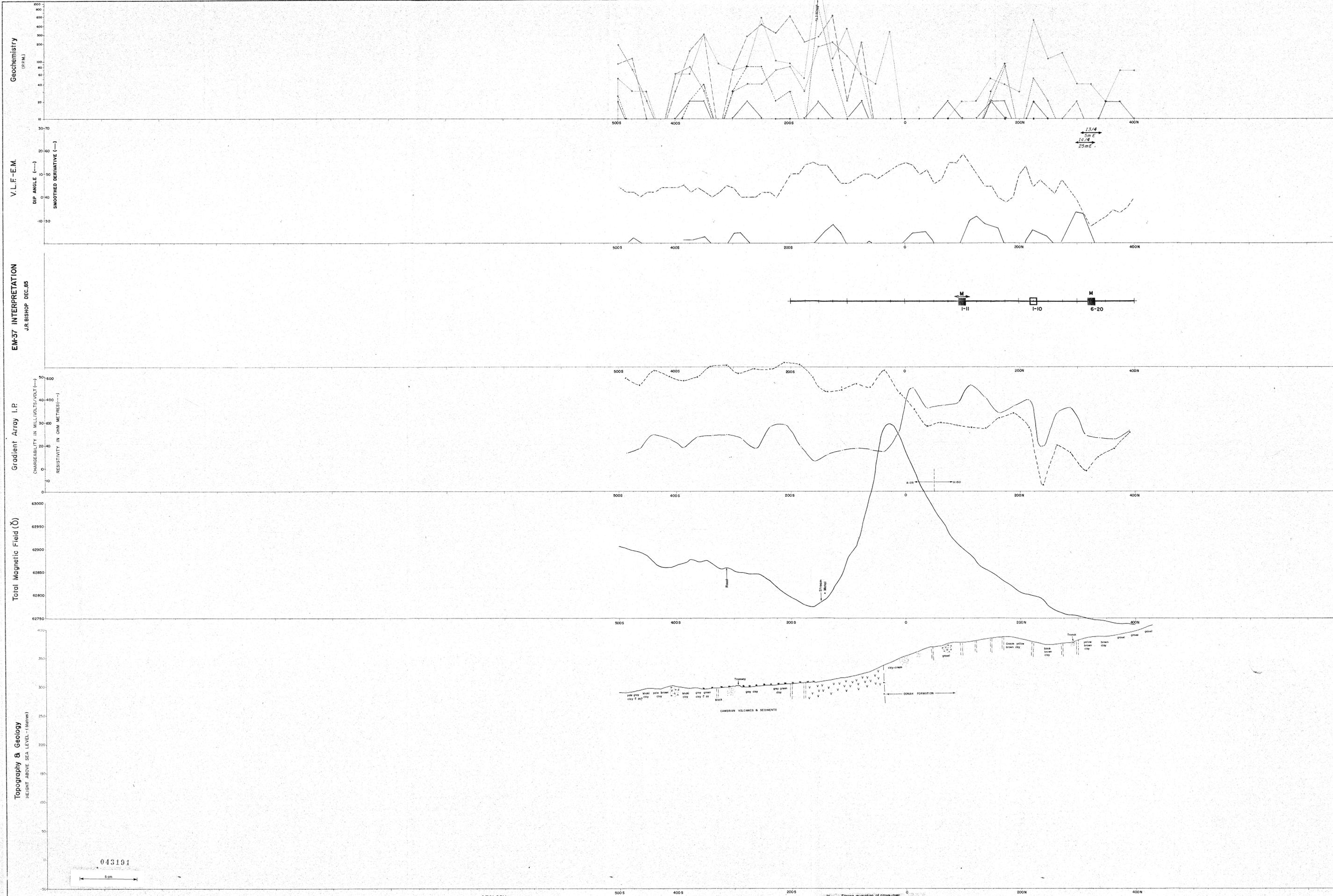
M: Strong migration of cross-over

?: Possible anomaly

L.A: Low amplitude response

Quantitatively interpreted anomaly

E.O.L.: Partially defined, end of line anomaly. True position likely to be off the end of the line.



043191

500m

GOLD FIELDS EXPLORATION PTY LIMITED

DRAWN	PK
TRACED	S.F.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	21

S.P.L. 129-STONEHENGE GRID
LINE 1000E
LOOKING N.W.
SCALE 1:2000 METRES

I.P. DATA

A1 DIPOLE DISTANCE

V.L.F.-E.M.

13/4 Dipgram No. / Dipgram Grade
5m E Position

MAGNETICS

GEOCHEMISTRY

Sh	Shale
Cu	Siltstone
Pb	Sandstone
Zn	
As	
Mo	

GEOLOGY

Dunham Formation - Precambrian	Cambrian - Dundas Group?
Shale	Basic Lavas
Siltstone	Grits
Sandstone	

Gossan

Bedding

Cleavage

LEGEND - EM 37 INTERPRETATION

Low Amplitude Anomaly

ANOMALY

11-20 channels on which anomaly is recognised

6-13

1-20

Pronounced Anomaly

COVERAGE

M

Strong migration of cross-over

Extent of migration

Possible anomaly

LA

Low amplitude response

Quantitatively interpreted anomaly

E.O.L.

Partially defined end of line anomaly
True position likely to be off the end of the line

Geochemistry (PPM)

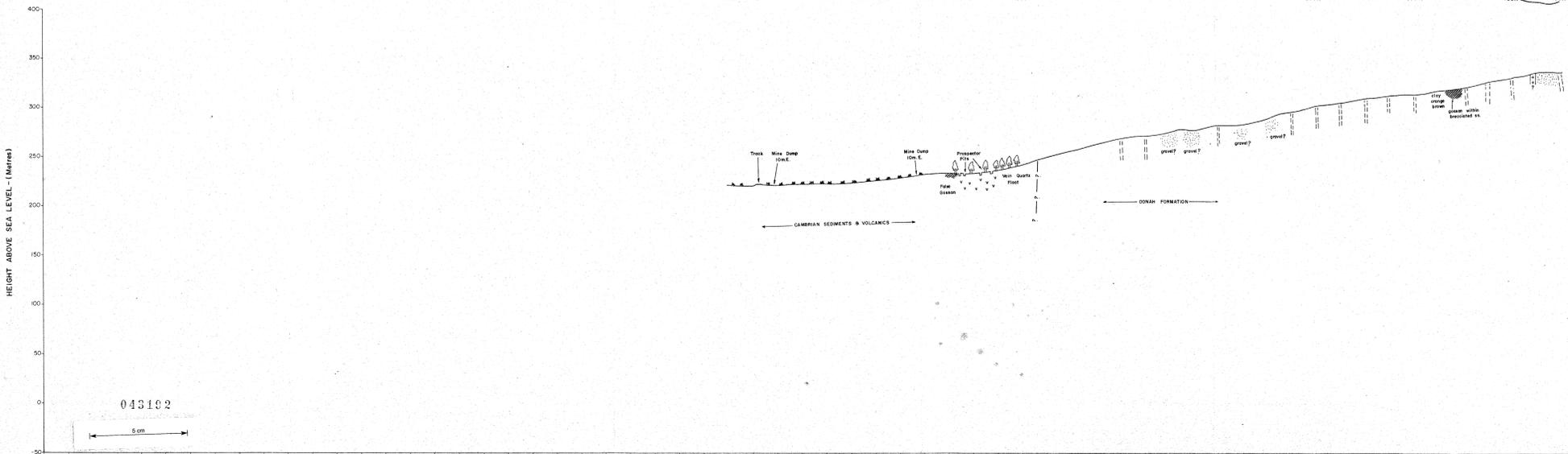
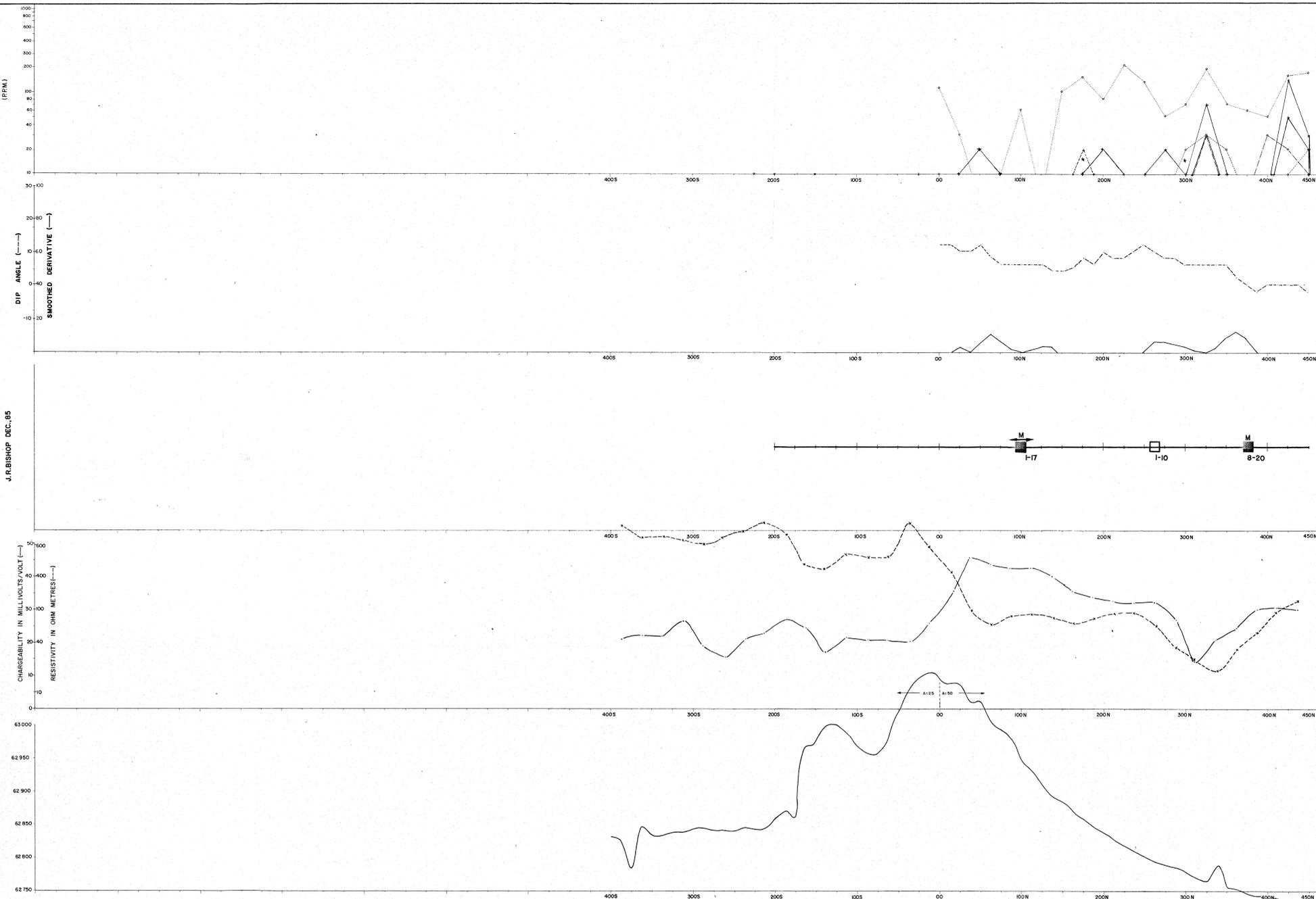
V.L.F. - E.M. DIP ANGLE (---) SMOOTHED DERIVATIVE (—)

EM-37 INTERPRETATION J.R.BISHOP DEC.85

Gradient Array I.P. CHARGEABILITY IN MILLIVOLTS/VOLT (---) RESISTIVITY IN OHM METRES (—)

Total Magnetic Field (G)

Topography & Geology HEIGHT ABOVE SEA LEVEL - (Metres)



043102
5cm

DRAWN	PK
TRACED	S.E.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	
22	

I.P. DATA
A: DIPOLE DISTANCE

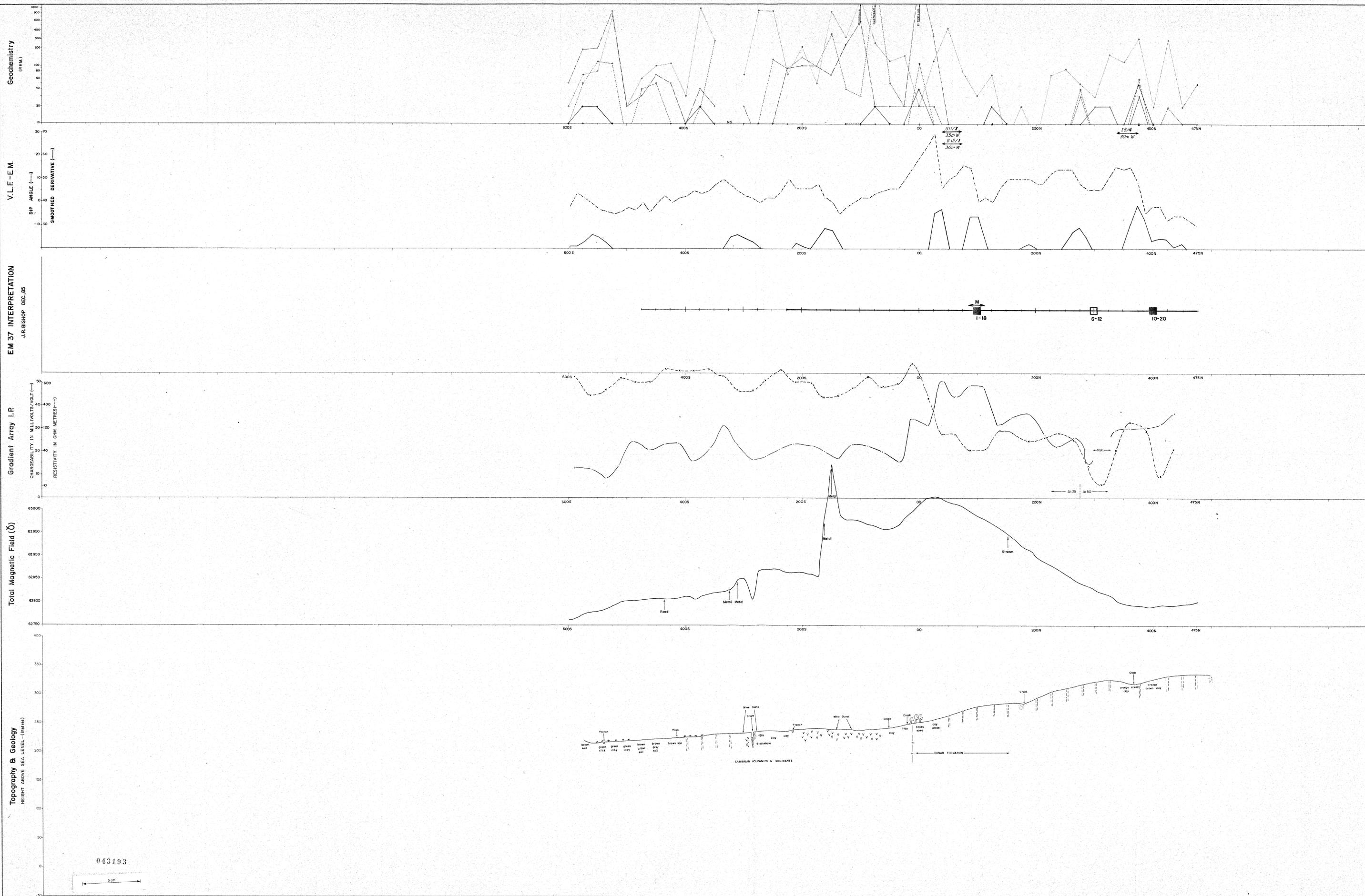
MAGNETICS

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As
Wb3
Mo

GEOLOGY
Donoh Formation - Precambrian
Shale
Siltstone
Sandstone
Cambrian - Dundas Group?
Basic Lavas
Shale
Siltstone
Grits

LEGEND - EM 37 INTERPRETATION
Low Amplitude Anomaly
Bedding
Cleavage
ANOMALY
Channels on which anomaly is recognised
Pronounced Anomaly
COVERAGE
M Strong migration of cross-over
Extent of migration
? Possible anomaly
L.A. Low amplitude response
Quantitatively interpreted anomaly
E.O.L. Partially defined end of line anomaly
True position likely to be off the end of the line

300N
400N
450N



043193

50m

GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 1200 E
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	S.F.
DATE	Feb. 85
SCALE	1:2000
FIG. NO.	
23	

I.P. DATA
 A = DIPOLE DISTANCE
 N.R. = NO READING

V.L.F.-E.M.
 15/A Diphen No. / Diphen Grade
 30m W Position

MAGNETICS

GEOCHEMISTRY

Sn	Oposh Formation - Precambrian
Cu	Shale
Pb	Siltstone
Zn	Sandstone
As N.S. = No Sample	
Mo3	
Mo	

GEOLOGY

Basic Lavas	Grits
Shale	
Siltstone	
Sandstone	

Cambrion - Dundas Group?

LEGEND - EM 37 INTERPRETATION

Strong migration of cross-over	M
Extent of migration	→
Possible anomaly	?
Low amplitude response	L.A.
Quantitatively interpreted anomaly	■
Partially defined, end of line anomaly	◻
True position likely to be off the end of the line	E.O.L.

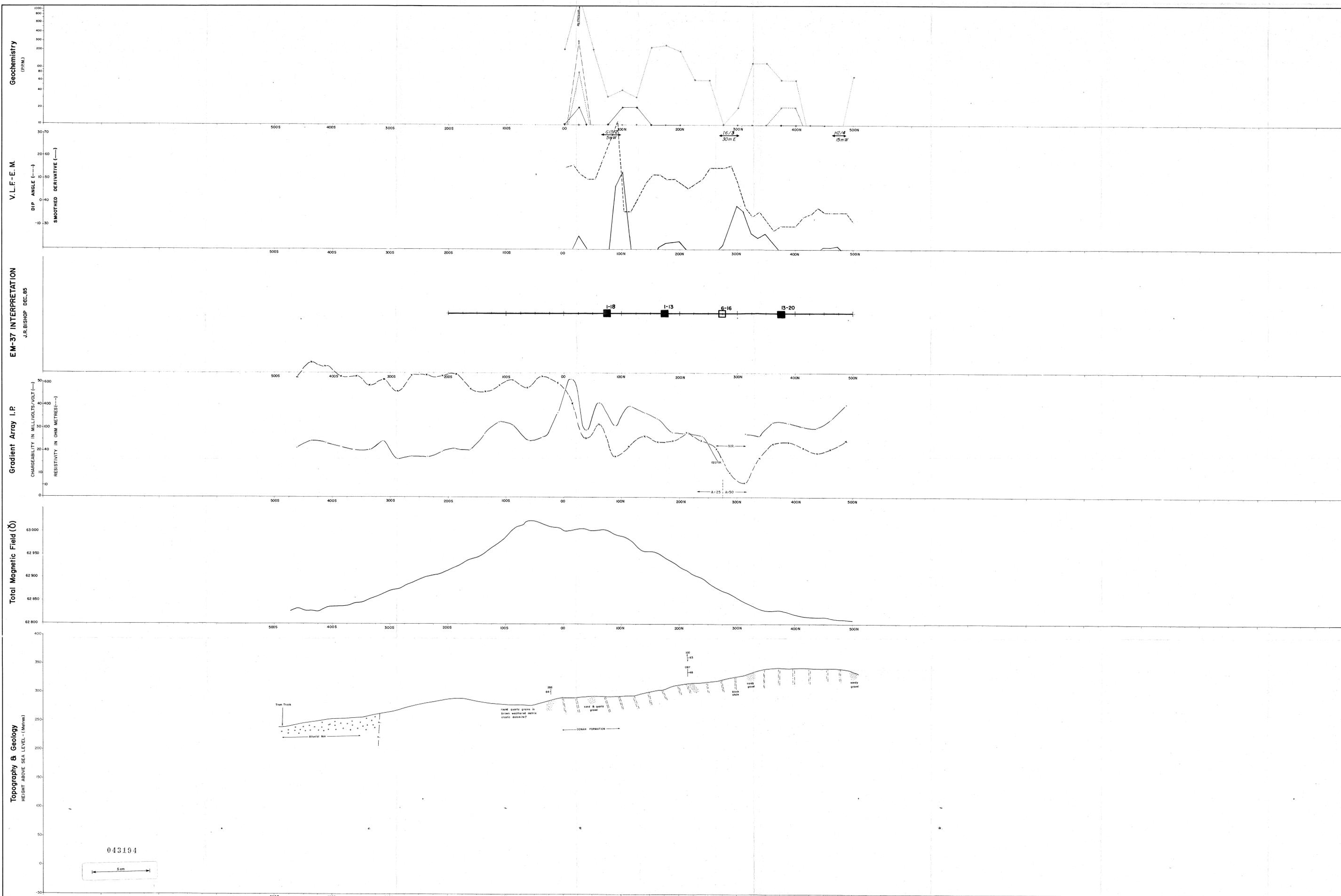
ANOMALY

COVERAGE

11-20 Channels on which anomaly is recognised

6-15

Pronounced Anomaly



043194

SCALE 1:2000 METRES

50m

GOLD FIELDS EXPLORATION PTY LIMITED	DRAWN P.K.
TRACED S.F.	
DATE Feb. 83	
SCALE 1:2000	
FIG. NO	
24	

I.P. DATA

A1 DIPOLE DISTANCE

NR: NO READING

V.L.F.-E.M.

16/3 30m E Dighem No./ Dighem Grade Position

MAGNETICS		GEOCHEMISTRY	
Shale	Sn	As	Wb3
Siltstone	Pb		
Sandstone	Zn		

GEOLOGY	
Onagh Formation - Precambrian	Cambrian - Dundas Group ?
Shale	Basic Lavas
Siltstone	Shale
Sandstone	Siltstone
	Grits
	Gossan
	Bedding
	Cleavage

LEGEND - EM 37 INTERPRETATION

Low Amplitude Anomaly

ANOMALY

II-20 Channels on which anomaly is recognised

6-15

1-20

Pronounced Anomaly

COVERAGE

All Bearings Magnetic

M Strong migration of cross-over

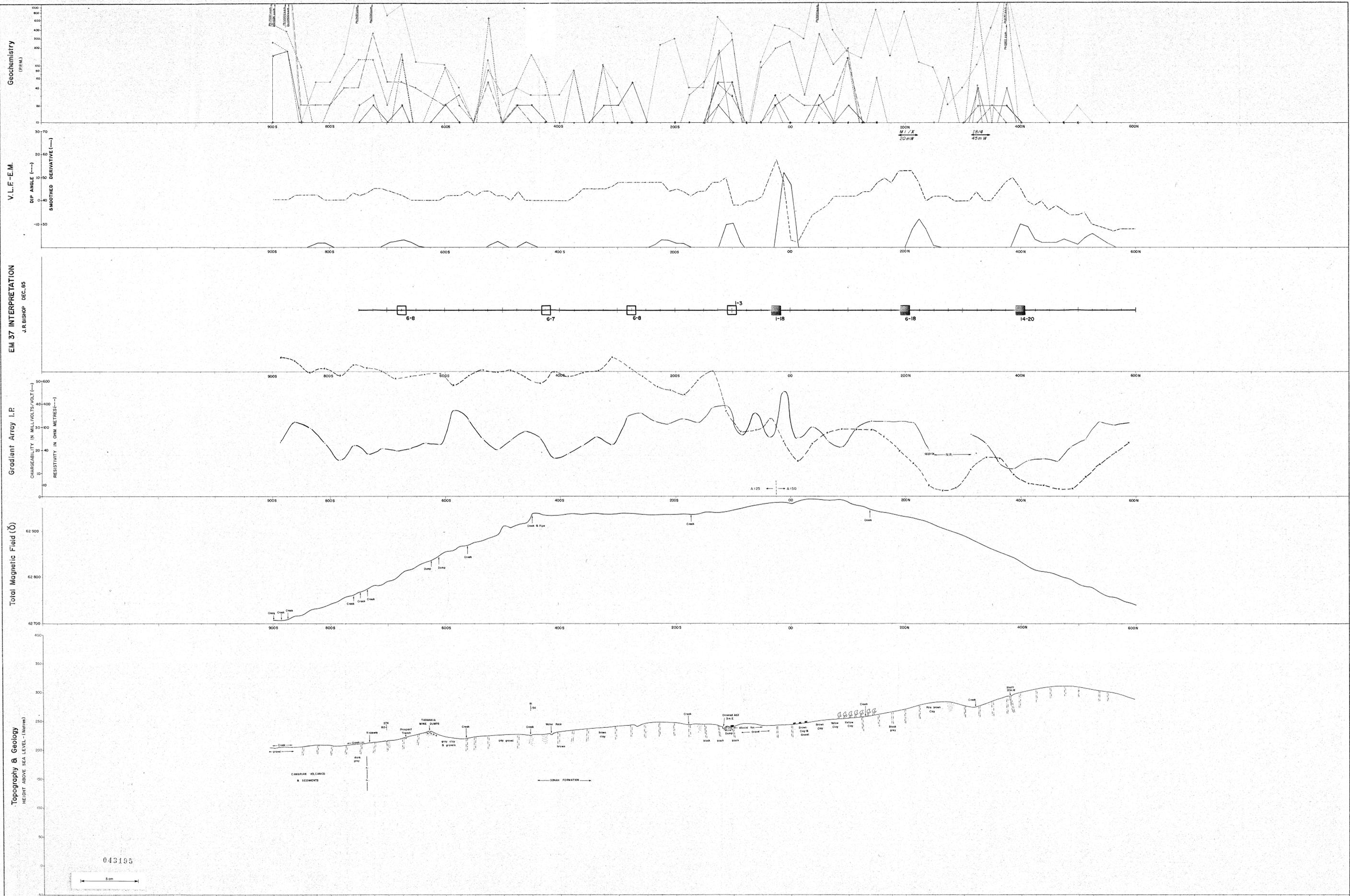
→ Extent of migration

? Possible anomaly

L.A Low amplitude response

Quantitatively interpreted anomaly

E.O.L. Partially defined end of line anomaly True position likely to be off the end of the line.



GOLD FIELDS EXPLORATION PTY. LIMITED		DRAWN	RK
S.P.L. 129 - STONEHENGE GRID		TRACED	S.F.
LINE 1600E		DATE	Feb. 85
LOOKING N.W.		SCALE	1:2000
SCALE 1:2000 METRES		FIG. NO.	25

I.P. DATA
 A = DIPOLE DISTANCE
 N.R. = NO READING

V.L.F.-E.M.
 18/4 Dipgram No. / Dipgram Grade
 45m W Position

MAGNETICS

GEOCHEMISTRY

GEOLOGY

LEGEND - EM 37 INTERPRETATION

Low Amplitude Anomaly
 11-20 channels on which anomaly is recognised

ANOMALY
 6-15 channels on which anomaly is recognised

1-20 channels on which anomaly is recognised

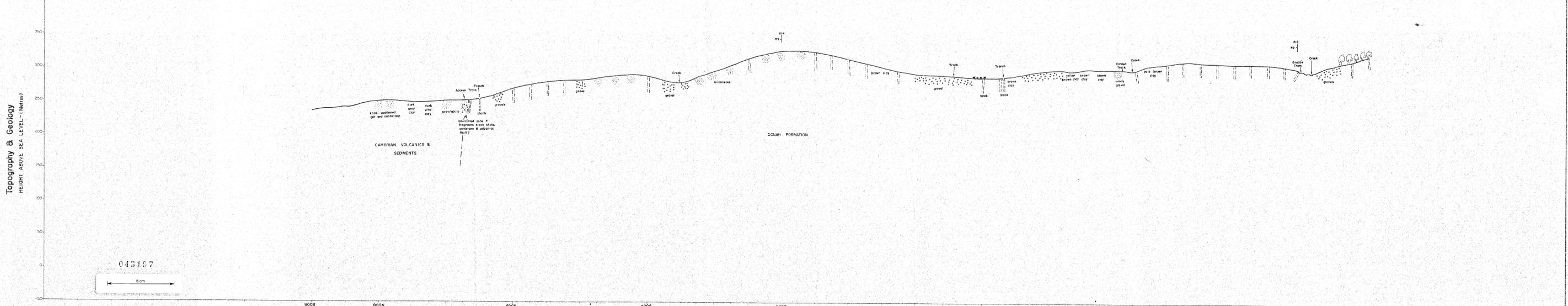
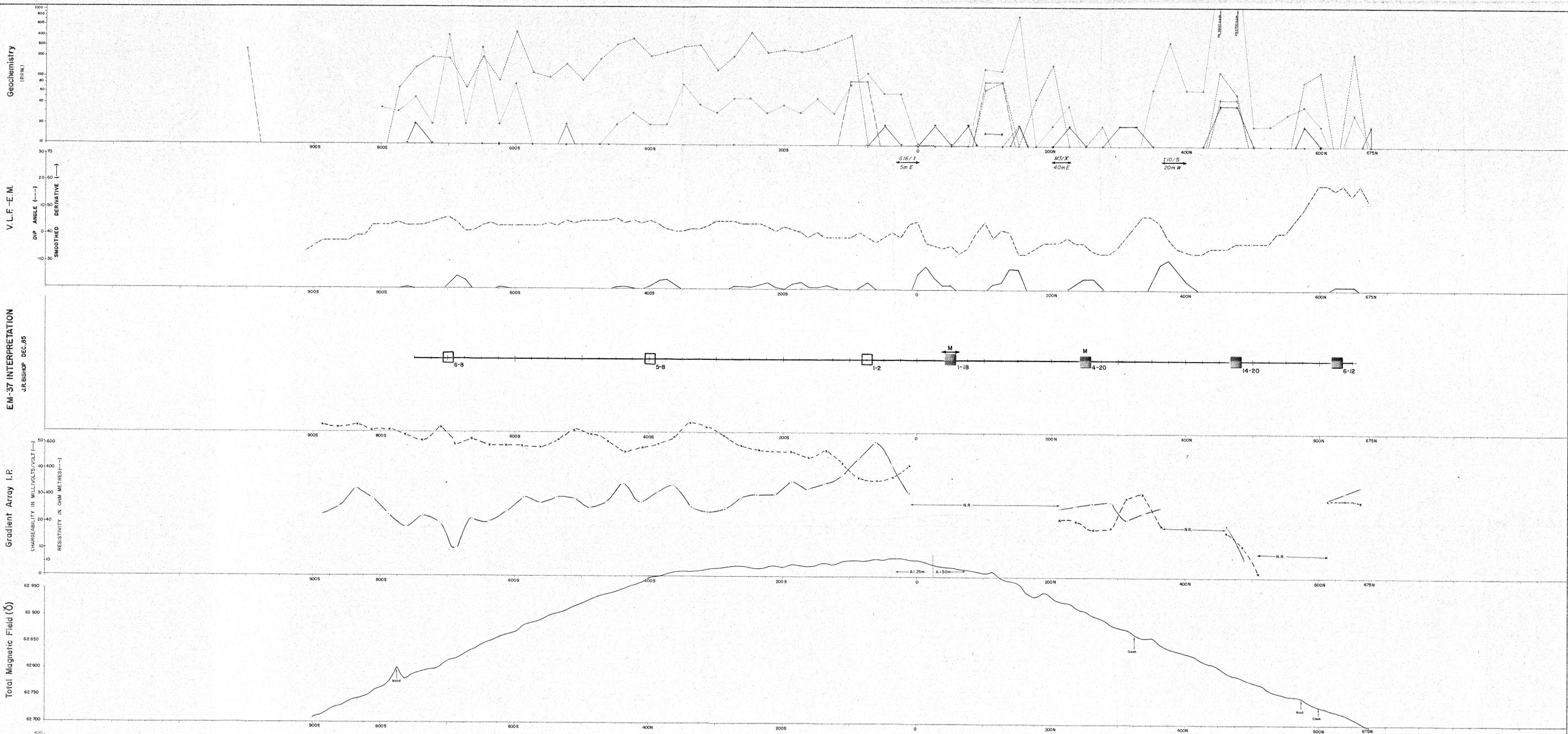
COVERAGE

Strong migration of cross-over
 Extent of migration
 Possible anomaly
 Low amplitude response
 Quantitatively interpreted anomaly
 Partially defined, end of line anomaly
 True position likely to be off the end of the line

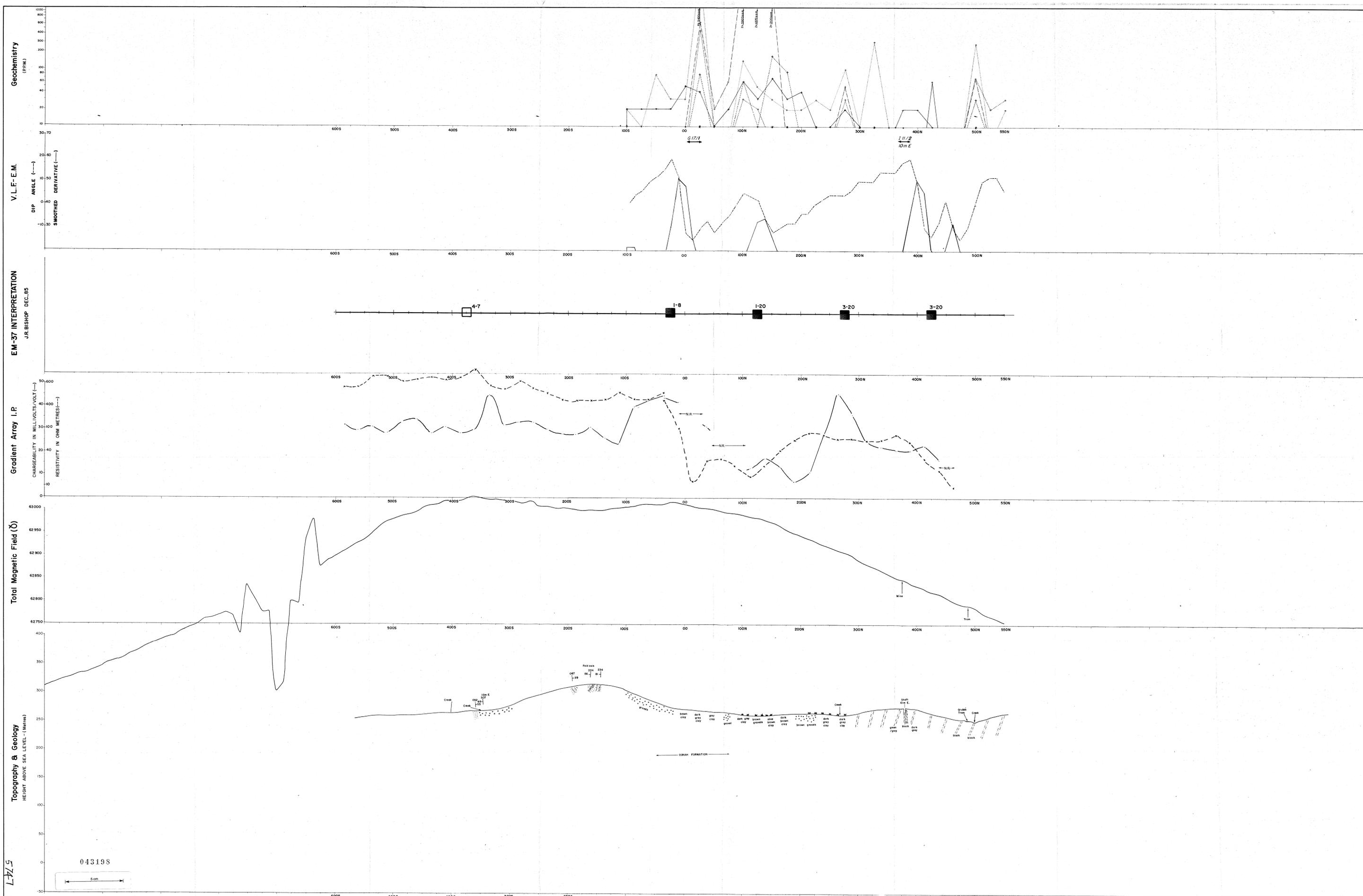
Donoh Formation - Precambrian
 Shale
 Siltstone
 Sandstone

Cambrian - Dundas Group?
 Basic Lavas
 Shale
 Siltstone

Gossion
 Bedding
 Cleavage
 All Magnetic Bearings



GOLD FIELDS EXPLORATION PTY LIMITED S.P.L. 129 - STONEHENGE GRID LINE 1800E (900S-675N) LOOKING N.W. SCALE 1:2000 METRES		DRAWN: R.K. TRACED: S.E. DATE: Feb. 83 SCALE: 1:2000 FIG. NO: 27	I.P. DATA A = DIPOLE DISTANCE NR = NO READING V.L.F.-E.M. Diphem No. / Diphem Grade Position	MAGNETICS All Bearings Magnetic	GEOCHEMISTRY Sn, Cu, Pb, Zn, As, W ₃ , Mo	GEOLOGY Donoh Formation - Precambrian Shale, Siltstone, Sandstone Cambrian - Dundas Group? Basic Lavae, Grits, Shale, Siltstone	LEGEND - EM 37 INTERPRETATION Low Amplitude Anomaly, ANOMALY, COVERAGE, 11-20 channels on which anomaly is recognised, 5-15, 1-20, Pronounced Anomaly	M Strong migration of cross-over Extent of migration ? Possible anomaly L.A Low amplitude response Quantitatively interpreted anomaly E.O.L. Partially defined end of line anomaly True position likely to be off the end of the line.
---	--	--	---	---	--	--	---	--



043198
 SCALE 1:2000 METRES
 5cm

DRAWN	RK
TRACED	S.F.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	
28	

I.P. DATA
 N.R. = NO READING
V.L.F.-E.M.
 11/2
 10m E
 Dighem No./Dighem Grade
 Position

MAGNETICS
 All Bearings Magnetic

GEOCHEMISTRY
 Sn
 Cu
 Pb
 Zn
 As
 Mo

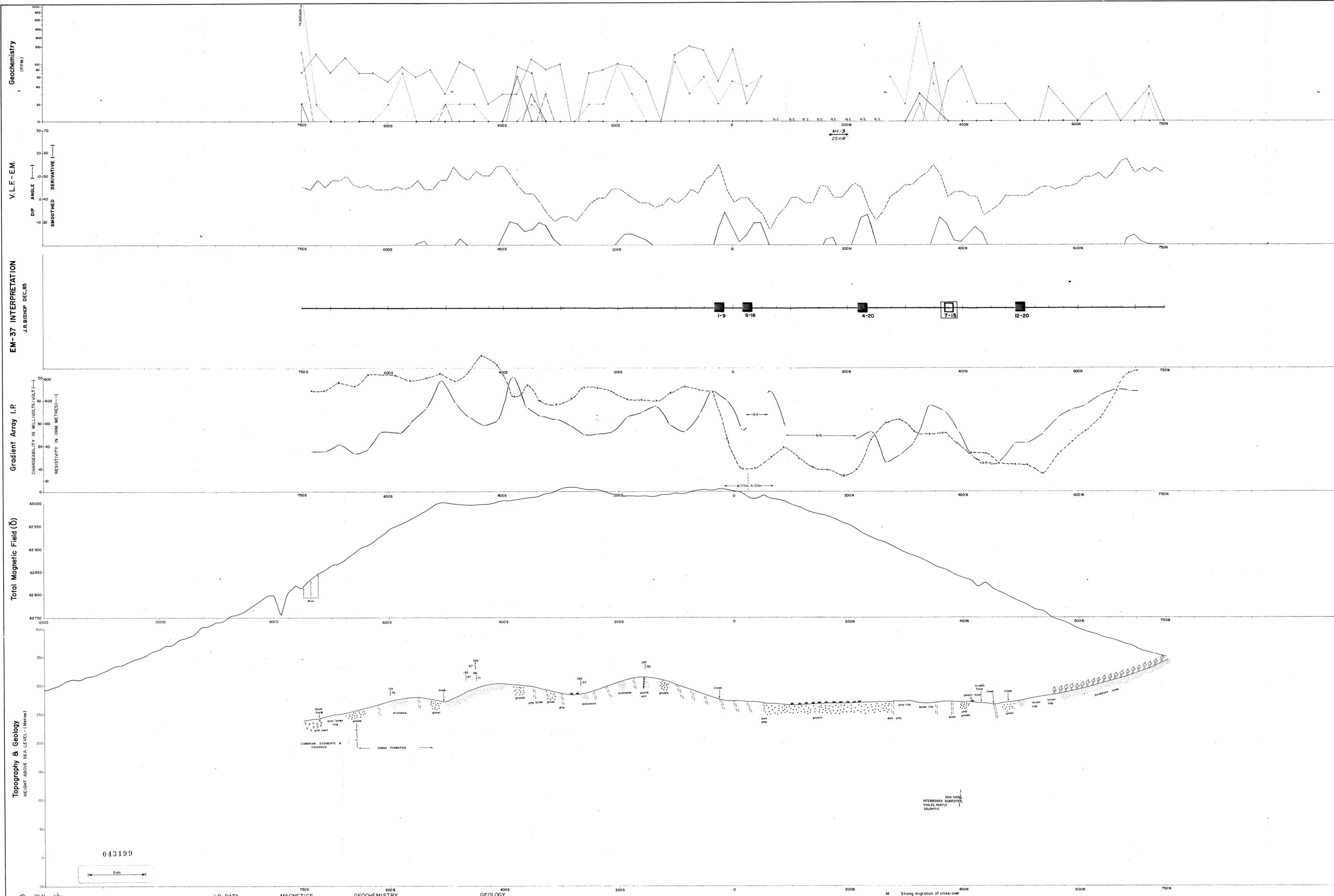
GEOLOGY
 Oonah Formation - Precambrian
 Shale
 Siltstone
 Sandstone

Cambrion - Dundas Group?
 Basic Lavas
 Shale
 Siltstone

Grits
 Gossan
 Bedding
 Cleavage

LEGEND - EM 37 INTERPRETATION
 Low Amplitude Anomaly
 ANOMALY
 11-20 Channels on which anomaly is recognised
 6-13
 1-20
 Pronounced Anomaly
 COVERAGE

M Strong migration of cross-over
 Extent of migration
 Possible anomaly
 L.A. Low amplitude response
 Quantitatively interpreted anomaly
 E.O.L. Partially defined, end of line anomaly
 True position likely to be off the end of the line



043199

5748

GOLD FIELDS EXPLORATION PTY. LIMITED

S.R.L. 129 - STONEHENGE GRID

LINE 2000E (200S-750N)

LOOKING N.W.

SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	S.F.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	29

I.P. DATA

A = DIPOLE DISTANCE

N.R. = NO READING

V.L.F.-E.M.

M/3 Diphem No / Diphem Grade

25m W Position

MAGNETICS	GEOCHEMISTRY	GEOLOGY
Sh	Sn	Ononah Formation - Precambrian
Cu	Pb	Shale
Zn	As	Siltstone
MoS	N.S. = No Sample	Sandstone
		Cambric - Dundas Group?
		Basic L. lavas
		Grits
		Gossion
		Bedding
		Cleavage
		All Bearings Magnetic

LEGEND - EM 37 INTERPRETATION

Low Amplitude Anomaly

ANOMALY

11-20 Channels on which anomaly is recognised

6-13

1-20

Pronounced Anomaly

COVERAGE

M Strong migration of cross-over

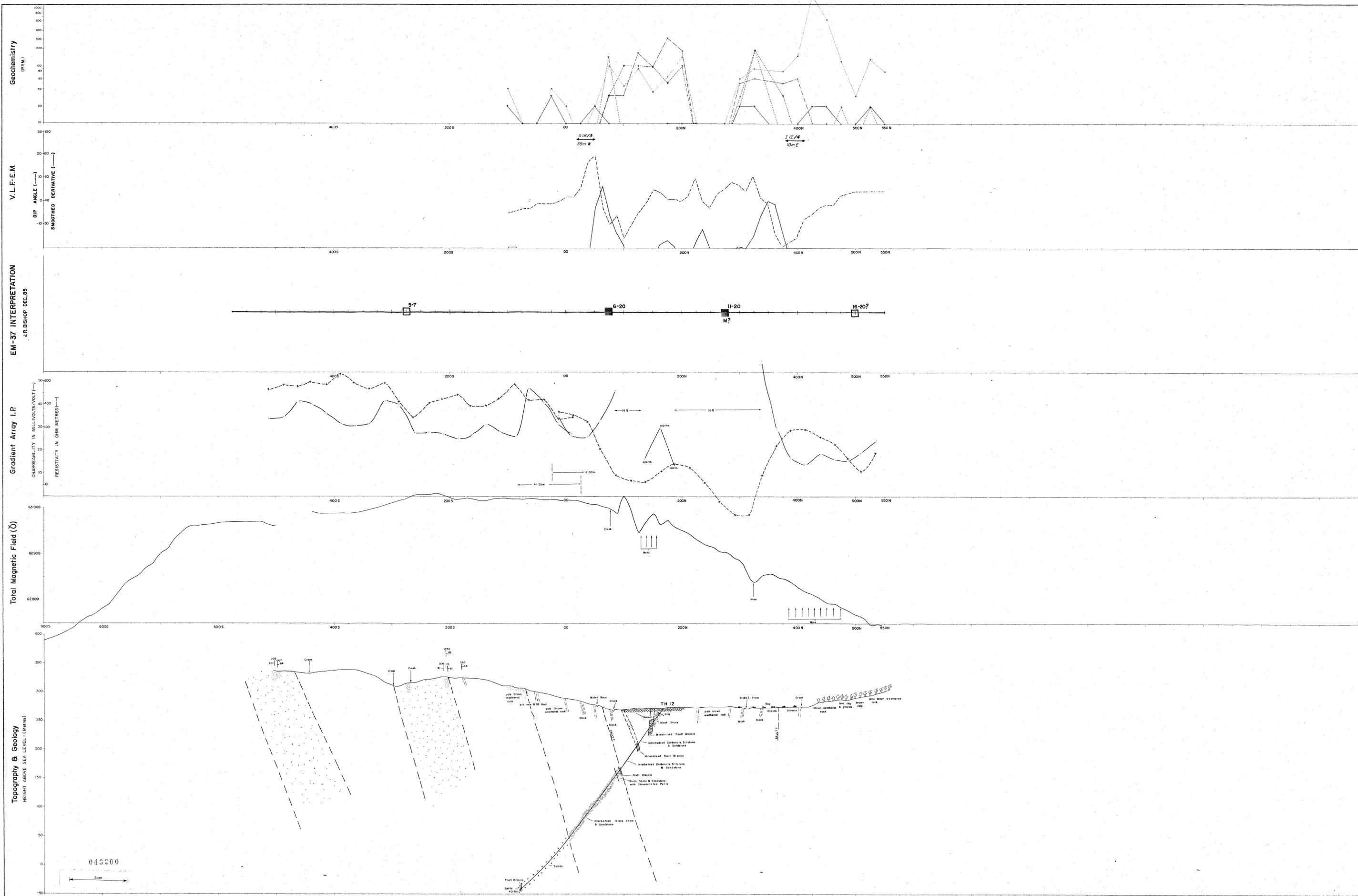
Extent of migration

? Possible anomaly

L.A. Low amplitude response

Quantitatively interpreted anomaly

E.O.L. Partially defined end of line anomaly True position likely to be off the end of the line



St. 3526 114
 GOLD FIELDS EXPLORATION PTY. LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 2100 E (900S-550N)
 LOOKING N.W.
 SCALE 1:2000 METRES

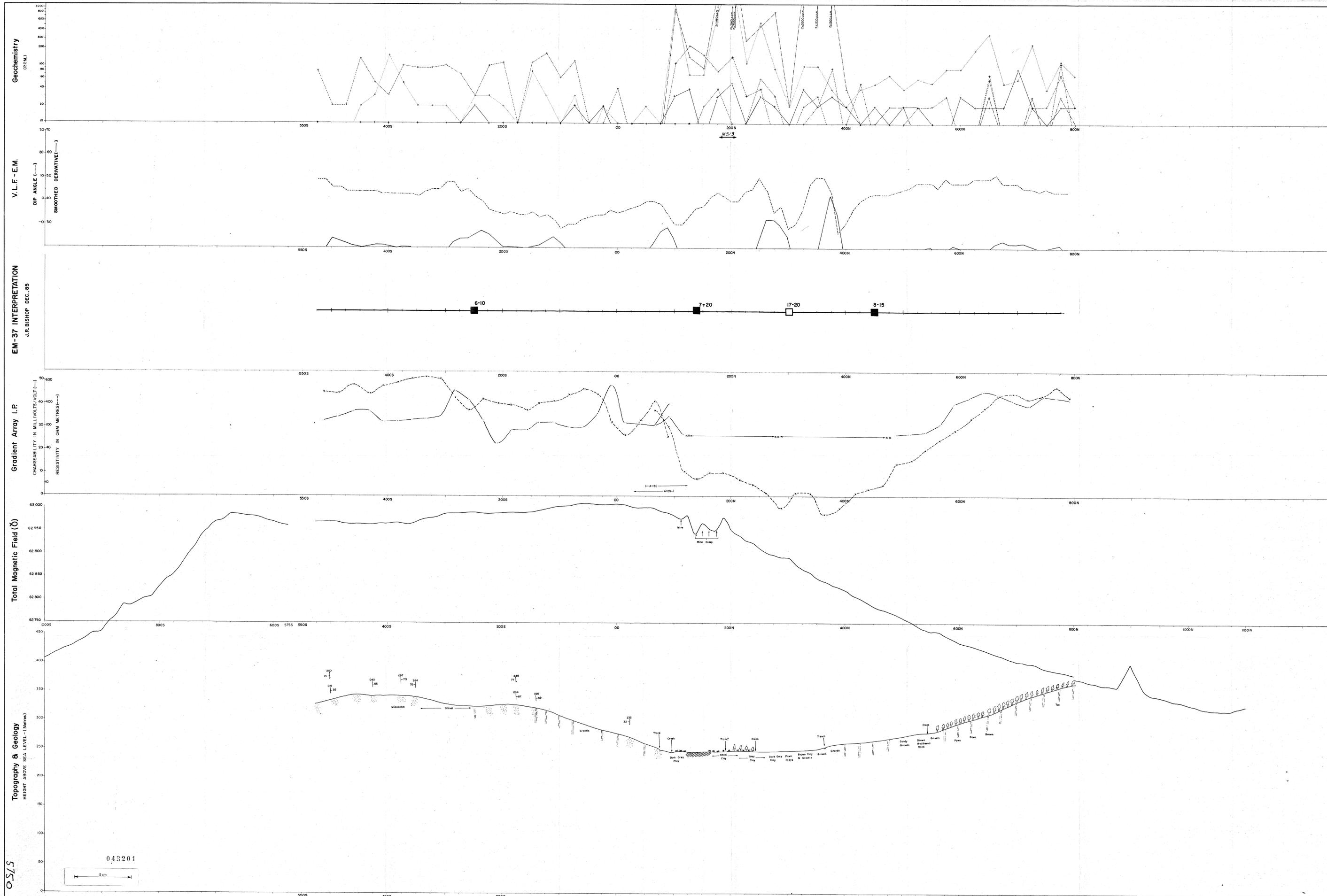
DRAWN	PK.
TRACED	S.E.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	
30	

I.P. DATA
 A1 DIPOLE DISTANCE
 NR = NO READING
 V.L.F.-E.M.
 G18/3
 35m W
 Dighm No./Dighm Grade
 Position

MAGNETICS		GEOCHEMISTRY		GEOLOGY	
—	—	Sn	Goshan Formation - Precambrian	Cambrian - Dundas Group?	Gossion
—	—	Cu	Shale	Basic Lavas	Grills
—	—	Pb	Siltstone	Shale	Beading
—	—	Zn	Sandstone	Siltstone	Cleavage
—	—	As			
—	—	Mo			

LEGEND - EM 37 INTERPRETATION
 Low Amplitude Anomaly
 ANOMALY
 II-20 Channels on which anomaly is recognized
 Prolonged Anomaly
 All Bearings Magnetic

— M Strong migration of cross-over
 — Extent of migration
 ? Possible anomaly
 L.A. Low amplitude response
 Quantitatively interpreted anomaly
 E.O.L. Partially defined, end of line anomaly
 True position likely to be off the end of the line



043201
 5m
 S.P.L. 129 - STONEHENGE GRID
 LINE 2200 E(000S-100N)
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	R.K.
TRACED	S.F.
DATE	FEB. 83
SCALE	1:2000
FIG. NO.	
31	

I.P. DATA
 N.R. = NO READING
 A = DIPOLE DISTANCE
V.L.F.-E.M.
 M5/3 Dighem No. / Dighem Grade
 Position

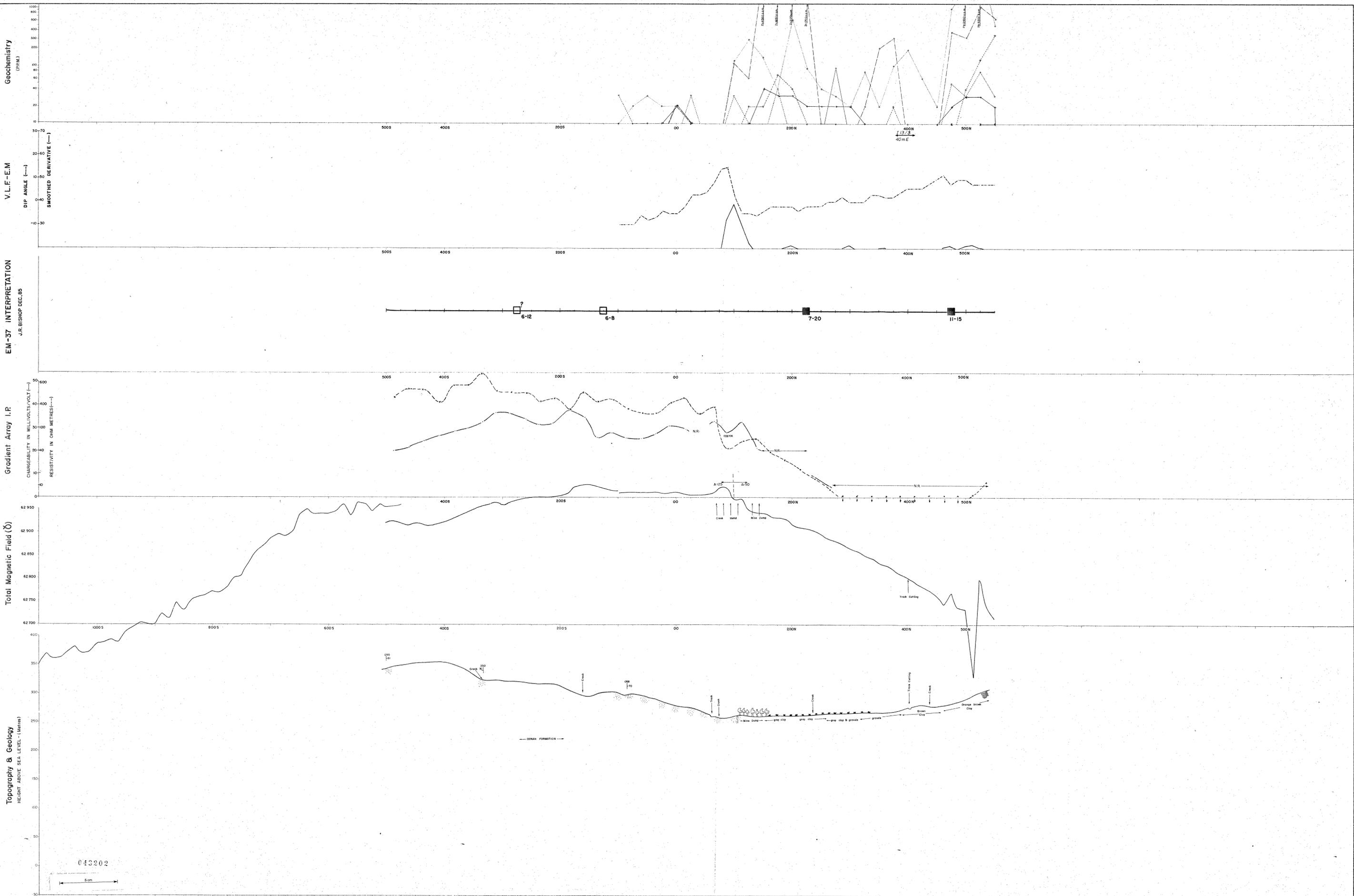
MAGNETICS
 All Bearings Magnetic

GEOCHEMISTRY
 Sn
 Cu
 Pb
 Zn
 As
 Mo

GEOLOGY
 Oonah Formation - Precambrian
 Shale
 Siltstone
 Sandstone

LEGEND - EM 37 INTERPRETATION
 Low Amplitude Anomaly
 ANOMALY
 Channels on which anomaly is recognised
 11-20
 6-13
 1-20
 Pronounced Anomaly
 COVERAGE

LEGEND - EM 37 INTERPRETATION
 M - Strong migration of cross-over
 Extent of migration
 ? Possible anomaly
 L.A. Low amplitude response
 Quantitatively interpreted anomaly
 E.O.L. Partially defined, end of line anomaly
 True position likely to be off the end of the line



GOLD FIELDS EXPLORATION PTY. LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 2300E (1100S-550N)
 LOOKING N.W.
 SCALE 1:2000 METRES
 043202
 5cm

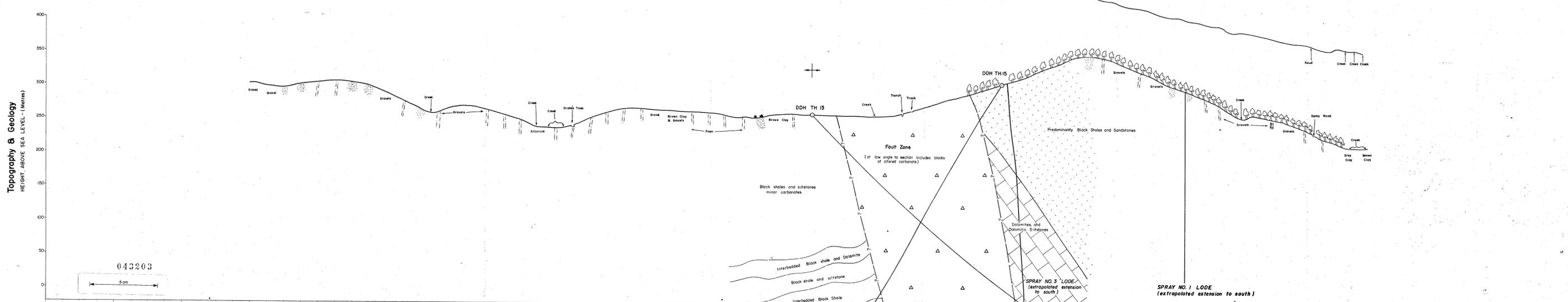
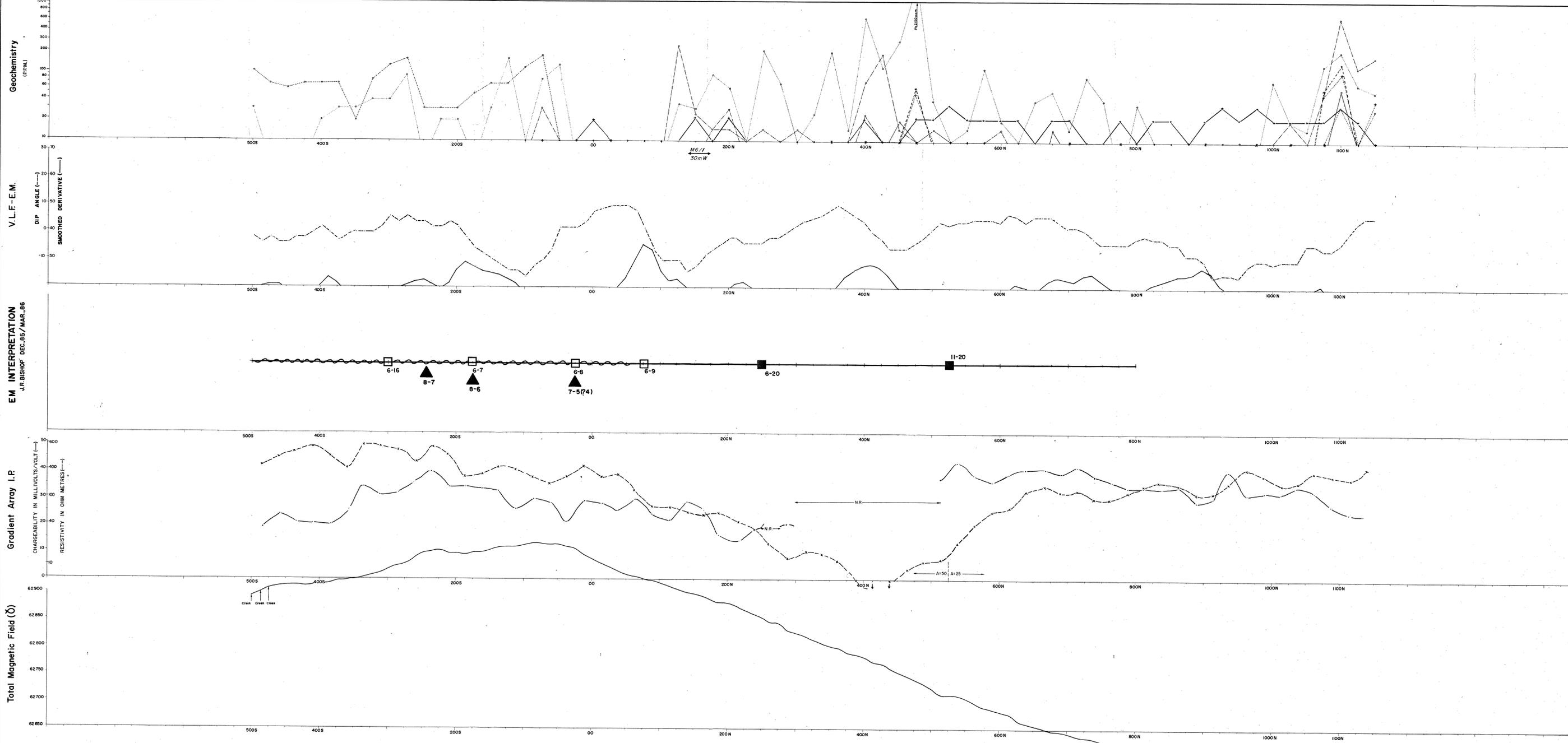
DRAWN	RK
TRACED	S.F.
DATE	FEB. 83
SCALE	1:2000
FIG. NO.	32

I.P. DATA
 A1 = DIPOLE DISTANCE
 NR = NO READING

MAGNETICS
V.L.F.-E.M.
 115/3
 40mE
 Dighem No. / Grade
 Position

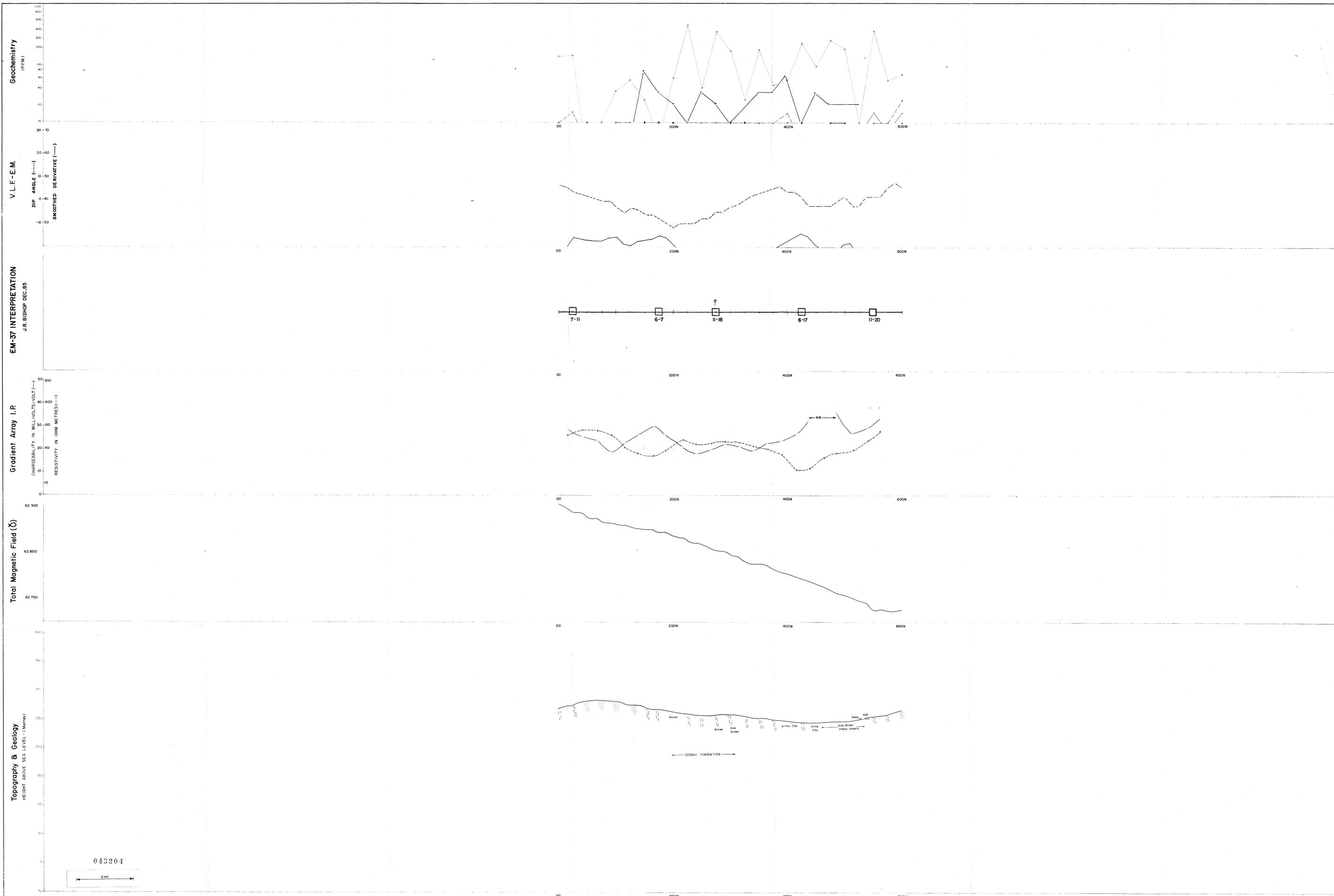
GEOLOGY
 Onagh Formation - Precambrian
 Shale
 Siltstone
 Sandstone
 Gossan
 Bedding
 Cleavage
 Cambrian - Dundas Group?
 Basic Lavas
 Shale
 Siltstone
 Grits

LEGEND - EM 37 INTERPRETATION
 Low Amplitude Anomaly
 ANOMALY
 11-20 Channels on which anomaly is recognised
 6-13
 1-20
 Prolonged Anomaly
 COVERAGE
 M Strong migration of cross-over
 ? Extent of migration
 L.A. Low amplitude response
 Quantitatively interpreted anomaly
 E.O.L. Partially defined end of line anomaly
 True position likely to be off the end of the line



GOLD FIELDS EXPLORATION PTY. LIMITED S.R.L. 129 - STONEHENGE GRID LINE 2400E SCALE 1:2000 METRES 36-2536		DRAWN P.K. TRACED S.F. DATE Feb. 83 SCALE 1:2000 FIG. NO. 33	I.P. DATA A1 DIPOLE DISTANCE NR = NO READING V.L.F.-E.M. M6/1 30mW Dighem No./Dighem Grade Position	MAGNETICS CHARGEABILITY RESISTIVITY	GEOCHEMISTRY Sn Cu Pb Zn As MoS Mo	GEOLOGY Osnah Formation - Precambrian Shale Siltstone Sandstone Cambrian - Dundas Group? Basic Lavas Shale Siltstone Grits	LEGEND: UTEM INTERPRETATION M Strong migration of cross-over Extent of migration Possible anomaly L.A. Low amplitude response Quantitatively interpreted anomaly E.O.L. Partially defined, end of line anomaly True position likely to be off the end of the line.	LEGEND: EM 37 INTERPRETATION ANOMALY Channels on which anomaly is recognised PROSPECTIVE ANOMALY ANOMALY LOW AMPLITUDE ANOMALY Channels on which anomaly is recognised
--	--	--	---	--	--	--	--	---

5752



36-2534 44
 GOLD FIELDS EXPLORATION PTY. LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 2500 E
 LOOKING N.W.
 SCALE: 1:2000 METRES
 043204
 5 cm

DRAWN	PK
TRACED	S.F.
DATE	Feb. 85
SCALE	1:2000
FIG. NO.	
34	

I.P. DATA
 N.R. = NO READING

MAGNETICS

GEOCHEMISTRY

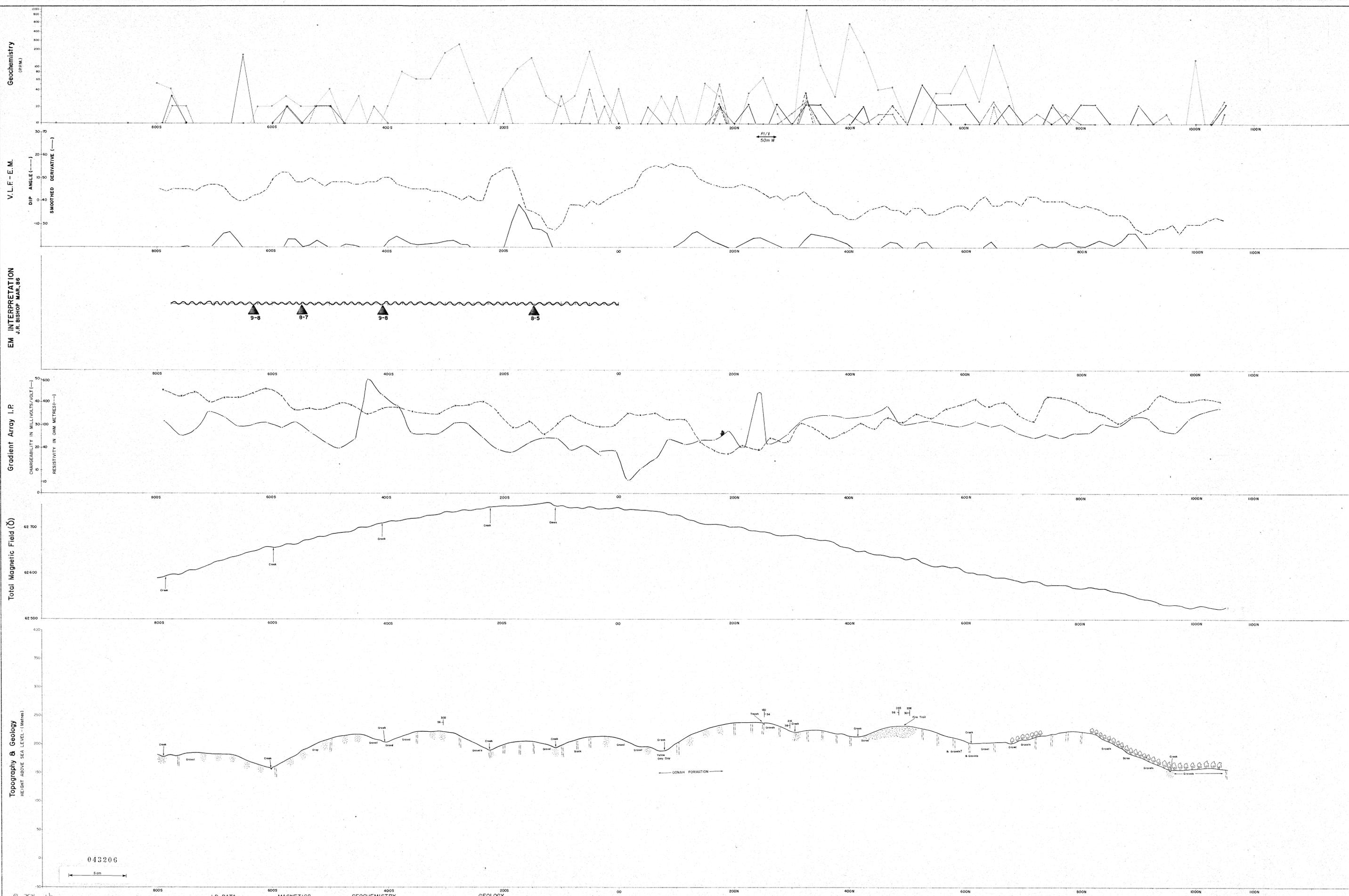
ONAH FORMATION - Precambrian
 Shale
 Siltstone
 Sandstone

Comorian - Dundas Group?
 Basic Lavas
 Shale
 Siltstone

Grits
 Gossan
 Beeding
 Cleavage

LEGEND - EM 37 INTERPRETATION
 Low Amplitude Anomaly
 ANOMALY
 COVERAGE
 11-20 Channels on which anomaly is recognised
 6-13
 1-20
 Pronounced Anomaly
 All Bearings Magnetic

M Strong migration of cross-over
 Extent of migration
 ? Possible anomaly
 L.A. Low amplitude response
 Quantitatively interpreted anomaly
 E.O.L. Partially defined end of line anomaly
 True position likely to be off the end of the line



043206
 5cm
 S.P.L. 129-STONEHENGE GRID
 LINE 2800E
 LOOKING N.W.
 SCALE 1:2000 METRES

DRAWN	P.K.
TRACED	S.F.
DATE	Feb. 83
SCALE	1:2000
FIG. NO.	
36	

I.P. DATA
 MAGNETICS
 V.L.F.-E.M.
 Diphen No. / Diphen Grade
 Position
 50m W

GEOCHEMISTRY	
Sn	○
Cu	●
Pb	○
Zn	○
As	○
Mo	○
W	○

GEOLOGY	
Qonah Formation - Precambrian	
Shale	▨
Siltstone	▨
Sandstone	▨

Cambrian - Dundas Group?	
Basic Lavas	▨
Shale	▨
Siltstone	▨
Gossan	▨
Bedding	▨
Claivage	▨
Grits	▨
All Bearings Magnetic	▨

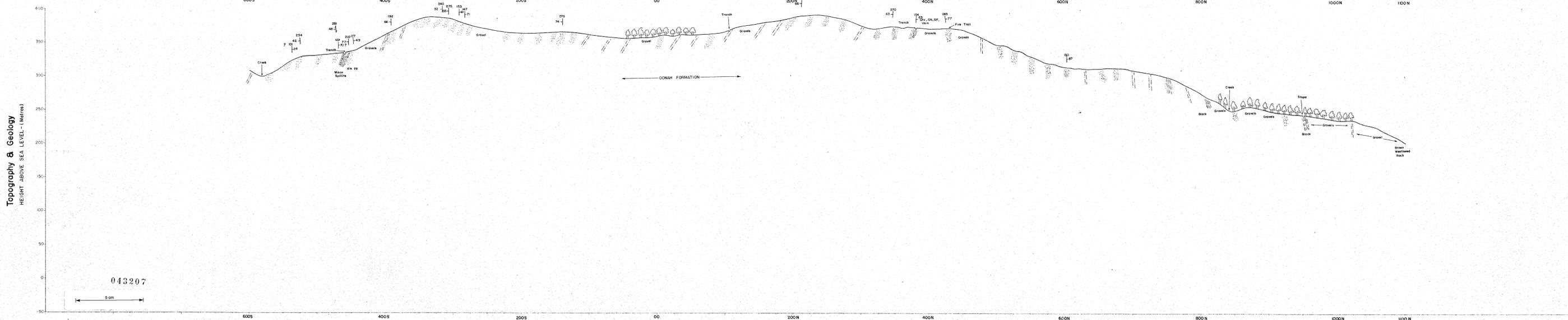
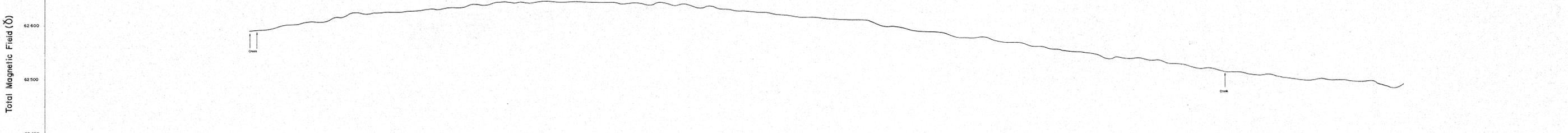
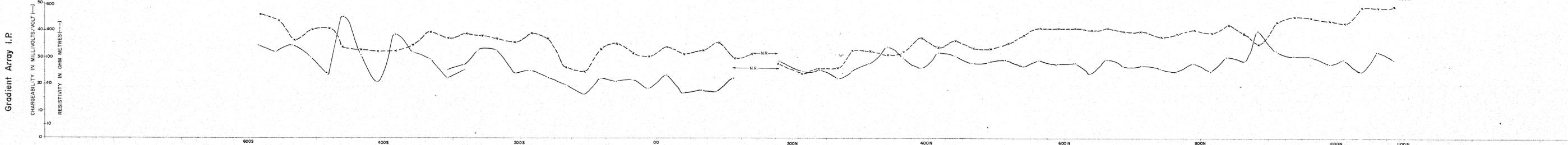
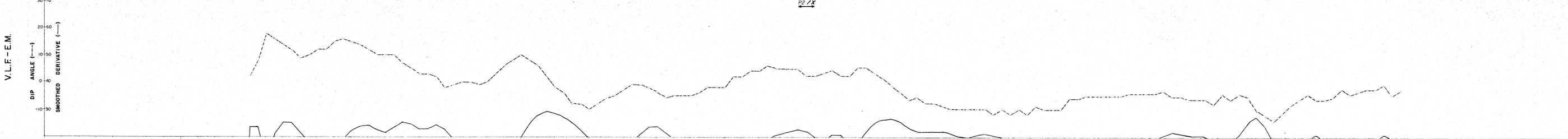
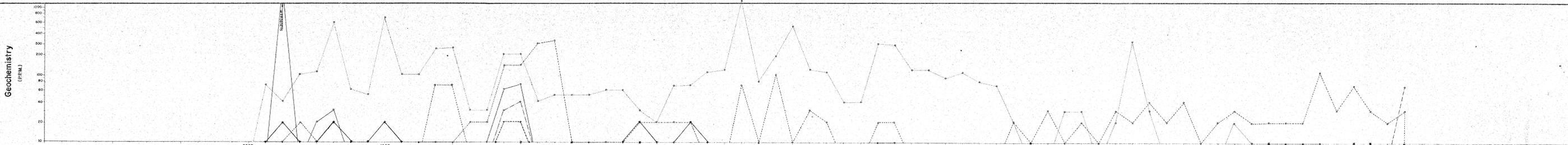
LEGEND UTEM INTERPRETATION

ANOMALY

COVERAGE

PROSPECTIVE ANOMALY

Number of which anomaly is recognised



043207
 50m
 GOLD FIELDS EXPLORATION PTY LIMITED
 S.P.L. 129 - STONEHENGE GRID
 LINE 3000E
 DRAWN: PK
 TRACED: S.F.
 DATE: Feb. 83
 SCALE: 1:2000
 FIG. NO: 37

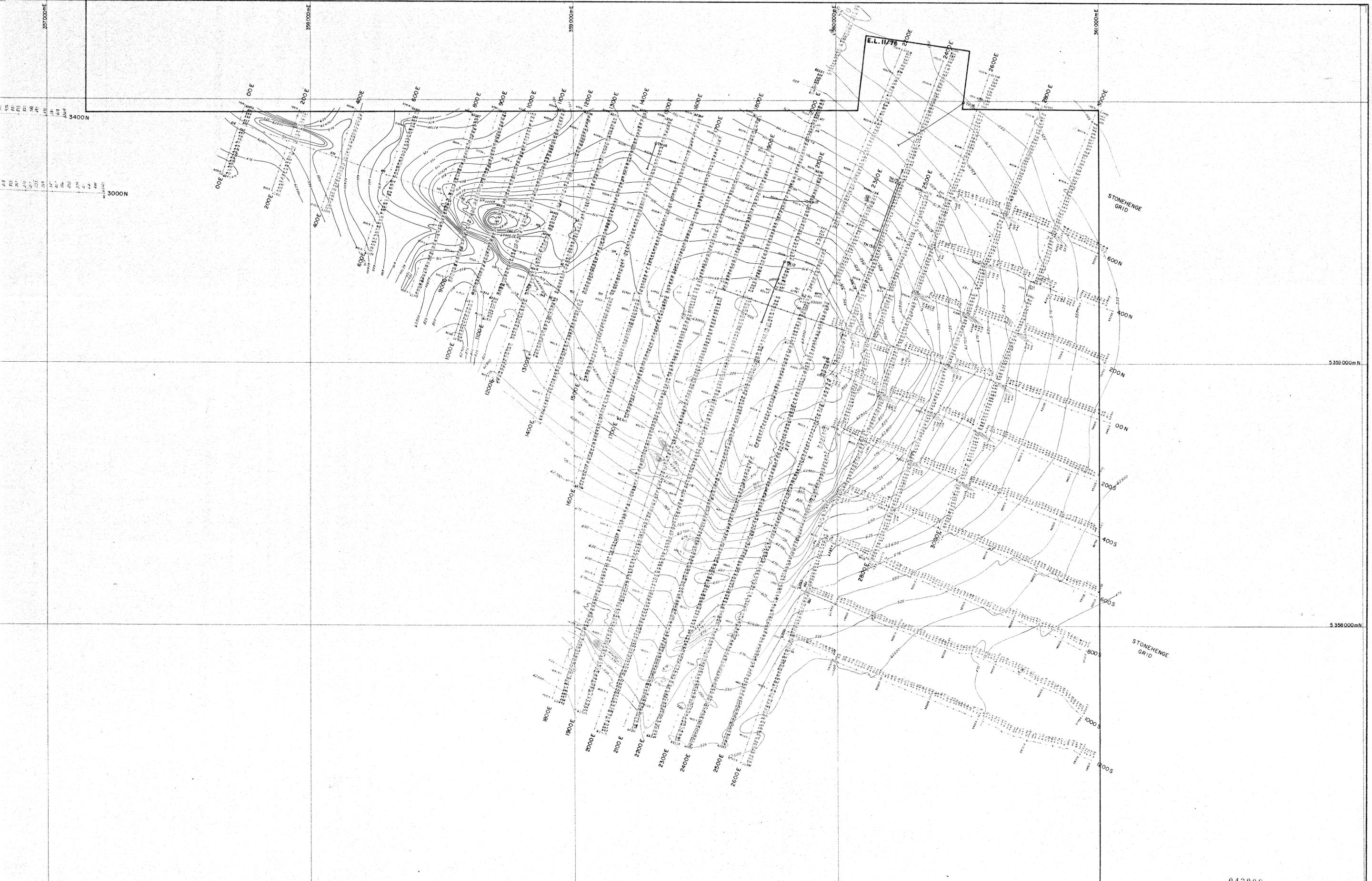
I.P. DATA
 N.R. 1 NO READING
 V.L.F.-E.M.
 Diphen No. / Diphen Grade
 50m E Position

MAGNETICS

GEOCHEMISTRY
 Sn
 Cu
 Pb
 Zn
 Al
 Mo
 Wo3

GEOLOGY
 Oonah Formation - Precambrian
 Shale
 Siltstone
 Sandstone
 Cambrian - Dundas Group?
 Basic Lava
 Shale
 Siltstone
 Grits
 Gossion
 Bedding
 Cleavage
 All Bearings Magnetic

LEGEND: UTEM INTERPRETATION
 ANOMALY
 PROTECTIVE ANOMALY
 OVERPAGE
 Channels on which anomaly is recognized



3570000mE
3580000mE
3590000mE
3600000mE
3610000mE
3620000mE
3630000mE
3640000mE
3650000mE
3660000mE
3670000mE
3680000mE
3690000mE
3700000mE
3710000mE
3720000mE
3730000mE
3740000mE
3750000mE
3760000mE
3770000mE
3780000mE
3790000mE
3800000mE
3810000mE
3820000mE
3830000mE
3840000mE
3850000mE
3860000mE
3870000mE
3880000mE
3890000mE
3900000mE
3910000mE
3920000mE
3930000mE
3940000mE
3950000mE
3960000mE
3970000mE
3980000mE
3990000mE
4000000mE
4010000mE
4020000mE
4030000mE
4040000mE
4050000mE
4060000mE
4070000mE
4080000mE
4090000mE
4100000mE
4110000mE
4120000mE
4130000mE
4140000mE
4150000mE
4160000mE
4170000mE
4180000mE
4190000mE
4200000mE
4210000mE
4220000mE
4230000mE
4240000mE
4250000mE
4260000mE
4270000mE
4280000mE
4290000mE
4300000mE
4310000mE
4320000mE
4330000mE
4340000mE
4350000mE
4360000mE
4370000mE
4380000mE
4390000mE
4400000mE
4410000mE
4420000mE
4430000mE
4440000mE
4450000mE
4460000mE
4470000mE
4480000mE
4490000mE
4500000mE
4510000mE
4520000mE
4530000mE
4540000mE
4550000mE
4560000mE
4570000mE
4580000mE
4590000mE
4600000mE
4610000mE
4620000mE
4630000mE
4640000mE
4650000mE
4660000mE
4670000mE
4680000mE
4690000mE
4700000mE
4710000mE
4720000mE
4730000mE
4740000mE
4750000mE
4760000mE
4770000mE
4780000mE
4790000mE
4800000mE
4810000mE
4820000mE
4830000mE
4840000mE
4850000mE
4860000mE
4870000mE
4880000mE
4890000mE
4900000mE
4910000mE
4920000mE
4930000mE
4940000mE
4950000mE
4960000mE
4970000mE
4980000mE
4990000mE
5000000mE
5010000mE
5020000mE
5030000mE
5040000mE
5050000mE
5060000mE
5070000mE
5080000mE
5090000mE
5100000mE
5110000mE
5120000mE
5130000mE
5140000mE
5150000mE
5160000mE
5170000mE
5180000mE
5190000mE
5200000mE
5210000mE
5220000mE
5230000mE
5240000mE
5250000mE
5260000mE
5270000mE
5280000mE
5290000mE
5300000mE
5310000mE
5320000mE
5330000mE
5340000mE
5350000mE
5360000mE
5370000mE
5380000mE
5390000mE
5400000mE
5410000mE
5420000mE
5430000mE
5440000mE
5450000mE
5460000mE
5470000mE
5480000mE
5490000mE
5500000mE
5510000mE
5520000mE
5530000mE
5540000mE
5550000mE
5560000mE
5570000mE
5580000mE
5590000mE
5600000mE
5610000mE
5620000mE
5630000mE
5640000mE
5650000mE
5660000mE
5670000mE
5680000mE
5690000mE
5700000mE
5710000mE
5720000mE
5730000mE
5740000mE
5750000mE
5760000mE
5770000mE
5780000mE
5790000mE
5800000mE
5810000mE
5820000mE
5830000mE
5840000mE
5850000mE
5860000mE
5870000mE
5880000mE
5890000mE
5900000mE
5910000mE
5920000mE
5930000mE
5940000mE
5950000mE
5960000mE
5970000mE
5980000mE
5990000mE
6000000mE
6010000mE
6020000mE
6030000mE
6040000mE
6050000mE
6060000mE
6070000mE
6080000mE
6090000mE
6100000mE
6110000mE
6120000mE
6130000mE
6140000mE
6150000mE
6160000mE
6170000mE
6180000mE
6190000mE
6200000mE
6210000mE
6220000mE
6230000mE
6240000mE
6250000mE
6260000mE
6270000mE
6280000mE
6290000mE
6300000mE
6310000mE
6320000mE
6330000mE
6340000mE
6350000mE
6360000mE
6370000mE
6380000mE
6390000mE
6400000mE
6410000mE
6420000mE
6430000mE
6440000mE
6450000mE
6460000mE
6470000mE
6480000mE
6490000mE
6500000mE
6510000mE
6520000mE
6530000mE
6540000mE
6550000mE
6560000mE
6570000mE
6580000mE
6590000mE
6600000mE
6610000mE
6620000mE
6630000mE
6640000mE
6650000mE
6660000mE
6670000mE
6680000mE
6690000mE
6700000mE
6710000mE
6720000mE
6730000mE
6740000mE
6750000mE
6760000mE
6770000mE
6780000mE
6790000mE
6800000mE
6810000mE
6820000mE
6830000mE
6840000mE
6850000mE
6860000mE
6870000mE
6880000mE
6890000mE
6900000mE
6910000mE
6920000mE
6930000mE
6940000mE
6950000mE
6960000mE
6970000mE
6980000mE
6990000mE
7000000mE
7010000mE
7020000mE
7030000mE
7040000mE
7050000mE
7060000mE
7070000mE
7080000mE
7090000mE
7100000mE
7110000mE
7120000mE
7130000mE
7140000mE
7150000mE
7160000mE
7170000mE
7180000mE
7190000mE
7200000mE
7210000mE
7220000mE
7230000mE
7240000mE
7250000mE
7260000mE
7270000mE
7280000mE
7290000mE
7300000mE
7310000mE
7320000mE
7330000mE
7340000mE
7350000mE
7360000mE
7370000mE
7380000mE
7390000mE
7400000mE
7410000mE
7420000mE
7430000mE
7440000mE
7450000mE
7460000mE
7470000mE
7480000mE
7490000mE
7500000mE
7510000mE
7520000mE
7530000mE
7540000mE
7550000mE
7560000mE
7570000mE
7580000mE
7590000mE
7600000mE
7610000mE
7620000mE
7630000mE
7640000mE
7650000mE
7660000mE
7670000mE
7680000mE
7690000mE
7700000mE
7710000mE
7720000mE
7730000mE
7740000mE
7750000mE
7760000mE
7770000mE
7780000mE
7790000mE
7800000mE
7810000mE
7820000mE
7830000mE
7840000mE
7850000mE
7860000mE
7870000mE
7880000mE
7890000mE
7900000mE
7910000mE
7920000mE
7930000mE
7940000mE
7950000mE
7960000mE
7970000mE
7980000mE
7990000mE
8000000mE
8010000mE
8020000mE
8030000mE
8040000mE
8050000mE
8060000mE
8070000mE
8080000mE
8090000mE
8100000mE
8110000mE
8120000mE
8130000mE
8140000mE
8150000mE
8160000mE
8170000mE
8180000mE
8190000mE
8200000mE
8210000mE
8220000mE
8230000mE
8240000mE
8250000mE
8260000mE
8270000mE
8280000mE
8290000mE
8300000mE
8310000mE
8320000mE
8330000mE
8340000mE
8350000mE
8360000mE
8370000mE
8380000mE
8390000mE
8400000mE
8410000mE
8420000mE
8430000mE
8440000mE
8450000mE
8460000mE
8470000mE
8480000mE
8490000mE
8500000mE
8510000mE
8520000mE
8530000mE
8540000mE
8550000mE
8560000mE
8570000mE
8580000mE
8590000mE
8600000mE
8610000mE
8620000mE
8630000mE
8640000mE
8650000mE
8660000mE
8670000mE
8680000mE
8690000mE
8700000mE
8710000mE
8720000mE
8730000mE
8740000mE
8750000mE
8760000mE
8770000mE
8780000mE
8790000mE
8800000mE
8810000mE
8820000mE
8830000mE
8840000mE
8850000mE
8860000mE
8870000mE
8880000mE
8890000mE
8900000mE
8910000mE
8920000mE
8930000mE
8940000mE
8950000mE
8960000mE
8970000mE
8980000mE
8990000mE
9000000mE
9010000mE
9020000mE
9030000mE
9040000mE
9050000mE
9060000mE
9070000mE
9080000mE
9090000mE
9100000mE
9110000mE
9120000mE
9130000mE
9140000mE
9150000mE
9160000mE
9170000mE
9180000mE
9190000mE
9200000mE
9210000mE
9220000mE
9230000mE
9240000mE
9250000mE
9260000mE
9270000mE
9280000mE
9290000mE
9300000mE
9310000mE
9320000mE
9330000mE
9340000mE
9350000mE
9360000mE
9370000mE
9380000mE
9390000mE
9400000mE
9410000mE
9420000mE
9430000mE
9440000mE
9450000mE
9460000mE
9470000mE
9480000mE
9490000mE
9500000mE
9510000mE
9520000mE
9530000mE
9540000mE
9550000mE
9560000mE
9570000mE
9580000mE
9590000mE
9600000mE
9610000mE
9620000mE
9630000mE
9640000mE
9650000mE
9660000mE
9670000mE
9680000mE
9690000mE
9700000mE
9710000mE
9720000mE
9730000mE
9740000mE
9750000mE
9760000mE
9770000mE
9780000mE
9790000mE
9800000mE
9810000mE
9820000mE
9830000mE
9840000mE
9850000mE
9860000mE
9870000mE
9880000mE
9890000mE
9900000mE
9910000mE
9920000mE
9930000mE
9940000mE
9950000mE
9960000mE
9970000mE
9980000mE
9990000mE
10000000mE

3000N
3400N
3800N
4200N
4600N
5000N
5400N
5800N
6200N
6600N
7000N
7400N
7800N
8200N
8600N
9000N
9400N
9800N
10000N

Survey Data
BASE STATION: LINE 200E, 150S
624608

REFERENCE TO SHEETS

ZEEHAN D/1	ZEEHAN D/2
ZEEHAN D/3	ZEEHAN D/4

043208 5357000mN

GOLD FIELDS EXPLORATION PTY LIMITED

5 cm

GROUND MAGNETICS

96-2536 444 5757

SCALE 1:5000

DRAWN BY	R.K.
DRAUGHTSMAN	
DATE	Sept. 85
REVISIONS	
FILE NO.	
FIG 38	



? Possible anomaly
 M Strong migration of cross-over
 — Extent of migration
E CONDUCTIVE ZONE
 Transmitting Loop
TX-1 Transmitting Loop No.

LEGEND: UTEM INTERPRETATION
 SURVEY: LAMONTAGNE
 DATE: NOV. 85
 ANOMALY Channels on which anomaly is recognised
 COVERAGE PROSPECTIVE ANOMALY

LEGEND: EM 37 INTERPRETATION
 SURVEY: GEOTERRIX
 DATE: DEC. 84
 ANOMALY Channels on which anomaly is recognised
 COVERAGE PROSPECTIVE ANOMALY

REFERENCE TO SHEETS
 ZEEHAN D1/1 ZEEHAN D1/2
 ZEEHAN D1/3 ZEEHAN D1/4

043209 5758 5 357 000mN

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.11/76 - STONEHENGE GRID

EM INTERPRETATION

5 cm

Ref: GF/MG86/02
 GF/MG85/02

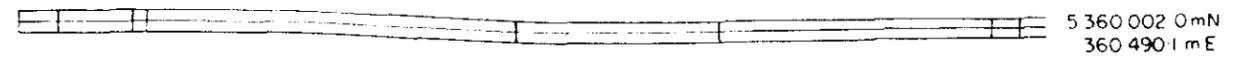
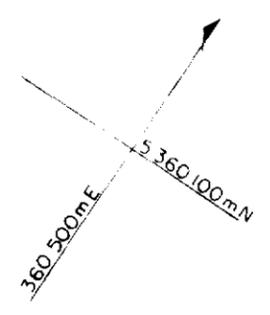
SCALE 1:5000

DRAWN BY: J.B.
 DRAFTSMAN: S.F.
 DATE: FEB. 86
 REVISIONS:
 FILE NO:
FIG. 39



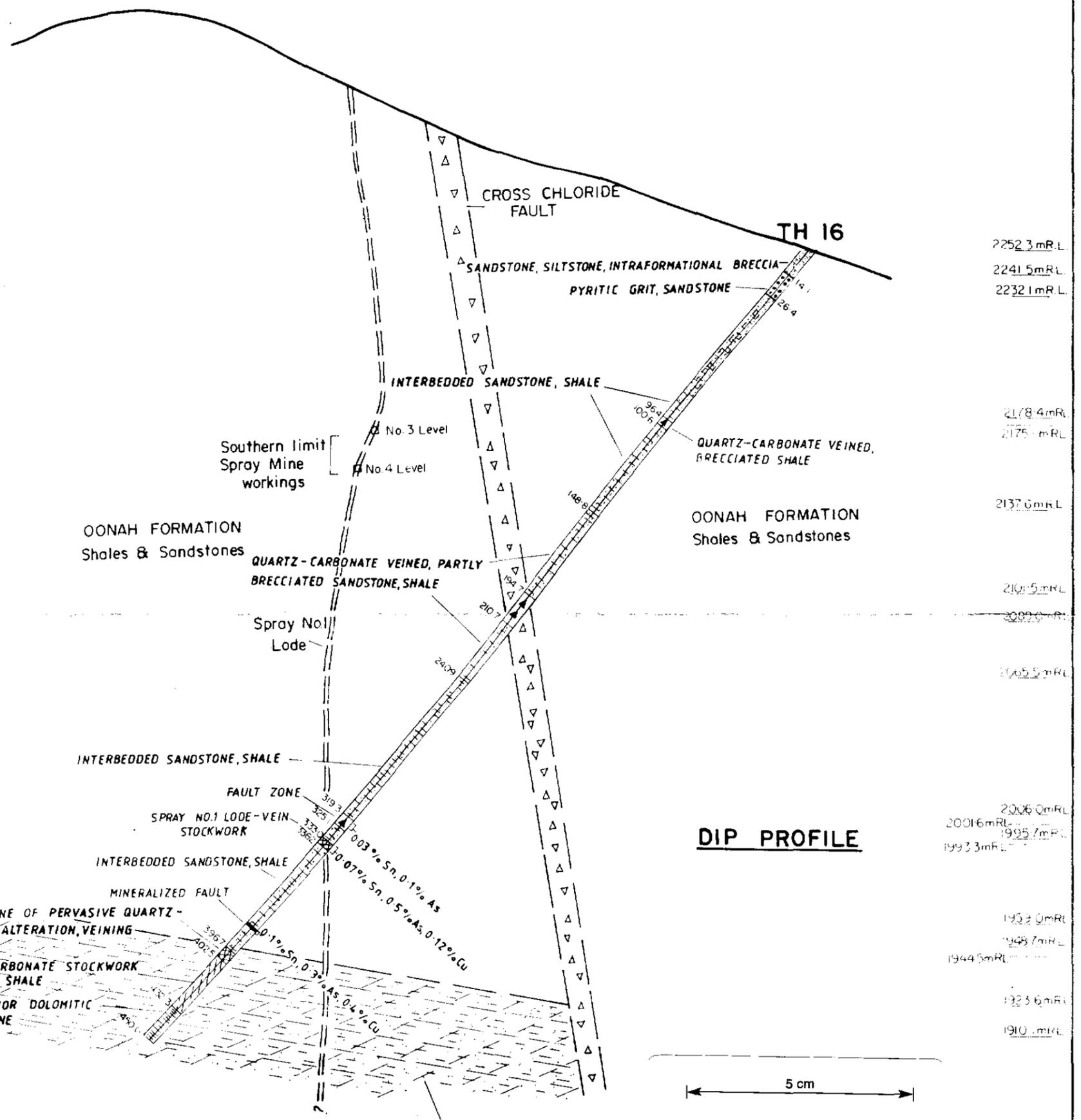
SCALE 1:2000

PLAN VIEW

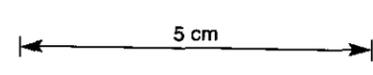


GOLD FIELDS EXPLORATION PTY LIMITED
DIAMOND DRILL HOLE PLOT

TH 16



2252.3mRL
2241.5mRL
2232.1mRL
2178.4mRL
2175.1mRL
2137.0mRL
2101.5mRL
2082.0mRL
2065.0mRL
2006.0mRL
2001.6mRL
1999.7mRL
1993.3mRL
1953.0mRL
1948.7mRL
1944.5mRL
1923.6mRL
1910.1mRL



5759

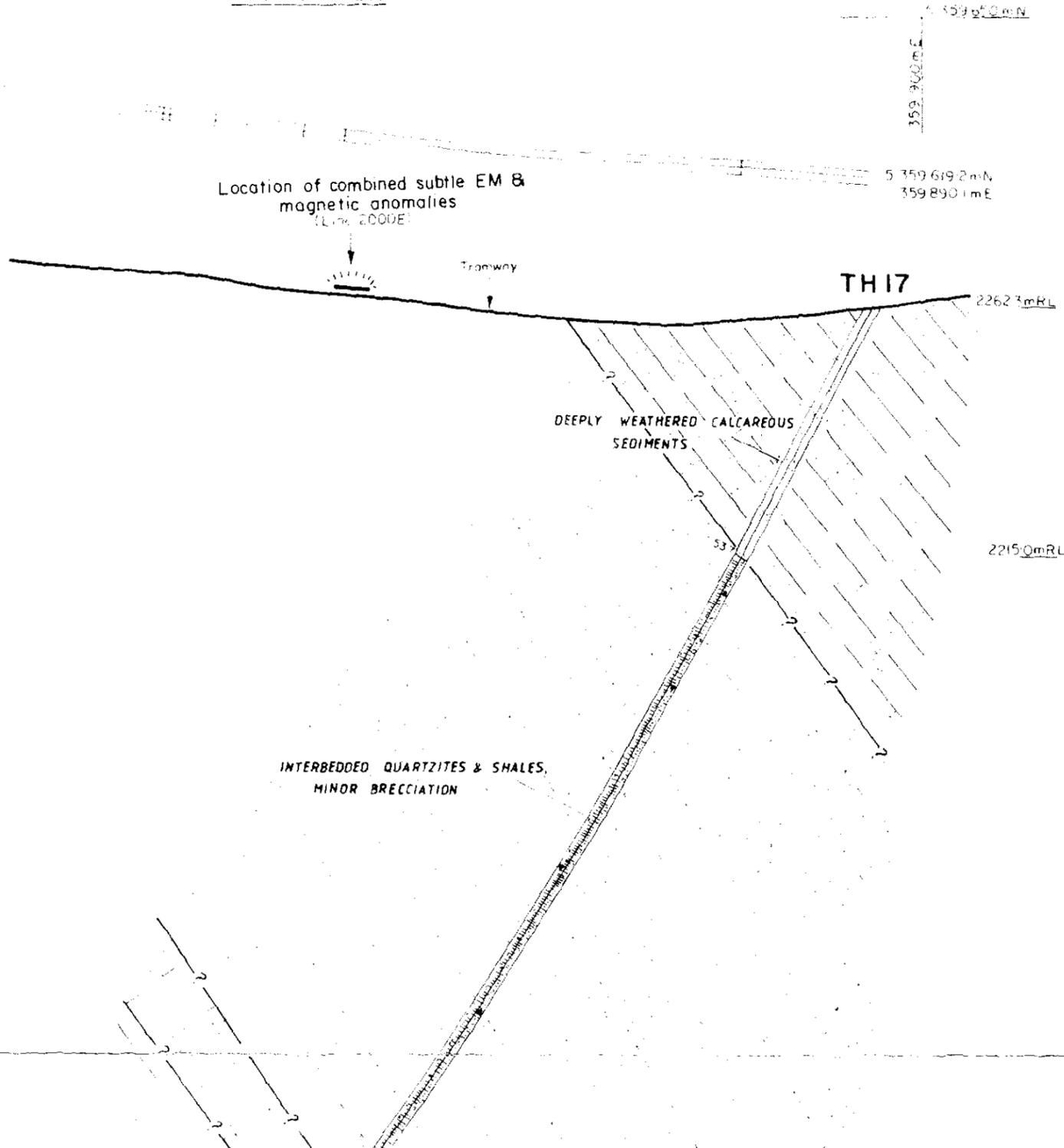
GOLD FIELDS EXPLORATION PTY LIMITED	
DRAWN BY: P.R.	REVISIONS
DRAFTSMAN: S.F.	
DATE: MAR 86	
FILE NO	
STONEHENGE GRID DIAMOND DRILL HOLE PROFILE TH 16	
SCALE 1:2000	FIG. 41

86-2536 4/4

043210



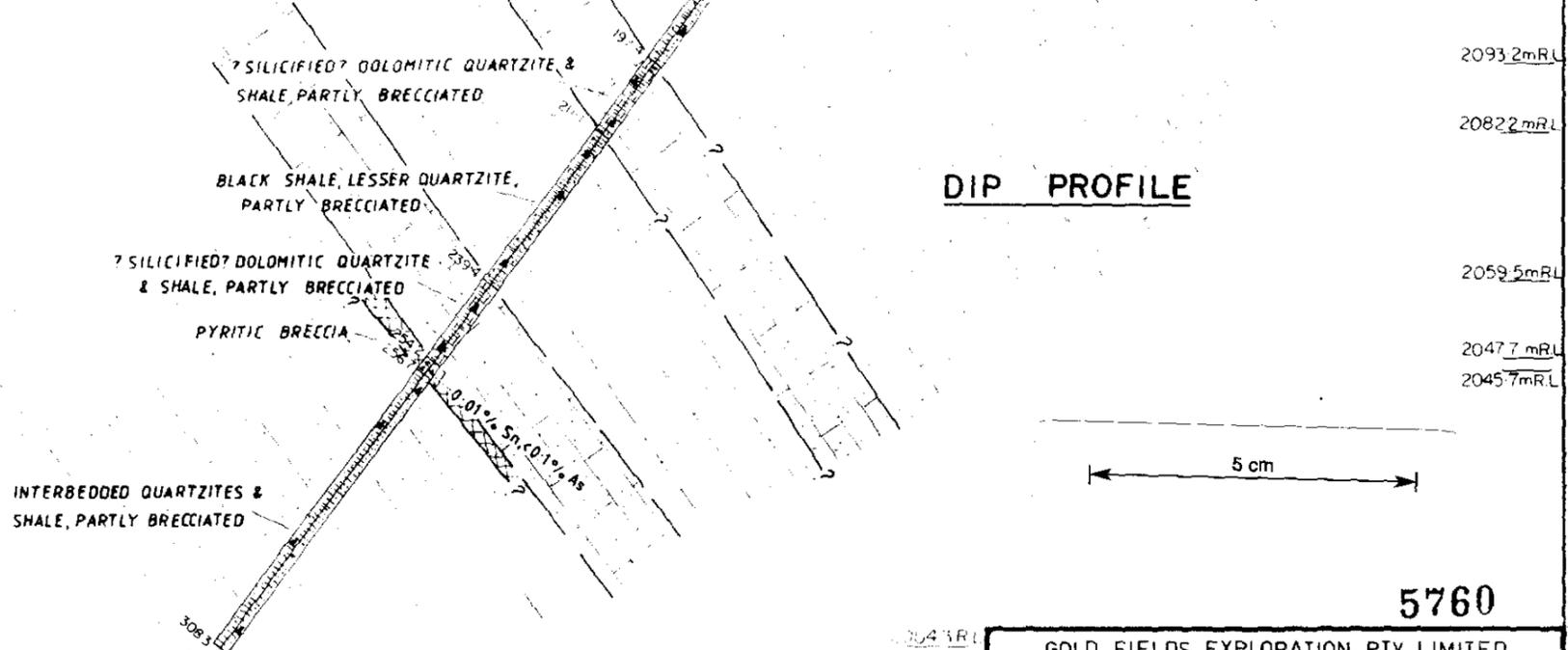
PLAN VIEW



DIAMOND DRILL HOLE PLOT

HOLE NO TH 17

DIP PROFILE



5760

GOLD FIELDS EXPLORATION PTY. LIMITED	
STONEHENGE GRID DIAMOND DRILL HOLE PROFILE TH 17	DRAWN BY: JPR
	DRAFTSMAN: SF
	DATE: MAR 88
	REVISIONS:
	FILE NO:
SCALE 1:1000	
	FIG. 42

043211