GOLD FIELDS EXPLORATION PTY. LIMITED

014001

E.L.9/66 - TYNDALL AREA, TASMANIA

ANNUAL REPORT 1985/86

FOR

PARTS II, III & IV

VOLUME 1 - TEXT & APPENDICES

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ANNUAL REPORT 1985/86

FOR

PARTS II, III & IV

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SUMMARY

Exploration Licence 9/66, Tyndall Area, Western Tasmania, comprises four separate blocks, designated Parts I to IV on the EL schedule, which cover parts of the Cambrian Mt. Read Volcanics north and south of Queenstown. During 1985-86 a major program of exploration was completed on parts II to IV of the licence to evaluate the mineral potential of eight specific prospect areas. This work entailed gridding, bedrock geochemistry, geological mapping, TEM surveys and 1215.4m of diamond drilling in four holes. Most of this exploration was carried out using helicopter support. The program was designed so that any remaining targets would be ready for final drill testing during the last year of the licence tenure. A report on the results of work carried out on part I, the Henty Project, during 1985-86 is presented separately.

Potential massive sulphide mineralization was tested at Basin Lake, Zig Zag Hill (West Sedgwick), Selina and Huxley. A total of 34.8 line km of TEM surveys were completed over the prospective sulphide horizon at eastern Basin Lake and the Bradshaws Road and Leech Hill Pyrite Zones. This was accompanied by additional geological mapping and a detailed review of all the previous exploration data. Several strong geophysical anomalies have been identified with encouraging geochemical and/or geological indications. A smaller TEM survey over an old Rio Tinto EM anomaly north of Zig Zag Hill has revealed potential for sulphide mineralization in a favourable structural position beneath scree and glacial cover. A helicopter supported drill hole, LS13 502.6m long, was completed to test the Ag-Pb-Zn geochemical anomaly at Mt. Selina. No significant mineralization was intersected and down hole EM surveys have shown that no massive sulphides occur at depth along strike between LS13 and LS10 (drilled in 1983-84). A drill hole 340.5m long to test for massive sulphides beneath an IP anomaly at Huxley also failed to locate any significant mineralization. The source of the IP anomaly is pyritic, black shales, intersected beneath glacial moraine.

A major program to evaluate the gold mineralization potential west and south of Queenstown was also completed. Additional helicopter supported gridding, bedrock geochemistry and geological mapping was carried out at Snake Spur and Flannigans. Two holes, totalling 372.3m were drilled to test the most encouraging gold anomalies at Snake Spur but unfortunately the results were quite disappointing. No significant mineralization was encountered and a geological interpretation of the results indicates that no other targets here warrant further investigation at this time. Finally, reconnaissance grid orientated bedrock geochemistry was completed over areas of anomalous gold in stream sediments in the West Queen and

Tofft drainages. The results for all samples were negative and no additional exploration is recommended for these, or other, minor gold occurrences in the general Queenstown area.

Total expenditure for the eleven month period to the end of May 1986 on parts II, III and IV of EL9/66 was $309,300.

The proposed program for 1986-87 on Parts II to IV of EL9/66 concentrates on drilling the most encouraging massive sulphide targets. These are: a good UTEM response and strong IP anomalies within the sulphidic horizon at Basin Lake to be tested by two ground-accessed drill holes for a total of 600m; an EM anomaly adjacant to the Great Lyell Fault-Sedgwick Fault intersection near Zig Zag Hill to be tested by one helicopter-supported drill hole for 250m. It is proposed to survey all three drill holes with down hole EM. The budget for this program is $163,500 which includes an allowance for an additional 550m of drilling. This work would be required to fully evaluate any major intersection obtained by the initial testing of these targets before relinquishment of the licence area.

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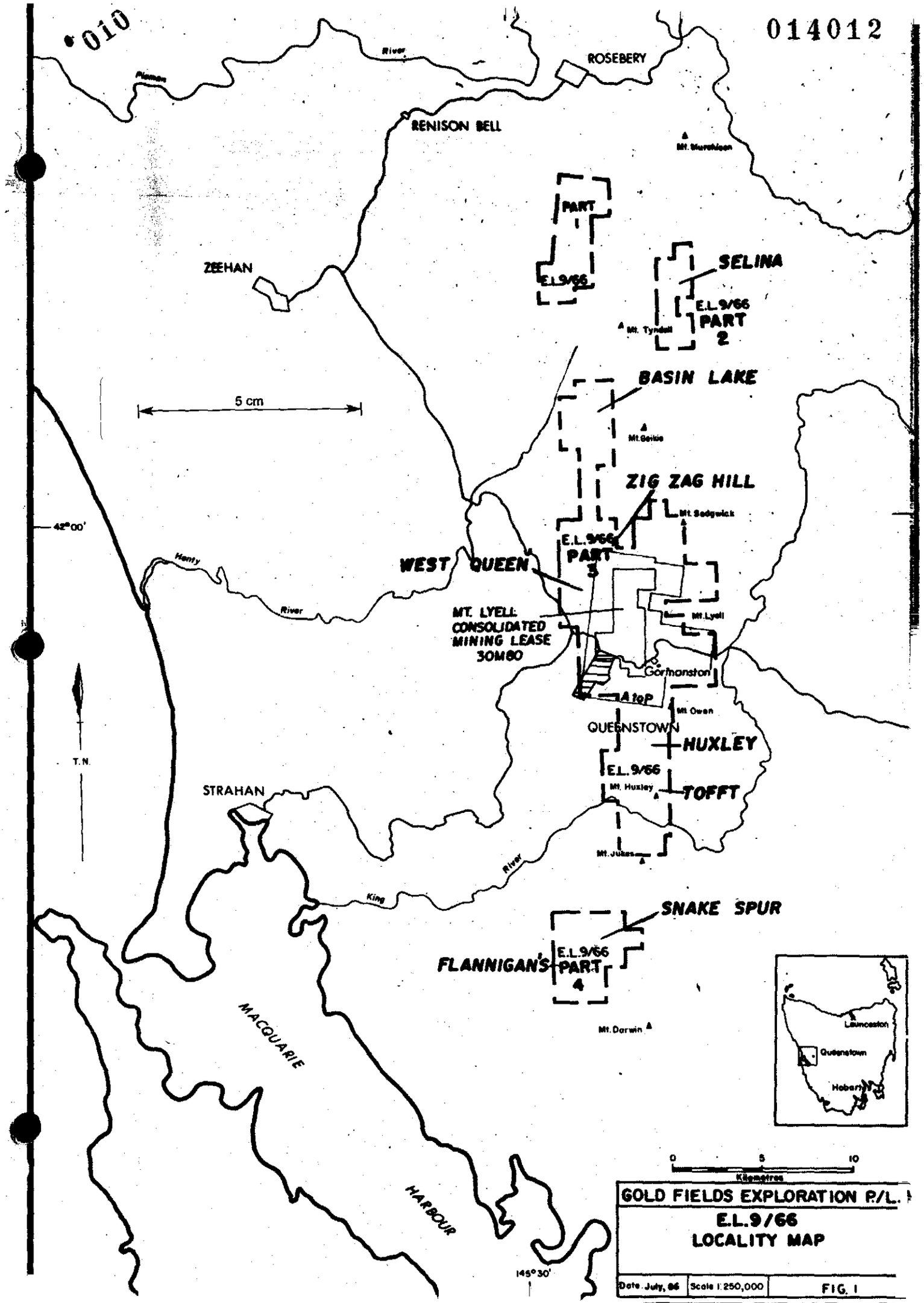
1. INTRODUCTION

The Tyndall Licence, EL9/66, covers an area of 124 km² in four separate blocks, designated Parts I to IV, which lie between Mt. Read near Rosebery in the north and Mt. Darwin east of Macquarie Harbour in the south (see Figure 1). This report details the results of the exploration carried out during 1985-86 on parts II, III and IV of the EL. The work completed on part I is reported separately.

EL9/66 covers part of the Cambrian Mt. Read Volcanic belt which is host to several major volcanogenic massive sulphide deposits as well as the large copper ore bodies in the Mt. Lyell Field. Systematic exploration has been carried out in this area since the licence was granted in 1966. This work has included airborne geophysical surveys and comprehensive geological, geochemical and ground geophysical surveys leading to the completion of 90 diamond drill holes to date.

During 1985-86 exploration has focused on evaluating the remaining prospects to bring them all up to final drill testing status in the last year (1986-87) of the licence's tenure. This work has involved the search for massive sulphides by: large TEM surveys in the Basin Lake area; drilling and down hole EM surveys at Selina and Huxley and a small TEM survey in the West Sedgwick area and the search for economic gold mineralization by: bedrock geochemistry in the Snake Spur, Flannigans, West Queen and Tofft areas; and drilling in the Snake Spur area (see Figure 2). A total of 4 drill holes were completed for 1215m in parts II to IV of EL9/66. This program cost $309,300 to complete and brings total expenditure on the EL since 1966 up to approximately $5.4 million (see Appendix A).



GOLD FIELDS EXPLORATION P/L.

E.L.9/66

LOCALITY MAP

Date: July, 86	Scale 1:250,000	FIG. 1

2. LAND TENURE

EL9/66 Tasmania was granted to Renison Limited in 1966. Over the next ten years a further three licences were granted to the Mt. Lyell Mining and Railway Company in the general Queenstown area, namely ELs 10/69, 41/71 and 21/76. These were all amalgamated into the one licence, EL9/66, in 1978. In 1983 the licence area was reduced from 637 km² to 446 km². Then in August 1984 the EL was further reduced to four separate blocks totalling 124 km² in area in compliance with the Mines Department regulations governing exploration licences (see Figure 1).

Gold Fields Exploration Pty. Limited, a division of Renison Goldfields Consolidated, has carried out the work on the EL since 1982. In 1976 a Joint Venture Agreement was signed with Getty Oil Development Co. Ltd. over EL9/66. In 1985 Getty sold their interest to Little River Goldfields NL. Little River Goldfields did not contribute to the 1985-86 exploration expenditure and are currently diluting their interest.

Under the present EL tenure conditions, the licence must be relinquished by August 1987.

3. BASIN LAKE (F.G. FitzGerald)

3.1 INTRODUCTION

The Basin Lake Area forms part of a linear belt of volcanics which lie west of the Tyndall Range and stretches from the Henty Project Area in the north to the West Sedgwick Area (north of the Mt. Lyell Mining Field) in the south. Previous exploration, including 11 diamond drill holes in the Basin Lake Area, has outlined an extensive zone of hydrothermal alteration and sulphide mineralization, mostly beneath a variable cover of glacial moraine. Although no significant base or precious metal mineralization has been located to date, it is believed that substantial potential still exists for the discovery of a massive sulphide ore body between the widely spaced drill holes.

Previous geophysical surveys over the Basin Lake and East Tyndall Grids have concentrated on IP surveys, especially gradient array IP. Whilst these surveys have been able to identify graphitic black shale units and some sulphide concentrations, some evidence suggests that this method may not have been effective in penetrating areas of thick glacial overburden. Consequently, it was proposed to cover the main prospective belt of volcanics with a modern, deep-seeking, large loop ground TEM method. At the same time it was planned to survey two areas of sulphidic mineralization, previously identified to the west of this main zone, with the same TEM survey.

Since only one year remains to complete exploration on the EL it is necessary to positively identify massive sulphide targets and drill these as early as possible during the 1986-87 season. The exploration effort this year has been directed specifically towards this end.

3.2 PREVIOUS EXPLORATION

A comprehensive discussion of previous exploration carried out over the area has been given by FitzGerald in Purvis et. al. (1983). Since that time two more diamond drill holes have been comleted. Hole BL5, drilled in 1985, was designed to test for massive sulphide mineralization within a strong IP anomaly along strike to the south of the bedded

massive pyrite intersected in hole BL4, and gave a negative result. The Mines Department drilled a 504m long hole in 1984 to test, in part, a sericite-pyrite alteration zone centred on Leech Hill. This hole terminated in altered andesitic volcanics carrying minor base metal sulphides (Corbett, 1985). In 1982 Dr. J.R. Bishop (Mitre Geophysics) prepared a detailed review of the numerous geophysical surveys over the Basin Lake and East Tyndall grids. This report is a very useful synthesis of the important geophysical features interpreted from the mass of existing data. The significant results from all of this work are summarized below.

A linear belt of altered intermediate composition volcaniclastics 500-700m wide, which typically carries low to moderate levels of sulphide mineralization, has been outlined along more than 5 km of strike extent, mostly beneath glacial moraine. Geological interpretation of this zone, based mainly on drill core data, indicates that the setting is favourable for the occurrence of a volcanogenic massive sulphide ore body. However, the widely spaced drilling to date has not intersected significant base metal mineralization. Some of the prominent IP anomalies, outlined in earlier surveys, have been tested by diamond drilling or costeaning and have been identified as due to pyritic black shales. Other anomalies, within the interpreted sulphidic zone, have not yet been tested and there are indications, including anomalous Pb-Cu geochemistry, that the source of these could be sulphide mineralization.

The IP surveys, accompanied by geological mapping, have also identified two areas of sericite-pyrite altered andesitic volcaniclastics in the western part of the Basin Lake grid over Leech Hill and Bradshaw's Road. Soil and rock chip geochemistry across very limited outcrops within these zones has returned only minor base metal values. Geological interpretation of these two areas, however, suggests that they are moderately prospective for massive sulphide mineralization.

3.3 WORK COMPLETED 1985-86

3.3.1 Gridding

During September-October 1985, the eastern side of the old

imperial Basin Lake Grid between lines 00S and 95S was re-cleared and re-pegged, where necessary, in preparation for a UTEM survey. The lines are spaced approximately 600 feet (183m) apart and pegged at 100 feet (30m) non-slope corrected intervals. In addition the southern part of the East Tyndall Grid along the eastern end between lines 8N and 18N and the western end between lines 2N and 8N was similarly re-established. These lines are spaced between 100m and 200m apart and pegged at 25m non-slope corrected intervals. At the same time five rectangular lines were cut to permit placement of EM transmitting loops through the bush.

A further 4 grid lines on the Basin Lake Grid, lines 12S to 30S, were recleared over the Leech Hill area and a sixth rectangular loop line was cut prior to a Sirotem survey in April 1986.

The total grid line cutting and re-clearing, including transmitting loop lines, completed during 1985-86 was 50.2 line km.

3.3.2 Geological Mapping

The Basin Lake and East Tyndall Grids lie within the Hydro Electric Commission's Henty-Anthony Power Development area. Construction works associated with this scheme have recently exposed bedrock in a number of areas previously covered by vegetation and alluvium. In particular, cuttings along the new Anthony Road have revealed useful geology and were mapped and sampled during January 1986. The sample locations are included with previous sampling on Figure 4 and the assay results shown on Figures 5 to 9 and in Appendix E.

The results from this mapping have been incorporated into a comprehensive geological interpretation of the whole area (see Figure 3). Much of the data for this map has come from earlier work by Mt. Lyell exploration geologists. A brief discussion of the salient features of the geology is given below.

Broadly the area is composed of an east facing sequence of volcanics and related intrusive and sedimentary lithologies forming part of the Mt. Read Volcanics. The westernmost units are predominantly argillaceous sediments, with lesser ignimbrites and coarse grained epiclastics which are intruded by high level quartz-feldspar porphyries. This sequence appears to be largely unprospective and can be correlated with Corbett's (1984) Western Sequence.

The central belt of volcanics, which forms most of the gridded area, is composed of predominantly andesitic lavas, pyroclastics and related epiclastic lithologies. Higher up in this sequence, towards the east, sedimentary units, including tuffaceous sandstones and siltstones and graphitic black shales, become dominant. The eastern margin of this belt is marked by calcareous and hematitic epiclastics which appear to have been deposited in a shallow water, oxidizing environment. An elongated body of coarse grained hornblende-feldspar porphyry forms much of the central zone within this belt and has clearly intruded at a high level, the andesitic extrusive and sedimentary sequence. This massive, porphyritic body is compositionally quite similar to the enclosing lithologies. In fact the predominantly intermediate composition of the volcanics within the Basin Lake area, in contrast to the mainly felsic volcanics to the north and south, may be an important feature of the mineral potential here. The Mt. Read Volcanics in the Que River-Hellyer belt are similarly intermediate in general composition.

The uppermost part of the volcanic sequence in the Basin Lake area is a series of massive pink quartz phyric lavas and agglomerates which are typical of the Tyndall Group lithologies. The contact with the underlying hematitic-calcareous epiclastics may be gradational. The eastern contact of the Tyndall Group rocks is marked by a major fault zone, the northern continuation of the Great Lyell Fault, which has juxtaposed the Upper Cambrian-Lower Ordovician Owen Conglomerate with the Cambrian Volcanics.

Pleistocene fluvio-glacial deposits cover much of the eastern part of this Basin Lake area. The depth of cover is quite variable

as shown by surface exposures, drilling and limited electrical depth soundings. A thickness of between 5m and 20m is common, however moraine in excess of 100m also occurs within the southern part of the area. The effect of this glacially derived cover has had a profound impact on the exploration here, particularly in assessing the results from earlier geochemical and geophysical surveys.

The alteration and mineralization patterns within the central belt of volcanics is based largely on interpretation from drill core. It appears that the massive hornblende-feldspar porphyry body(ies) is mostly weakly altered and quite unmineralized. By contrast the older andesitic extrusive-sedimentary sequence is characterized by widespread quartz-sericite-pyrite alteration (the "sulphide facies") with minor base metals and the local occurrence of bedded massive pyrite. This "sulphide facies" is best developed east of the intrusive centre, although two, apparently similar alteration-mineralization zones have been identified to the west over Bradshaw's Road and Leech Hill. The interpreted deeper subaqueous reducing environment of the "sulphide facies" gradually changes to a shallow subaqueous oxidizing environment, the "oxide facies", characterized by primary and secondary hematite $\pm$ magnetite-carbonate, higher in the sequence to the east. Only minor sericite-pyrite alteration and base metal mineralization occurs within this zone. This reducing-oxidizing geochemical interface may be an important horizon for economic mineralization.

3.3.3 TEM Surveys

Two TEM surveys were completed over the Basin Lake area during 1985-86. Lamontagne Geophysics (Australia) Pty. Ltd. carried out a UTEM survey in November. This survey covered all of the prospective "sulphide facies" belt of volcanics between line 18N (East Tyndall Grid) and line 75S (Basin Lake Grid) with readings taken every 25m or 100 feet (30m) along the respective grids. Four large rectangular transmitting loops roughly 1000m x 1500m in size positioned to the west of the zone were used for this work. A fifth, smaller loop was positioned to permit

survey coverage over the Bradshaw's Road Pyrite Zone between lines 2N and 8N (East Tyndall Grid) on the west side of the andesitic belt. Some difficulties were experienced with the data quality from this loop and several of the lines were re-read by Lamontagne in March 1986. The total UTEM survey coverage was 31.1 line km and is shown on Figure 10 along with the transmitting loop locations.

Solo Geophysics & Co. completed a Sirotem survey over the Leech Hill Pyrite Zone during April 1986. Four lines between 12S and 30S on the Basin Lake Grid were read at 100 feet (30m) intervals using a transmitting loop 300m x 600m in size positioned to the east of Leech Hill. In addition part of line 30S on the east side of the loop was read to compare the results with a UTEM response identified earlier on this line. A total of 3.7 line km were surveyed by Sirotem with the line coverage and transmitting loop position shown on Figure 10.

The data from both TEM surveys have been interpreted by Dr. J.R. Bishop (Mitre Geophysics Pty. Ltd.). His report on this work is presented in Appendix D along with the profile plots for each line. The interpretation of the results is also shown on Figure 10. This report includes a comprehensive discussion of the previous geophysical surveys carried out over the Basin Lake area and Bishop has integrated the results from these surveys with the TEM interpretation. The significant responses outlined by the TEM surveys are summarized below. A more detailed discussion of these features in relation to the other geophysical, and where relevant geological and geochemical, data is presented in section 3.3.4.

A total of ten anomalous TEM zones have been defined by Bishop and these are labelled A to J on Figure 10. Single-line and some weak two-line responses have not been labelled. Five zones (A, F, G, H and J) can be readily correlated with black shale units identified by surface exposures or drill intersections. The northern end of zone C also passes over a black shale horizon

and this may be extrapolated through to zone G. Bishop interpreted that zone D, which is a long weakly anomalous zone, is due to a lithological contact or poorly conducting fault. Geologically, this zone is closely related to the eastern margin of the main hornblende porphyritic intrusion (see Figure 3). The sources of the remaining three zones, B, E and I are not definitely known.

Zone B, which contains the most significant TEM anomaly at line 14.5N, 585mE, appears to be adjacent to several interesting IP anomalies and coincident with a relative IP resistivity low (see further discussion insection 3.3.4). This EM zone is also subparallel to an interpreted "finger" of glacial moraine cover of unknown thickness. Zone E is a fairly weak response, which Bishop believes is unlikely to be due to massive sulphide mineralization. A moderate IP chargeability anomaly is associated with part of this zone, which may indicate another concealed lens of black shale within the sequence. Zone I is a similarly weak response. This feature is of interest because of the proximity to minor base metal sulphide mineralization intersected in BL802 (best assay 15 feet at 0.47% Pb, 0.19% Zn) and BL1 (best assay 12m at 0.1% Pb, 0.35% Zn). Unfortunately a detailed examination of these responses by Bishop indicates that they are unlikely to be due to massive sulphides.

3.3.4 Geophysical Compilation and Discussion

The Basin Lake area has been covered by numerous geophysical surveys since the early days of modern exploration in the late 1950's (see Table 3.1). Much of the data from this work has been presented on different maps at different scales in a wide range of reports. As part of the assessment of the economic mineral potential of the area the results from the more comprehensive geophysical surveys have been compiled onto standard 1:5,000 scale sheets to that it is possible to directly compare them with one another and the geology and geochemistry.

Figures 11, 12 and 13 show a compilation of all of the gradient array IP chargeability and resistivity and total field ground magnetics data respectively over the Basin Lake-East Tyndall Grids. Bishop discussed this work in detail in his 1982 review report and has elaborated further on these results in conjunction

Table 3.1 GROUND GEOPHYSICAL SURVEYS - BASIN LAKE AREA

Notes 1. EL9/66 part III, 1986 covers East Tyndall Grid lines 2N to 18N and Basin Lake Grid lines 9N to 95S.

2. East Tyndall Grid originally pegged every 100 feet, now re-pegged every 25m. The grid origin in both cases is the old Bradshaws Road.

3. Basin Lake Grid is still pegged every 100 feet.

EAST TYNDALL GRID

(a) Induced Polarization

1. Dipole-dipole lines 2N-18N, McPhar 1967 and 1968 for Mt. Lyell EL9/66.
2. Gradient array lines 2N-10N, 15N-18N, Scintrex 1974 for Mt. Lyell EL9/66.
3. Dipole-dipole lines 2N-8N, 15N-18N, Scintrex 1981 for GFEL EL9/66.
4. Gradient array lines 10N-15N, Scintrex 1982 for GFEL EL9/66.

(b) Electromagnetics

1. Genie EM lines 4N-8N, 12N, 14N-17N, Scintrex 1982 for GFEL EL9/66.
2. UTEM lines 2N-8N (west), 8N-18N (east), Lamontagne 1985 for GFEL EL9/66.

(c) Magnetics

1. Fluxgate lines 2N-18N Mt. Lyell 1968, 1969 EL9/66.
2. Proton precession lines 4N-18N Scintrex 1982 for GFEL EL9/66.

(d) Electrical Soundings

1. Lines 16N and 18N Scintrex 1974 for Mt. Lyell EL9/66.

BASIN LAKE GRID

(a) Induced Polarization

1. Dipole-dipole i along Great Lyell Fault
   ii PMI Grid McPhar 1968-69 for Pickands Mather EL12/65.

2. Gradient array lines 3N-95S, Scintrex 1974 for Mt. Lyell EL41/71.
3. Gradient array lines 9N-6S, 66S-82S, Scintrex 1978 for Mt. Lyell EL41/71.
4. Pole-dipole line 00S, Scintrex 1978 for Mt. Lyell EL41/71.
5. Dipole-dipole lines 30S and 36S, Scintrex 1981 for GFEL EL9/66.
6. Dipole-dipole line 78S, Scintrex 1982 for GFEL EL9/66.

(b) Electromagnetics

1. Turam PMI grid Seigel 1970 for Pickands Mather EL12/65.
2. Genie lines 00S-36S, 78S Scintrex 1982 for GFEL EL9/66.
3. UTEM lines 00S-95S (east) Lamontagne 1985 for GFEL EL9/66.
4. Sirotem lines 12S-30S (Leech Hill), Solo 1986 for GFEL EL9/66.

(c) Magnetics

1. Proton precession lines 00S-95S, Scintrex 1974 for Mt. Lyell EL41/71.
2. Proton precession lines 30S and 36S, Scintrex 1981 for GFEL EL9/66.

(d) Electrical Soundings

1. Line 60S, Scintrex 1974 for Mt. Lyell EL41/71.

(e) Down-hole Geophysics

1. BL1 IP between 125m and 390m, Scintrex 1978 for Mt. Lyell EL41/71.
2. BL2 IP between 175m and 285m, Scintrex 1978 for Mt. Lyell EL41/71.
3. BL3 3 array IP between 0m and 451m, Scintrex 1981 for GFEL EL9/66 magnetic susceptibility of core 0m to 451m, GFEL 1981.
4. BL4 3 array IP between 0m and 289m, Scintrex 1981 for GFEL EL9/66 magnetic susceptibility of core 0m to 289m, GFEL 1981.

with the TEM survey data (see Appendix D). For ease of discussion the TEM responses have been labelled with letters from A to J (see Figure 10) and the gradient array IP chargeability anomalies with numbers 1 to 13 (see Figure 11). A summary of both these anomaly sets is presented in Table 3.2 along with any tests that have been carried out, the interpreted geological source of the anomaly and any other relevant comments.

The table shows that the TEM surveys have responded to the graphitic black shale horizons outlined by the gradient array IP and tested by costeaning and/or diamond drilling (viz IP anomalies 1, 2, 4, 6b, 7, 8 and 9 and EM anomalies A, C, F, G, H and J). Three IP anomalies (6a, 11 and 12) covered by the TEM surveys did not respond to this method. Anomalies 11 and 12 over Leech Hill are related to weak disseminated sulphides which do not appear to be associated with massive sulphide mineralization. Conversely anomaly 6a is due to semi massive-massive pyrite (see later discussion). The table also shows that three TEM responses (B, D and I) do not have corresponding gradient array IP anomalies. Zone I, which is co-incident with the 1970 Turam EM response, occurs within a dipole-dipole IP anomaly and is probably due to disseminated sulphides intersected in holes BL802 and BL1. It appears that glacial moraine 30m thick has masked the gradient array response. Zone D is interpreted as due to a lithological contact or weakly conducting fault on the margin of the main hornblende porphyritic intrusion. Zone B is also covered by glaical moraine of unknown thickness, however no significant dipole-dipole IP anomaly appears to be directly related to this response.

Part of line 30S was covered by both the UTEM and Sirotem surveys and the results give an opportunity to compare the effectiveness of each system. The UTEM survey gave a pronounced response over the black shales intersected in hole BL4 whereas the Sirotem survey, using a smaller transmitting loop, recorded a lower amplitude response. Neither system (nor the Genie EM survey in 1982) responded to the 16m thick semi-massive to massive pyrite mineralization intersected less than 50m below

Table 3.2 GRADIENT ARRAY IP AND EM ANOMALIES - BASIN LAKE AREA

See Figures 10 and 11 for anomaly locations

Gradient Array Anomaly	EM Anomaly	Test	Source	Comments
1	A (part)	TYN3, roads	black shale	
2	A (part)	TYN1	black shale	
No anomaly	B	-	sulphides?	drill target
3	not surveyed	-	sulphides?	drill target
4	C (part)	costean	black shale	
No anomaly	D	-	intrusive contact?	weak response
5	E (part)	-	?	weak response
6a	no anomaly	BL4	massive pyrite	no EM over 16m thick semi-massive pyrite <50m deep
6b	F	BL4, BL5	black shale	
7	G (part)	BL2	black shale	
8	H	BL801	black shale	
No anomaly	I	BL1	dissem. sulphides	dipole-dipole anomaly
9 (Bradshaws Road)	J (part)	TYN2	black shale?	poor test
10	not surveyed	-	black shale?	
11 (Leech Hill)	no anomaly	LH1	dissem. sulphides	zone only partly tested
12 (Leech Hill)	no anomaly	-	?	unprospective
13	not surveyed	-	?	unprospective
14	not surveyed	costean	bog iron	unprospective

Note Somedisplacement of IP and EM anomalies is probably due to poorly located grid lines, e.g. IP anomalies 4 and 7 with EM Zones C and G.

the surface by hole BL4 which was outlined by gradient array IP (anomaly 6a). The results from BL4 and adjacent hole BL5 also demonstrate that stronger IP anomalies (>30 m.sec) are often due to graphitic black shales but, significantly, that moderate IP anomalies (20-30 m.sec) can be due to massive sulphide mineralization.

Three good geophysical responses with significant mineral potential emerge from all of these investigations. A summary of the salient geophysical results, along with the interpreted bedrock geology and geochemical data for each of these targets is presented in Table 3.3. In each case there are strong positive features and some, possibly negative aspects. Most importantly, all three targets occur within the hydrothermally altered sulphidic volcaniclastic sequence adjacent to the "oxide facies" geochemical interface and towards the northern end of this highly prospective horizon in the Basin Lake area.

Immediate testing of this zone of anomalies is warranted. Minor additional surface investigations of the limited outcrop exposed here may assist with specific target definition. However, it is necessary to evaluate these responses by diamond drilling associated with down hole EM surveys to fully assess the massive sulphide mineralization potential here.

3.4 CONCLUSIONS

The prospective hydrothermally altered sulphidic belt of volcaniclastics extending along 5 km of strike at eastern Basin Lake has been surveyed by TEM and numerous responses have been obtained. A detailed study of these anomalies, in conjunction with the results from earlier geophysical surveys (principally IP) and drill hole information has shown that most responses are due to graphitic shale units or minor disseminated sulphide occurrences without indications for massive sulphide mineralization. However, three good geophysical (IP and/or EM) anomalies within a zone of favourable geology and geochemistry in the north eastern area remain untested and warrant immediate investigation by diamond drilling.

Table 3.3 UNTESTED MASSIVE SULPHIDE TARGETS - BASIN LAKE AREA

Location*	Geophysical Features	Interpreted Geology	Geochemical Results
Line 16N, 250mE	1. Strong dipole-dipole IP anomaly not tested by hole TYN3 2. Weak UTEM response	Pyritic volcaniclastics, adjacent to black shales intersected in TYN3	Up to 4000 ppm Pb from outcrops 300m along strike to the south
Line 14.5N, 585mE	1. Good UTEM anomaly 2. Relative IP resistivity low 3. No significant IP chargeability response	Glacial cover of unknown thickness over inferred sulphidic volcaniclastics	Up to 4000 ppm Pb from outcrops 170m west of (below?) the zone
Line 12N, 1000mE to 10.5N, 1100mE	1. Strong gradient array IP chargeability anomaly 2. Moderately high IP resistivity 3. No EM survey coverage	Hematite-carbonate $\pm$ pyrite altered epiclastics adjacent to Tyndall Group tuffs.	Up to 500 ppm Pb and 680 ppm Cu in soils above the zone

* Note: All anomalies occur on the eastern side of East Tyndall Grid

In order to fully evaluate the massive sulphide potential of this zone down hole EM surveys should also be carried out here.

The TEM surveys over the Bradshaws Road and Leech Hill Pyrite Zones have given no encouragement for the occurrence of significant massive sulphide mineralization in this area.

4. WEST SEDGWICK (F.G. FitzGerald)

4.1 INTRODUCTION

The West Sedgwick area lies to the north and north west of the Mt. Lyell Mining Field within the Mt. Read Volcanics (see Figure 2). Mineral prospecting at the turn of the century and modern exploration in the late 1950's to early 1970's pursued the possibility of extensions to the Mt. Lyell copper deposits, particularly associated with the northern continuation of the Great Lyell Fault. No encouragement for the occurrence of such mineralization has been found, apart from a moderately weak EM anomaly outlined by Rio Tinto Exploration in 1958. This feature was never adequately tested. Interest was renewed in this anomaly following recent geological investigations at Mt. Lyell and a modern TEM survey was proposed to further evaluate the mineral potential here.

Since 1971 the area has been explored by Mt. Lyell and Gold Fields Exploration as part of EL41/71 and EL9/66 respectively. The emphasis of this work has been on investigating the massive sulphide potential and quite recently the gold potential. Little direct encouragement for the former target has been obtained. However, detailed stream sediment geochemistry, carried out during 1984-85, outlined a linear belt of volcanics to the west of the West Queen River as a possible source area for fine grained gold being shed into the drainage. It was proposed to further investigate this occcurrence by reconnaissance bedrock geochemistry and geological mapping.

4.2 PREVIOUS EXPLORATION

A detailed account of the previous exploration over the West Sedgwick area has been given by FitzGerald in Purvis et. al. 1983. This report also includes a comprehensive discussion of the geology of the area. Aspects of this earlier work relevant to the current investigations are reiterated here.

In 1958 Rio Tinto Australian Exploration Pty. Ltd. (RTAE) carried out detailed work north of the Mt. Lyell Mine Lease, mainly pursuing

possible extensions to the Lyell copper mineralization. A grounded wire Turam EM survey was conducted along grid lines laid out roughly normal to the Owen Conglomerate-Mt. Read Volcanics contact. Several moderate level responses were outlined, the main anomaly being located just north of Zig Zag Hill (see Figure 15) adjacent to a prominent swing in the Owen Conglomerate contact from north west to westerly (Boniwell, 1958).

RTAE investigated this response further with detailed geological mapping, stream sediment and soil geochemistry, ground magnetics and a gravity survey. The geological mapping of scattered volcanic outcrops exposed through extensive Conglomerate scree cover revealed an apparently similar but weaker style of alteration to that of the main Lyell Field. Fraser (1958) notes the general lack of sulphides observed in these limited exposures and suggests that this may be a negative feature in regard to possible concealed economic mineralization. The geochemical investigations were fairly crude with mainly field testing for Cu, Pb and Zn using dithizone being carried out along traverses. Only selected samples were submitted for spectrographic analysis. Despite this, the work outlined some low anomalous levels, of Pb in particular, which generally coincided with the Turam anomaly (Muceniekas, 1958). The gravity results did not appear to identify any significant mass concentration associated with the EM anomaly. However, the extremely rugged topography and lack of accurate survey control here may well have masked a positive response.

No further work was carried out over the West Sedgwick (Zig Zag Hill) EM anomaly until 1962 when RTAE, in association with the EZ Co., completed a three electrode array IP survey along 6 re-established grid lines. No significant IP effect was detected over the main anomaly although some responses were recorded to the east. These were related to a change in rock type and no further work was recommended (McCarthy and Pinney, 1962).

The area was pegged by Pickands Mather & Co. International (PMI) in 1965 as part of EL12/65. In 1966 the area was covered by reconnaissance geological and stream sediment geochemical surveys, and by 1967 attention had focused along the Mt. Read Volcanics-Owen Conglomerate contact

in the search for extensions to the Mt. Lyell copper mineralization. The results from this work were largely negative, however it was recognized that the thick scree and glacial cover over much of this contact may have obscured any anomalies. As a consequence a reconnaissance 500 feet (150m) dipole IP survey was conducted parallel to the contact by McPhar Geophysics in 1968. A moderate response was recorded in the vicinity of the Turam anomaly, however PMI directed all of their attention to a much stronger anomaly north of Basin Lake and no further work was carried out by them in the West Sedgwick area (Wuerch, 1971).

When Mt. Lyell acquired the ground as part of EL41/71 in 1971 they turned their attention to the area north and west of Zig Zag Hill. This was progressively gridded, geologically mapped and surveyed by gradient array IP, magnetics and soil geochemistry. Several drill targets were identified and two of these were tested by drilling in 1977 (holes WS1 to 3) without encountering any significant mineralization.

In 1980-81 Mt. Lyell cut an extensive grid over the Comstock Valley as part of a complete coverage of the Mine Lease. The grid lines extended across the Mt. Read Volcanics-Owen Conglomerate contact north of Zig Zag Hill and were surveyed by Scintrex with gradient array IP and proton precession magnetics in 1981. No significant chargeable anomalies were identified in the vicinity of the Turam conductor although there are interesting features on some of the line profiles (see discussion in section 4.3.2). Systematic soil and patchy rock chip geochemical sampling was carried out along the Comstock Grid as part of an unfinished honours thesis in 1981. The samples were analysed for Cu, Pb, Zn, Ag, Ba, Fe and Mn by Mt. Lyell. One of the lines, which extended over the Turam anomaly, located elevated lead values (maximum assay 1450 ppm Pb in soil).

The western section of the area, west of the Lake Margaret township, was covered by a stream sediment geochemical survey during 1981-83. The minus 80 mesh samples were analysed for Cu, Pb, Zn and Ag with selected samples being assayed for Au. Several low level gold anomalies were identified, not surprisingly in creeks sporadically worked for alluvial gold by local residents. R.A. Poltock carried out brief geological investigations of the drainages in 1983 but failed to locate any potential bedrock

source. Then in 1984-85 Poltock was contracted again to systematically cover all of the main drainages in the West Sedgwick area specifically seeking for gold mineralization. Both minus 80 mesh and panned concentrate samples were taken during this survey. Samples from most drainages did not yield signficant values, however samples from the West Queen River and tributaries draining into it from the west along approximately 3.5 km of its length gave consistent low levels of gold. Very fine grained gold was visible in most panned samples from this area. The West Queen River drainage, like some creeks near the Lake Margaret township, has long been recognized as a source of minor alluvial gold by amateur prospectors.

4.3 WORK COMPLETED 1985/86

The work carried out this year was centred on two separate areas within West Sedgwick, and comprised geological mapping and a Sirotem survey near Zig Zag Hill in the east and reconnaissance bedrock geochemistry over the West Queen drainage to the west.

4.3.1 Geological Mapping West Sedgwick

P. Komyshan extended detailed geological mapping and sampling over the Comstock area into the West Sedgwick area during July-August 1985. The mapping concentrated on tracing the Great Lyell Fault northwards to search for favourable alteration and structure indicative of possible high grade copper deposits at depth. The results of Komyshan's mapping are incorporated into the compiled geological interpretation (see Figure 14). He found no evidence for such possible mineralization but was able to elucidate some of the major structures in the area, particularly the Great Lyell and related Margaret (thrust?) Faults and the later Sedgwick Fault.

Widespread Owen Conglomerate talus and glacial moraine conceal most of this contact zone, frustrating definitive geological interpretation. However, Komyshan has inferred that a sequence of Tyndall Group lithologies conformably overlies mafic-intermediate volcanics of the Central Sequence in the Zig Zag Hill area. He

postulates that the WNW trending Sedgwick Fault offsets this sequence. This interpretation is in agreement with earlier mapping by Sheppard (1974) and Corbett (1981). A much more speculative proposal put forward by Komyshan is that the Great Lyell Fault, which is reasonably inferred north of the Sedgwick Fault along the Owen Conglomerate contact, forms the break between Cambrian Jukes Formation lithologies and the Ordovician Gordon Limestone on the northern slopes of the Comstock Valley. The position of the Great Lyell Fault here beneath thick cover is quite conjectural, of course, although there is some evidence from the IP survey that a major structure occurs close to this location and has been offset by the Sedgwick Fault in an analogous manner to the North Lyell Fault's translation of the Great Lyell Fault in the Linda Valley.

4.3.2 Sirotem Survey, Zig Zag Hill

Recent geological mapping over the Mt. Lyell Mine Lease led to a review of the RTAE Turam anomaly just north of Zig Zag Hill. Although the response had been re-evaluated by Bishop (pers. comm.) in 1983 who concluded that it was unlikely to be due to massive sulphide mineralization, it was felt that the interpreted stratigraphic and structural location of the anomaly in relation to possible high grade Cu-Ag mineralization warranted further investigation. Consequently three of the 1981 Comstock Grid (AMG) lines were re-established and extended in April to cover this feature. At the same time cross lines were cut to permit the laying out of a rectangular transmitting loop 300m x 600m in size. A total of 3.9 line km of cutting was completed, using helicopter support.

In May, Solo Geophysics & Co. carried out a Sirotem survey along these grid lines with Hz (vertical field) readings taken every 25m. The location of the transmitting loop and the survey coverage are shown on Figure 15 and the data plots are presented in Appendix D. G. Staltari (Geophysical Exploration Consultants Pty. Ltd.) studied the results of this survey and his comments are included in Appendix D.

Staltari identified two responses which could be correlated across all three lines. These are labelled A and B on Figure 15 and are open to both the east and west. Anomaly zone A appears to reflect a near surface lateral change in resistivity with an interpreted depth of less than 50m. Although he could not be certain whether this response represents a discrete sulphide source or a fault zone/formational contact, he noted that on line 381400E there appears to be a lateral peak migration which may indicate current channelling into a weakly conductive zone. He also observed that the anomaly appears to get broader and more coherent in this line which may reflect a sulphide conductor developing more strongly to the west. Anomaly zone B, which is parallel to zone A, appears to be a very shallow (less than 25m deep) resistivity contrast. Staltari feels that this response is quite likely to be due to a formational contact or fault.

An examination of the 1981 gradient array IP profiles along these and adjacent grid lines reveals several interesting features. East of line 381800E towards the northern extremity of each profile there is a pronounced drop in resistivity to less than 1000 ohm.m followed by a sharp increase to over 10,000 ohm.m. This feature is generally accompanied by a drop in chargeability and is logically explained by a major fault zone (the Sedgwick Fault) separating moderately resistive volcanics from extremely resistive Owen Conglomerate (see Figure 14). This IP anomaly, which may extend westwards as far as 381700E is co-incident with the Sirotem zone B response and confirms Staltari's interpretation for this.

Between lines 381800E and 382100E there is a weak chargeability high of 20-30 mV/V above a background of 10-15 mV/V located 100-200m south of the above fault-related response. This chargeability feature is sometimes accompanied by a relative drop in resistivity. On line 381 800E this second IP feature coincides with the Sirotem zone A response. In fact the trend of this IP anomaly follows both the Sirotem zone A and the RTAE Turam Em anomalies. The observation that the IP anomaly does not appear to continue further west may indicate that the source plunges to the west beneath thick cover.

4.3.3 Bedrock Geochemistry, West Queen

The apparent linear source area for the gold in drainage anomalies outlined over the West Queen River in 1984-85 is parallel to the regional geological strike in this area. In particular, high level quartz-feldspar porphyritic intrusives which have been mapped here were recognized as a possible source rock for the gold. In fact a similar body is host to minor gold mineralization prospected by small workings on Diamond Hill, 3 km to the west. The possibilty of structurally controlled mineralization was also considered a target here. Consequently it was decided to evaluate this area by taking close spaced bedrock samples (10m apart) along two reconnaissance grid lines oriented across strike and separated quite widely through the zone.

A low key program of sampling using a portable percussion rig ("wacker") was completed in April. A total of 121 samples were taken along the two lines. The depth to bedrock for most samples was 0.5-2.0m. At the same time, geological contractor R.A. Poltock logged the bedrock chips and mapped and sampled outcrops adjacent to lines. His brief report on this work is included in Appendix C. All samples were analysed for Au, Cu, Pb, Zn, Ag, As, W and Bi and the results are presented, along with sample descriptions, in Appendix E. The location of the grid lines and sample numbers is shown on Figure 17.

The results from this program were very disappointing. No significant mineralization was identified, in fact no sample assayed above the detection limit of 0.008 g/t Au. An isolated sample of dark grey siltstone assayed 0.2% Pb, 0.5% Zn. Geologically the area is underlain by a predominantly epiclastic sequence of shales-siltstones and possible greywackes with lesser probable pyroclastic units (see Figure 16). Towards the eastern end of both lines, a weakly altered quartz-feldspar porphyry was encountered apparently intruding the sequence. No mineralization is associated with this inferred sub-volcanic intrusive. The suite of lithologies is typical of the western sequence as described by Corbett 1981(a).

The source of the alluvial gold remains unexplained; however, the widespread occurrence of quartz lag gravels up to a maximum of 2m thick which form a striking feature over much of this area may offer a clue. These unconsolidated gravels are composed of white quartz which is probably derived from weathered remnants of Devonian metamorphogenic veins in both Mt. Read Volcanics and Ordovician-Silurian sediments. Such veins are known to carry low levels of gold in the Queenstown area.

Although these quartz lag gravels are quite extensive, particularly to the west and south of Queenstown, they are never very thick and therefore are not an attractive exploration target for an economic gold deposit. However, to verify the proposition that they are the source for this, and possibly other, minor alluvial gold in the area, it is suggested that several large samples of the gravel be panned down and checked for any contained gold.

5.4 CONCLUSIONS

A moderately weak EM conductor has been located beneath scree and glacial cover just north of Zig Zag Hill. The response is open to the west and may be broadening with depth. Geophysical interpretation suggests that the source could be a discrete sulphide body within 50m of the surface. Geological as well as geophysical work indicates that the anomaly is closely associated with the Sedgwick Fault which appears to have offset the Great Lyell Fault immediately to the north. The area is probably underlain by Tyndall Group lithologies flanked to the west by mafic-intermediate volcanics of the Central Sequence. Some anomalous lead geochemistry occurs within the EM zone. The geological and geophysical indications are sufficiently encouraging to justify further investigation for a massive sulphide orebody here.

No evidence for bedrock gold mineralization was found in the West Queen River drainage. It is possible that the source of minor alluvial gold in this area is quartz lag gravels derived from weathered metamorphogenic veins. This does not constitute an attractive exploration target.

5. SELINA (A.J. Cartwright)

5.1 INTRODUCTION

The Selina area lies within the northeastern block of the Tyndall licence (EL9/66, Part II - see Figure 1). The area has been actively explored since 1970, and 13 diamond drill holes have been completed to date, predominantly on geophysical targets. The geology of the Selina area is characterised by two, extensive, linear belts of strongly altered, sulphidic volcanics known as the Western Pyrite Zone (WPZ) and the Eastern Pyrite Zone (EPZ). These zones are hosted by an elongate belt of Mt. Read Volcanics comprising felsic lavas, pyroclastics and epiclastics, with overlying sequences of hematitic conglomerates (Dora Conglomerate and Owen Conglomerate). The area has undergone several periods of glaciation and features associated with glaciers such as moraines and steep ice-eroded slopes are present.

Exploration for volcanogenic massive sulphides, the primary target at Selina, has, in the past, concentrated on the WPZ. More recently however, the emphasis of exploration has moved to the EPZ, and in particular, to a feature known as the Mt. Selina Anomaly Zone (MSAZ) which lies at the southern limit of the EPZ. The MSAZ is a major soil and bedrock Ag-Pb-Zn geochemical anomaly first outlined in 1981-82. It remained unexplained however until 1984-85, when a re-evaluation of the area was made. A remapping programme during 1984-85 led to the conclusion that the MSAZ occurred over a sequence of dacitic lavas and volcaniclastics in a geological setting similar to Kuroko-style massive sulphide deposits. It was decided to evaluate the potential of the area with a deep seeking ground EM (UTEM) survey which was completed in 1985. Although no anomaly targets were generated by this survey, it was decided to test the MSAZ by drilling, siting the hole under the best geochemical responses.

This report summarises the 1985-86 exploration programme which included the drilling of one diamond drill hole (LS13) and a subsequent down-hole EM survey, in the Mt. Selina area.

5.2 PREVIOUS EXPLORATION

A comprehensive review of all the previous exploration to 1982 over the Selina area was prepared by Purvis et al. (1983). Additional work completed during the 1983-84 programme and the 1984-85 programme are discussed by Roberts and Cartwright (1984) and FitzGerald and Pease (1985) respectively.

In summary, the area has been covered by: 800 feet spaced grid lines, locally infilled to 400 feet; detailed geological mapping and sampling; comprehensive gradient array IP, SP, total field magnetics and soil geochemical surveys and more restricted dipole-dipole IP, Genie EM, max-min EM, UTEM, gravity, trace element and lead isotope surveys. In addition, helicopter-borne Turair EM and Dighem surveys have been flown over the area. A total of 12 drill holes had been completed (to 1985) with some geophysical testing of the drill core.

5.3 WORK COMPLETED AND RESULTS, 1985-86

Work completed during the 1985-86 period involved drilling one diamond drill hole (LS13) at the MSAZ and a subsequent down-hole EM survey using both LS13 and the nearby hole, LS10. All of this work was carried out using helicopter support from Zeehan in November-December, 1985 (the drilling) and February, 1986 (the down-hole EM).

5.3.1 Diamond Drilling

LS13 is a 502.6m long diamond drill hole, completed by East Coast Drilling. The hole has been logged and down-hole surveyed, its collar position has been survey located by Renison Ltd. and the core has been photographed and assayed where necessary. Hole details (including a drill log) are given in Appendix B. The location of LS13 is shown on Figure 18, a geological interpretation of the Selina area, and a sectional veiw of LS13 is given in Figure 19.

LS13 was drilled to test for volcanogenic massive sulphide mineralization beneath the MSAZ, along strike from encouraging alteration

and mineralization intersected in LS10. The geochemical anomalies on lines 116N and 120N were chosen as the target, primarily because they lie at the centre of the MSAZ, and they have the strongest Ag-Pb-Zn anomalies. Also, the geological setting of the MSAZ was believed to be prospective for Kuroko-style deposits and it was felt that the absence of any significant UTEM responses may reflect sphalerite-rich massive sulphides at depth, known to be relatively poor conductors. The collar position of LS13 was chosen on the grounds of ease of helicopter access and site preparation, i.e. stands of large trees and steep slopes were avoided. At the completion of the hole, it was lined with PVC pipe after the casing had been removed.

LS13 intersected approximately 360m of chloritic epiclastics with a moderately strong carbonate-sericite-chlorite-magnetite alteration assemblage developed. This graded into a sequence of autobrecciated felsic lavas with chloritic volcaniclastics, over the remainder of the hole. The epiclastics contained weak sulphide mineralization, particularly between 240m and 300m, where thin galena-sphalerite veinlets occur. Assays were taken every second metre over this interval and maximum values obtained were: Pb - 2800 ppm; Zn - 4.80% and Ag - 16 ppm, all coincident with small base metal veinlets.

5.3.2 Down-Hole EM Survey

After completion of hole LS13 it was decided to fully evaluate the massive sulphide potential of the MSAZ by surveying the hole with down-hole EM. In order to extend the coverage further along strike and at depth it was planned to survey hole LS10, drilled in 1983-84 and considered to be the most encouraging intersection at Selina, as part of this programme. Fortunately this hole was still open to the end. Solo Geophysics & Co. carried out the down-hole EM survey using the Sirotem system with helicopter support in February. Three transmitting loops, 200m x 200m in size, were utilized and both holes were surveyed using the two adjacent loops. A report by Mitre Geophysics on the interpretation of the survey and plans showing the loop layouts and data profiles is given in Appendix D. Although the data is quite noisy, the results clearly indicate that no significant off-hole conductors occur in this area.

5.4 CONCLUSIONS

The remaining most prospective area at Selina, the Mt. Selina Anomaly Zone, has been tested by diamond drilling with disappointing results. The geochemical anomalies over Mt. Selina can be explained by the small base-metal veinlets encountered in LS13. Despite the encouraging geological setting, the lack of strong hydrothermal alteration seriously downgrades the chances of a volcanogenic massive sulphide deposit existing at depth at Mt. Selina.

Elsewhere on EL9/66, Part II, the Western and Eastern Pyrite Zones have been thoroughly tested with no encouragement for economic mineralization. No other targets remain undrilled on the area, which must now be considered fully evaluated for potential to host volcanogenic massive sulphide deposits.

6. HUXLEY (F.G. FitzGerald)

6.1 INTRODUCTION

The Huxley area lies immediately south of the main Mt. Lyell Mining Field within the Central Mt. Read Volcanics belt. Despite the proximity to Queenstown the exploration effort here has generally lagged behind other areas of the EL. This was recognized in 1983, following detailed geological mapping by Komyshan which identified favourable lithologies and alteration for the occurrence of a massive sulphide deposit. An accelerated program was proposed to fully evaluate the area before relinquishment of the ground in 1987. This work also included investigation into the scattered gold occurrences, mainly in the south and west, which were located during early prospecting here.

A dipole-dipole IP survey over the Huxley grid during 1984-85 outlined several moderate anomalies. Modelling of these responses identified one in particular as likely to be due to sulphide mineralization which should be drill tested. At the same time, a low level stream sediment gold geochemical anomaly was outlined in the headwaters of the Tofft River and warranted further investigation. Thus, two programs were completed during the current season, namely diamond drilling on the Huxley Grid and gold geochemistry follow-up at Tofft.

6.2 PREVIOUS EXPLORATION

A review of the previous exploration over the Huxley area was presented by FitzGerald (1985) to which the reader is referred. Jones in Purvis et al. (1983) presents a useful discussion of the main geological elements of the area which are summarized here.

In broad terms, the Huxley area can be divided into three geological units which generally face east. These are: a westerly, predominantly sedimentary sequence with some pyroclastics and intermediate to basic volcanics; a central felsic volcanic sequence composed of rhyodacitic lavas and sub-intrusive domes, ignimbrites and epiclastics including possible exhalites; the Owen Conglomerate which forms the eastern

margin along the probable southern extension of the Great Lyell Fault. Widespread glacial moraine and talus obscures most of the bedrock geology over this central prospective sequence.

Although the geological review recognized the potential for massive sulphide mineralization along a zone south from Nasty Knob close to the faulted Owen Conglomerate contact the IP survey failed to indicate any significant sulphide body here. However, a promising anomaly was identified beneath a moraine covered area adjacent to a nunatak (Island Ridge) of moderately altered volcaniclastics which carry minor veinlet base metal mineralization.

Detailed stream sediment geochemistry carried out during 1983-84 by R.A. Poltock with a particular emphasis on gold mineralization outlined several anomalous drainage areas. Three of these were investigated by a reconnaissance grid (the Mt. Ellen Grid) bedrock geochemical sampling program late last season. The results from this work were inconclusive, partly due to severe difficulties penetrating Owen Conglomerate scree deposits on the west flank of Mt. Huxley. The Tofft River headwaters were also identified as a source for low level gold. It was believed that the bedrock geochemical sampling method may be more effective here as Owen Conglomerate scree is not a major problem.

6.3 WORK COMPLETED 1985-86

6.3.1 Drilling, Hole HX1

Diamond drill hole HX1 was designed to test for massive sulphide mineralization beneath a moderate dipole-dipole IP anomaly on line 6S 275mW. The modelled depth to the source was 200m (Bishop in FitzGerald and Pease, 1985). The hole was sited to drill roughly southeast towards the anomaly as available outcrop in the area indicated a prominent swing in the regional strike of the geology from northerly to north-easterly (see Figure 20). A short bulldozed drill access track off the existing HEC powerline road was cut in such a way as to permit later rehabilitation. The hole was drilled by East Coast Drilling using a Longyear 38 rig during September-October, to a depth of 340.5m.

Details of the drill hole including geological log and assay results are presented in Appendix B, and a drill hole section is shown on Figure 21. A petrographic report on samples of drill core by Dr. A.S. Joyce (Geochempet Services) is also included with the drill log.

The results from the drilling are disappointing; no indications for massive sulphide mineralization were obtained and the source of the IP anomaly was found to be graphitic black shales. No black shales are exposed in the Huxley area. It is likely that these less resistant units have been preferentially scoured by Pleistocene glacial action and the resultant troughs subsequently filled with moraine cover.

The hole intersected a sequence of mineralized epiclastics including black shale, tuffaceous siltstone and sandstone between 131.8m and 198.2m. Minor sphalerite-galena-pyrite veinlets occur throughout this sequence and are similar in style to the weak mineralization outlined on Island Ridge. The best assays from this sequence are 162.3-184.3m, 22m at 0.08% Pb, 0.27% Zn and 1.5 g/t Ag including 180.8-182.8m, 2m at 0.16% Pb, 0.56% Zn and 3.0 g/t Ag. No significant gold values were obtained from any of the split core. Dacitic lavas were intersected stratigraphically below (up hole of) this epiclastic sequence and massive felsic ignimbrites and lava breccias above (down hole from) them. Both the lavas and the pyroclastics are weakly altered and largely unmineralized.

Upon completion of the drilling the hole was cased with PVC pipe. During February the hole was logged by Solo Geophysics & Co. using a down-hole Sirotem system. One transmitting loop 150m x 150m was laid out 50m behind the drill collar and orthogonal to the hole to test for possible massive sulphide mineralization beneath the drill intersection. Dr. J.R. Bishop (Mitre Geophysics) examined the results from this survey and his report, along with the down hole EM plots and map showing the loop location, are presented in Appendix D. Unfortunately the survey did not detect any off hole conductors. Two samples of the graphitic pyritic black shale core were submitted for petrophysical testing at Sydney University. The results of this work, which are also tabulated in Appendix D, indicate that the

shales are the probable source of the IP anomaly. The inductively measured resistivity of these samples also showed that the shales have a low resistivity, however they do not appear to have responded to the down-hole Sirotem survey.

6.3.2 Bedrock Geochemistry, Tofft Drainage

Detailed stream sediment geochemistry, including sampling both minus 80 mesh and panned concentrated sediment identified an area approximately 1.5 km² in the headwaters of the Tofft River just east of Mt. Huxley shedding minor gold into the drainage (see Figure 23). Previous geological mapping has shown that the area is mostly underlain by volcaniclastic lithologies which strike in a northerly direction (see Figure 20). No clear model for a bedrock source of this gold was apparent, however structurally controlled mineralization sub-parallel to the faulted Owen Conglomerate contact west of Mt. Owen and around the Mt. Huxley outlier was considered possible. Consequently a bedrock sampling program was designed to sample across strike at close spaced intervals (10m) along two reconnaissance grid lines separated fairly widely apart within the anomalous zone.

A low key bedrock sampling program was completed during April using a portable percussion ("Wacker") rig. Outcrop is quite common, particularly along the northern line, and (where exposed on the lines) this was sampled at the appropriate interval. A total of 80 bedrock samples were taken along the two lines and analysed for Au, Cu, Pb, Zn, As, Ag, W and Bi. R.A. Poltock was contracted to geologically log the rock chips and map and sample in the vicinity of these lines. All the assay results, along with sample descriptions of the rock chips are presented in Appendix E and the grid lines and sample locations are shown on Figure 22. A brief report on the geology by Poltock is given in Appendix C.

The results of this program are very disappointing, no gold values above the detection limit of 0.008 g/t Au were obtained and no significant assays for any of the other possible path-finder elements were identified. Geological mapping along line 4800N

located several chlorite-magnetite rich pods within a felsic volcaniclastic sequence. A similar outcrop adjacent to an old shallow prospect pit 50m north of the line was sampled in 1984-85 and returned a value of 0.05 g/t Au. This may be the source of some of the fine grained alluvial gold in the area but it is considered that the widespread low levels of gold must also be derived from other sources.

A recent interpretation proposes that the southern part of the Tofft anomaly is underlain by Tyndall Group Jukes Breccia lithologies. These coarse grained quartz-phyric volcaniclastic conglomerates and sandstones are quite hematitic and appear to lie within a south plunging anticline. The western limb of this fold is composed of Owen Conglomerate conformably(?) overlying the Tyndall Group and forming the Mt. Huxley mass. The eastern limb similarly exposes Owen Conglomerate although it is probably down-dropped by the southern extension of the Great Lyell Fault (see Figure 20). Whilst no immediate source for the alluvial gold has been identified here it is interesting to note that similar stratigraphic settings are closely related to minor gold occurrences: west of Mt. Huxley; at Snake Spur and in the Flannigans area.

6.4 CONCLUSIONS

The most encouraging massive sulphide mineralization target identified in the Huxley area has been tested by drill hole HX1 (340.5m long). Neither the drill interesection nor a subsequent down-hole EM survey have given any encouragement for the occurrence of such a deposit in the vicinity of the hole. No other significant massive sulphide targets exist in the area.

Investigations, including grid oriented bedrock geochemistry, to follow up the widespread minor alluvial gold occurrences in the Huxley area have failed to positively identify any bedrock sources for this mineralization. Given that only one field season remains to complete exploration on the EL, no further work can be justified to pursue these weak gold anomalies further.

7. SNAKE SPUR-FLANNIGANS (F.G. FitzGerald)

7.1 INTRODUCTION

The Snake Spur and Flannigans prospect areas lie within the southern, part IV, of EL9/66 (see Figure 1). Exploration during the past two years involving mainly stream sediment and bedrock geochemistry has identified both areas as having interesting gold mineralization potential. The area is difficult to explore because of poor access, very thick vegetation and extensive areas of fluvio-glacial and scree cover. All field work to date has been carried out from field camps using helicopter support.

Given that only two years remained at the start of the 1985-86 season before the licence had to be relinquished, it was necessary to advance the most interesting prospect areas to the drilling stage during the same period. The program this year was completed within this tight timetable by carrying out all surface investigations during September-November, evaluating the results and drilling the best targets during February-March.

7.2 PREVIOUS EXPLORATION

Pease (in FitzGerald and Pease, 1985) presented a succinct summary of the previous exploration over the Snake Spur and Garfield-Flannigans areas. Poltock (1984) discussed in some detail many of the early workings and mineral occurrences, most of which were discovered at the turn of the century by prospectors operating south of Mt. Lyell. The majority of these old prospects were alluvial gold workings, with those in the Flannigans Creek drainage being the most extensive. However, there is no record of the amount of gold produced from the area.

Until 1983, modern exploration by the EZ Co. and Mt. Lyell consisted predominantly of reconnaissance geochemistry and largely ignored the area's gold potential. Since this large block of the Mt. Read Volcanics was the least explored part of EL9/66 in 1983, an accelerated program of investigation has been carried out since that time. This work involved detailed stream sediment geochemistry (both minus 80 mesh and panned

concentrate samples), geological mapping, gridding, bedrock geochemistry and a UTEM survey.

7.3 WORK COMPLETED 1985-86

During the 1985-86 field season exploration was centred on the gold potential of the Snake Spur and Flannigans Grid areas. These two prospect areas are discussed together in this report because the field work over them was carried out as a joint program.

7.3.1 Gridding

Gridding activity commenced this year very early in the season when the Snake Spur Grid was extended during September-October. The gridding was designed to cover possible extensions to anomalous bedrock gold geochemistry in the south and west of the area covered by the 1984-85 sampling. In addition, three further lines were cut at the northern end of the grid to investigate an interesting stream sediment gold anomalous area. The lines are spaced 200m apart and pegged at 25m slope corrected intervals. This activity was based out of two helicopter-supported camp sites which were located near lines 1000N and 3100N (see Figure 24).

Following the Snake Spur gridding the crew moved to the Flannigans Camp site and infilled and extended the reconnaissance grid lines established late last season. These lines, which were planned to define anomalous bedrock gold values, extend from 600N to 3000N and are also spaced 200m apart, but are pegged at 10m slope corrected intervals. The closer spaced sample interval was chosen here because reconnaissance mapping last year suggested that a possible source for the gold mineralization could be narrow structures trending north-south. An old pine logging track was used as the grid access base line.

A total of 13.5 line km of gridding was completed at Snake Spur and Flannigans this year.

7.3.2 Bedrock Geochemistry

Bedrock geochemical sampling using a portable percussion ("wacker") rig followed directly behind the line cutting over both the Snake Spur and Flannigans Grids. Two two-man crews were used to accelerate this program, both crews working on the same line using a "leap-frog" method with the gear which proved to be quite effective. The larger (1½ inch) cutting head was utilized on the "wacker" to maximize the sample size and help reduce sampling errors inherent in gold geochemistry.

At the same time geological contractor R.A. Poltock was employed to log the rock chips and to map and sample outcrops in the vicinity of the grid lines. Where bedrock was exposed along the grid line this was also sampled at the appropriate interval. All samples were submitted for analysis for Au, Cu, Pb, Zn, Ag and As. The results from this sampling, including brief geological descriptions, are presented in Appendix E. The sample locations and assay results for gold are shown on Figures 27 to 34.

7.3.2.1 Snake Spur Grid Results

A total of 377 "wacker" and outcrop samples were collected during October, 1985, on the Snake Spur Grid. In general this year's sampling results were disappointing. The interesting gold anomalies identified in the vicinity of the old Snake Spur Camp between lines 2200N and 2600N were closed off without significant extensions in area. No other prominent areas of gold mineralization were detected on the grid apart from an unusual zone confined to line 1000N. The results were particularly disappointing over the northern part of the grid area. No assays above 0.03 g/t Au were obtained from any of the samples which covered a small drainage where several old alluvial workings were discovered. Poltock believes that these workings may be part of section 2688 referred to by T.B. Moore (1912).

Assays for the other elements were generally subdued apart from a weakly anomalous arsenic zone which

046

is roughly coincident with the western gold zone between lines 2200N and 2800N. However, a subsequent investigation suggests that this is derived from black shales which have higher background levels of As and base metals.

The only significant area of gold in bedrock mineralization is a broad belt over the north western flank of Snake Spur and the adjacent part of the Currie Rivulet with values generally above 0.1 g/t Au. Within this area two linear zones of higher values, to a maximum of 0.46 g/t Au, are defined (see Figure 31). It was decided that these targets warranted further investigation by diamond drilling (see Section 7.3.3). It is worth noting that scattered anomalous gold values up to 0.13 g/t Au occur over Owen Conglomerate within this general area. A detailed discussion of the geology in relation to the gold geochemistry is given in Section 7.4.

Finally, several results clearly demonstrate the caution that must be taken with regard to this method of sampling for gold. Repeat sampling of two 1984-85 sites this year has given markedly different results. These are: site 2600N 3125E, from which a sample 0.8m deep gave an assay of 0.42 g/t Au compared to a sample 2.8m deep which assayed at 0.07 g/t Au; site 2400N 3000E with depth to bedrock 7.1m assayed 0.22 g/t Au compared to 5.5m deep and <0.01 g/t Au. A check on the validity of these results has shown that both may be correct, given the likely marked variability in depth of soil cover and gold distribution.

7.3.2.2 Flannigans Grid Results

The results from bedrock sampling over the Flannigans Grid during 1985-86 were similarly disappointing. No significant gold anomalous zones were clearly outlined from the 283 bedrock "wacker" and outcrop samples collected during October and November, 1985. Irregular elevated gold values occur over several areas of the

grid with a maximum value of 0.44 g/t Au. Most assays, however, are less than 0.1 g/t Au. No consistent geologically-controlled pattern could be defined from these results although there is a tendency for elevated values to be aligned in a north westerly trending zone between lines 2400N and 2800N (see Figure 34). No significant concentration of values was detected along the volcaniclastics-Owen Conglomerate contact and recent geological interpretation suggests that this boundary may not represent a major structural zone (see section 7.3.4). It is worth noting here that, like Snake Spur, scattered anomalous gold values were also obtained from outcrops within the Owen Conglomerate with a maximum assay of 0.26 g/t Au (see Figure 34).

The results for the other "pathfinder" elements were all quite subdued and give no encouragement for a significantly mineralized occurrence within the Flannigans area. It should be mentioned that Tertiary(?) gravels and recent scree, composed predominantly of Owen Conglomerate, cover large parts of the Flannigans Grid. The "wacker" was able to penetrate this thin veneer in most areas except towards the south on lines 1000N to 1200N where the cover exceed 5m in thickness.

7.3.3 Drilling, Snake Spur

Once all the results from the surface exploration had been evaluated, it became apparent that the most promising target for economic gold mineralization occurred in the vicinity of the old camp site, between lines 2200N and 2600N, on the north west flank of Snake Spur. It was proposed to test these two sub parallel linear gold zones by diamond drilling from within the old cleared area. It was planned to drill the stronger eastern zone first and use the results from this hole to design a second hole to test the western gold zone. In the event, the two holes were drilled for a total of 372.3m, roughly on section.

The holes were drilled by East Coast Drilling using a helicopter-supported Longyear 38 rig during February-March 1986. Considerable

difficulty was experienced with drilling through much bad ground including a major structural zone 25m thick. In fact hole SS2 had to be abandoned and re-drilled through the core barrel to complete the hole. Core recovery was generally poor with nearly half of hole SS2 being lost. Details of the drill holes including geological descriptions are presented in Appendix B, and the drill locations are shown on Figure 24 with a composite drill section on Figure 26. All drill core was split from the collar to the end of the holes and sampled, generally over 3m intervals, and assayed for Au, Cu, Pb, Zn, Ag, As and Ba. The assay results are included with the drill logs in Appendix B. Five samples of representative units within the drill core were also submitted for petrographic description to Dr. A.S. Joyce (Geochempet Services). His report is also presented in Appendix B.

In the course of drilling hole SS1 the drillers noticed that the hole was making a considerable quantity of brown coloured water with a strong sulphurous odour. The source of this ground water appeared to be close to the volcaniclastics-Owen Conglomerate contact. It was considered that the fluids may be draining massive sulphide mineralization at depth along this possible thrust fault. Consequently it was decided to push hole SS2/2A on to test this structure deeper below the SS1 intersection (see Figure 26).

The results of the drilling were quite disappointing. No significant gold values were obtained from any of the units intersected in the holes. Initial assay results on holes SS2 and SS2A showed widespread elevated gold values throughout the entire hole which were inconsistent with the negative results from hole SS1 drilled through the same sequence. Recent check assaying of the highest values from hole SS2A has shown unequivocally that the earlier results are wrong. This casts doubts on the remaining gold values in holes SS2 and SS2A and it must be assumed that these also are likely to be too high. Unfortunately this further downgrades the results of the drilling.

Geologically the holes intersected several distinct lithologies separated by major structures and interpretation of this data

has elucidated the geology of the Snake Spur area (see Figure 24). In summary both holes were collared in a sequence of medium to coarse grained, hematitic, quartz-phyric volcaniclastics typical of the Tyndall Group Comstock Tuff in the Queenstown area. In hole SS2 this hematitic sequence becomes quite coarse grained down hole with rounded volcanic and quartzite lithic clasts up to 2 cm in size set in a feldspar crystal-rich matrix. This lithology is characteristic of the upper Tyndall Group Jukes Formation and as such would indicate a down hole (easterly) facing to the sequence. Several prominent fault structures occur within this "Tyndall Group" sequence including a major zone 25m thick which marks the contact with a distinct sedimentary sequence.

Lithologies within this sedimentary sequence include brown biotite rich tuffaceous sandstone and grey to black siltstones and shales. Rare coarse feldspar crystal rich thin bands, which are interpreted as possible airfall tuffs, within the sequence indicate a volcanic provenance. This conclusion is supported by petrographic studies. The sedimentary sequence, which is only weakly pyritic, is quite distinct within the Mt. Read Volcanics, especially with the unusual detrital biotite grains. No significant hydrothermal alteration could be identified within these units. Good facing evidence from graded bedding and scour and fill sedimentary structures give consistent up hole (westerly) facings.

Another, less prominent fault which is associated with the development of slickensides, separates this sedimentary sequence from massive pink and grey hematitic siliclastic conglomerate and sandstone, the Owen Conglomerate. Very minor disseminated pyrite occurs within the margin of the Conglomerate but no significant hydrothermal alteration was intersected. Reliable facing evidence from truncated cross bedding within sandstone units of the Owen Conglomerate also gave a consistent younging direction to the west. The simplest explanation for this series of inferred facings is to have two (related) thrust faults within a multiply-folded sequence (see Figure 25). Such a proposition is consistent with the drill hole structural data.

No explanation for the gold in bedrock anomaly was found by the drilling. However, it is worth noting that very low levels of gold (up to 0.03 g/t Au) were detected in samples of the sedimentary sequence and the Owen Conglomerate in hole SS1. Since these formations underlie the gold geochemistry, it is likely that they carry minor gold mineralization, the nature of which is unknown at present. It is possible that the "wacker" drilling has sampled an horizon enriched in gold by supergene processes.

7.3.3.1 Down-hole EM Survey

As mentioned above, sulphidic ground water apparently emanating from the volcaniclastics-Owen Conglomerate faulted contact was observed in hole SS1. Even though hole SS2A, which was pushed on to intersect this contact at depth, failed to locate evidence of massive sulphides, it was decided to survey this hole with down hole EM to check for such mineralization even deeper along this structure.

The survey was conducted by Solo Geophysics & Co. during April using the down-hole Sirotem system. A small 150m x 150m transmitting loop placed behind the collar of SS2/2A was used. Dr. J.R. Bishop (Mitre Geophysics) has interpreted the data from the survey and his comments, along with the profile plots and loop location, are presented in Appendix D. Unfortunately the results were very disappointing with no responses, apart from the drill rods stuck in the hole, being recorded. It is now appears that the source of the sulphidic water is finely disseminated pyrite from the highly fractured shale-siltstone sequence.

7.4 GEOLOGICAL DISCUSSION

The exploration carried out to date over the Snake Spur-Garfield-Flannigans area, culminating in the completion of two drill holes, has given some useful geological information. The importance of these results to other areas on the EL warrants a brief discussion.

In broad terms, stratigraphically, the area appears to lie within the upper part of the Mt. Read Volcanics overlying the Central Sequence of rhyodactitic lava domes and related lithologies which form the Jukes-Darwin ridge. Owen Conglomerate rests unconformably on this volcanic sequence, although the results from SS1 and SS2/2A suggest that this contact is not necessarily at a high angle (see Figure 26). The preponderance of epiclastic lithologies has permitted some correlation of distinctive units along strike and helped to elucidate the structures of the area. It is now confidently interpreted that a series of north west to north trending folds, which plunge to the north west, repeat sequences across the area. The drill results in the Snake Spur area also show that thrust faulting, possibly related to the folding, has disrupted the stratigraphic sequence further.

A simplified geological section between Flannigans and Intercolonial Spur demonstrates these features (see Figure 25). Two important exploration points emerge from the geochemical results and this geological section. Firstly, most of the gold occurrences appear to be derived from the uppermost volcaniclastic sedimentary sequence and the immediately overlying Owen Conglomerate. Secondly, major structures, such as the inferred recumbent folds and thrust faults in the Snake Spur area do not appear to have up-graded the low levels of gold mineralization in the adjacent wall rocks.

7.5 CONCLUSIONS

Anomalous stream sediment gold geochemistry has been followed up by grid oriented bedrock sampling in the Snake Spur and Flannigans areas. This work has outlined several zones with low levels of gold mineralization. The most interesting of these lies on the north west flank of Snake Spur. Diamond drill testing of this anomaly has failed to locate any significant gold mineralization at depth. A geological interpretation of the area suggests that the source of the anomalies may be widespread very low levels of gold mineralization within the uppermost sedimentary units of the Mt. Read Volcanics and basal sequence of the overlying Owen Conglomerate. No evidence for upgrading of this mineralization by structurally related or metamorphogenic means

has been observed. No additional specific targets for economic gold mineralization (nor massive sulphides) exist in the area and further exploration cannot be justified here at this time.

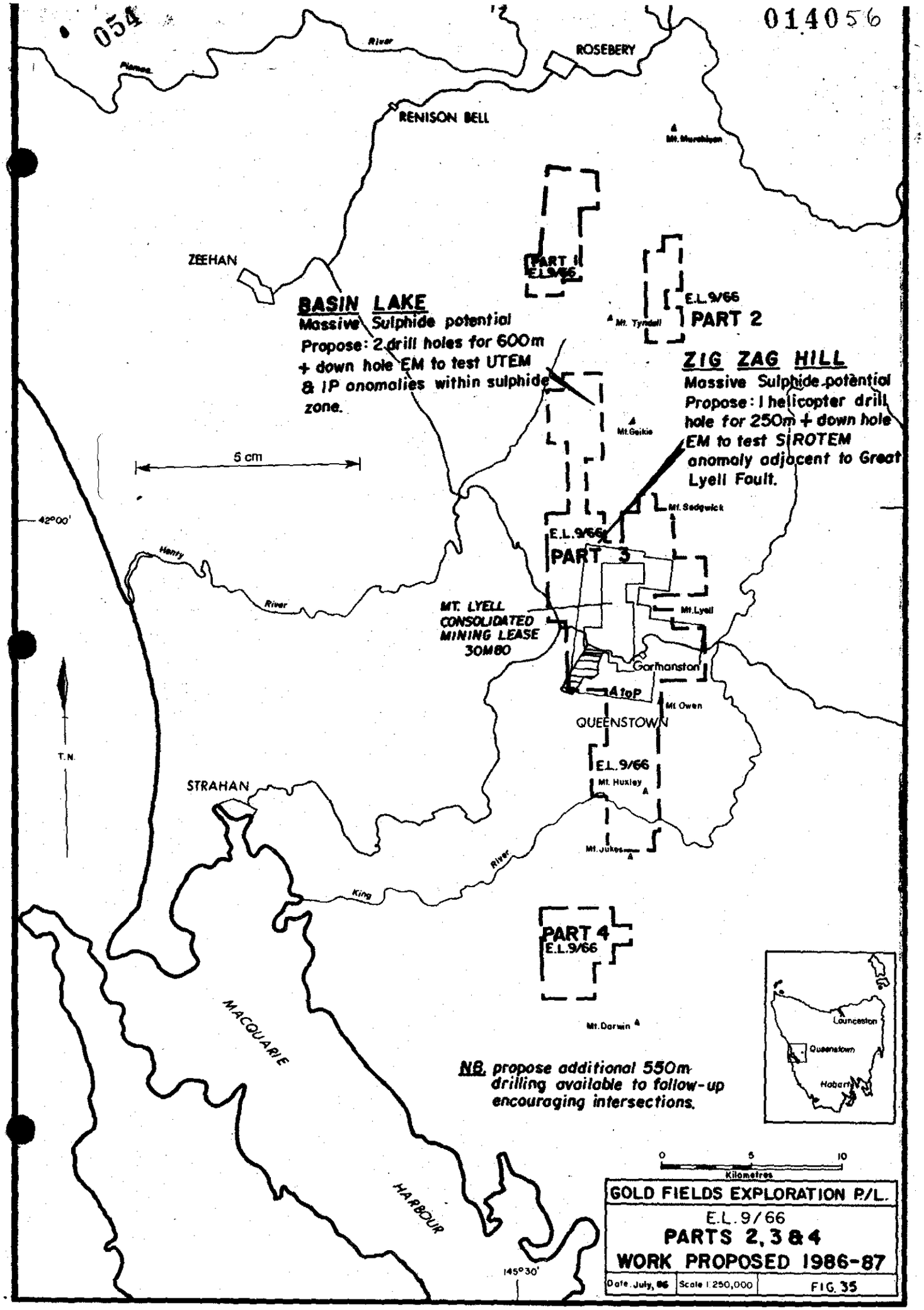
8. WORK PROPOSED 1986-87

The 1986-87 season is the final year for exploration on EL9/66. The licence area must be relinquished by August 1987 to comply with Mines Department regulations. All surface work has now been completed, as scheduled, so that during the remaining 12 months specific untested targets can be drilled. The proposed exploration program for 1986-87 is based on the premise that only those targets with a high chance of significant mineral discovery from early drilling warrant further work.

As a result of careful evaluation of all of the exploration to date, only two areas within parts II, III and IV of EL9/66 are considered to merit such work. These are the Basin Lake sulphide zone and the Zig Zag Hill anomaly zone at West Sedgwick. Both areas are prospective for volcanogenic massive sulphide deposits. A total of 850m of drilling is proposed to test these targets which should be drilled as early as possible in the coming year to permit the maximum time for further work if significantly mineralized intersections are obtained. The proposed budget for parts II, III and IV of EL9/66 is $163,500, which includes an allowance for an additional 550m of drilling which would be used to follow up any encouraging intersections early in 1987 (see Appendix A).

8.1 BASIN LAKE

Several strong geophysical indicators for sulphide mineralization have been delineated in the Basin Lake area. These anomalies lie within a linear belt of strongly altered intermediate volcaniclastic lithologies. Previous exploration of this belt, including widely spaced diamond drilling, has shown that sulphide mineralization (predominantly pyrite) occurs throughout this sequence and includes intervals of bedded massive sulphide. Whilst base and precious metal values from this drilling have been generally low, geological considerations indicate that the environment is very favourable for the occurrence of economic volcanogenic massive sulphide mineralization at depth. Most of this prospective belt is covered by recent alluvium and Pleistocene glacial moraine which inhibits further evaluation by means other than drilling.


ROSEBERY
RENISON BELL
ZEEHAN
STRAHAN
QUEENSTOWN
Mt. Murchison
Mt. Tyndall
Mt. Geikie
Mt. Sedgwick
Mt. Lyell
Mt. Owen
Mt. Huxley
Mt. Jukes
Mt. Darwin
Garfield
Henty River
King River
Macquarie Harbour
42°00'
145°30'
T.N.
5 cm
PART 1 E.L.9/66
PART 2 E.L.9/66
PART 3 E.L.9/66
PART 4 E.L.9/66
BASIN LAKE
Massive Sulphide potential
Propose: 2 drill holes for 600m + down hole EM to test UTEM & IP anomalies within sulphide zone.
ZIG ZAG HILL
Massive Sulphide potential
Propose: 1 helicopter drill hole for 250m + down hole EM to test SIROTEM anomaly adjacent to Great Lyell Fault.
MT. LYELL CONSOLIDATED MINING LEASE 30M80
NB. propose additional 550m drilling available to follow-up encouraging intersections.
Launceston
Queenstown
Hobart
0 5 10
Kilometres
GOLD FIELDS EXPLORATION P/L.
E.L. 9/66
PARTS 2, 3 & 4
WORK PROPOSED 1986-87
Date: July, 86
Scale 1:250,000
FIG. 35

From north to south these geophysical anomalies are:

(1) a dipole-dipole IP anomaly on line 16N, 250E with associated weak UTEM response and strong lead geochemical anomaly along strike

(2) a good UTEM anomaly on line 14.5N, 585E within a zone of relatively low resistivity which is covered by glacial moraine

(3) a zone of strong gradient array IP chargeability between lines 12N, 1000E and 10.5N, 1100E which has co-incident moderate Cu and Pb in soil anomalies but was not covered by the TEM survey because of a high voltage power line across the area.

Additional field mapping of the sparse outcrops in this area should be carried out prior to drilling to assist in assessing the priority of these anomalies. Two drill holes for a total 600m are proposed to test the best targets. Both holes should be surveyed with down hole EM at the completion of the drilling to fully evaluate the massive sulphide potential along strike between them. Similarly hole BL4, which intersected 16m of semi-massive pyrite, further south within this sulphide zone should be surveyed with down hole EM at the same time, provided that the hole is still open at depth.

The area is easily accessible, lying adjacent to the recently paved HEC Anthony Road. No problems should be encountered with drilling these holes during the winter months.

8.2 ZIG ZAG HILL

A moderate EM anomaly has been outlined adjacent to the Great Lyell Fault-Sedgwick Fault intersection just north of Zig Zag Hill in the West Sedgwick area. Geophysical interpretation of the data suggests that the anomaly is improving to the west at depth and that a sulphidic source is possible. The anomaly is covered by glacial moraine and Owen Conglomerate talus. However, geological mapping along strike indicates that the area is underlain by Tyndall Group volcaniclastics adjacent to mafic to intermediate volcanics of the Central Sequence. Fine grained pyritic epiclastics have been recorded from sparse outcrop in the vicinity. In addition, a moderate lead soil geochemical anomaly occurs here.

It is proposed to test the western end of the EM anomaly zone 100m below line 318000E, 7000N with a hole 250m long. No vehicle access exists into this area so that the hole should be helicopter-supported using the HEC helicopter based at Crotty. Consequently it would be preferable to drill this hole a little later in the year (November-December) when the weather is more likely to be stable. Upon completion of the hole a down-hole EM survey should be conducted to test for any off-hole massive sulphide occurrences.

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APPENDIX A

EL9/66 PARTS II, III & IV

EXPENDITURE FOR 11 MONTHS TO END OF MAY 1986

AND

PROPOSED BUDGET FOR 1986-87

060

GOLD FIELDS EXPLORATION PTY. LIMITED

014062

E.L.9/66 - PARTS II, III & IV

EXPENDITURE FOR 11 MONTHS TO END OF MAY 1986

	$
Salaries, Wages & On Costs	60,000
Travel and Accommodation	1,100
Consultants	19,300
Contractors	74,600
Helicopter	48,900
Assaying	17,000
Drilling	70,000
Stores	4,400
Vehicles/Plant	9,000
Tenement	2,000
Office	3,000
	$ 309,300

061

GOLD FIELDS EXPLORATION PTY. LIMITED

014063

E.L.9/66 - PARTS II, III & IV

PROPOSED BUDGET 1986-87

	$
Salaries, Wages & On Costs	30,000
Travel and Accommodation	1,500
Consultants and Contractors	8,000
Helicopter	8,000
Assaying	7,000
Drilling	100,000
Stores	1,500
Vehicles/Plant	3,000
Tenement	2,000
Computing	1,000
Office	1,500
	$ 163,500

APPENDIX B

DIAMOND DRILL HOLE LOGS

HOLES HX.1, LS.13, SS.1, SS.2, SS.2A

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

014065

HOLE NO.: HX 1 063

STATE : TASMANIA

PROJECT	E.L.9/66 TYNDALL
DESIGNED BY	F.G. FITZGERALD
LOGGED BY	F.G. FITZGERALD
COMMENCED	24. 9.85
COMPLETED	9.10.85

PURPOSE

To test for massive sulphide mineralization beneath a dipole-dipole IP anomaly on line 6S 275W, adjacent to a geochemical anomaly on Island Ridge.

LOG SUMMARY

GENERAL COMMENTS

A sequence of mineralized epiclastics (black shale, tuffaceous siltstone and sandstone) was intersected between 131.8-198.2m. The minor sphalerite-pyrite veinlets may be the source of the geochemical anomaly and the pyritic, graphitic black shales appear to be the source of the IP anomaly. Dacitic lavas occur stratigraphically below (up hole) and massive welded ignimbrites above (down hole of) these epiclastics, both sequences are weakly altered and unmineralized.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	Ba							COMMENTS
162.3	184.3	32	768	2725	1.5	<0.008	548							Mixed epiclastic sequence: black shale-tuffaceous
Including														sandstone
180.8	182.8	40	1640	5590	3.0	0.017	710							Remobilized mineralization in black shale

LOCATION

NORTHING	5337017.6
EASTING	383028.8
R.L.	581.83
GRID	AMG
LENGTH	340:5m

HOLE CONDITION

SIZE Hole Size	Depth
HQ	24m
NQ	57m
BQ	340.5m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	21.3	71
201.4	201.8	92
313.6	315.0	28

POOR GROUND CONDITION ZONES From	To	Condition
0.0	21.3	Glacial rubble and deeply
		weathered bedrock volcanics

HOLE CONDITIONS AFTER COMPLETION

HQ casing stuck: 15m, from 9 to 24m, left in hole.

PVC pipe inserted to 340.5m (EOH).

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

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total	SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
Collar	121°	-62°	0	15.5	15.5	13.69	568.14	7.28	7.28										
31m	121°	-61°	15.5	56.0	40.5	35.42	532.72	19.63	26.91										
81m	120°	-58°	56.0	105.5	49.5	41.98	490.74	26.23	53.21										
130m	120°	-57°	105.5	155.0	50.0	41.93	448.81	27.23	80.44										
180m	120°	-55°	155.0	205.0	50.0	40.96	407.85	28.68	109.12										
230m	121°	-54°	205.0	255.0	50.0	40.45	367.4	29.39	138.51										
280m	122°	-51°	255.0	300.0	45.0	34.96	332.43	28.32	166.83										
320m	123°	-48.5°	300.0	340.5	40.5	30.33	302.1	26.84	193.67										

014066

064

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	6.0	0.32	5	GLACIAL SCREE
				Unconsolidated cobbles of Owen Conglomerate and deeply weathered
				volcanics.
6.0	25.0	8.93	47	WEATHERED PYROCLASTIC?
				Moderate to strongly weathered yellow-brown to grey-green (when
				fresher) relatively massive volcanic. Uniform texture with
				scattered feldspar crystals 2-4mm. Remnant foliation suggests
				possible pyroclastic.
				Alteration Mostly masked by weathering, fresher core has weak
				pervasive sericite. 18.0-20.8m and 24.0-25.0m major quartz-
				carbonate veins.
				Mineralization None visible. Yellow FeOx throughout with
				only minor brown MnOx on fractures.
				Structure Much broken core and rubble zones. Clay pug, possible
				faults: 22.0-22.2m and 22.6-22.8m.
25.0	43.0	15.84	88	DACITIC LAVA
				Green-grey to pink (often diffuse patches) massive uniform
				lava. Minor phenocrysts of feldspar set in fine grained crystal-
				line almost aphanitic groundmass. Core is moderately magnetic.
				Alteration Generally weak, subtle sericite and red (hematite)
				pervasive in vitric groundmass. Scattered thin quartz-carbonate
				veins and rare quartz-chlorite-albite veins up to 10cm e.g.
				29.3m.
				Mineralization Mostly unmineralized apart from trace disseminated
				pyrite and minor vein pyrite.
				Structure Only minor fractures. Broken core with quartz-carbonate
				-albite veins at 29.3-29.6m, 35.7-36.1m.
43.0	57.0	13.71	98	DACITIC LAVA BRECCIA
				Green-grey to pink, massive hard lava as above but with distinct
				auto-brecciated fabric with scattered clasts between 0.5 and
				3 cm diameter. Upper contact is gradational. This may be
				margin of lava "dome" or flow. Core less strongly magnetic.
				Alteration As above but increase in quartz-carbonate ± chlorite

ASSAY DATA All values in p.p.m.

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 2

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA All values in p.p.m. Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba
				veins mostly <1 cm thick, max 30 cm, e.g. 51.4m. Feldspar										
				crystals often pink-red (albite)altered.										
				Mineralization Similarly very weakly mineralized. From 55.6-										
				57.0m scattered crystals and clusters of pyrite 5-7mm in size										
				increasing down hole.										
				Structure Only weakly fractured. Broken zone 45.2-45.6m.										
57.0	123.3	65.12	98	DACITIC LAVA										
				Medium grained grey-green very uniform hard lava with minor										
				buff coloured diffuse zones. Similar to above sequence but										
				more obviously crystalline with feldspars 2-4mm in size and										
				scattered relict mafic(?) crystals now chloritized. Upper										
				contact with breccia fairly sharp. Core only weakly or non										
				magnetic.										
				Alteration Weak pervasive chlorite in crypto-crystalline ground-										
				mass. Scattered, mostly thin quartz-carbonate-albite ±chlorite										
				± pale green sericite veins, rarely up to 40 cm thick, e.g.										
				104.6-105.0m. Veins appear to increase in quantity and thickness										
				down hole.										
				Mineralization Mostly unmineralized apart from trace disseminated										
				pyrite and rare pyritic fractures with veins. Trace of sphalerite										
				in quartz-chlorite vein at 115.7m.										
				Structure Massive, competent rock with no broken zones. Very										
				subtle foliation locally e.g. 40° to LCA at 85.8m.										
				Petrology T984 at 90.6m.										
123.3	131.8	8.02	97	LAVA OR PYROCLASTIC										
				Medium-coarse grained green-grey volcaniclastic. Very similar										
				in composition to above dacitic lavas but texture coarser and										
				slightly "gritty", i.e. crystals are quite distinct and partly										
				rounded, mostly feldspar 4-6mm in size with minor quartz crystals.										
				Groundmass appears relatively glassy especially 123.3-124.4m.										
				Core is noticeably more foliated, although this is gradational										
				with above section.										
				Alteration Still quite weak. Minor pervasive chlorite-sericite										
				increasing down hole. Very weak chlorite stringer veins,										

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				scattered quartz-carbonate ±chlorite ±sericite veins; 2 thick
				veins at 124.8-125.2m and 125.4-126.0m.
				Mineralization Mostly unmineralized except for lower section
				130.0-131.8m minor disseminated and irregular fracture-fill
				galena-sphalerite-pyrite. Total sulphide <0.5%.
				Structure Massive mostly unbroken core.
131.8	133.7	1.8	99	BLACK SHALE
				Relatively massive dark grey-black shale and fine siltstone.
				Moderately graphitic, not calcareous. Upper contact sharp at
				25° to LCA, facing unclear. Sequence generally not well bedded,
				some primary lamination, e.g. 60° to LCA at 132.3m but mostly
				disrupted. Some soft sediment deformation especially lower
				contact zone.
				Alteration Minor thin quartz-carbonate-sericite gash veins.
				Mineralization Veins of pyrite-sphalerite-trace galena (sweat-
				out) and disseminated pyrite. Estimate 1-2% total sulphides.
				Structure Common healed fractures. Core only weakly broken
				with weak cleavage.
133.7	138.3	4.23	92	TUFFACEOUS SILTSTONE-SANDSTONE
				Green-grey fine to medium grained epiclastic. Relatively uniform
				unbedded unit. Upper contact is disrupted over 30cm with blocks
				of siltstone in black shale matrix, also some pale grey pelitic
				ash (almost "cherty") matrix. Bands up to 1 cm thick quite
				irregular.
				Alteration Moderately weak pervasive sericite. Fine crackle
				breccia of carbonate-quartz ±sericite veinlets and earlier
				dark green-black chlorite veinlets.
				Mineralization Moderately sulphidic with breccia fill of fine
				grained pyrite and sphalerite. Total sulphide 2-4%.
				Structure Weak cleavage, 2 directions 0-20° to LCA and 45-60°
				to LCA.

ASSAY DATA All values in p.p.m.

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba
T2271	129.8	131.8	97	10	405	310	<0.5	<0.008	850
T2272	131.8	133.8	99	35	575	1640	1	<0.008	790
T2273	133.8	135.8	100	50	290	885	<0.5	<0.008	860
T2274	135.8	138.3	98	10	260	1290	<0.5	0.008	820

GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 4

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba
									ASSAY DATA All values in p.p.m.					
138.3	140.3	1.66	83	BLACK SHALE										
				Massive graphitic black shale. Mostly unbedded, some very fine										
				laminations 45° to LCA at 139.5m. Upper contact sharp at 35° to										
				LCA, appears to be faulted.										
				Alteration Moderately calcareous with very thin carbonate-										
				quartz ±sericite gash veins.										
				Mineralization Mostly "sweat-out" pyrite-sphalerite with very	T2275	138.3	140.3	83	65	630	190	2.5	<0.008	690
				fine grained disseminated pyrite. Total sulphide approx 1%										
				decreasing down hole.										
				Structure Upper contact faulted with 4 mm thick pug zone.										
				Very weak cleavage, shale is not fissile.										
				I.P. Sample 15 cm at 139.1m.										
140.3	158.3	17.83	99	TUFFACEOUS SANDSTONE										
				Fine to medium grained grey uniform epiclastic. Relatively										
				massive unbedded sequence with general decrease in grain size										
				down hole. Mostly well sorted but some coarser bands with										
				subangular feldspar grains with possible relict glass shards	T2276	140.3	142.3	100	15	605	2390	<0.5	<0.008	750
				e.g. 141.6-143.0m. From 156.2m on minor black shale and dark	T2277	142.3	144.3	97	15	375	1590	<0.5	<0.008	620
				grey tuffaceous silstone bands, usually quite disrupted and	T2278	144.3	146.3	100	5	350	1590	<0.5	<0.008	590
				within the coarser sediments.										
				Alteration Mostly weak. Weak pervasive silicification increasing										
				down hole. Minor thin irregular quartz-carbonate veinlets.										
				Mineralization Moderate to weak disseminated, blebs and veinlets										
				of pyrite-sphalerite. Estimate total sulphide is 1%, locally										
				2-3% but decreasing down hole. Trace galena in veinlets e.g.										
				157.6m.										
				Structure Fault at 158.3m, broken zone 5 cm wide.										
				Petrology T985 at 143.3m.										
158.3	172.9	14.15	97	MIXED FINE GRAINED EPICLASTICS										
				Predominantly grey tuffaceous siltstone but with increasing										
				fine laminae of black shale down hole especially from 167.9m on.										
				Bed of black shale as above 168.3-169.35m. Upper part of sequence										
				relatively massive as above but with decreasing grainsize down										
				hole well developed bedding although angles quite variable										

GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA All values in p.p.m. Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba
				over short intervals as from 5° to LCA to 70° to LCA. Some is										
				due to soft sediment deformation, others from post lithification										
				faulting and recementing.										
				Alteration Slightly more altered than above sequence with	T2279	158.3	160.3	98	5	200	810	<0.5	<0.008	520
				weak to moderate pervasive sericite. Carbonate-quartz ±sericite	T2280	160.3	162.3	98	5	220	765	<0.5	<0.008	530
				±chlorite veinlets, locally forming sub-stockwork.	T2281	162.3	164.3	99	10	635	2490	<0.5	<0.008	840
				Mineralization Predominantly fracture "sweat out" sphalerite-	T2282	164.3	166.3	100	10	335	2090	<0.5	0.008	530
				pyrite, some blebs and fine disseminated pyrite-sphalerite.	T2283	166.3	168.3	94	5	360	1240	1.0	<0.008	540
				Total sulphides 1-2%, locally up to 5% over 10-20 cm zones,	T2284	168.3	170.3	96	40	790	3140	1.5	<0.008	550
				increasing down hole.	T2285	170.3	172.9	97	25	665	2390	1.0	<0.008	540
				Structure Weak cleavage.										
				Petrology T986 at 160.1m.										
172.9	178.6	5.60	98	BLACK SHALE										
				Predominantly massive black graphitic shale as above. Some										
				bedding is evident e.g. 15° to LCA at 175.8m but usually the										
				bedding is quite irregular and deformed. Upper and lower con-										
				tacts of this unit are both sharp at 20° and 35° to LCA	T2286	172.9	174.9	98	55	635	2290	2.0	<0.008	580
				respectively.	T2287	174.9	176.9	88	70	985	4400	2.5	<0.008	580
				Alteration Weak pervasive sericite. Carbonate-quartz ±sericite	T2288	176.9	178.6	100	75	1290	4340	2.5	0.008	630
				veinlets locally forming a sub-stockwork. Minor chlorite fractures.										
				Mineralization Mostly vein "sweat out" pyrite-sphalerite with										
				minor galena and chalcopyrite. Total sulphide 1-2% with py>sp.										
				Structure Broken core 174.9-175.2 associated with low angle										
				cleavage which is still mostly weak.										
				IP Sample 16 cm from 176.1m.										
178.6	180.8	2.06	94	TUFFACEOUS CONGLOMERATE-SANDSTONE										
				Very coarse grained epiclastic with cobbles of felsic volcanics,										
				black shale, grey siltstone and silicified ash up to 5 cm dia-										
				meter set in a gritty volcaniclastic matrix with common quartz	T2289	178.6	180.8	100	15	140	340	<0.5	<0.008	440
				grains up to 8mm in size. Most clasts are well rounded within										
				this poorly sorted unit however there is a suggestion of crude										
				layering which has been disrupted by brecciation and re-cemented										
				e.g. 180.4m.										

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 6

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA All values in p.p.m.												
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba			
				Alteration Only weak pervasive sericite-chlorite alteration													
				of matrix. Some clasts are silicified, apparently from their													
				pre-cursor formation.													
				Mineralization Minor disseminated pyrite, locally up to 5%													
				but overall approximately 1%.													
180.8	184.3	3.34	95	BLACK SHALE													
				Predominantly massive graphitic black shale as above but with													
				minor intercalations of coarser epiclastics especially from													
				183.2m onwards. Here bands of tuffaceous sandstone have sharp													
				contacts e.g. 183.2m at 60° to LCA, 183.3m at 45°.													
				Alteration Fairly weakly altered apart from carbonate-quartz	T2290	180.8	182.8	81	40	1640	5590	3	0.017	710			
				gash veinlets.	T2281	182.8	183.4	100	15	980	2040	1	<0.008	610			
				Mineralization Generally weaker than above units. Predominantly													
				sweat out vein pyrite-sphalerite with minor chalcopyrite-galena.													
				Mostly total sulphide 1-2%, locally up to 5%, e.g. 182.5-182.65m.													
				Structure Core more broken than above, weak cleavage. Possible													
				fault: clay and rubble at 183.6m for 10 cm.													
				Petrology T987 at 182.0m.													
184.3	198.2	13.58	98	TUFFACEOUS SANDSTONE													
				Grey medium to fine grained uniform tuffaceous sandstone.													
				Generally fairly structureless with a gradual decrease in grain													
				size down hole, however some subtle thin silty bands occur													
				e.g. 188.6m 7mm thick at 50° to LCA. Some dark wispy (relict													
				vitric) streaks up to 1 cm long occur.													
				Alteration Only weak pervasive chlorite-sericite alteration													
				within the matrix and minor carbonate-quartz gash veins.													
				Mineralization Very weak, minor fine grained pyrite <0.5%.													
				Structure No cleavage, minor broken core towards the lower													
				section. 190.9m small crush zone 3 cm wide.													
198.2	206.3	6.85	84	PELITIC ASH													
				Very fine grained green-brown massive ash unit. No primary													
				structures evident but strong "crackle breccia". Rock is very													
				hard reflecting vitric component.													

GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: E.L. 9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HX 1 Page: 7

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INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba
									ASSAY DATA All values in p.p.m.					
				Alteration Appears to be quite weak, the hardness due to the										
				vitric nature rather than silicification. Crackle breccia										
				fill is quartz-carbonate ± sericite.										
				Mineralization Virtually unmineralized apart from trace dissemi-	T2292	198.2	200.2	78	5	15	220	<0.5	<0.008	950
				nated pyrite and sphalerite.	T2293	200.2	202.2	79	<5	<5	240	<0.5	<0.008	1000
				Structure The whole unit has been deformed by brittle fracture	T2294	202.2	204.2	90	<5	5	220	<0.5	<0.008	780
				unlike the surrounding less competent units. Two phases of	T2295	204.2	206.2	89	45	45	140	<0.5	<0.008	1250
				fracturing recognized: first the re-healed crackle breccia;										
				second open fault structures and shear zones. Fault zones										
				are: 198.5-198.8m, 201.0-201.7m, 203.2-203.5m and 204.2-206.3m										
				broken core with common clay shear zones.										
206.3	289.0	81.88	99	WELDED IGNIMBRITE										
				Mostly a green-brown competent massive coarse grained volcani-										
				clastic made up of euhedral feldspar crystals up to 6mm; lithic										
				clasts of buff to pink coloured lava up to 8mm and dark green	T2296	206.2	208.2	94	30	755	1240	<0.5	<0.008	1100
				vitric shards up to 5 cm long, set in an ashy matrix. The										
				upper section down to 214.5m is marked by much disruption with										
				blocks of lithic material, especially fine grained pelitic										
				ash ranging in size from a few cm up to 40cm in size. The										
				blocks are often irregular in shape but have sharp margins.										
				It appears as if the pyroclastic flow has torn up blocks of										
				the underlying (co-ignimbritic?) ash. This would indicate										
				facing down hole (to the south). From 236.4m fine grained										
				buff coloured ashy bands 1cm-70cm thick occur. These have										
				subtle bands at 40° to LCA at 242.8m.										
				Mafic-intermediate dyke 281.5m 16cm thick with sharp contacts										
				at 40° to LCA, marked by moderate pervasive chlorite and blebs										
				and veins of galena-sphalerite-pyrite at 2%.										
				Alteration Overall very weak with minor sericite-chlorite										
				alteration of vitric components/fiammé. Possisble silicification										
				of vitric ashy units?										
				Mineralization Mostly unmineralized apart from trace disseminated										
				pyrite except: 206.3-208.1m disseminated and sweat out sphalerite-										
				pyrite-minor galena up to 5% sulphide over 10 cm but average										
				<1%; 277.1-277.7m vein 0.5 cm thick of galena-sphalerite-										

GOLD FIELDS EXPLORATION PTY. LIMITED

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DRILL CORE LOG AND ASSAY DATA

PROJECT: E.L. 9/66 TYNDALL

HOLE NUMBER: HX 1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				chalcopyrite, vein is sub-parallel to LCA and is associated
				with weak pervasive chlorite alteration between 276.0-278.5m.
				Petrology T988 at 240.3m.
293.0	340.5	46.30	95	WELDED IGNIMBRITE
				Similar to above sequence but rock is now fawn to pink coloured
				and very hard. Still coarse grained pyroclastic with euhedral
				feldspar crystals in a very fine grained ashy matrix with abundant
				khaki fiamme. Rock appears to be more intensely welded than
				above unit. Blotches of pink-grey albitic(?) lava clasts, now
				reabsorbed, occur throughout e.g. 319.6-325.4m.
				Alteration Generally very weak apart from (deuteric?) albite.
				Quatz-carbonate-pink feldspar(?) ±minor chlorite veins are
				common up to 40 cm thick.
				Mineralization Virtually unmineralized apart from trace fine
				grained disseminated pyrite.
				Structure 305.5-315.0m core broken with possible faults at
				305.5 (10 cm), 308.2 (40 cm) and 313.4-315.0m with upper contact
				at 55° to LCA.
				Petrology T989 at 296.7m.
				END OF HOLE

ASSAY DATA All values in p.p.m.

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Ba

Ge[illegible]mpet Services (. m Joyce) 21/1/86

GENERAL COMMENTS

1. The six samples are interpreted to comprise a lava, a vitric crystal tuff, a siliceous pelite, a pyritic carbonaceous slate, a lava or subvolcanic intrusion, and a banded tuff.

2. One sample (T 985) carries quartz phenoclasts and is of apparently dacitic derivation. The other tuffs and igneous rocks lack quartz phenocrysts but commonly carry fine quartz, some or all of which may reflect subtle silicification of previously andesitic (or in one case perhaps trachyandesitic) rocks.

3. Obvious hydrothermal effects involve varying degrees of sericitization along with production of some carbonate, sphene chlorite and quartz.

   Very minor disseminated sulphide mineralization is commonly represented by very fine pyrite and subordinate sphalerite. Fracture-controlled veins carry coarser, more obvious sphalerite along with carbonate, quartz and minor other minerals.

4. The finely pyritic carbonaceous slate may be an explanation of the I.P. anomaly, but hydrothermal alteration and weak mineralizing processes involving pyrite and sphalerite have operated throughout the set of samples.

HX1

Sample Number:- T 984 90.6m

Identification: Lightly carbonated, intensely sericitized acid lava (?dacite) with traces of disseminated fine pyrite

Description:

The sample is a drill core specimen of essentially uniform, fine-grained, light olive grey rock with a few small whitish and light grey altered phenocrysts.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample is seen to consist of sparse, altered phenocrysts (about 0.5 to 2mm) and a few clusters of altered phenocrysts set in a uniform groundmass of anhedral quartz grains (about 0.05mm), fine sericite and minor sphene. There are a few possible 0.5mm amygdales of carbonate (?dolomite) with quartz and others of sericite with quartz. Several healed fractures carry fine sphene.

Most of the phenocrysts seem to be partly recrystallized, poorly twinned, sericitic plagioclase. Inconspicuous mafic silicate phenocrysts are represented by carbonate-sericite-chlorite; some carry a few grains of fine pyrite and a few remnant crystals of apatite. Aggregates of cloudy sphene, a few intergrown with fine pyrite, seem to be pseudomorphous after inferred ilmenite phenocrysts about 0.2 to 0.5mm in size.

An approximate mode is:

2-3%	plagioclase phenocrysts, recrystallized and partly sericitized
0.2-0.3%	carbonate-sericite-chlorite after inferred mafic silicate phenocrysts
0.1-0.2%	sphene aggregates after inferred ilmenite phenocrysts
60-70%	groundmass sericite
30-40%	" quartz
0.2-0.3%	" sphene
0.2-0.3%	amygdales of sericite-quartz and carbonate-quartz
0.1%	pyrite
rare	apatite

Comments and Interpretations:

This sample is interpreted with moderate confidence to have originated as a porphyritic lava, probably of dacitic composition, but it does lack quartz phenocrysts and a moderately silicified andesitic composition is a possibility.

Alteration involved trace development of chlorite, light development of sphene and carbonate (probably dolomitic) and intense development of sericite. It is not clear whether groundmass quartz is original or a product of silicification.

There are only traces of metallic mineralization, represented by disseminated fine pyrite within altered mafic silicates and oxides.

014074

Sample Number: T 985 143.3m

Identification: Dacitic vitric crystal tuff with light alteration and with sphalerite and pyrite present as veins and disseminated replacements

Description:

The sample is a drill core specimen of fine-grained, medium light grey rock finely speckled with many light grey, small phenoclasts.

A cobaltinitrite staining test revealed minor K-feldspar as phenoclasts and groundmass grains.

In thin section the sample displays distinctly tuffaceous textures. Subhedral and broken phenoclasts, about 0.2 to 1mm in size, are scattered through a vitroclastic matrix which did consist of unwelded or poorly welded vitric shards, about 0.1 to 0.5mm in size, now devitrified mainly to quartz and untwinned feldspar about 0.01 to 0.03mm in grainsize.

The most common phenoclasts are twinned, poorly zoned plagioclase. There are some quartz clasts and a few clasts of inconspicuous K-feldspar. A few inferred ilmenite clasts are represented by aggregates of sphene. Some phenoclasts of unknown type, possibly mafic, have been replaced by aggregates of fine, subhedral pyrite (less than about 0.05mm grainsize) and, less commonly, by aggregates of translucent red brown sphalerite.

The matrix is dominated by fine quartz and feldspar, but there are specks of sphene and minor inhomogeneously distributed sericite and calcite.

There is a partly replacement style and partly fissure style vein (up to 0.5mm wide) of sphalerite-quartz-calcite-pyrite. The quartz is strained. The pyrite is subhedral, about 0.02 to 0.2mm in grainsize. The sphalerite is translucent red brown, anhedral and ranges up to 0.5mm. Later, crudely orientated replacement veinlets carry calcite with sericite but no sulphides.

An approximate mode is:

5-8%	plagioclase phenoclasts
1-2%	quartz "
0.5-1%	K-feldspar "
0.1%	sphene after probable ilmenite phenoclasts
80-90%	vitroclastic matrix, now fine feldspar and quartz with minor sphene, sericite and calcite
0.3-0.4%	disseminated aggregates of pyrite and sphalerite after phenoclasts
0.5-0.7%	vein of sphalerite-quartz-calcite-pyrite
4-6%	veins of sericite-calcite

Comments and Interpretations:

This sample is confidently interpreted to have originated as an unwelded or poorly welded vitric crystal tuff of dacitic composition.

The rock has been devitrified to mainly fine feldspar and quartz, but there has been only light hydrothermal alteration to sericite, calcite and sulphides. Sphalerite and pyrite are present partly as disseminated replacements of phenoclasts and partly as components of veins which also contain quartz and calcite. Sericite-calcite veinlets may also reflect later metamorphic mobilization.

Sample Number: T 986 160.1m

Identification: Carbonate-veined siliceous pelite with traces of pyrite and sphalerite

Description:

The sample is a drill core specimen of hard, fine-grained, medium light grey rock with many irregular, light grey veins.

A staining test revealed no K-feldspar.

In thin section the rock is seen to consist mainly of very fine, anhedral quartz (about 0.01 to 0.03mm), moderately aligned minor sericite and small amounts of carbonate, sphene or rutile, and very fine pyrite (0.01 to 0.05mm). There are faint suggestions of aligned vitric shards up to 0.2mm long.

There are many irregular, fracture-controlled, but partly replacement style veins of carbonate and minor strained quartz with rare grains of yellowish to reddish brown sphalerite. The veins are about 0.05 to 0.5mm wide. The carbonate is anhedral and seems dolomitic. The sphalerite grains are finer than about 0.05mm.

An approximate mode is:

80-90%	fine quartz (and possibly some untwinned plag.)
5-8%	fine sericite
0.2-0.3%	disseminated carbonate
0.1-0.2%	" sphene or rutile
0.1%	pyrite and subordinate sphalerite as disseminations
5-8%	carbonate within veins
1-2%	quartz within veins
rare	sphalerite within veins

Comments and Interpretations:

This sample is interpreted to be a siliceous pelite with traces of disseminated fine pyrite and sphalerite and with many fracture-controlled veins of calcite with minor quartz and rare sphalerite.

There are no structures which resemble phenocrysts, phenoclasts, amygdales or flow banding, but there are faint suggestions of aligned small vitric shards. Perhaps the rock originated by reworking of vitric tuff.

Obvious hydrothermal alteration of the rock is confined to veining by calcite-quartz-sphalerite. Inconspicuous groundmass sericite may well relate to subsequent incipient regional metamorphism. It is not clear whether the finely siliceous nature of the sample is original or metasomatic.

Sample Number: T 987 182.0m

Identification: Finely pyritic carbonaceous slate with fissure veins containing carbonate, quartz, minor sphalerite and traces of other sulphides and chlorite

Description:

The sample is a drill core specimen of greyish black, fine-grained rock with slaty foliation and many irregular, fine white veins.

A staining test revealed no K-feldspar.

In thin section the bulk of the rock displays sparse silt-sized grains of quartz (less than 0.06mm) set in a moderately foliated and cleaved matrix of sericite, clays, fine carbonaceous matter and disseminated specks of sulphide. The carbonaceous matter consists of fine 'dust' and streaks. The sulphide appears to be mainly subhedral pyrite, less than about 0.01mm in size, but other types may be present.

Abundant veins are of deformed fissure style, about 0.02 to 1.5mm wide. The veins are dominated by relatively coarse carbonate (clcite or possibly dolomite), but there is some strained quartz and obvious translucent red brown sphalerite (up to 1.5mm). Small amounts of opaque sulphides accompany the coarsest sphalerite: they seem to include galena and pyrite. There are a few grains of chlorite.

An approximate mode is:

1-2%	silt grains of quartz
65-75%	sericite and clays
8-10%	carbonaceous matter
5-8%	disseminated sulphides, mainly pyrite
12-15%	veins of calcite-quartz-sphalerite with traces of other sulphides and chlorite

Comments and Interpretations:

This sample is interpreted to have originated as a finely pyritic black shale.

Hydrothermal alteration has involved development of many fracture-controlled veins of calcite with subordinate quartz, minor sphalerite and traces of other sulphides and chlorite.

Incipient regional metamorphism is considered to be rsponsible for deformation of the veins, development of slaty foliation and cleavage and partial conversion of clays to sericite.

Hx1

Sample Number: T 989 296.7m

Identification: Sericitized, carbonated and probably silicified (?)trachyandesite with traces of disseminated fine pyrite

Description:

The sample is a drill core specimen which displays greyish olive, sericitic wisps and many moderate orange pink, altered phenocrysts or similar structures set in a pale red, fine-grained groundmass.

A staining test revealed that K-feldspar occurs as patches in many altered phenocrysts.

In thin section the sample is seen to be heavily altered, but remnant primary textures seem to involve many subhedral phenocrysts, about 1 to 4mm in size, set in an allotriomorphic groundmass with grainsizes probably around 0.1 to 0.2mm.

The phenocrysts seem to have been mainly feldspar, now heavily replaced by ankeritic carbonate with albite and microcline. Aggregates of sphene pseudomorph inferred small ilmenite phenocrysts and groundmass grains. A few aggregates of ankerite and sphene may represent mafic silicate phenocrysts.

The groundmass consists mainly of sutured quartz grains (about 0.05mm) and mildly foliated aggregates of fine sericite. Disseminated ankeritic carbonate, sphene and very fine pyrite are minor components. The pyrite occurs as euhedral, multifaceted grains, about 0.005 to 0.02mm in size: they are mildly enriched within a few stringers of more intense sericitization.

An approximate mode is:

10-15%	phenocrysts altered to ankerite, albite and microcline
0.2-0.3%	sphene aggregates after inferred ilmenite phenocrysts
30-40%	groundmass quartz
40-50%	" sericite
2-3%	" ankerite
0.1%	" sphene
0.1-0.3%	disseminated pyrite

Comments and Interpretations:

Abundantly and relatively coarse porphyritic textures in this otherwise fine-grained rock indicate that it originated as a lava or possibly subvolcanic intrusion. Heavy hydrothermal alteration involving production of sericite, ankerite and sphene and probably pervasive fine silicification has obscured the primary composition, but an intermediate, possibly trachyandesitic chemistry seems likely.

There are traces of very fine, disseminated pyrite, apparently enriched in the most sericitic regimes.

Sample Number: T 980 240.3m

Identification: Bands of carbonated and chloritized, intensely sericitized (?)andesitic tuff with traces of pyrite

Description:

The sample is a drill core specimen which displays three bands of rock with sharp contacts. One band, of 20mm or more, resembles tuff and displays numerous white, altered phenocrysts and wispy sericitic structures in an olive grey matrix. A central band of about 10mm thickness is similarly tuffaceous, but a darker olive grey. The third band, at least 20mm thick, is fine-grained and yellowish grey; it is in sharp, but locally lobate contact with the darkest tuffaceous band.

A cobaltinitrite staining test produced some diffuse colour but revealed no K-feldspar.

In thin section the olive grey band is seen to consist of altered phenoclasts (about 1 to 2mm in size) and altered, lenticular lithic clasts (commonly 5mm) set in a fairly coarsely sericitic, foliated matrix with poorly preserved wispy and lenticular structures. The phenoclasts include carbonate-quartz aggregates after probable feldspar, chlorite with and without sphene after mafic silicates and sphene after inferred ilmenite. The lithic clasts are carbonate-quartz-chlorite-sphene aggregates apparently representing altered aggregates of former phenocrysts or altered granitoid rock. All of the carbonate has refractive indices suggestive of dolomite rather than calcite.

An approximate mode is:

5-7%	carbonate-quartz aggregates after feldspar phenoclasts
2-3%	chlorite-sphene aggregates after mafic phenoclasts
0.1-0.2%	sphene after inferred ilmenite phenoclasts
3-4%	calcite-chlorite-sphene aggregates after lithic clasts or aggregates of phenoclasts
85-90%	matrix sericite
2-3%	" quartz
tr	pyrite, as thin stringers

The central band of darker tuffaceous rock shows no obvious differences in texture or mode from the rock described above. The matrix merely appears darker in hand specimen. Fine pyrite partly replaces a 2mm sericitized clast of uncertain origin.

The yellowish grey band is seen to consist very largely of sericite with a criss-cross pattern of metamorphic foliations. There are sparse 0.5 to 1mm tabular phenoclasts of inferred feldspar pseudomorphed by carbonate and quartz. A few coarsely sericitic pseudomorphs may represent mafic phenoclasts. An approximate mode is:

1-2%	carbonated phenoclasts
0.2-0.3%	sericitized phenoclasts
95-97%	matrix sericite
2-3%	" quartz
tr	" sphene

Comments and Interpretations:

This sample is thought totrepresent three layers of tuff which originally displayed phenoclasts of feldspar, mafic silicates and ilmenite along with a few related lithic clasts all set in a vitroclastic matrix. The tuff may have been deposited by airfall processes on land or into water. It does not seem to be reworked.

There are no quartz phenocrysts and the original composition may have been andesitic.

Pervasive hydrothermal alteration has been intense. It involved production of carbonate (?dolomitic) and quartz in place of feldspar phenocrysts, chlorite and sphene in place of mafic components and abundant sericite from vitroclastic components.

A trace of fine pyritic mineralization is displayed as fine replacement stringers and as a replacement aggregate.

076

014078

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

HOLE NO.: LS13
STATE : TASMANIA

PROJECT	EL.9/66 TYNDALL
DESIGNED BY	F.G. FITZGERALD
LOGGED BY	A.J. CARTWRIGHT
COMMENCED	12.11.85
COMPLETED	5.12.85

PURPOSE

To test for massive sulphide mineralization beneath the Mt. Selina geochemical anomaly zone between lines 116N and 120N along strike from encouraging alteration and mineralization in hole LS10.

LOG SUMMARY

0.0 - 361.0 Chloritic epiclastics with weak sulphide mineralisation. Carbonate-sericite-chlorite-magnetite alteration is developed.

361.0 - 502.6 Autobrecciated felsic lavas intercala ted with chloritic volcaniclastics. Rare sulphides.

GENERAL COMMENTS

Significant assays are recorded below.

ASSAY SUMMARY

INTERVAL From	INTERVAL To													COMMENTS
														No significant assays.

LOCATION

NORTHING	5362381.8
EASTING	386488.7
RL.	693.9
GRID	AMG
LENGTH	502.6m

HOLE CONDITION

SIZE	
Hole Size	Depth
HQ	6m
NQ	45m
BQ	502.6m

SIGNIFICANT CORE LOSS INTERVALS		
From	To	% Lost

POOR GROUND CONDITION ZONES		
From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

All casing recovered from hole.

PVC pipe inserted to 502.6m (EOH).

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

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
Collar	283°	-50°	0.0	20.0	20.0	15.32	678.6	12.86	12.86
40m	279°	-47.5°	20.0	59.5	39.0	28.75	649.8	26.35	39.21
79m	280°	-46°	59.5	98.5	39.0	28.05	621.7	27.09	66.30
118m	281°	-45°	98.5	137.5	39.0	27.58	594.1	27.58	93.88
157m	282°	-42.5°	137.5	176.5	39.0	26.35	567.7	28.75	122.63
196m	280°	-40°	176.5	215.5	39.0	25.07	542.6	29.88	152.51
235m	279.5°	-38°	215.5	254.5	39.0	24.01	518.6	30.73	183.24
274m	In rods	-35°	254.5	293.5	39.0	22.37	496.2	31.95	215.19
313m	279°	-33.5°	293.5	332.5	39.0	21.53	474.7	32.52	247.71
352m	279°	-33.5°	332.5	371.5	39.0	21.53	453.2	32.52	280.23
391m	281.5°	-32°	371.5	410.5	39.0	20.67	432.5	33.07	313.30
430m	283°	-31.5°	410.5	449.5	39.0	20.38	412.1	33.25	346.55

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
469m	280°	-30°	449.5	485.5	36.0	18.00	394.1	31.18	377.73
502m	273°(?)	-29°	485.5	502.6	17.1	8.29	385.8	14.96	392.69

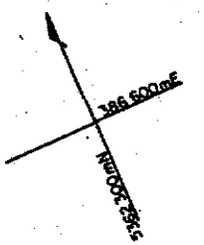
HOLE NO. L.S. 13

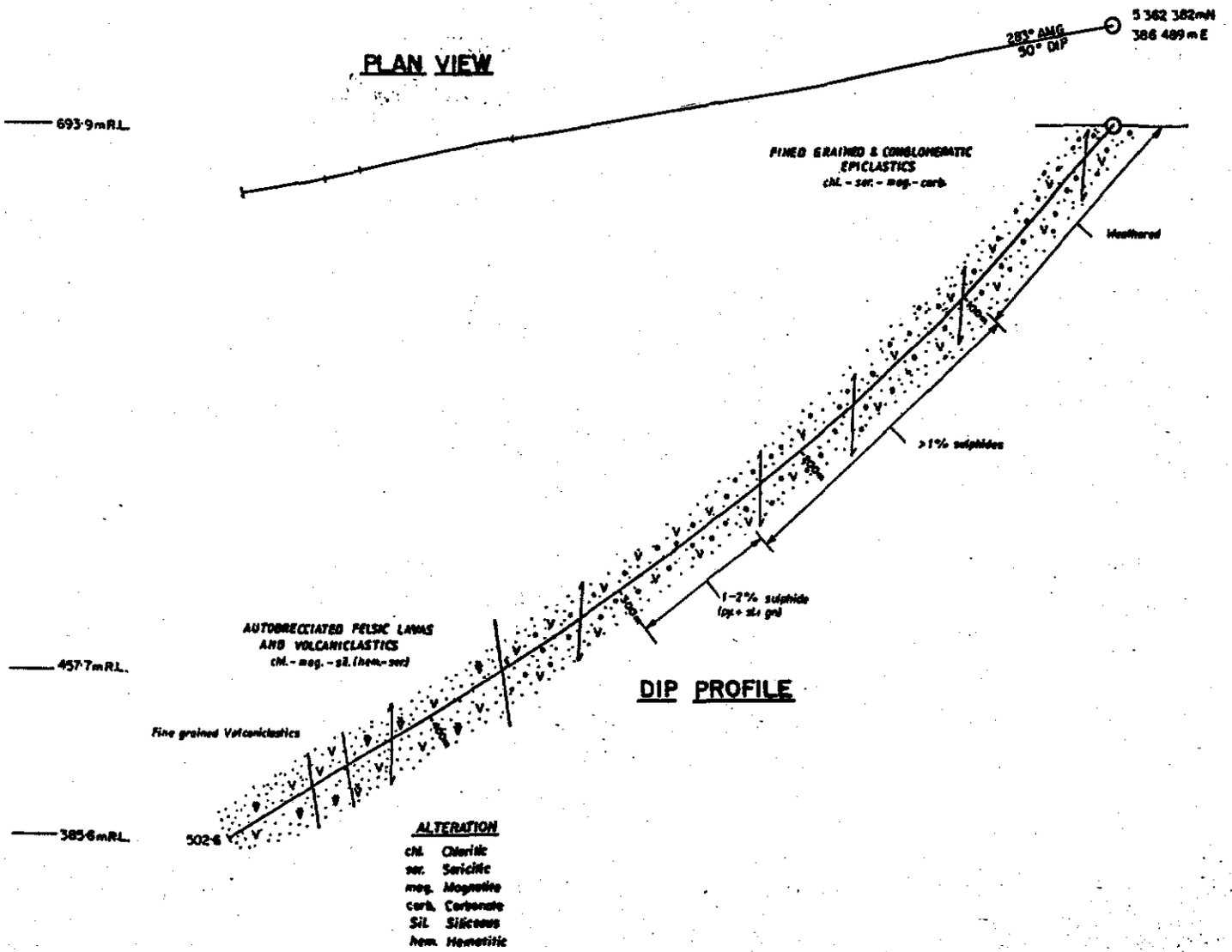
GOLD FIELDS EXPLORATION PTY. LIMITED

DIAMOND DRILL HOLE PLOT

SCALE 1: METRES

PLAN VIEW





DIP PROFILE

5 cm

ALTERATION

chl.	Chloritic
ser.	Sericitic
mag.	Magnetite
carb.	Carbonate
Sil.	Siliceous
hem.	Hematitic

014080

078

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS13

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				SUMMARISED LOG				
0.0	361.0			VOLCANICLASTICS; PREDOMINANTLY EPICLASTICS. A WEAK TO MODERATE CHLORITE-SERICITE-CARBONATE-MAGNETITE ALTERATION IS DEVELOPED. WEAK SULPHIDE MINERALISATION OCCURS, PARTICULARLY BETWEEN 240.0m -300.0m WHERE THIN GALENA-SPHALERITE VEINLETS ARE PRESENT. THE TOP 96.5m OF THE SEQUENCE IS WEATHERED.				
361.0	502.6			LAVAS AND VOLCANICLASTICS; MINOR AUTOBRECCIATED FELSIC LAVAS INTERCALACTED WITH PYROCLASTICS. A MODERATELY STRONG CHLORITE-MAGNETITE-SILICA ALTERATION ASSEMBLAGE IS DEVELOPED. SULPHIDES, CALCITE, HEMATITE AND SERICITE ARE LESS COMMONLY FOUND.				
				DETAILED LOG				
				0.0-361.0 CHLORITIC EPICLASTICS WITH WEAK SULPHIDE MINERALISATION.				
0.0	96.5	89.7	93	Green, chloritic epiclastics. Fine-medium grained and massive, with numerous quartz phenocrysts/crystal fragments. Small, pink				
(0.0-6.0m, 1.4m recovered)				rock chips are also common. The core is moderately weathered to limonite/hematite in places. Quartz-chlorite-albite, thick				
				metamorphic veins occur. The rock is weakly fractured with very				
(13.7-14.9m, 0.5m recovered)				few clayey zones. A weak foliation exists at 35°CA. Thin bands				
				of silty, very fine sediment occur, parallel to foliation.				
				Also, coarser gritty conglomeratic beds are present. Overall				
				the alteration is weak and the weathering is variable in intensity				
				Selective wea thering has resulted in pitting as many small				
(40.0-43.1m, 1.4m recovered)				clasts (rock fragments) have been eroded out, below 45.0. Occa-				
				sional blebs (very fine) of sulphides, pyrite and galena can				
(92.7-92.9m, 0.4m recovered)				be seen (less than 0.5% by volume). Between 91.0 and 96.5, a				
				strongly weathered zone occurs. Here the core is fractured				
				with clayey/crumbly zones. It is strongly leached and limonitic.				
96.5	234.0	137.5	100	Green chloritic epiclastics, similar to above except virtually				
				unweathered. Also, wispy carbonate lenses occur. The basic				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL HOLE NUMBER: LS13 Page: 2 of 4

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA (p.p.m.) Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au*
				lithologies (fine grained silts, coarse and medium grained gritty									
				conglomerates) are the same. The rock is quartz phyric and									
				foliated at 38° to CA. Alteration is weak and sulphides occur									
				as above.									
				Below 115.0, the coarse polymict conglomerate predominates.									
				A variety of sub-rounded to angular fragments, up to 5 cm across,									
				occur ina fine grained chloritic matrix. The carbonate becomes									
				more pervasive with depth. Rare lenses of fine epiclastic silts									
				and rare, thick quartz-chlorite-metamorphic veins, occur. Some									
				of the larger fragments are pink, quartz phyric rhyolite lava.									
				Between 150.6 and 152.6, a moderately strongly fractured zone									
				occurs. The core appears to be slightly more sericitic also.									
				Below this zone the carbonate alteration is weaker. Thin sericite-									
				sulphide veinlets also occur. Thin sericite veinlets and wisps									
				occur rarely throughout the rock below 153.0. With the increased									
				sericite, the core is slightly more strongly foliated (45° CA									
				at 170.0).									
				Below 180.0, thin carbonate veinlets occur irregularly through									
				the core.									
				Between 189.6 and 191.1, a sericitic fracture zone occurs.									
				The core is pale green, pervasively sericitised and fractured.									
				Many carbonate veins also occur.									
				Below 197.0, the fragments of pink lava become more abundant									
				- all small pebble sized.									
				At 214.5, a thin galena veinlet occurs - very wispy. The foliation									
				at this depth is 50° CA.									
				Below 228.0, quartz-chlorite-albite metamorphic veins cut the									
				core at various angles. This zone of increased veining persists									
				to 232.0.									
				At 237.0, a thin band of coarse pyrite crystals occurs.									
234.0	298.0	64.0	100	Green chloritic epiclastics, similar to above, but with incrased	T2298	230·0	231·0	100	22	79	760	<1	<0·005
				sulphides and magnetite. The rock contains many dark green-black	T2299	232·0	233·0	"	12	90	330	"	"
				chloritic wisps and lenticular (foliated) fragments. Back to	T2300	234·0	235·0	"	10	90	425	"	"
				pale green, more sericitic alteration at 241.0.	T 886	236·0	237·0	"	11	125	690	"	"
				At 243.0, a small fluorite grain occurs within a calcite vein.	T 888	238·0	239·0	"	10	54	275	"	"

* ANDEL FIRE ASSAY

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL HOLE NUMBER: LS13

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au
				Below 245.0, patches of core with disseminated, very fine grained	T889	240·0	241·0	100	11	130	460	<1	<0·005
				magnetite become common. This increases below 250.0 to almost	T890	242·0	243·0	"	14	280	510	"	"
				pervasive magnetite (but not visible). Also, rare blebs of	1	244·0	245·0	"	10	86	320	"	"
				sulphides (coarse grained aggregates) appear.	2	246·0	247·0	"	46	660	770	16	"
				The rock is strongly quartz phyric - small euhedral grains,	3	248·0	249·0	"	13	60	225	1	"
				around 2mm in diameter.	4	250·0	251·0	"	12	42	220	<1	"
				At 270.4, a 3mm thick galena veinlet cuts the core at 50° CA.	5	252·0	253·0	"	10	32	275	"	"
				A few of the quartz-chlorite-albite metamorphic veins, also	6	254·0	255·0	"	12	48	270	"	"
				contains blebs and pods of sulphides, in particular galena.	7	256·0	257·0	"	12	74	225	"	"
				At 275.2, a 2.0m zone of thick metamorphic veins cut the core.	8	258·0	259·0	"	25	285	1000	1	"
				Mixed sulphide (galena, sphalerite in particular) veinlets and	9	260·0	261·0	"	11	88	345	<1	"
				thin pods occur randomly throughout the rock below ~270.0.	T900	262·0	263·0	"	20	120	340	"	"
					T3901	264·0	265·0	"	17	245	310	"	"
245.0	361.0	63.0	100	Green, chloritic volcaniclastics with weak sulphide mineralisation.	2	266·0	267·0	"	17	400	250	"	"
				The core is only very weakly foliated and is coarse-grained	3	268·0	269·0	"	12	720	88	1	"
				and grittier. The sulphides are very rare. The core is very	4	270·0	271·0	"	22	520	4·80%	2	"
				weakly sericitic but secondary calcite is abundant, as veinlets	5	272·0	273·0	"	10	100	1440	<1	"
				and wispy pods. The rock is moderately chloritc. This unit	6	274·0	275·0	"	19	68	415	"	"
				is only very weakly magnetic in patches.	7	276·0	277·0	"	13	1440	390	1	"
				Below 325.0, thin, wispy sericite veinlets occur pervasively	8	278·0	279·0	"	11	135	260	<1	"
				through the rock, producing a pale green colour. Magnetite	9	280·0	281·0	"	37	1100	1760	2	"
				(not visible) returns with the sericite, and the calcite content	T3910	282·0	283·0	"	16	280	530	<1	"
				decreases. The weak foliation is at 52° CA.	1	284·0	285·0	"	16	550	500	"	"
				At 360.3, a 0.7m wide quartz-chlorite-albite metamorphic vein	2	286·0	287·0	"	8	120	260	"	"
				occurs.	3	288·0	289·0	"	39	2880	2340	2	"
					4	290·0	291·0	"	62	880	1880	1	"
				361.0-502.6 AUTOBRECCIATED FELSIC LAVAS INTERCALATED WITH	5	292·0	293·0	"	36	730	2000	1	"
				CHLORITIC VOLCANICLASTICS	6	294·0	295·0	"	10	110	210	<1	"
361.0	502.6	141.6	100	Pink-green (pale) coloured autobrecciated quartz porphyritic									
				lava. The rock is massive, with large blocks of pink and green									
				lava in a chloritic, fine grained pyroclastic matrix. Alteration									
				is hematite-chlorite-magnetite-silica. Sericite and sulphides are incipiently									
				and rarely developed respectively. Thick metamorphic veins similar									
				to that which occurs on the contact above, occur throughout									
				this unit. Rare calcite blebs also occur. Several moderately									

GOLD FIELDS EXPLORATION PTY. LIMITED

014083

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS13

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				fractured zones (non-sericitic) produced blockily fractured				
				core in an otherwise unfractured, massive unit.				
				Between 388.3 and 391.3, a zone of lava poor, moderately-weakly				
				foliated volcaniclastics (quartz phyric) occur. These are chlori-				
				tic with hematitic lava fragments. Magnetite and sericite are				
				weakly developed. The foliation is at 60° CA. Other zones				
				of volcaniclastics with similar thicknesses also occur regularly				
				through the unit. Below ~403.0, the magnetite in the autobrec-				
				ciated lavas and volcaniclastics is patchy; absent in some places,				
				strongly developed (not visible) in others.				
				At 442.0, an 18.0m thick zone of fine grained volcaniclastics				
				occurs. Magnetite veins and brecciated pods and lenses are				
				abundant in this volcaniclastic sequence.				
				Below this, thin sericite veinlets occur, cutting the lava/volcani-				
				clastic sequence. The lava component is minor.				
				At 474.6, a metamorphic vein, 10 cm thick, occurs at ~10° CA.				
				The vein is quartz-calcite-chlorite with minor siderite, galena				
				and chalcopyrite.				
				Below 490.0, pale green sericite veinlets become abundant.				
				Also, the lava component of this unit increases below this depth.				
				END OF HOLE 502.6				

014084

HOLE NO : S[illegible]
STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

PROJECT	E.L.9/66 TYNDALL
DESIGNED BY	C.F.D. PEASE
LOGGED BY	F.G. FITZGERALD
COMMENCED	11.2.86
COMPLETED	21.2.86

PURPOSE

To test a broad gold in bedrock geochemical anomaly adjacent to the Owen Conglomerate contact on the north west flank of Snake Spur.

LOG SUMMARY / GENERAL COMMENTS

0 - 28.5m	Weathered, possibly hydrothermally altered quartz-phyric volcaniclastics (possible Tyndall Group correlate) - major fault zone?
28.5-112.9m	Sequence of graphitic black shales, grey siltstones and sandstones (greywacke) (possible Newton Creek Sandstone member correlate)
112.9-151.8m	Owen Conglomerate without major faulting at contact

ASSAY SUMMARY

INTERVAL From	INTERVAL To													COMMENTS
														No significant assays obtained.

LOCATION

NORTHING	5325559.2
EASTING	380644.7
R.L.	189.0
GRID	AMG
LENGTH	151.8m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NQ	63.0m
BQ	151.8m

SIGNIFICANT CORE LOSS INTERVALS

From	To	% Lost
0.0m	31.2m	92%
110.0m	112.5m	79%

POOR GROUND CONDITION ZONES

From	To	Condition
0.0m	30.0m	Major fault zone, deeply
		weathered

HOLE CONDITIONS AFTER COMPLETION

NQ casing stuck, backed off recovering 39m and leaving 24m of NQ rods in the hole fro 39m to 63m. PVC pipe (32 mm) inserted to the end of the hole (151.8m). Hole is making water.

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

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total
Collar	097°	-55°	0.0	35.5	35.5	29.1	159.9	20.4	20.4
69.0m	096°	-54°	35.5	89.0	53.5	43.3	116.6	31.5	51.9
109.0m	096°	-53.5°	89.0	151.8	62.8	50.5	66.1	37.4	89.3

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total

014085

PROJECT: **TYNDALL** HOLE NO.: **SS I**

GOLD FIELDS EXPLORATION PTY. LIMITED

DIAMOND DRILL HOLE PLOT

SCALE 1: 20 10 0 20 40 METRES

083

5 325 600·0mN
380 600·0mE

PLAN VIEW

5 cm

5 325 559·2mN
380 644·7mE

SS I

189·0mR.L.

165·7mR.L.

97·4mR.L.

66·1mR.L.

UNCONSOLIDATED SCREE

FELSIC VOLCANOCLASTICS
poor core recovery, deeply weathered
probable major fault zone

SILTSTONE - SANDSTONE SEQUENCE
minor shales, sequence west facing
minor framboidal pyrite
weakly altered

BLACK SHALE - SILTSTONE
graphitic, syngenetic pyrite
slump folding

MIXED SHALE - SILTSTONE - SANDSTONE
weakly altered

BLACK SHALE
graphitic, pyritic

OWEN CONGLOMERATE
grey siliceous, minor pyrite

OWEN CONGLOMERATE
pink hematitic, siliceous
west facing

SS I

DIP PROFILE

SYMBOLS

BEDDING

VOLCANIC FOLIATION

CLEAVAGE

PROMINENT FAULT

MAJOR FAULT ZONE

014086

084

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.1 Page: 1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	≈6.0	0.1	<10	UNCONSOLIDATED SCREE
				Approximately 6m of unconsolidated sediment, mostly boulders of
				Owen Conglomerate derived from talus and/or fluvio-glacial
				deposits.
≈6.0	28.5	1.6	<10	WEATHERED FELSIC VOLCANICLASTICS
				Very little core recovered. Mostly grey medium grained quartz-
				phyric foliated volcaniclastics. Made up of abundant feldspar
				crystals andscattered quartz crystals2-4 mm in size with pale
				green "vitric" wisps set in a volcaniclastic matrix. Minor
				but prominent kernels of sulphide, mainly partly oxidized pyrite
				occur.
				Alteration The rock is moderately to deeply weathered,however
				it appears to have been previously hydrothermally
				altered. Supergene(?) clay predominates.
				Mineralization Apart from the sulphide kernels minor stringers
				of pyrite sub-parallel to cleavage occur giving an
				estimated total sulphide content of the core recovered
				of 1-2%.
				Structure Well developed foliation at 43° to LCA which probably
				reflects cleavage. The rubbly core recovered may
				be due to drilling problems in the weathered zone or
				faulting.
28.5	80.8	43.3	83	SILTSTONE-SANDSTONE SEQUENCE
				Predominantly light grey finely bedded siltstones grading down
				hole to a fine to medium grained sandstone. Minor dark grey
				shaley intercalations occur mainly in the upper part of the
				sequence e.g. 31.2-31.7m and 34.5-36.1m. The upper contact of
				this sequence with the pyroclastics appears to be faulted. Some
				bedding is evident within the finer grained units e.g. 29.5m at
				46°; 40.8m at 50° to LCA. The gross increase in grainsize down
				hole suggests facing up hole (to the west).
				The sequence is made up of well sorted feldspar-quartz-mica
				arenites with a minor graphitic component and does not appear
				to be necessarily volcanically derived.

ASSAY DATA (*in p.p.m.*)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
T3966	≈6.0	28.5	<10	0.01	30	20	88	<1	660	17
T3967	28.5	31.5	42	0.01	72	96	235	<1	480	50
T3968	31.5	34.5	85	0.01	32	76	56	<1	700	33
T3969	34.5	37.5	74	<0.01	49	72	98	<1	710	28
T3970	37.5	40.5	80	0.01	20	215	125	<1	810	9
T3971	40.5	43.5	92	<0.01	19	120	175	<1	750	12
T3973	43.5	46.5	81	<0.01	18	58	98	<1	960	12
T3974	46.5	49.5	72	0.01	29	26	39	<1	840	9
T3975	49.5	52.5	84	<0.01	52	12	37	<1	1020	8

GOLD FIELDS EXPLORATION PTY. LIMITED

014087

085

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.1

Page: 2

INTERVAL		RECOVERY		DESCRIPTION
From	To	m	%	
				The coarser beds contain common brown biotite grains which appear
				to be secondary in origin e.g. 58.3-80.8m. These units also
				contain light and dark grey shale chips up to 5 mm long giving
				the rock a greywacke appearance.
				Alteration Appears only weak, after supergene (clay) weathering
				The sequence is non calcareous.
				Mineralization Scattered clasts of framboidal pyrite mostly
				ovoid in shape up to 1 cm long e.g. 54.0m, 62.5m.
				The framboids consist of fine pyrite crystals with a
				minor silica gangue and are generally elongate parallel
				to the bedding. Very minor disseminated pyrite occurs
				especially near the upper contact.
				Structure The core is quite broken with generally poor recovery.
				This mainly reflects moderate jointing and weathering.
				Major zones of broken rubble core are: 31.0-31.7m,
				35.0-36.1m, 44.5-52.7m and 54.5-55.5m.
				38.6-39.0m Major clay, rubble zone may represent a
				prominent fault.
				Petrology 68.3m
80.8	99.0	15.1	83	BLACK SHALE-SILTSTONE SEQUENCE
				This is another graded sedimentary sequence from finely bedded
				graphitic black shale through grey relatively massive siltstone
				to minor fine grained sandstone down hole. The sequence is quite
				similar to the above lithologies apart from the preponderance
				of argillaceous material. The upper contact is sharp at approx.
				80° to LCA and appears to be normal sedimentary with sandstone-
				greywacke being deposited onto semi consolidated black shales.
				Minor thin units of coarse grained tuffs occur at 869m (10 cm
				thick), 89.1m (6 cm) and 90.8m (15 cm). These possible air fall
				pyroclasatic bands are made up of euhedral feldspar crystals in
				a darkgrey (ashy) matrix. Contacts are sharp and slightly
				irregular between 53° and 85° to LCA. Bedding is best developed
				in finer grained units e.g. 82.3m at 55°, 83.6m at 80° and
				88.4m at 85° to LCA however intraformational slump folding
				is common.

ASSAY DATA (in p.p.m.)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As	
T3976	52.5	55.5	82	<0.01	13	54	42	<1	1140	5	
T3977	55.5	58.5	79	<0.01	16	6	39	<1	990	9	
T3978	58.5	61.5	96	<0.01	20	12	39	<1	1180	6	
T3979	61.5	63.0	69	0.01	26	34	41	<1	1100	5	
T3980	63.0	66.0	92	0.01	21	<4	37	<1	1580	6	
T3981	66.0	69.0	73	<0.01	15	6	52	<1	1560	6	
T3982	69.0	72.0	75	<0.01	28	20	70	<1	1520	9	
T3983	72.0	75.0	99	0.01	37	12	86	<1	1320	13	
T3984	75.0	78.0	93	<0.01	29	34	80	<1	1260	11	
T3985	78.0	80.8	100	<0.01	36	32	56	<1	1180	22	
T3986	80.8	84.0	91	0.01	45	720	930	<1	490	66	
T3987	84.0	85.9*	60	0.01	50	1100	405	<1	590	115	*Probable drill
T3989	85.9	89.0*	80	0.01	44	410	425	<1	530	52	depth error, now
T3990	89.0	93.0	62	0.01	33	105	210	<1	550	30	corrected for less
T3991	93.0	96.0	91	0.01	20	84	155	<1	1020	18	3m in rest of drill
T3992	96.0	99.0	90	<0.01	17	32	78	<1	830	10	log.

GOLD FIELDS EXPLORATION PTY. LIMITED 014088

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.1 Page: 3

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INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
									ASSAY DATA (in p.p.m.)						
				Alteration Appears relatively weak. Some quartz-carbonate(?)											
				(now removed by weathering?) veins up to 2 cm thick											
				mainly in black shales.											
				Mineralization Pyrite framboids relatively common and up to											
				1.5 cm in size but decreasing in size and quantity											
				down hole. Moderate disseminated pyrite within											
				shales appears similarly syngenetic. Minor concentra-											
				tion of pyrite near upper contact.											
				Structure The finer grained beds are generally broken reflec-											
				ting, in part, the greater fissile parting of these											
				units. Minor jointing mostly at 10-45° to LCA.											
99.0	107.3	6.6	80	MIXED SHALE-SILTSTONE-SANDSTONE SEQUENCES											
				Sequence of similar lithologies to above viz graded (up hole)											
				units of black shale, dark grey siltstone to grey relatively											
				massive medium grained sandstones. The coarsest units may											
				be tuffaceous and contain common lithic chips of shale up to	T3993	99.0	101.0	69	0.01	24	60	140	<1	680	18
				8 mm long set in a feldspar crystal rich crudely layered rock.	T3994	101.0	103.0	74	0.03	50	165	425	<1	560	54
				Bedding best developed in finer grained units e.g. 100.7m 85°,	T3995	103.0	105.0	91	0.01	12	24	60	<1	640	10
				106.5m 58° and 107.2m at 68° to LCA. Appears as though two	T3996	105.0	107.3	85	<0.01	20	30	64	<1	500	10
				sedimentary cycles are represented here viz 99.0-101.0m and											
				101.0-107.3m.											
				Alteration Relatively weak apart from supergene effects i.e.											
				feldspar crystals are clearly preserved although											
				the core is quite soft due to pervasive clay weathering.											
				Mineralization Pyrite framboids occur throughout as above.											
				The black shale units have fine grained pyrite											
				concentrated along bedding planes forming up to											
				2% sulphides e.g. 101.0-103.0m.											
				Structure Core is quite broken especially the finer grained											
				units viz 100.8-103.2m and 104.3-105.6m.											

GOLD FIELDS EXPLORATION PTY. LIMITED

014089

087

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.1 Page: 4

INTERVAL		RECOVERY		DESCRIPTION
From	To	m	%	
107.3	112.9	3.3	59	PYRITIC BLACK SHALE
				Finely bedded graphitic black shale with no arenaceous inter-
				calations. Upper contact obscured by broken core but appears
				to be sharp, possibly sedimentary. Bedding well developed e.g.
				108.0m 62°; 109.7m 46° to LCA.
				Alteration Minor quartz + carbonate(?) veinlets.
				Mineralization Minor pyrite framboids or clots are widespread.
				Fine grained syngenetic pyrite concentrated along
				bedding planes forms up to 2-4% overall.
				Structure Most of the core is rubble with much core loss
				due partly to the fissile nature of the rock.
				However there appear to be common open fractures
				which are unmineralized.
				Petrology 102.9m.
112.9	141.4	27.1	95	*GREY OWEN CONGLOMERATE*
				Grey siliceous sandstone (quartzite) and siliclastic conglomerate.
				Mostly relatively massive and unbedded, minor bedding at 119.3m
				68° to LCA. Upper contact with black shales is sharp, probably
				marked by a minor fault with a 4 cm thick quartz vein which has
				disrupted the shale. This does not appear to be a Great Lyell
				Fault-style structure.
				Alteration Strong silicification throughout, locally intense
				and completely detexturing apparent sandstone beds,
				e.g. 116.9-121.0m and 124.9-131.8m. Very minor,
				chlorite + cream carbonate + pale green sericite
				irregular fractures and cavity fill. 133.4m 10 cm
				possible hydrothermal breccia with moderate chlorite-
				pyrite matrix.
				Mineralization Minor pyrite scattered throughout along fractures,
				<0.5% total sulphide. Some coarse grained pyrite up
				to 0.5 cm occurs within the quartzite e.g. 125.0m.
				Structure 112.9m faulted contact with slickensidesat 85°
				to LCA within the conglomerate.
				141.0-141.4m broken core with basal 2 cm crush
				zone, a probable fault. Other broken
				core intervals 131.1-131.9m and 136.0-136.7m.

ASSAY DATA (in p.p.m.)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
T3997	107.3	109.3	70	0.02	68	215	420	<1	460	90
T3998	109.3	111.3	49	0.03	78	205	790	1	530	70
T3999	111.3	112.9	62	0.03	610	345	185	2	450	400
T4000	112.9	116.0	89	0.01	17	8	21	<1	65	235
T3101	116.0	119.0	100	0.01	13	12	4	<1	25	4
T3103	119.0	121.0	93	<0.01	14	<4	5	<1	20	4
T3104	121.0	124.0	88	0.02	11	8	15	<1	55	7
T3105	124.0	127.0	74	0.04	13	<4	10	<1	20	5
T3106	127.0	130.0	97	0.01	13	4	5	<1	10	2
T3107	130.0	133.0	97	<0.01	13	<4	11	<1	30	3
T3108	133.0	136.0	91	<0.01	10	10	19	<1	65	4
T3109	136.0	139.0	79	<0.01	26	<4	11	<1	40	4
T3110	139.0	142.0	96	0.01	10	9	12	<1	50	4

014090

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.1 Page: 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Petrology 133.4m.
146.4	151.8	9.9	96	PINK OWEN CONGLOMERATE
				Mixed sequence of pink hematitic, siliceous quartz sandstone
				and siliclastic conglomerate. Bedding is well developed in
				arenaceous units e.g. 143.3m 77°, 146.8m 80° to LCA. Truncated
				cross bedding consistently gives facing up hole (to west).
				Alteration Moderate, pervasive silicification and hematitic
				alteration typical of Owen Conglomerate.
				151.3-151.8m intense silicification after sandstone?
				Mineralization Only very minor pyrite on fractures.
				147.7m rare pyrite vein up to 1 cm thick.
				Structure Broken core at 141.4-143.0m, 151.5-EOH apparently
				reflecting jointing.
				END OF HOLE

ASSAY DATA (in p.p.m.)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
T3111	142.0	145.0	86	0.01	22	14	8	<1	110	7
T3112	145.0	148.0	100	<0.01	12	6	6	<1	25	3
T3113	148.0	151.8	99	<0.01	11	8	4	<1	40	3

Geochemical Services 15/5/86

014091

089

Sample Number : T 2610 (SS1 70.1m)

Identification : Potassic feldspathic arenite

Description :

The sample is a drill core specimen of light grey rock with moderately sorted, finely sandy textures and sparsely disseminated, pyrite spheroids, about 2 to 6mm in diameter.

A cobaltinitrite staining test revealed that the rock is rich in K-feldspar.

In thin section the sample displays moderately sorted sandy textures modified by a well developed sericitic foliation which is not at all obvious in hand specimen. The foliation is inclined at about 52° to the core axis in the section and it cuts across and deforms a preferred orientation of biotite grains which are inclined at about 37° to the core axis in the section.

The most abundant clasts are subangular and subrounded clasts of single untwinned and poorly twinned feldspar crystals, generally moderately sericitized, and in some fine-grained aggregates of feldspar : K-feldspar dominates, but there is some plagioclase. Quartz occurs as angular to subangular clasts, about 0.1 to 0.5mm in size. Biotite occurs as prominent, disseminated, aligned, thick, brown books (up to 0.3mm by 0.2mm) which have been mildly deformed and in some cases re-aligned by the sericitic foliation. There are sparse lenticular clasts of finely carbonaceous pelite, about 0.5 to 4mm in size. Some small examples have been re-aligned by the foliation but the largest is aligned with the biotite and consists of sericite internally aligned with the sericitic foliation, fine carbonaceous matter and disseminated fine grains and aggregates of pyrite, about 0.03 to 0.1mm in size. There are other grains of pyrite sparsely disseminated through the arenite and a major aggregate within an 8mm spheroid. The spheroid is of diagenetic style, containing alternating bands of subhedral pyrite (0.1 to 0.4mm grainsize) and strained fine quartz aligned with remnant inclusions of biotite which are aligned with biotite in adjacent arenite. Fibrous quartz strain shadows are also developed around the spheroid.

An approximate mode is :

40-50%	feldspathic clasts, cominantly potassic
6-8%	quartz clasts
5-7%	biotite clasts
2-3%	clasts of carbonaceous pelite
30-40%	sericite
1-2%	pyrite, as disseminations and spheroidal aggregates.

Comments and Interpretations :

The sample is identified as a moderately sorted feldspathic arenite. It is probably of volcaniclastic origin, being composed of feldspar and finely feldspathic clasts, quartz, biotite and minor carbonaceous pelite. Crystal tuff of quartz trachyte composition seems a likely provenance.

The sample is interpreted to show detrital mica, aligned during deposition and a different sericitic foliation generated by later incipient metamorphism.

Pyrite is present as disseminated grains and as spheroidal aggregates of diagenetic origin.

Geochemical Services - 13/5/86

090

Sample Number : T 2611 (SS1 102.9m)

Identification : Argillized and sericitized, layered, intermediate vitric crystal airfall tuff

Description :

The sample is a drill core specimen which displays gently undulating laminations of medium dark grey and olive grey, fine-grained rock speckled with tiny dispersible clasts. The laminations range in thickness from less than 1mm to about 13mm and are inclined at about 55° to the core axis.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample displays many disseminated, small, angular and subhedral phenoclasts and related pores set in a finely sericitic matrix with some very vague textures suggestive of former unwelded vitric shards.

The most common pores have tabular shapes (0.1 to 0.5mm) resembling feldspar, but they have presumably been altered to smectite or illite-smectite then dispersed during sectioning : there are some remnant finely sericitic or illitic clasts. Quartz occurs as sparse angular clasts, rarely larger than 0.1mm. Small aggregates of chlorite and others of sphene pseudomorph a few clasts.

The matrix consists mainly of fine sericite and probably illite, with an incipient metamorphic foliation developed at a high angle to primary layering. Primary textures are obscure in most cases, but locally there are variously siliceous and sericitic pseudomorphs of undeformed vitric shards, about 0.3 to 0.4mm in size. Primary layers are alternately pigmented by very fine, earthy opaques (?Mn oxides or ?carbonaceous matter). One pyrite grain was seen.

A bulk mode is about :

10-15%	argillized and sericitized phenoclasts of feldspar
0.2-0.3%	quartz phenoclasts
tr	chloritized clasts
tr	sphene aggregates
85-90%	sericitic vitroclastic matrix
0.2-0.3%	opaque pigments
rare	pyrite

Comments and Interpretations :

This rock is confidently interpreted to have consisted of laminations of unwelded vitric shards with small phenoclasts of feldspar and traces of quartz and mafics. It is very likely that it represents airfall tuff and it was derived from intermediate volcanic sources.

Weathering and/or diagenesis has argillized and sericitized the feldspar clasts and the vitroclastic matrix. Subsequent incipient metamorphism has begun to develop a sericitic foliation inclined steeply to primary bedding.

Sample Number : T 2612 (SS1 133.4m)

Identification : Stylolitic, chloritic, quartzite conglomerate

Description :

The sample is a drill core specimen which displays very light grey siliceous and chloritic siliceous pebbles (about 5 to 30mm in size), most with sutured outlines, set in a minor, dark greenish grey chloritic matrix. There is a vague chloritic foliation inclined at about 50° to the core axis.

A staining test revealed no K-feldspar.

In thin section the samples displays densely packed quartzite pebbles with stylolitic, sutured contacts delineated by small grains of cloudy sphene, chlorite and sericite. A few grains of subhedral and broken pyrite, about 0.02 to 0.2mm in size, occur in and adjacent to the stylolitic sutures. A single 1mm grain of pyrite adjacent to chlorite in a quartzite pebble has been shattered.

The quartzite pebbles are all composed of mildly to heavily strained, sutured quartz, but with grainsizes varying from clast to clast (from about 0.05 to 1mm). Some clasts contain only quartz, but others carry a small patch of non-foliated chlorite or in other cases sericite, and traces of sphene and pyrite.

An approximate mode of the section is :

94-96%	quartz
3-5%	chlorite
0.2-0.3%	sericite
0.2-0.3%	sphene
0.1%	pyrite

Comments and Interpretations :

The sample is a quartzite conglomerate, consistent with the Owen Conglomerate. Weak hydrothermal activity is thought to account for minor chlorite and traces of sericite and pyrite within some pebbles. Subsequent compression is considered to be responsible for producing stylolitic, sutured boundaries between clasts. Chlorite, sericite and sphene have accumulated in the stylolites and minor pyrite has been remobilized from fractured, earlier grains.

The rock has been compressed, not expanded and is, therefore, not regarded as a hydrothermal breccia.

Geochemical Services - 13/5/86

091

Sample Number : T 2611 (SS1 102.9m)

Identification : Argillized and sericitized, layered, intermediate vitric crystal airfall tuff

Description :

The sample is a drill core specimen which displays gently undulating laminations of medium dark grey and olive grey, fine-grained rock speckled with tiny dispersible clasts. The laminations range in thickness from less than 1mm to about 13mm and are inclined at about 55° to the core axis.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample displays many disseminated, small, angular and subhedral phenoclasts and related pores set in a finely sericitic matrix with some very vague textures suggestive of former unwelded vitric shards.

The most common pores have tabular shapes (0.1 to 0.5mm) resembling feldspar, but they have presumably been altered to smectite or illite-smectite then dispersed during sectioning : there are some remnant finely sericitic or illitic clasts. Quartz occurs as sparse angular clasts, rarely larger than 0.1mm. Small aggregates of chlorite and others of sphene pseudomorph a few clasts.

The matrix consists mainly of fine sericite and probably illite, with an incipient metamorphic foliation developed at a high angle to primary layering. Primary textures are obscure in most cases, but locally there are variously siliceous and sericitic pseudomorphs of undeformed vitric shards, about 0.3 to 0.4mm in size. Primary layers are alternately pigmented by very fine, earthy opaques (?Mn oxides or ?carbonaceous matter). One pyrite grain was seen.

A bulk mode is about :

10-15%	argillized and sericitized phenoclasts of feldspar
0.2-0.3%	quartz phenoclasts
tr	chloritized clasts
tr	sphene aggregates
85-90%	sericitic vitroclastic matrix
0.2-0.3%	opaque pigments
rare	pyrite

Comments and Interpretations :

This rock is confidently interpreted to have consisted of laminations of unwelded vitric shards with small phenoclasts of feldspar and traces of quartz and mafics. It is very likely that it represents airfall tuff and it was derived from intermediate volcanic sources.

Weathering and/or diagenesis has argillized and sericitized the feldspar clasts and the vitroclastic matrix. Subsequent incipient metamorphism has begun to develop a sericitic foliation inclined steeply to primary bedding.

Sample Number : T 2612 (SS1 133.4m)

Identification : Stylolitic, chloritic, quartzite conglomerate

Description :

The sample is a drill core specimen which displays very light grey siliceous and chloritic siliceous pebbles (about 5 to 30mm in size), most with sutured outlines, set in a minor, dark greenish grey chloritic matrix. There is a vague chloritic foliation inclined at about 50° to the core axis.

A staining test revealed no K-feldspar.

In thin section the samples displays densely packed quartzite pebbles with stylolitic, sutured contacts delineated by small grains of cloudy sphene, chlorite and sericite. A few grains of subhedral and broken pyrite, about 0.02 to 0.2mm in size, occur in and adjacent to the stylolitic sutures. A single 1mm grain of pyrite adjacent to chlorite in a quartzite pebble has been shattered.

The quartzite pebbles are all composed of mildly to heavily strained, sutured quartz, but with grainsizes varying from clast to clast (from about 0.05 to 1mm). Some clasts contain only quartz, but others carry a small patch of non-foliated chlorite or in other cases sericite, and traces of sphene and pyrite.

An approximate mode of the section is :

94-96%	quartz
3-5%	chlorite
0.2-0.3%	sericite
0.2-0.3%	sphene
0.1%	pyrite

Comments and Interpretations :

The sample is a quartzite conglomerate, consistent with the Owen Conglomerate. Weak hydrothermal activity is thought to account for minor chlorite and traces of sericite and pyrite within some pebbles. Subsequent compression is considered to be responsible for producing stylolitic, sutured boundaries between clasts. Chlorite, sericite and sphene have accumulated in the stylolites and minor pyrite has been remobilized from fractured, earlier grains.

The rock has been compressed, not expanded and is, therefore, not regarded as a hydrothermal breccia.

J92

014094

GOLD FIELDS EXPLORATION PTY LIMITED

DRILL CORE RECORD

HOLE NO	SS.2
STATE	TASMANIA

PROJECT	E.L.9/66 TYNDALL
DESIGNED BY	C.F.D. PEASE
LOGGED BY	F.G. FITZGERALD
COMMENCED	26.2.86
COMPLETED	7.3.86

PURPOSE

To test a narrow gold in bedrock geochemical anomaly adjacent to a broad anomaly at Snake Spur. The hole was designed to drill beneath hole SS.1 to intersect the Owen Conglomerate contact.

LOG SUMMARY	0.0-115.0 Hematitic tuffaceous epiclastic sequence, possible correlate of Tyndall Group Comstock Tuff, with several major faults especially contact.
GENERAL COMMENTS	115.0-145.8m Graphitic black shale-grey siltstone-sandstone sequence possible upper member of Owen Conglomerate.

ASSAY SUMMARY

INTERVAL From	INTERVAL To													COMMENTS
														NOTE: CHECK ASSAYING FOR GOLD IN HOLE SS.2A
														HAS SHOWN THAT THE ORIGINAL ASSAYING WAS
														INACCURATE. THIS CASTS DOUBT ON THE VALIDITY
														OF THE GOLD ASSAYS REPORTED FOR THIS HOLE.

LOCATION

NORTHING	5325524.8
EASTING	380564.0
R.L.	194.2
GRID	AMG
LENGTH	145.8m

HOLE CONDITION

SIZE	
Hole Size	Depth
HQ	15.0m
NQ	145.8m

SIGNIFICANT CORE LOSS INTERVALS		
From	To	% Lost
0.0m	145.8m	48
65.5m	70.4m	89
80.9m	85.4m	86
91.4m	100.4m	84

POOR GROUND CONDITION ZONES		
From	To	Condition
65.5m	70.4m	Major fault zone
80.4m	85.6m	Major fault zone
91.4m	119.0m	Major fault zone

HOLE CONDITIONS AFTER COMPLETION

Hole collapsed, NQ reamed to 129m then stuck. NQ cemented and drilled out with BQ hole (hole SS2A). NQ cut at 90.0m leaving 36m NQ rods and barrel in hole. HQ rods all recovered. PVC pipe (32mm) inserted to end of hole (SS2A).

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
Collar	077°	-55°	0.0	20.0	20.0	16.4	177.8	11.5	11.5										
40.0m	075°	-54.5°	20.0	59.5	39.5	32.2	145.6	22.9	34.4										
79.0m	072°	-55°	59.5	99.0	39.5	32.4	113.2	22.7	57.1										
119.0m	-	-55°	99.0	145.8	46.8	38.3	74.9	26.8	83.9										

PROJECT: TYNDALL HOLE NO: SS 2 / SS 2A

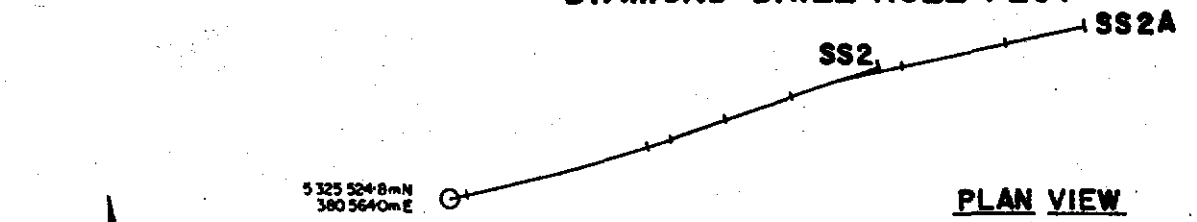
GOLD FIELDS EXPLORATION PTY. LIMITED

DIAMOND DRILL HOLE PLOT

SCALE 1: 20 10 0 20 40 METRES

893

PLAN VIEW



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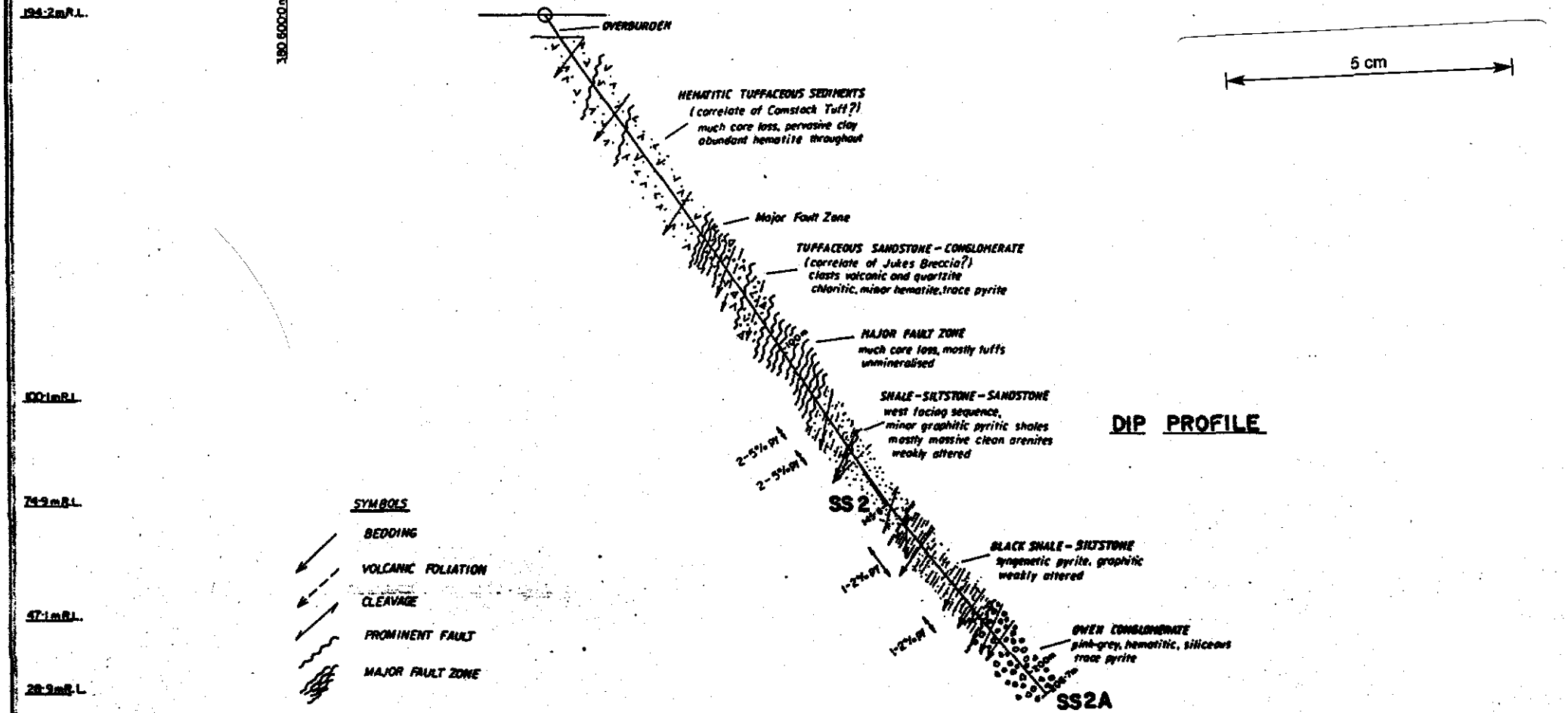

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094

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2

INTERVAL From	INTERVAL To	RECOVERY m.	RECOVERY %	DESCRIPTION
0.0	6.0	0.06	<10	OVERBURDEN
				No core recovered apart from quartz vein material in soil.
6.0	70.4	39.1	61	HEMATITIC TUFFACEOUS SEDIMENTS
				Possible correlate of Tyndall Group Comstock Tuff. Relatively uniform sequence of medium to coarse grained crystal rich tuffaceous sandstone with minor siltstone beds. Sequence is moderately weathered throughout becoming strongly oxidized from 52.0m onwards approaching a major fault. The rock is made up of abundant cream feldspar crystals (often sub-hedral) 2-4 mm in size, common dark grains (now hematite) and subtle green "wisps" (possible vitric material) set in a silty matrix. Core is mostly massive, however some definite bedding occurs e.g. at 11.5m 73°, 28.9m 75° and 56.8m 68° to LCA. Minor hematitic sandstone units occur e.g. 49.0-49.2m typically with sheared contacts. Prominent foliation developed throughout not parallel to bedding but marked by elongation of feldspars and thin bands of hematite e.g. at 12.0m 65°, 28.2m 62°, 37.6m 62° and 48.8m 55° to LCA.
				Alteration: Moderate hematitic alteration clearly overprinting the primary fabric forming stringers along the foliation cleavage. Locally unusual conglomerate-like texture developed with kernals 1-5 cm in size of weakly altered tuff "embedded" in a matrix of strongly hematitic material e.g. 50.0-52.4m. Common submetallic hematitic 'grains' occur throughout but appear to be secondary. No carbonate alteration positively identified although this may have been leached or weathered out. Pervasive supergene clay occurs throughout.
				Mineralization: No sulphides visible, only minor FeOx on some open fractures.
				Structure: Much core loss with common broken and rubbly core zones as follows: 6.0-11.4m, 13.5m, 22.6-25.5m, 26.1-26.3m, 37.0m, 43.5-43.7m, 52.5-53.4m, 57.2-57.5m,

ASSAY DATA (in p.p.m.)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
T3163	6.0	9.0	13	0.09	9	10	30	<1	350	7
T3164	9.0	12.0	68	0.07	7	12	36	<1	360	3
T3165	12.0	15.0	98	0.08	2	16	50	<1	440	6
T3166	15.0	18.0	58	0.08	6	86	38	<1	430	19
T3167	18.0	21.0	69	0.08	30	12	58	<1	630	3
T3168	21.0	24.0	82	0.08	115	20	125	<1	1040	8
T3169	24.0	27.0	47	0.03	70	18	68	<1	1420	9
T3170	27.0	30.0	86	0.06	70	30	29	<1	1340	11
T3171	30.0	33.0	34	0.02	155	24	62	<1	930	6
T3172	33.0	36.0	75	0.07	170	10	60	<1	1220	9
T3173	36.0	39.0	88	0.06	68	18	70	<1	1000	10
T3174	39.0	42.0	25	0.06	34	10	58	<1	1100	7
T3175	42.0	45.0	68	0.01	27	12	30	<1	1680	8
T3176	45.0	48.0	81	0.03	80	76	27	<1	1340	24
T3177	48.0	51.0	93	0.02	64	14	35	<1	1060	6
T3178	51.0	54.0	54	0.05	64	14	58	<1	1020	9
T3179	54.0	57.0	72	<0.01	48	28	60	<1	890	13
T3180	57.0	60.0	85	0.03	52	28	64	<1	770	12
T3181	60.0	63.0	29	0.03	17	16	58	<1	790	9
T3182	63.0	66.0	80	0.04	40	150	80	<1	620	28
T3184	66.0	69.0	12	0.09	52	18	64	<1	830	7
T3185	69.0	70.4	9	0.05	49	42	64	<1	710	35

NOTE: CHECK ASSAYING FOR GOLD IN HOLE SS.2A HAS SHOWN THAT THE ORIGINAL ASSAYING WAS INACCURATE. THIS CASTS DOUBT ON THE VALIDITY OF THE GOLD ASSAYS REPORTED FOR THIS HOLE.

GOLD FIELDS EXPLORATION PTY. LIMITED

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095

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2

Page: 2

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA (in p.p.m.) Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
				58.8-59.0m, 59.5-60.0m and 63.1-63.4m.											
				Possible fault zones, crushed core with clay pug											
				as follows: 20.2-20.4m, 33.5-34.1m, 46.2-46.4m and											
				major fault zone 65.0-70.4m; no orientation obtainable.											
				Petrology: 48.4m											
70.4	91.4	11.3	54	TUFFACEOUS SANDSTONE-CONGLOMERATE SEQUENCE											
				Predominantly pale green medium-coarse grained crystal rich											
				tuffaceous sandstone with minor siltstone beds. Down hole sequence											
				becomes lithic rich almost conglomeratic gritstone with rounded											
				clasts of volcanics and quartzite up to 2 cm in diameter e.g.											
				86.4m. Most of the core is made up of deformed feldspar crystals											
				with minor (but increasingly prominent down hole) quartz grains	T3186	70.4	73.4	100	0.03	11	20	50	<1	310	13
				up to 5 mm in size. Some bedding developed e.g. sandstone-	T3187	73.4	76.4	52	0.03	27	12	66	<1	620	5
				siltstone contact at76.4m 57° to LCA but is less distinct in	T3188	76.4	79.4	57	0.09	40	26	68	<1	670	7
				coarser grained units. Banding and well developed foliation	T3189	79.4	82.4	26	0.03	48	12	80	<1	670	11
				is prominent as in above sequence of tuffs viz. 71.8m 54°, 78.3m	T3190	82.4	85.4	21	0.03	74	20	135	<1	310	6
				53° and 87.8m 50° to LCA.	T3191	85.4	88.4	89	0.03	37	<4	72	<1	880	4
					T3192	88.4	91.4	46	<0.01	45	12	64	<1	1140	10
				Alteration: Moderately chloritic especially along fractures											
				and in bands (cf hematite in above sequence), possible											
				pervasive sericite now dominated by supergene(?)											
				clay. Scattered fine grained secondary(?) hematite											
				grains throughout but decreasing noticeably down											
				hole. No evident carbonate alteration.											
				Mineralization: Trace disseminated medium grained pyrite crystals											
				scattered throughout.											
				Structure: Much core loss with common broken and rubbly core											
				zones as follows: 70.8-71.0m, 77.0-77.2m, 78.8-79.2m,											
				79.8-80.0m, 88.5-88.7m.	NOTE: CHECK ASSAYING FOR GOLD IN HOLE SS.2A HAS SHOWN THAT THE ORIGINAL											
				Possible fault zones 73.6-73.9m and 80.4-85.6m.	ASSAYING WAS INACCURATE. THIS CASTS DOUBT ON THE VALIDITY OF THE GOLD											
				Petrology: 86.4m.	ASSAYS REPORTED FOR THIS HOLE.											

014098

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2

Page: 095

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
91.4	115.0	5.4	23	MAJOR FAULT ZONE IN TUFFACEOUS SANDSTONE
				Zone with major core loss and common clay pug and rubble with
				the strongest pug zone being at the base along the contact.
				Short sections of whole core are blocks of cream coloured medium
				grained tuffaceous sandstone made up of common feldspar crystals
				and dark flecks up to 5 mm long. No quartz is visible. The
				lithologies appear to belong to the above tuffaceous sequence.
				Minor bedding is preserved in some blocks e.g. at 97m 30° to LCA.
				Some dark grey pyritic shale blocks occur within this zone after
				109m. These rocks probably belong to the sequence below and
				have been torn up by the faulting.
				Alteration: The zone is marked by a major quartz with minor
				chlorite vein at the top of the section viz. 91.4-94.8m.
				Rest of the core (residual blocks in fault pug)
				appears to be weakly hydrothermally altered now
				predominantly supergene(?) clay. Minor FeOx after
				stringers of chlorite are preserved.
				Mineralization: Appears to be unmineralized, apart from minor
				disseminated pyrite in shale block.
115.0	145.8	19.7	64	SHALE-SILTSTONE-SANDSTONE SEQUENCE
				Major rock type change. Sequence of dark grey-black shale,
				light grey siltstone and medium grained sandstone. Several
				sedimentary cycles appear to be represented here each grading
				up hole (west facing) with a gradual increase in grainsize down
				hole then abrupt contacts between sandstone on top of black
				shale. Sedimentary units as follows:
				115.0-121.5m Contact sheared at 58° to LCA
				121.5-132.7m Contact irregular approx 77° to LCA
				From 136.4m sequence becomes monotonous buff coloured sandstone
				The arenaceous units appear to be clean well sorted sediments
				made up of feldspar, quartz and brown biotite with prominent
				dark grey shale chips. The argillaceous units are typically
				darker partly graphitic and usually thinly interbedded. Bedding
				e.g. at 119.3 47°, 129.4m 62° to LCA.

ASSAY DATA (in p.p.m.)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As
T3193	91.4	94.4	5	0.04	3	8	5	<1	10	4
T3194	94.4	97.4	30	0.03	7	40	47	<1	360	20
T3195	97.4	100.4	13	0.03	8	24	84	<1	410	15
T3196	100.4	103.4	50	<0.01	9	30	62	<1	420	10
T3197	103.4	106.4	10	0.02	17	42	68	<1	470	17
T3198	106.4	109.4	22	<0.01	24	52	82	<1	720	16
T3199	109.4	112.4	14	0.02	12	38	70	<1	620	35
T3200	112.4	115.0	82	0.04	15	88	185	<1	580	27
T3201	115.0	118.0	38	0.12	50	120	250	<1	450	43
T3202	118.0	121.5	79	0.05	19	20	36	<1	690	24
T3204	121.5	124.0	31	0.11	24	130	160	<1	240	60
T3205	124.0	126.5	25	0.05	88	215	295	<1	400	68
T3206	126.5	129.5	58	0.03	11	32	36	<1	880	21
T3207	129.5	132.5	54	0.02	7	20	43	<1	1040	6
T3208	132.5	135.5	70	0.03	26	18	47	<1	1240	8
T3209	135.5	138.5	100	0.02	14	12	40	<1	1160	3
T3210	138.5	141.5	89	0.02	43	10	56	<1	1380	9
T3211	141.5	144.5	100	<0.01	20	24	62	<1	1380	8
T3212	144.5	145.8	82	0.03	23	14	74	<1	1220	8

NOTE: CHECK ASSAYING FOR GOLD IN HOLE SS.2A HAS SHOWN THAT THE ORIGINAL ASSAYING WAS INACCURATE. THIS CASTS DOUBT ON THE VALIDITY OF THE GOLD ASSAYS REPORTED FOR THIS HOLE.

GOLD FIELDS EXPLORATION PTY. LIMITED

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097

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2

Page: 4

INTERVAL		RECOVERY		DESCRIPTION
From	To	m	%	
				Alteration: Appears to be quite weak apart from supergene clay.
				Minor quartz-chlorite vein at 131.2-131.6m.
				Mineralization: Dark shaley units are moderately pyritic mainly
				as syngenetic bands along bedding plans, mostly
				1-2% but up to 5% e.g. 115.0-117.0m, 121.5-126.3m.
				Structure: Much broken core due to weak cleavage sub parallel
				to bedding and depth of clay weathering.
				Broken rubble core zones: 121.5-126.1m, 134.3-134.5m.
				Possible fault related crush zones with clay pug:
				115.0-119.0m, 130.8-131.7m.
				END OF HOLE

ASSAY DATA (in p.p.m.)												
Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As		

Sample Number : T 2613 (SS2 48.4m)

Identification : Foliated sericitic and siliceous pelite with porphyroblasts of hematite and apatite

Description :

The sample is a drill core specimen of fine grained rock with a well developed finely lenticular foliation inclined at about 60° to the core axis. Parts of the sample are medium grey but one concordant band, about 18mm thick, and another discordant band, at least 20mm thick, is bleached or pigmented to greyish orange pink. Throughout the specimen there are tiny specks of dark hematite.

A staining test revealed no K-feldspar.

In thin section the dark part of the sample is seen to consist mainly of strongly foliated sericite. Fine, anhedral quartz, about 0.01 to 0.03mm in grainsize forms vague patterns between lenses of sericite up to 5mm long. The pattern appears likely to have been produced by interaction between siliceous laminations and an acutely intersecting sericitic foliation.

Hematite occurs as many disseminated tiny specks (less than 0.01mm) and as sparse, equant subhedral porphyroblasts, about 0.1 to 1mm in size. Such grains have strain shadows of sericite and are weakly magnetic.

Apatite also occurs as porphyroblasts with strain shadows of sericite. The grains are subhedral stumpy prisms, about 0.1 to 0.4mm long. The cores are faintly mauve and contain tiny dark inclusions parallel to the C axis; there are thin clear overgrowths. Some crystals are interlocked with hematite.

There are a few small lenticular, skeletal or cellular aggregates (up to 1mm) of leucoxene, of unknown significance.

An approximate mode is :

70-80%	sericite
15-20%	fine quartz
3-4%	disseminated fine hematite
2-3%	porphyroblasts of hematite
0.4-0.6%	porphyroblasts of apatite
0.1%	aggregates of leucoxene

The paler regime contains less hematite and faint limonitic pigmentation.

Comments and Interpretations :

It seems likely that this rock originated as finely laminated pelite, composed of clays, fine silica or quartz and disseminated iron oxides and phosphates. During diagenesis small porphyroblasts of iron oxide and apatite formed. Then the rock experienced low grade dynamothermal metamorphism, producing abundant foliated sericite and blurring the original laminations. Inhomogeneous leaching has removed some of the iron oxide, resulting in bleached zones.

The oxide porphyroblasts are now hematite, but their weak magnetism and equant subhedral shapes are suggestive of former magnetite. Perhaps the sediment had some similarities to a banded iron formation.

There are no suggestions of any carbonate.

Sample Number : T 2614 (SS2 86.4m)

Identification : Chloritic, foliated, volcanolithic arenite

Description :

The sample is a greenish grey, drill core specimen with a metamorphic foliation inclined at about 60° to the core axis. Well displayed remnant primary textures involve stretched sand and pebble sized clasts, ranging up to about 25mm.

A cobaltinitrite staining test revealed that many of the clasts are rich in K-feldspar.

In thin section the sample is seen to consist of densely packed, stretched, poorly sorted lithic clasts and subordinate mineral clasts set in a foliated chloritic matrix. The clasts are subangular to subrounded and about 0.2 to tens of millimetres in size.

The largest, hardest and least deformed clasts are porphyritic rhyolite, with sparse phenocrysts (up to 1mm) of quartz, completely chloritized biotite and partly chloritized plagioclase set in an allotriomorphic groundmass of mainly K-feldspar and quartz. Other lithic clasts include porphyritic trachyte and porphyritic andesite (with and without primary magnetite) both with varied textures and modes. Mineral clasts include lightly sericitized and chloritized, twinned plagioclase, minor quartz and magnetite (partly altered to leucoxene and sphene) and traces ofchlorite and orthoclase. The foliated matrix consists of chlorite and minor sericite and sphene.

An approximate mode is :

45-50%	clasts of trachyte
10-15%	clasts of rhyolite
10-15%	clasts of andesite
5-7%	clasts of feldspar, mainly plagioclase
1-2%	clasts of quartz
0.5-1%	clasts of magnetite (partly altered to leucoxene and sphene)
0.2-0.3%	clasts of chlorite
15-20%	matrix chlorite
2-3%	matrix sericite
0.1%	matrix sphene

Comments and Interpretations :

This sample is regarded as a volcanolithic arenite formed by rapid aqueous transport and deposition of lithic clasts and subordinate mineral grains derived from lavas which were dominantly trachyte but included some rhyolite and andesite. Incipient dynamothermal metamorphism has stretched the clasts and rendered the matrix chloritic and foliated. It seems unnecessary to invoke hydrothermal processes to explain the chloritization.

The disseminated opaques in t he rock are magnetite as primary components of the andesitic clasts and as derived detrital mineral clasts.

014101

099

HOLE NO : SS.2A
STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

PROJECT	EL9/66 TYNDALL
DESIGNED BY	C.F.D. PEASE
LOGGED BY	F.G. FITZGERALD
COMMENCED	10.3.86
COMPLETED	18.3.86

PURPOSE

To complete hole SS2 (abandoned due to drilling difficulties) to test the gold in bedrock geochemical anomaly and intersect the Owen Conglomerate contact beneath hole SS1

LOG SUMMARY	132.0 - 182.6m	Black shale - dark siltstone - massive sandstone sequence possibly part of upper Owen Conglomerate, weakly altered.
GENERAL COMMENTS	182.6 - 206.7m	Owen Conglomerate

ASSAY SUMMARY

INTERVAL From	INTERVAL To													COMMENTS
														NOTE: CHECK ASSAYING FOR GOLD IN SOME SAMPLE
														OF THIS HOLE HAS SHOWN THAT THE ORIGINAL
														ASSAYING WAS INACCURATE. THIS CASTS DOUBT ON
														THE VALIDITY OF THE GOLD ASSAYS REPORTED FOR
														THE OTHER SAMPLES.

LOCATION

NORTHING	5325524.8
EASTING	380564.0
R.L.	194.2
GRID	AMG
LENGTH	206.7m

HOLE CONDITION

SIZE	
Hole Size	Depth
HQ (SS2)	15.0m
NQ (SS2)	132.0m
BQ (SS2A)	206.7m

SIGNIFICANT CORE LOSS INTERVALS		
From	To	% Lost

POOR GROUND CONDITION ZONES		
From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

BQ drilled through NQ rods and barrel (hole SS2) which was stuck at 129.0m. NQ cut at 90.0m leaving 36m NQ rods and barrel in hole. BQ and HQ rods all recovered. PVC pipe (32 mm) inserted to end of hole (206.7m).

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

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total	SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total
132.0m	See SS2 log						86.3												
176.5m	078°	-51°	132.0	176.5	44.5	34.6	51.7	28.0	28.0										
206.7m	078°	-49°	176.5	206.7	30.2	22.8	28.9	19.8	47.8										

014102

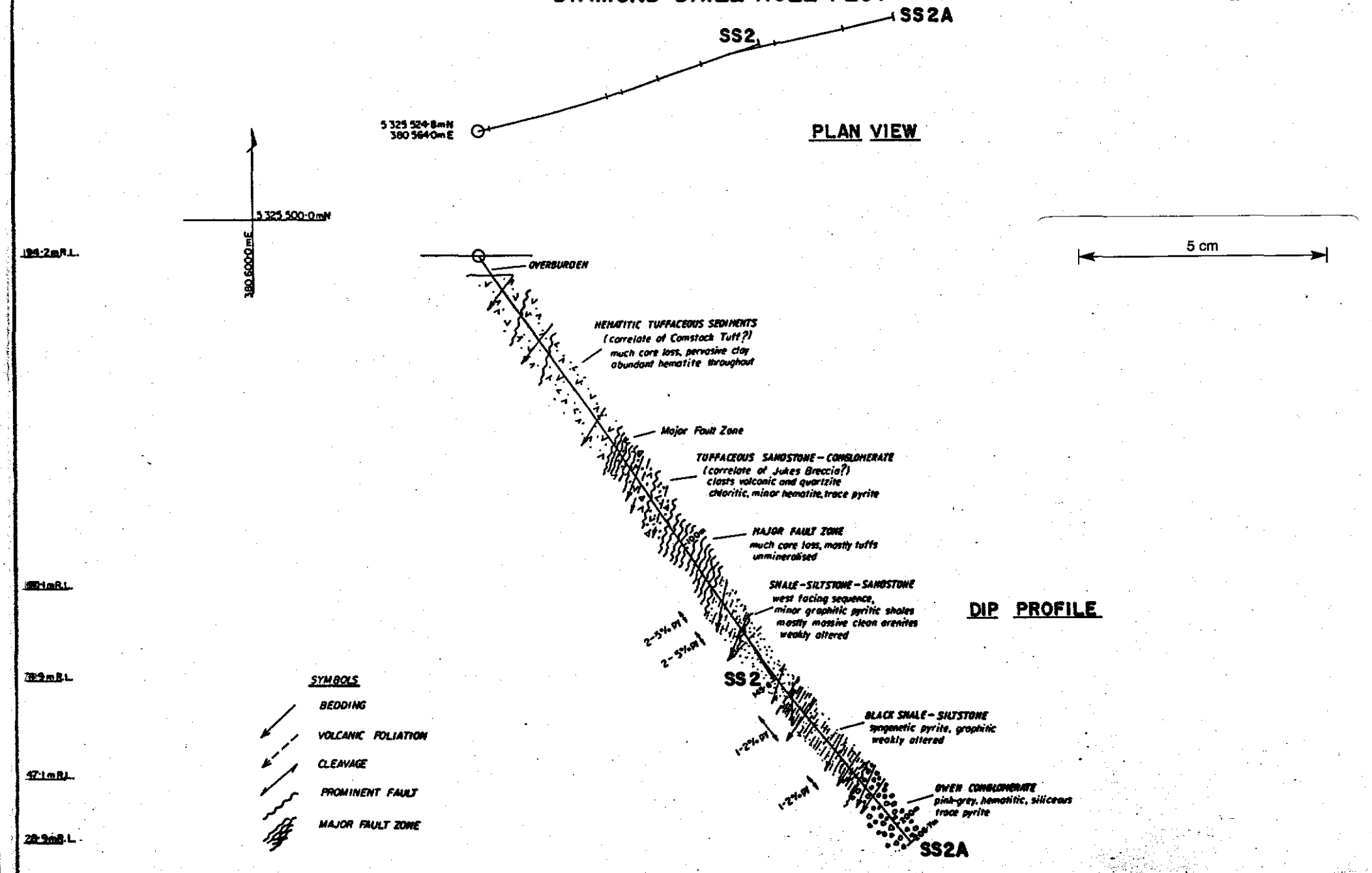
PROJECT: **TYNDALL** HOLE NO.: **SS 2 / SS 2A**

GOLD FIELDS EXPLORATION PTY. LIMITED

DIAMOND DRILL HOLE PLOT

SCALE 1: 20 10 0 20 40 METRES

100



014103

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2A

Page: 1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As		CHECK ASSAYS Au
									ASSAY DATA (in p.p.m.)								
132.0	150.2	18.5	100	MASSIVE SANDSTONE SEQUENCE													
				NB cement forms wedge in core from whole core at 132.0m to zero													
				at 141.2m.													
				Predominantly a uniform fine-medium grained buff coloured massive													
				sandstone sequence with minor darker siltstone units in upper													
				part of sequence. Units appear to be uniformly graded up hole													
				(i.e. west facing). The sandstone is predominantly a clean													
				well sorted arenite made up of feldspar-quartz-brown biotite													
				and dark shaley grains giving a sub-greywacke appearance in													
				coarsest units down hole. The biotite appears to be quite fresh	T3213	141.5	144.5	100	0.02	25	8	68	1	1320	11		
				up to 2 mm in size and may be secondary. The dark shale clasts	T3214	144.5	147.5	98	0.02	24	26	86	1	1180	8		
				are rarely up to 2 cm long but define a prominent foliation	T3215	147.5	150.2	98	0.03	38	28	80	1	1160	22		
				along elongate axis e.g. at 148.6m 58° to LCA.													
				Alteration: Appears quite weakly altered. Rare clay-sericite													
				(after carbonate?) veinlets. Supergene clay throughout.													
				Mineralization: No sulphides visible.													
				Structure: Minor broken core, probably related to drilling													
				off wedge.													
150.2	182.6	29.2	90	PYRITIC DARK SHALE-SILTSTONE SEQUENCE													
				Dark grey to black shale and siltstone finely bedded sequence.	T3216	150.2	153.2	70	0.03	45	420	1440	1	460	82		
				Upper contact is sharp sedimentary at 70° to LCA. Minor coarser,	T3217	153.2	156.2	92	0.02	49	230	490	1	470	50		
				possible tuffaceous or poorly sorted greywacke units occur as	T3218	156.2	159.2	89	0.04	39	120	260	1	580	40		
				thin sharply banded beds within the sequence e.g. 153.7 15 cm	T3219	159.2	162.2	91	0.08	32	62	135	<1	690	26		0.008
				thick, 156.6-156.85 (upper contact sheared at 42°, lower contact	T3220	162.2	165.2	90	0.09	16	24	56	1	1060	10		<0.008
				irregular at approx 65°) and 159.2m 10 cm thick. These units	T3221	165.2	168.2	90	0.13	17	34	76	1	870	15		0.008
				are made up of abundant feldspar grains, and lithic chips of	T3222	168.2	171.2	100	0.07	34	62	155	1	580	15		<0.008
				pale and dark shales and siltstones. The main shale-siltstone	T3224	171.2	174.2	93	0.10	62	170	305	2	360	76		0.008
				sequence is well bedded e.g. at 153.0m 40°, 157.8m 75°, 171.5m 66°	T3225	174.2	177.2	87	0.11	20	52	70	1	410	16		<0.008
				and 178.4m 75°, however intraformational folding is common espec-	T3226	177.2	180.2	88	0.09	48	115	135	1	370	66		<0.008
				ially 155.6-159.0m. The true black shale units are moderately	T3227	180.2	182.6	93	0.09	78	115	165	1	650	140		<0.008
				graphitic e.g. 150.2-160.7m, 173.1-174.8m and 179.0-181.5m.													
				The lower contact with the conglomerate is marked by a pale													
				buff coloured relatively hard siltstone from 181.6-182.6m.													
				This contact appears not to be a major structure.													

GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: E.L.9/66 TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SS.2A

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INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba	As		CHECK ASSAY Au
									ASSAY DATA (in p.p.m.)								
				Alteration: Appears to be quite weakly altered. Scattered quartz-													
				chlorite veins occur in places.													
				Mineralization: Moderately pyritic predominantly in the black													
				shale units with both fine grained syngenetic bands													
				along bedding planes and scattered framboids up													
				to 2 cm in size e.g. 172.8-174.0m. Some pyrite													
				is associated with quartz-chlorite veins. Estimate													
				total sulphide is 1-2%.													
				Structure: Moderately broken core mainly along bedding/cleavage													
				partings. Main broken/crush zones as follows:													
				152.2-152.4m, 160.0-160.5m, 177.6-178.3m, 181.3-181.5m,													
				182.3-182.4m.													
182.6	206.7	23.6	98	OWEN CONGLOMERATE													
				Predominantly pink siliclastic massive conglomerate sequence													
				with only minor sandstone (quartzite) units. Minor bedding in	T3228	182.6	185.6	93	0.07	18	<4	20	1	150	7		<0.008
				finer units e.g. at 185.6m 65°, 187.8m 77° to LCA. Locally	T3229	185.6	188.6	97	0.10	21	38	10	1	100	13		<0.008
				sequence is grey apparently intensely siliceous after sandstone	T3230	188.6	191.6	98	0.09	16	<4	4	1	65	2		<0.008
				beds e.g. 182.6-187.0m and 199.3-201.3m. Mostly sequence is	T3231	191.6	194.6	100	0.19	18	<4	4	<1	20	<2		<0.008
				typical Owen Conglomerate.	T3232	194.6	197.6	100	0.12	22	4	8	1	50	3		<0.008
					T3233	197.6	200.6	94	0.10	16	4	7	<1	15	2		<0.008
				Alteration: Pervasive silicification and hematitic alteration	T3234	200.6	203.6	98	0.10	11	6	7	<1	25	3		<0.008
				of matrix. Some clasts/cobbles are strongly hematitic	T3235	203.6	206.7	98	0.12	16	22	7	<1	20	7		<0.008
				Very minor chlorite-quartz veinlets occur 182.6-185.2m.													
				Mineralization: Very minor coarse grained pyrite concentrated														
				along fractures e.g. 186.8-188.8m.													
				Structure: Only weak joints and fractures.													
				END OF HOLE													

APPENDIX C

GEOLOGICAL NOTES

ON

WEST QUEEN, TOFFT, SNAKE SPUR & FLANNIGANS

BY

R.A. POLTOCK

WEST QUEEN LINES 33, 42 N

SUMMARY

No significant mineralization alteration or signs of previous prospecting were located during "Wacka" sampling.

LITHOLOGIES

1. Quartz feldspar hornblend porphyry

   On 33N this unit is massive with medium grained phenocrysts set in a fine pink groundmass. A porphyry interpretted to be the equivalent, on 42N is foliated and sericitized with only quartz phenocrysts apparent.

   These porphyries are interpretted to be shallow intrusives or extrusives:

   (a) Western contact with sediments on 33N is brecciated, chloritized and contains some lithics.

   (b) Sediments immediately west of the contact are quartz rich, the porphyry being the probable source of quartz grains, indicating a west facing.

   (c) No apparent intrusive aureole.

2. Volcanic derived sediments

   A sequence of massive to poorly bedded, fine to medium grained rock, interpretted to be a tuffaceous sediment. Minor black pyritic shale lenses outcrop at 33N 280-930E.

3. Ignimbrites

   Within the sedimentary sequence there is a horizon of fine to coarse grained felspar phyric volcanics. This unit is interpretted to be an ignimbrite on the basis of:

   a) little evidence of reworking.

   b) abundant chloritized lithics, which may have been glass or pumice.

ALTERATION AND MINERALIZATION

All lithologies are massive, unaltered excepting the foliated and sericitized quartz porphyry on 42N 1160E.

Minor pyrite was located in shale lenses at 33N 880-930E.

Quartz veining is common, particularly in the fine grained sediments; there is no specific orientation for veining. These veins have shed a quartz lag layer in soils up to 2 m thick.

R.A. Poltock

May, 1986.

TOFT LINES 41N, 48N

SUMMARY

The only mineralization located during "Wacka" sampling was several small chlorite magnetite alteration pods on 48N 1200-1260E.

Sample coverage of Line 41N was incomplete due to a veneer of glacial cover.

LITHOLOGIES

1. Felsic volcanics - ignimbrites?

   These outcrop extensively on 48N, fine to coarse grained, feldspar rather than quartz rich. The unit has been subdivided on the following basis:-

   - 1000 - 1090 E coarse grained volcanic lithics < 75 mm
   - 1090 - 1260 E fine grained, even granular texture with chloritized lithics? < 1 mm
   - 1260 - 1400 E similar to above but weakly chloritized.

2. Jukes Conglomerate?

   The conglomerate probably occurs along all of 41N (glacial cover), excepting eastern end where it is apparently conformably overlain by Owen Conglomerate. Typically the unit is medium-coarse grained (tuffaceouss sandstone - conglomerate) composed of poorly sorted volcanic detritus.

3. Owen Conglomerate

   Boulder to pebble conglomerate with sandstone interbeds.

STRUCTURE

A synclinal structure in Owen and Jukes Conglomerate is interpretted between Mt. Huxley and the Owen outcrops on eastern end of Line 41 and 48N. There may also be some fault displacement associated with this structure which strikes NNW.

MINERALIZATION

1. Chlorite magnetite - Occurring as pods only a few metres long, lying within a steeply dipping foliation, located on 48N between 1200-1260E. 50 m north of the line this mineralization has been prospected by shallow pits (sampled 1983-84 field season).

2. Detrital gold associated with quartz and specular hematite occurs in alluvial workings located at 41N 1550E. No mineralization was detected in this area, but veining shedding this gold and hematite could be hosted in fractures associated with the interpretted synclinal structure.

R.A. Poltock

May, 1986.

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SNAKE SPUR GEOLOGY - 1985/86 GRID DATA

LITHOLOGIES

1. Owen Conglomerate

Forms the spine of Snake Spur and outcrops to the north in the Thomas Currie Rivulet. Apparently faulted contact along western margin but no evidence of major disruption in outcrop.

2. Volcaniclastics

Both fine grained shales and siltstones and coarse grained volcaniclastic conglomerate-breccia. The former appear to increase in abundance towards the north from line 3450N on. The coarser units are quartz-phyric and typically hematitic (Jukes Formation?).

3. Ignimbrites

Medium grained feldspar-phyric with lithics <25 mm quite common. Quite extensive over the southern part of the grid. Local finer (ash) beds exposed.

4. Rhyolitic Lavas

Fine grained feldspar-phyric mostly massive lavas which form an elongate body in the south west and south east of the grid and a smaller narrow body at the north eastern part of the grid. Frequently contain chloritized phenocrysts. Typically pink-red hematitic altered in proximity to Owen Conglomerate. Columnar jointing occurs in lavas exposed towards the north, with associated flow banding.

5. Quartz-Phyric Volcanics

Medium grained prominently quartz>feldspar-phyric volcanics exposed along the eastern margin of the grid, forming the Currie-Garfield divide. Typically fresh quartz and feldspar phenocrysts in fine glassy groundmass. Frequently foliated and altered to quartz-sericite schist.

MINERALIZATION

Minor pyritic lenses in sericite schist located at 2400N/2750E and 4000N/2750-2800E. Minor pyrite associated with finer grained volcaniclastics. Only old prospect located was alluvial workings and trench in small stream at 2800E 4000N-4200N.

R.A. Poltock

December, 1985.

FLANNIGANS GEOLOGY - 1985/86 GRID DATA

LITHOLOGIES

1. Tertiary-Recent

Gravels and scree cover derived from micaceous quartzite and conglomerate. Quite extensive over south west section of grid and not penetrated by wacker.

2. Owen Conglomerate/Eldon Group

Micaceous quartzite, pebble conglomerate and minor phyllites. Forms the western margin of the grid. Contact with the Cambrian Volcanics is north trending which is parallel to trends within the volcanic units. However strike trends in quartzite are north west - indicating a faulted or unconformable contact.

3. Epiclastics

Fine-medium grained volcanic derived siltstone and shale. Usually occurs adjacent to quartzite/conglomerate. Also major belt exposed in Flannigans Creek east of the grid.

4. Volcaniclastics

Medium-coarse grained volcaniclastics forming a central belt within grid area. Some primary pyroclastics other outcrops show varying degrees or reworking.

MINERALIZATION

Only mineralization located is limited to minor pyrite (1%) in silicified and sericitized volcaniclastics. All alluvial prospects confined to present stream channels usually in proximity to the base (edge) of the extensive gravel cover. Note bedrock sampled in proximity to gravel contact may have alluvial gold contamination - these sites noted in sample book.

R.A. Poltock

December, 1985.

APPENDIX D

GEOPHYSICAL INTERPRETATION REPORTS

BASIN LAKE T.E.M. SURVEYS by DR. J.R. BISHOP

ZIG ZAG HILL SIROTEM SURVEY by G. STALTARI

DOWN HOLE E.M. SURVEYS LS10, LS13, HX1 AND SS2/2A by DR. J.R. BISHOP

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INTERPRETATION OF FIXED-LOOP, TIME-DOMAIN ELECTROMAGNETIC SURVEYS ON THE BASIN LAKE & EAST TYNDALL GRIDS (E.L. 9/66).

for

Gold Fields Exploration Pty Ltd

by

Dr J.R. Bishop

GF/MG86/04
June, 1986.

CONTENTS

LIST OF TABLES AND FIGURES

This report was prepared as an appendix to the report by FitzGerald and Cartwright (1986). The figures referred to here, belong to that report.

SUMMARY

Time-domain, electromagnetic surveys were carried out in the 1985/86 field season over prospective areas of the Basin Lake and East Tyndall grids. One specific anomaly has been recommended for further investigation. The details of this target, together with recommendations for drilling of possibly associated IP responses (defined by earlier surveys) are given in Table 1.

INTRODUCTION

The Basin Lake and East Tyndall grids cover a belt of the Mt Read Volcanics to the west of the Great Lyell Fault, some 10 to 15 kms north of Queenstown. Both grids were originally surveyed in by the Mt Lyell Mining & Railway Co during that company's exploration of E.L. 9/66 in the 1960's and 1970's. The E.L. was reduced in size and divided into four separate areas in 1984. This excluded sections of the two grids from the E.L.

Prospective areas of those parts of the grids remaining within E.L. 9/66 have been surveyed with fixed-loop, time-domain electromagnetic (TEM) surveys. Most of the area was covered by the UTEM system, but one zone of interest was covered with SIROTEM. This report interprets the results from these TEM surveys and integrates them with the previous geophysical surveys.

EXPLORATION TARGETS AND GEOLOGIC SETTING

A stratiform, volcanogenic massive sulphide (VMS) deposit similar to the nearby Rosebery and Hellyer orebodies is the prime target, however the area is also considered to be prospective for Mt Lyell-type copper bodies and volcanic-hosted gold deposits. The area immediately to the north of the lease boundary (Howard's Anomaly) contains some interesting silver values.

The TEM surveys were carried out to detect a VMS body. The rocks considered to be prospective hosts for such a deposit are a sequence of 'Central Sequence' pyroclastics which extend the length of the licence (labelled 'Sulphide Facies' on Figure 3), plus some pyritic areas within andesitic volcanics further to the west. Both sequences strike approximately north-south and have a near-vertical dip.

The southern half of the 'Sulphide Facies' and parts of the andesitic sequences are covered by glacial moraine and recent alluvium. While this is thought to be mostly a thin veneer (no more than a few metres thick), it thickens southwards until it reaches the Basin Lake terminal moraine which is probably more than 100m thick.

There are no old workings or prospects within the surveyed areas, however there are some areas of known mineralisation (eg, the Leech Hill and Bradshaw's Rd Pyrite Zones). There are also a number of graphitic shale lenses, some of which may be expected to respond to TEM.

EXPLORATION HISTORY

The East Tyndall area was first explored by Rio Tinto in the late 1950's when sections were surveyed with Turam, magnetics and gravity. In 1967 the whole of the East Tyndall area was covered

with regional dipole-dipole IP for Mt Lyell. The anomalous zones were surveyed with more detailed surveys in the following year. Since that time, various parts of the grid have been covered with gradient array and dipole-dipole IP (which mostly confirmed the earlier work) and some horizontal EM (mostly GENIE, which found nothing).

The Basin Lake area was first investigated by Pickands Mather in the early 1970's when IP and Turam surveys were carried out. This area was subsequently pegged by Mt Lyell and incorporated into E.L. 9/66. Various gradient array, pole-dipole and dipole-dipole IP surveys have been carried out and these have defined a number of anomalies. GENIE surveys over selected lines recorded no responses.

Both grids have been covered with airborne and ground magnetics, but there has, as yet, been no serious attempt to equate the results to the geology (and this report is no exception)*.

An evaluation of all of the geophysical surveys carried out over both grids up to October 1981 has been carried out by Bishop (1982) and an up to date listing of all surveys is given by FitzGerald and Cartwright (1986).

Eleven drill-holes have been sited on the areas covered by the TEM. Some of these, largely sited on IP anomalies, intersected black shales (DDH's BL801; BL2; BL4; TYN1; TYN2 & TYN3) or pyritic zones (DDH LH1). BL802 intersected a zone of promising base metal values, but a follow-up hole, BL1, showed no improvement. As well as black shales, BL4 also intersected a zone of massive to semi-massive pyrite. BL5 was drilled to test the along strike extension of this zone, but no significantly better base metal values were obtained. The remaining hole, BL3, was (unsuccessfully) drilled to test for a southern extension of the silver-bearing hematite-carbonate horizon at Howard's Anomaly.

SURVEY DETAILS

The UTEM survey was carried out by Lamontagne Geophysics in November, 1985 (with some repeat readings in March, 1986). This survey covered the eastern side of the Basin Lake and East Tyndall lines and the Bradshaw's Rd Pyrite Zone.

The Basin Lake grid is still pegged at the original 100ft spacing and this interval was used for the UTEM survey. The East Tyndall

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* Although the target VMS deposit is unlikely to be magnetic, it is quite possible that (?)subtle magnetic signatures could be correlated with zones of alteration. It is also possible that processing of detailed and sensitive magnetics could be used to aid mapping. Before such an analysis can be made, a study of the responses around known and exposed 'type' alteration/mineralisation and outcrop is required.

grid (including Bradshaw's Rd) has been repegged at 25m and this interval was used for this section of the survey.

Transmitting loops 1500m x 1000m were used to energise the ground and traverses up to 800m long were made away from the loops. A high voltage power line running along the eastern edge of the East Tyndall grid and through the Basin Lake grid, severely reduced the data quality in places.

The UTEM survey was carried out at a base frequency of 26Hz (ie, recording over the time range 0.05 to 13msecs) and only the vertical component was recorded.

The Leech Hill Pyrite Zone (within the Basin Lake grid) was surveyed with SIROTEM by Solo Geophysics in May, 1986. A 100ft station spacing was used. A 600m x 300m transmitting loop was used, with traverses up to 1100m from the loop edge (with apparently little reduction in data quality). The eastern end of line 30S was also surveyed to allow comparison of the two TEM systems.

The SIROTEM survey was carried out using the early time-base and data was recorded out to channel 16 (ie, recording over the time range 0.05 to 2msecs) and again, only the vertical component was recorded.

The UTEM survey recorded a number of responses and these have been plotted, together with the coverage on Figure 10. The SIROTEM survey detected no anomalies over Leech Hill, but it confirmed (less obviously) the two responses recorded by UTEM on line 30S. Also shown on Figure 10 is the location of the power line mentioned above. Since this does not coincide with the centre of the unsurveyed sections of lines 54S to 36S, positional errors of up to 100m are indicated.

INTERPRETATION

The UTEM survey defined ten anomalous zones which have been labelled alphabetically (from north to south) in Figure 10. Single-line, and some weak two-line, responses have not been labelled.

Five of the zones (A; F; H; G & J) can readily be correlated with black shales. The northern end of zone C also passes over a black shale horizon and this may be extrapolated through to zone G. Zone D is a long, weakly anomalous zone, typical of a lithological contact or poorly conducting fault. The weak, two-line responses to the north can probably be correlated with 'D'. The causes of the remaining three zones, B; E & I, are not known.

Zone B contains the most promising anomaly recorded by the TEM surveys (at 14.5N/585E). At its northern end, the zone is near, but not coincident with, the dipole-dipole IP anomaly on line 16N recommended as a drill target by Bishop (1982). At its southern end, zone B is near, but not coincident with, a pronounced charg-

eability anomaly (anomaly number 3 in Figure 11), the source of which is unknown. The lack of coincidence between the IP and TEM is unlikely to be due to positional errors, at least at the southern end of 'B', since the UTEM anomaly here is coincident with the lower resistivity values (less than 1000 ohm-m, see Figure 12) which are offset from the chargeability high.*

'E' is a short anomalous zone, defined by two weak, early-time responses. Its only interest lies in its apparent association with a well-defined chargeability anomaly (number 5 in Figure 11). The responses defining zone E are unlikely to be due to massive sulphides.

Zone I is defined by two similarly weak, early-time responses. The interest in this zone lies in its proximity to DDH BL1, which has the highest base metal intersections recorded in the surveyed area. The UTEM profiles for lines 90S and 95S both suggest the possibility of a broad response for channels 6, 7 & 8; however replotting on an expanded scale (not shown here) indicates that this is not the case and that the responses are due to separate, shallower and weaker sources (the western ones being part of zone H which is ascribed to black shales). Again, these are unlikely to be massive sulphides.

The potential of the anomaly at 14.5N/585E in zone B largely depends upon whether the response extends to channel 4 (#4). There is no response on #5 (?because of noise) and the low-amplitude apparent response on #4 is offset (?migrated) to the west. (None of the earlier channels show any migration.) If #4 is not a genuine response, then the anomaly is restricted to early times (#9 to #6) and is of much less interest.

If the #4 response is accepted, then the following interpretation can be made. The causative body has a strike length of perhaps 1km (with poorer electrical properties to the north and south). It has a near-vertical dip; perhaps steeply to the west and a depth to the top of the body of around 50m. A limited depth extent is indicated, but this parameter is poorly resolved (too close to the end of the line). The time constant is poorly determined, but a value of less than 1msecs is indicated (0.6msecs being calculated)@. Thus if the source is a thin tabular body, it may have a conductance between 3S and 50S#. (The Que River deposit probably has a conductance within this range.)

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* The IP and UTEM surveys were conducted over (largely) the same grid lines, but these were repegged in metric units before the latter survey.

@ The usual definition of time constant being used (eg, Buselli et al, 1985), rather than that defined in the UTEM manual (Macnae, 1985).

The former calculated from the UTEM manual using a strike length of 1000m (a shorter length giving a higher conductance) and the latter from Svetov's formula (eg, Gallagher et al, 1985) assuming a depth extent of 100m (a lesser extent again giving a higher conductance).

Thus the interpretation gives us parameters which allow for some optimism (given the initial optimism in accepting the channel 4 response). Against this, is the complete lack of response from a 50m dipole-dipole IP survey on line 15N, 150m to the north (see Bishop, 1982) and from a 300ft dipole-dipole IP survey on 14N, 150m to the south (Hallof, 1967): along-strike UTEM responses being interpreted on both of these lines. (IP responses from the black shales occur further to the west on both of these lines.) On line 16N, the anomalous TEM zone B passes some 75m to the east of a well-defined and untested IP anomaly recommended for drilling by Bishop (1982). At the southern end of the zone, the interpreted responses are close to the ends of the traverses and they are affected by noise from the power line. However, they almost certainly lie to the west of an untested anomalous chargeability zone (no. 3; Figure 11) which has associated prospective base metal values from soil and rock geochemistry.

From the above, it would appear that the IP and TEM anomalies have separate sources. There are two prospective IP anomalies (one best developed on line 10.5N; the other on line 16N) and the 'best' TEM response occurs in between, at 14.5N. In Table 1, all three sites are listed as potential drill targets, but input from geology and geochemistry is required to give an order of priority and to prevent possible over-testing of this area.

Line 30S was surveyed by both UTEM and SIROTEM. The former gave a pronounced response over the black shales and a very weak response further to the east, which may be an offset of the zones C & G. The latter, with a much smaller loop*, gave lower amplitude responses. Neither system responded to the zone of semi-massive to massive pyrite intersected by BL4 beneath 6550E. ('Responses' occur on channels 5 & 3 in the UTEM data at the right location, but these can only be seen with the advantage of prior knowledge.) It is recommended that conductivity measurements be made on some samples of BL4 core, since barren sulphides such as these might well be a lead-in to a VMS deposit.

RECOMMENDATIONS AND CONCLUSIONS

The UTEM survey has defined one potentially prospective anomaly. However there are a number of conflicting factors associated with it. The negative factors are: (1) there are no IP anomalies on the adjacent lines and (2) the whole of zone 'B' lies along the axis of a 'trough' of glacial material. Thus zone B may well be due to electrolytic conduction within unconsolidated sediments. The positive factors are: (1) the high base metal

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* Transmitting loops of large dimension will give an enhanced response to lithological features such as faults and black shale horizons. The SIROTEM results were plotted logarithmically (as is usually done by SIROTEM operators to cover the large range of response amplitudes): such plots normally enhance any subtle responses.

soil and rock chip values in the area and (2) the (interpreted) favourable lithology.

The IP anomaly at 16N/250E provides a more definite target at the northern end of the prospective area.

The high resistivity values (5000 +/- 2000ohm-m) coincident with the chargeability high at the southern end of this area (ie, at the eastern ends of lines 10.5N to 12N) indicate that the IP responses are not due to massive sulphides, however this region could not be surveyed with TEM (because of the power line) and a VMS deposit beneath a halo of disseminated sulphide is a possibility.

J.R. Bishop
June, 1986.

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Table 1

Summary of Recommendations

following the 1985/86 TEM surveys of the
Basin Lake & East Tyndall Grids.

Drill Targets (in geographic order).

* Dipole-dipole IP anomaly at 16N/250E.

* UTEM anomaly at 14.5N/585E.

* Beneath gradient array IP zone 10.5N/1100E to 12N/1000E.

Note. Three holes (one for each target) are not necessarily recommended for these possibly associated responses. The number of holes and order of priority to be decided from the geology and geochem.

Further Work.

* DHEM survey down BL4 (and conductivity measurements on the core).

* DHEM survey down BL1.

* Geochemical/geological assessment of IP zone 5
n.b. The pyrite zone intersected by BL4 has been tested to the south by BL5. It has not been tested to the north. Could a drill hole be sited to test zone 5 and a possible northern (?plunging) extension of the BL4 mineralisation?

Note.

The advent of down-hole EM systems capable of looking 100m-150m away from the hole (for 'ore-sized' bodies) means that drill holes no longer have to be sited onto a precise target. The drilling of prospective zones or areas should now be a more attractive approach to exploration.

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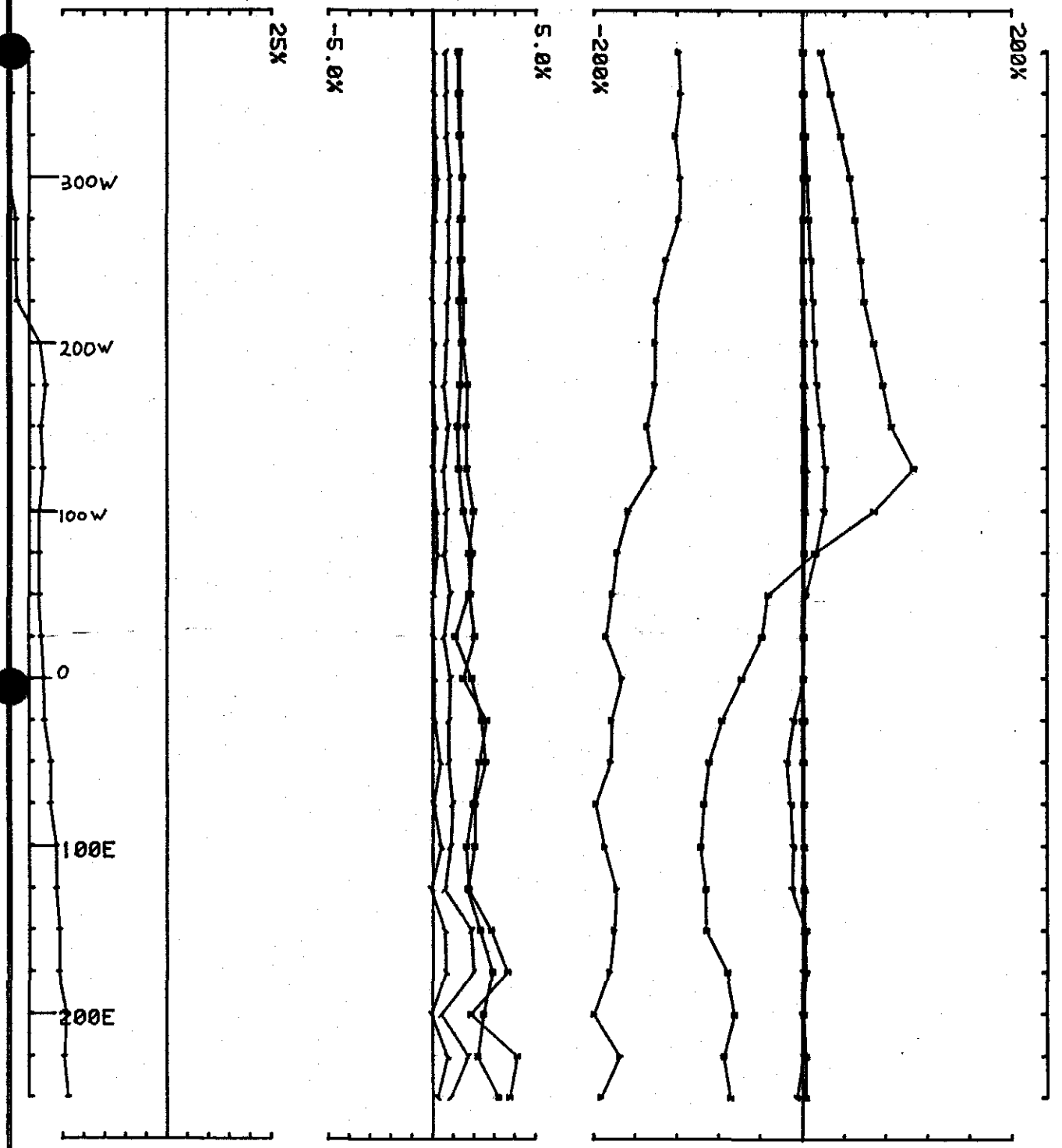
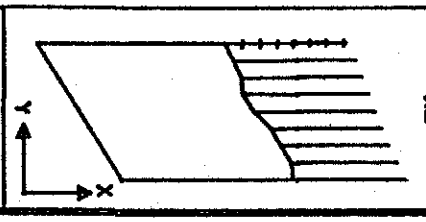
121

014123



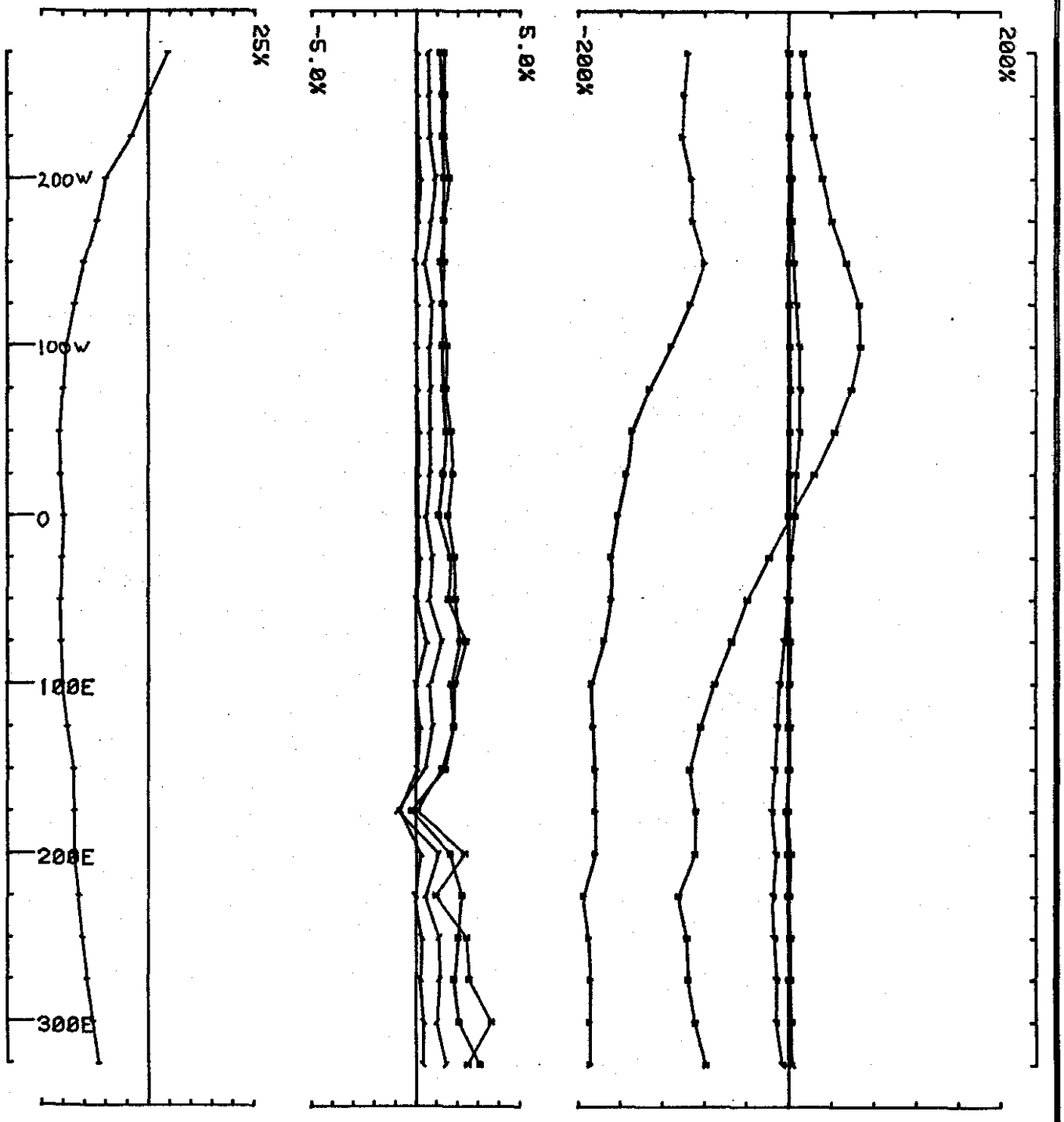
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 18 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



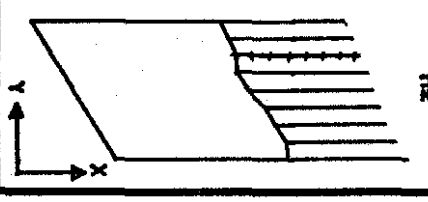
Basin Lake
LOOP 8001
LINE 18 N
Hz

122

014124



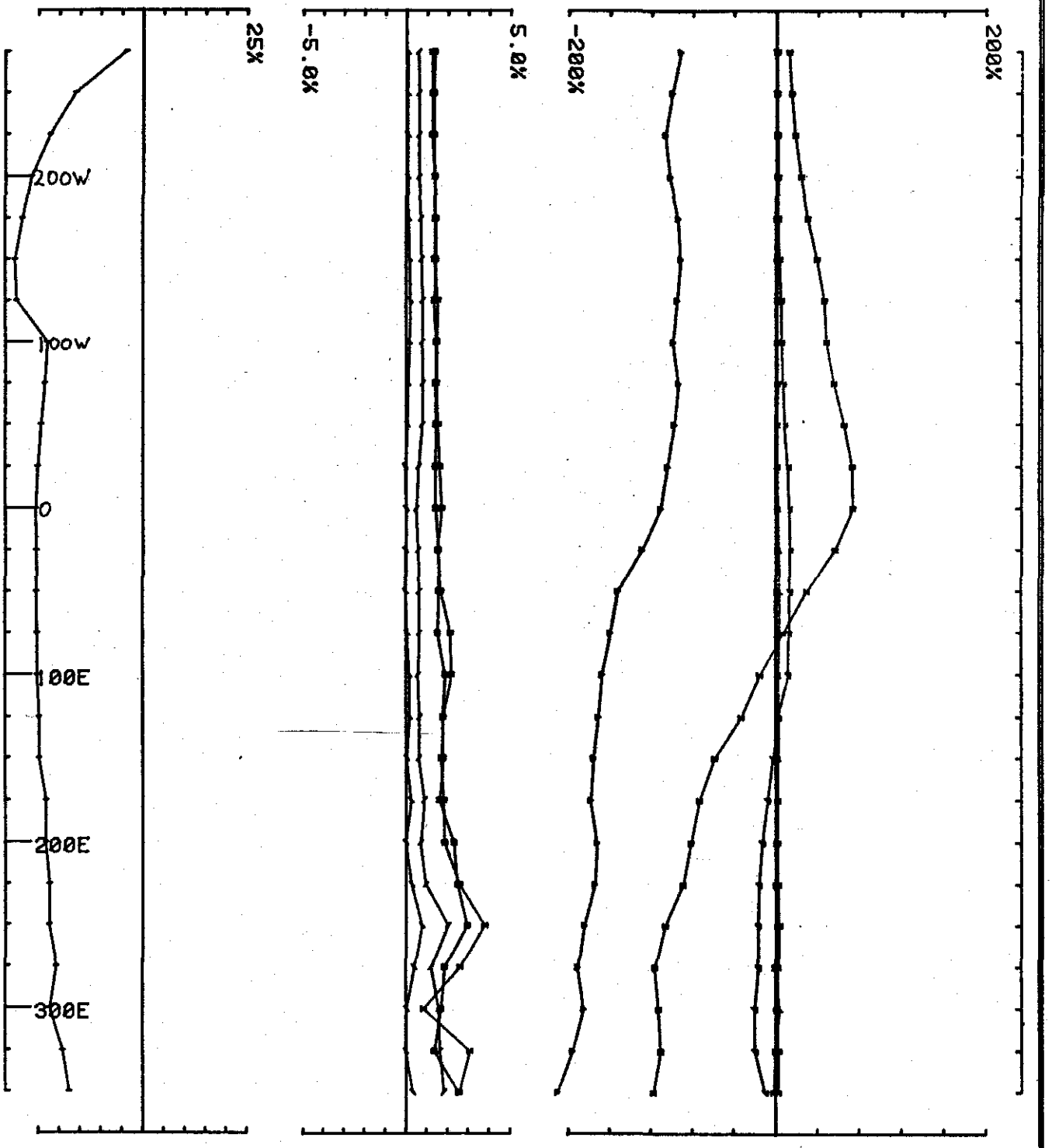
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 17N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP 8001
LINE 17N
Hz

123

014125



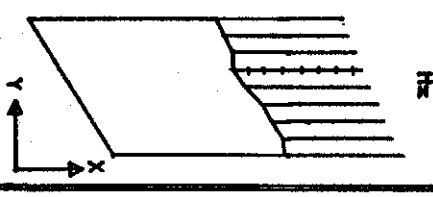
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507

AREA :- Basin Lake

CLIENT :- Goldfields CREW :- PMM GDM

L 16.5N Hz COMPONENT BASE FREQ :- 26.230HERTZ

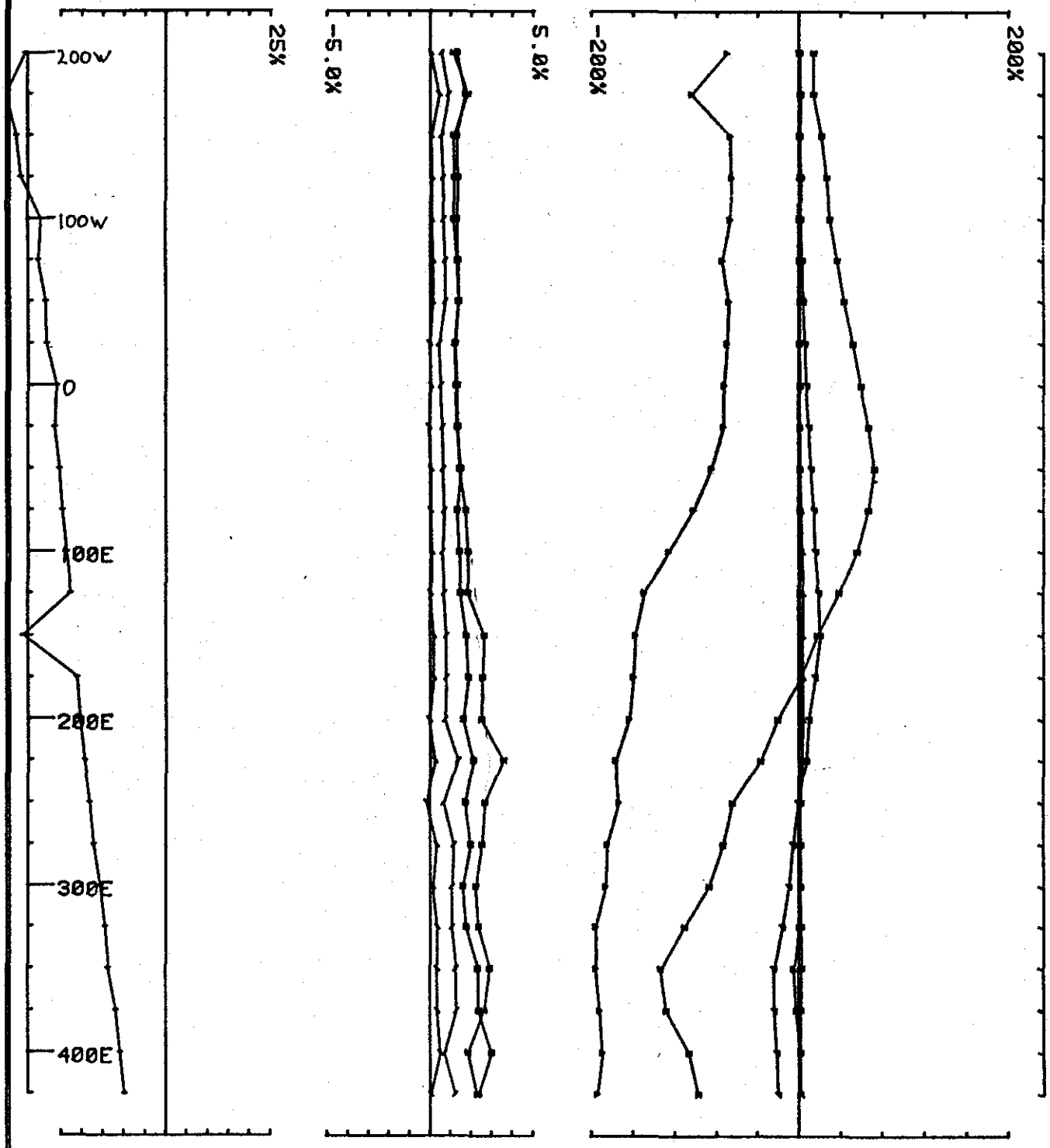
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



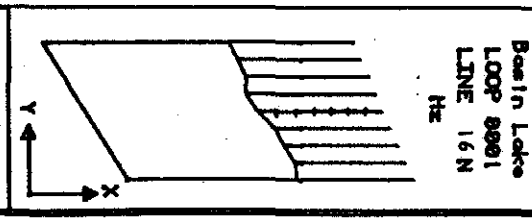
Basin Lake
LOOP 8001
LINE 16.5N
Hz

014126

124

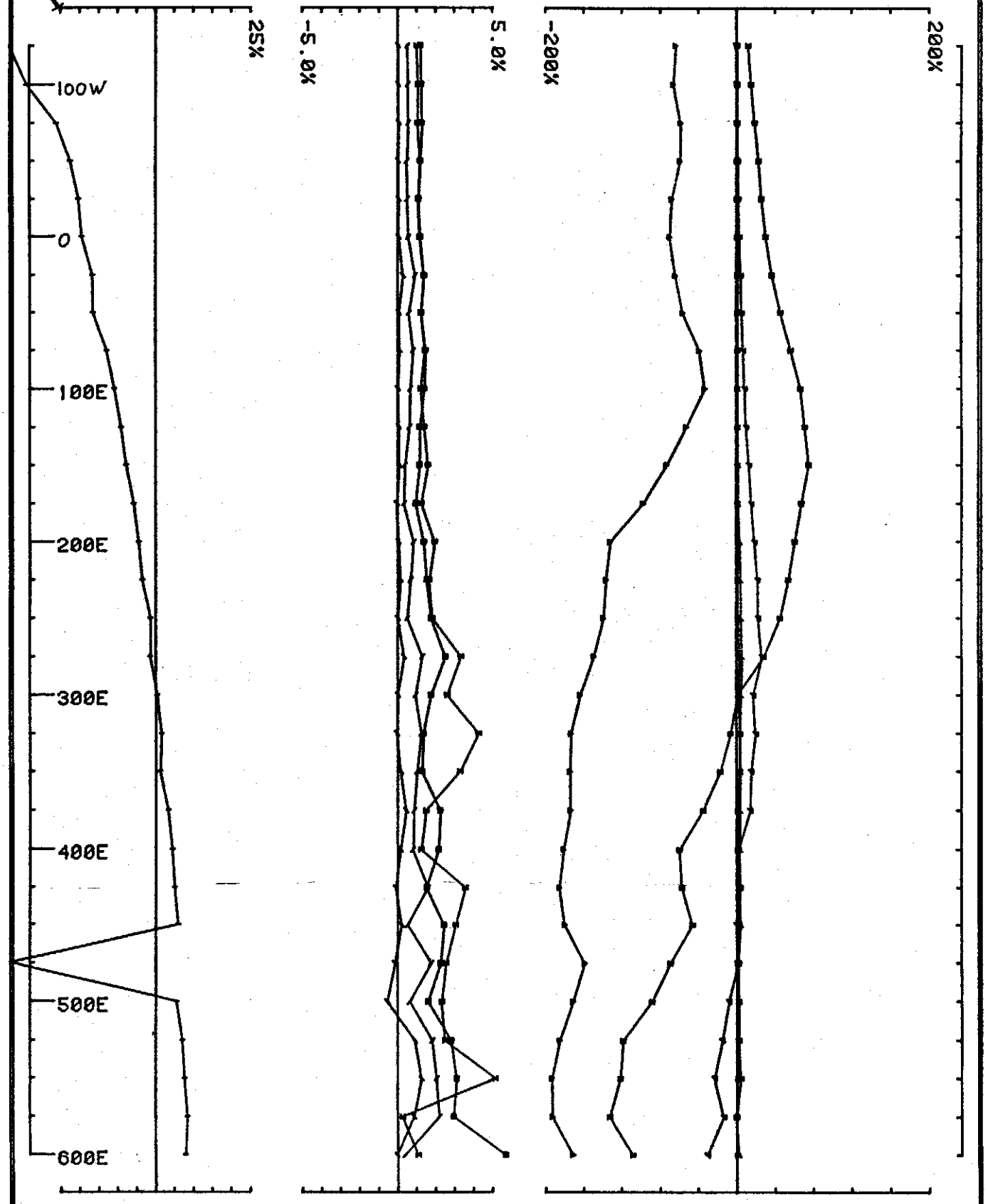


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 16N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



125

014127



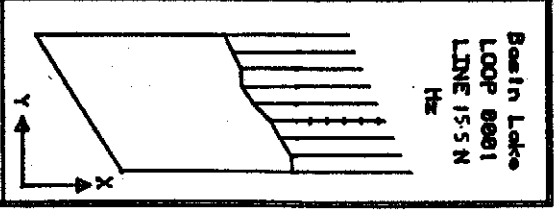
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507

AREA :- Basin Lake

CLIENT :- Goldfields CREW :- PMM GDM

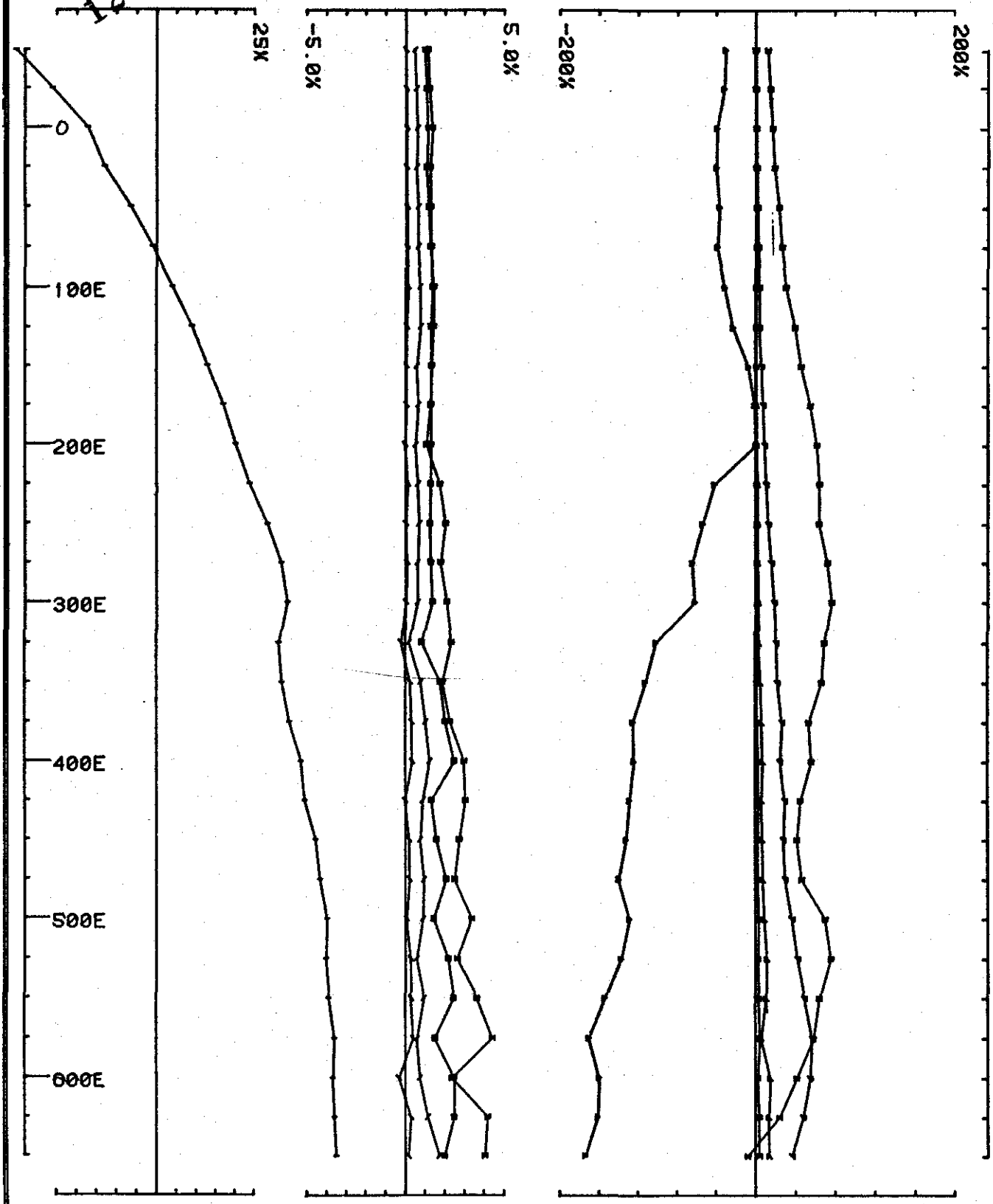
L 15-5N Hz COMPONENT BASE FREQ :- 26.230HERTZ

SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

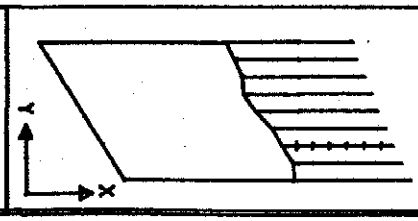


014128

126



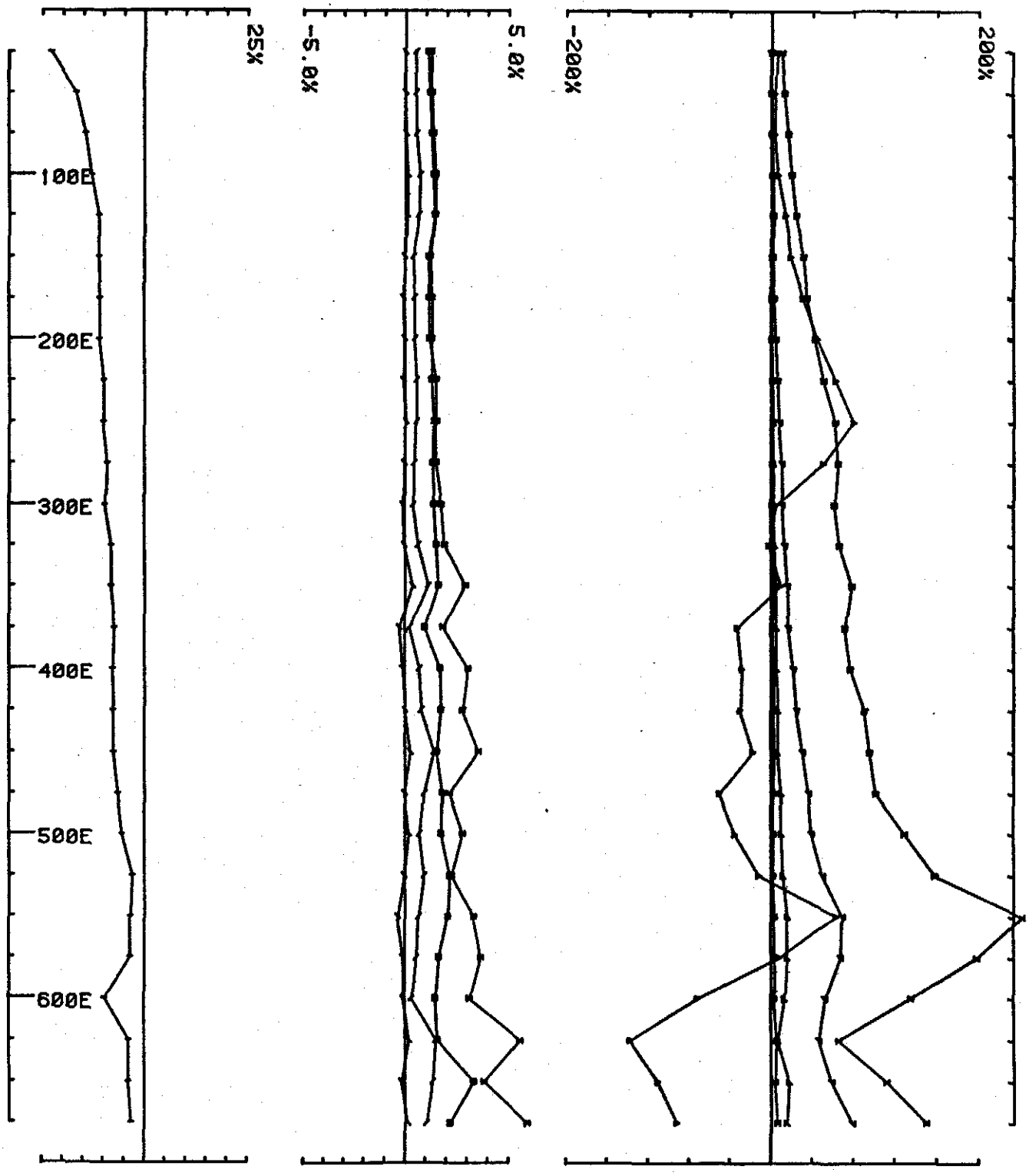
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 15 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



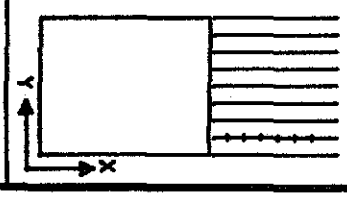
Basin Lake
LOOP 8001
LINE 15 N
Hz

127

014129



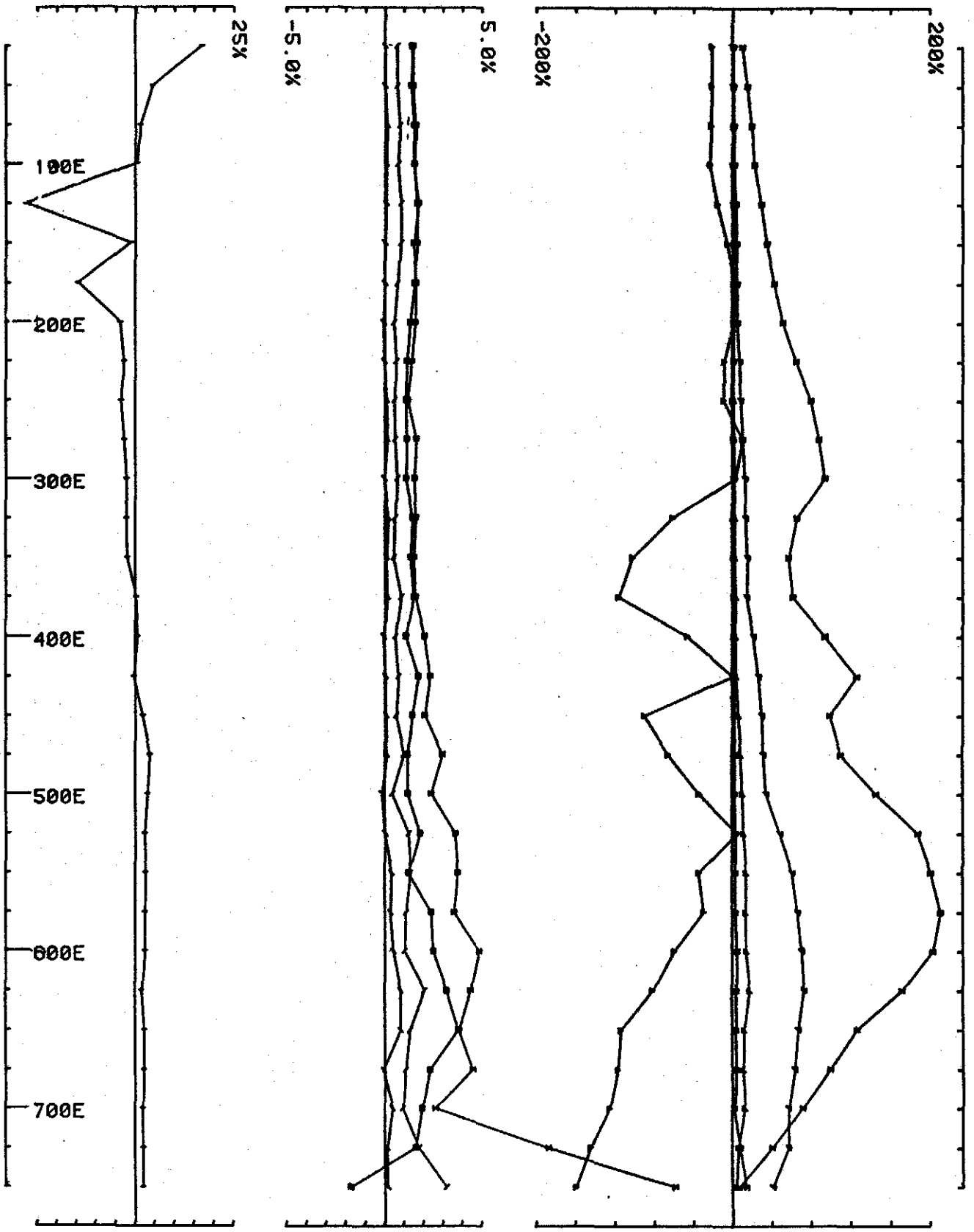
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 4+5N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP B001
LINE 14+5N
Hz

128

014130



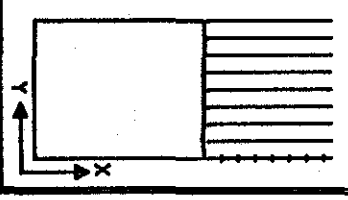
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507

AREA :- Basin Lake

CLIENT :- Goldfields CREW :- PMM GDM

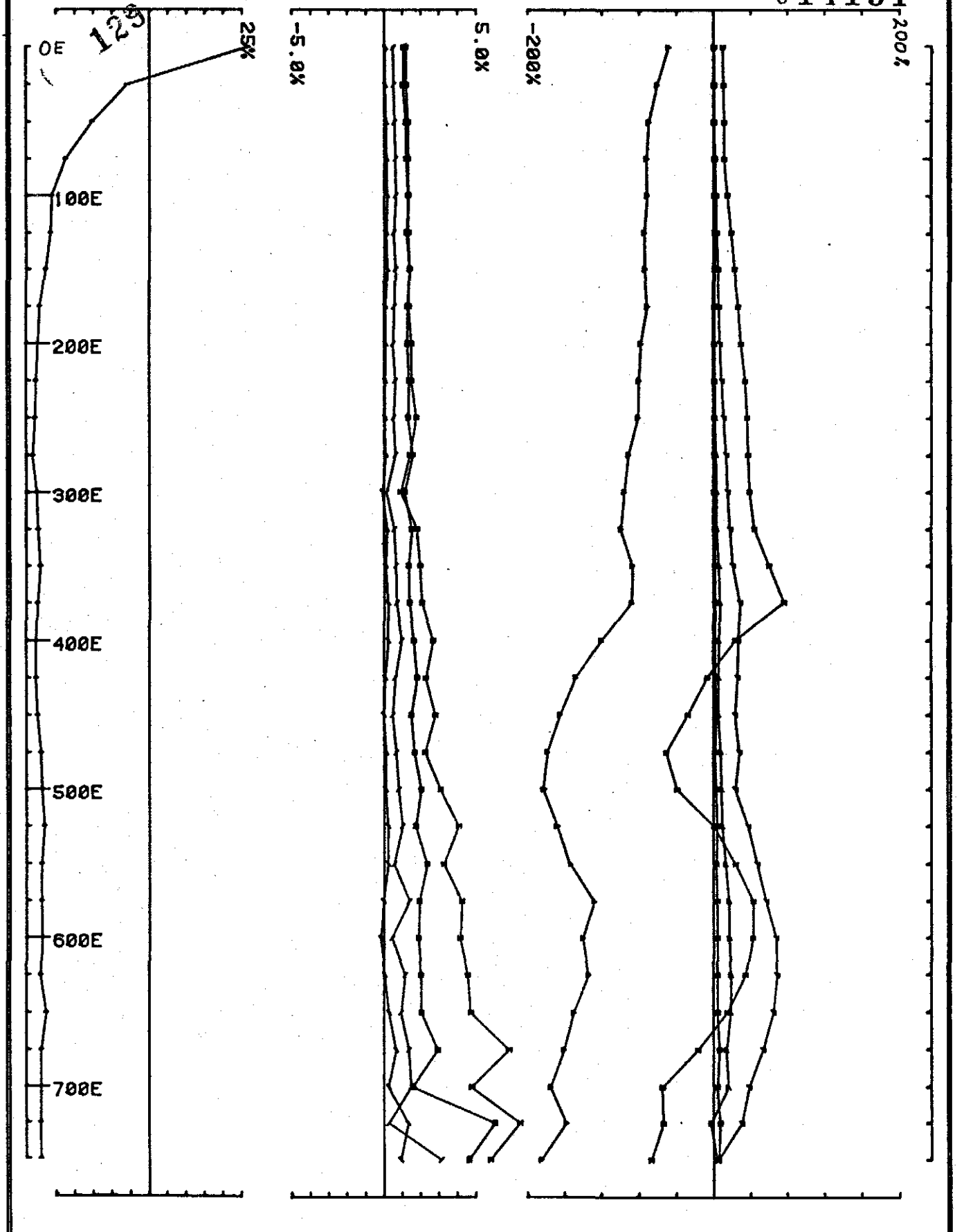
LIN/Hz COMPONENT BASE FREQ :- 26.230HERTZ

SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

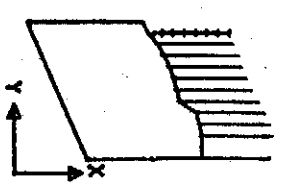


Basin Lake
LOOP 8001
LINE 14N
Hz

014131

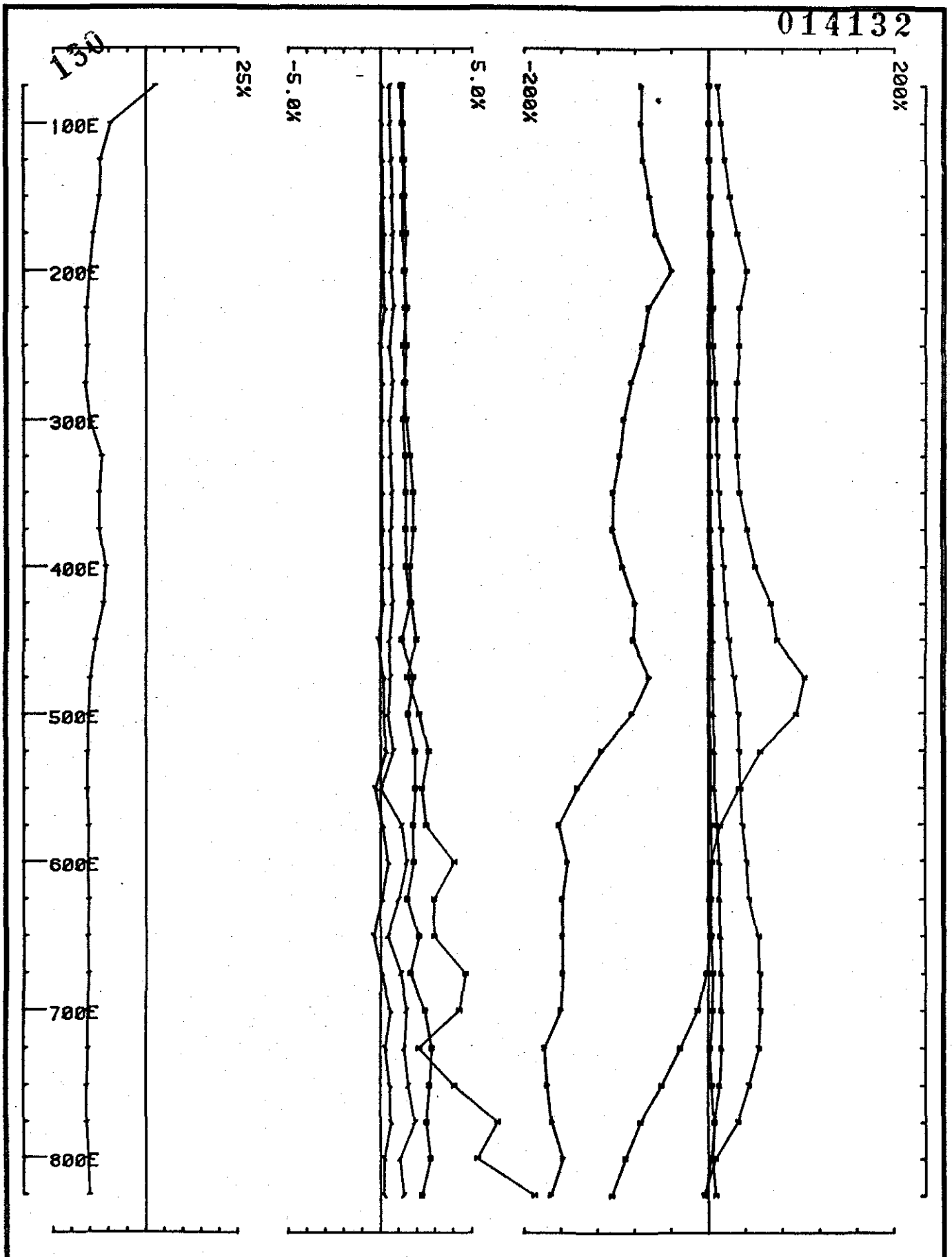


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 13-5 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

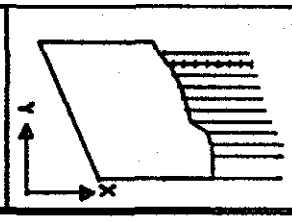


Basin Lake
LOOP 8002
LINE 13-5N
Hz

014132



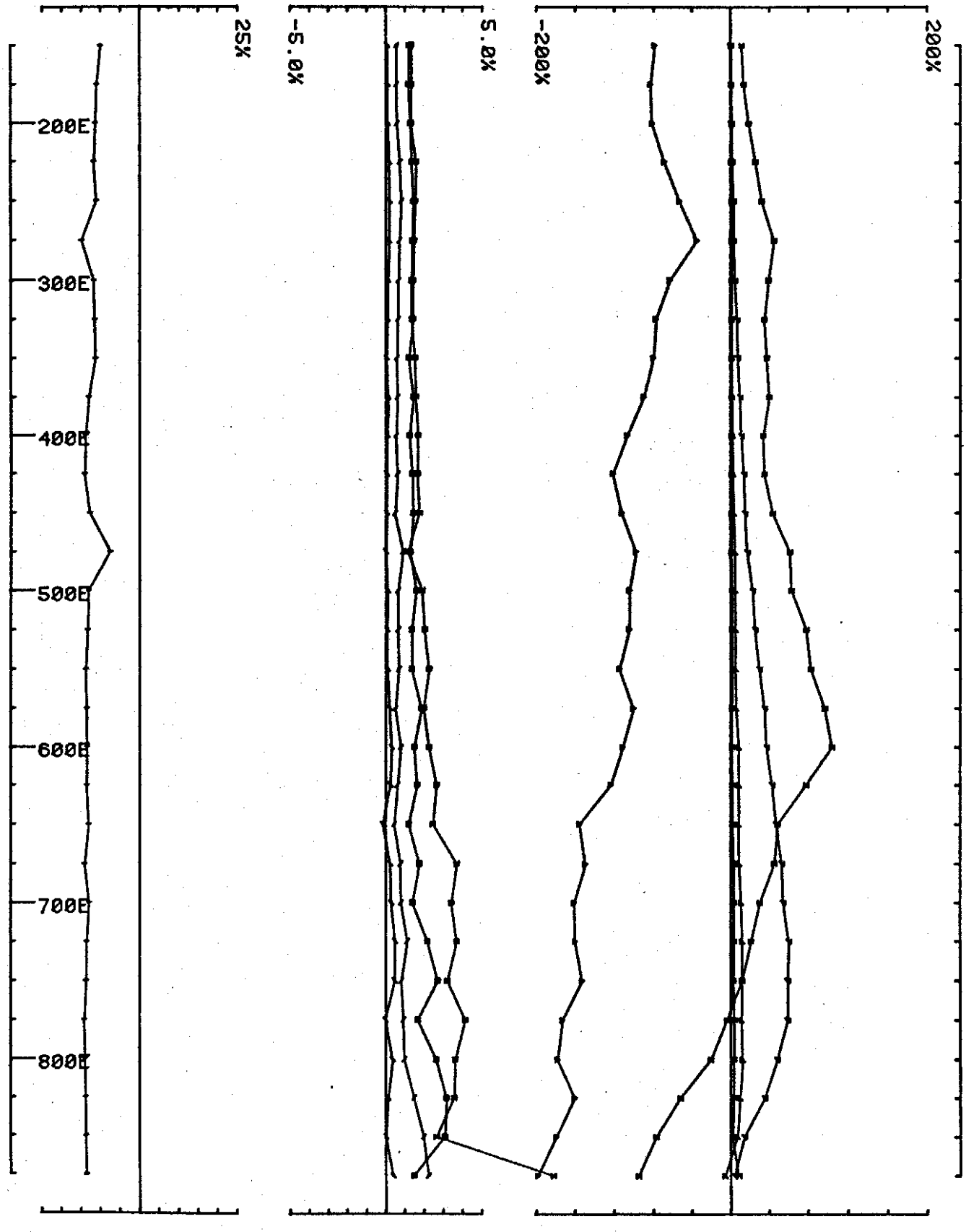
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 13 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP 8802
LINE 13 N
Hz

131

014133



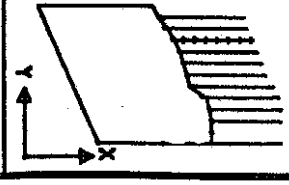
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507

AREA :- Basin Lake

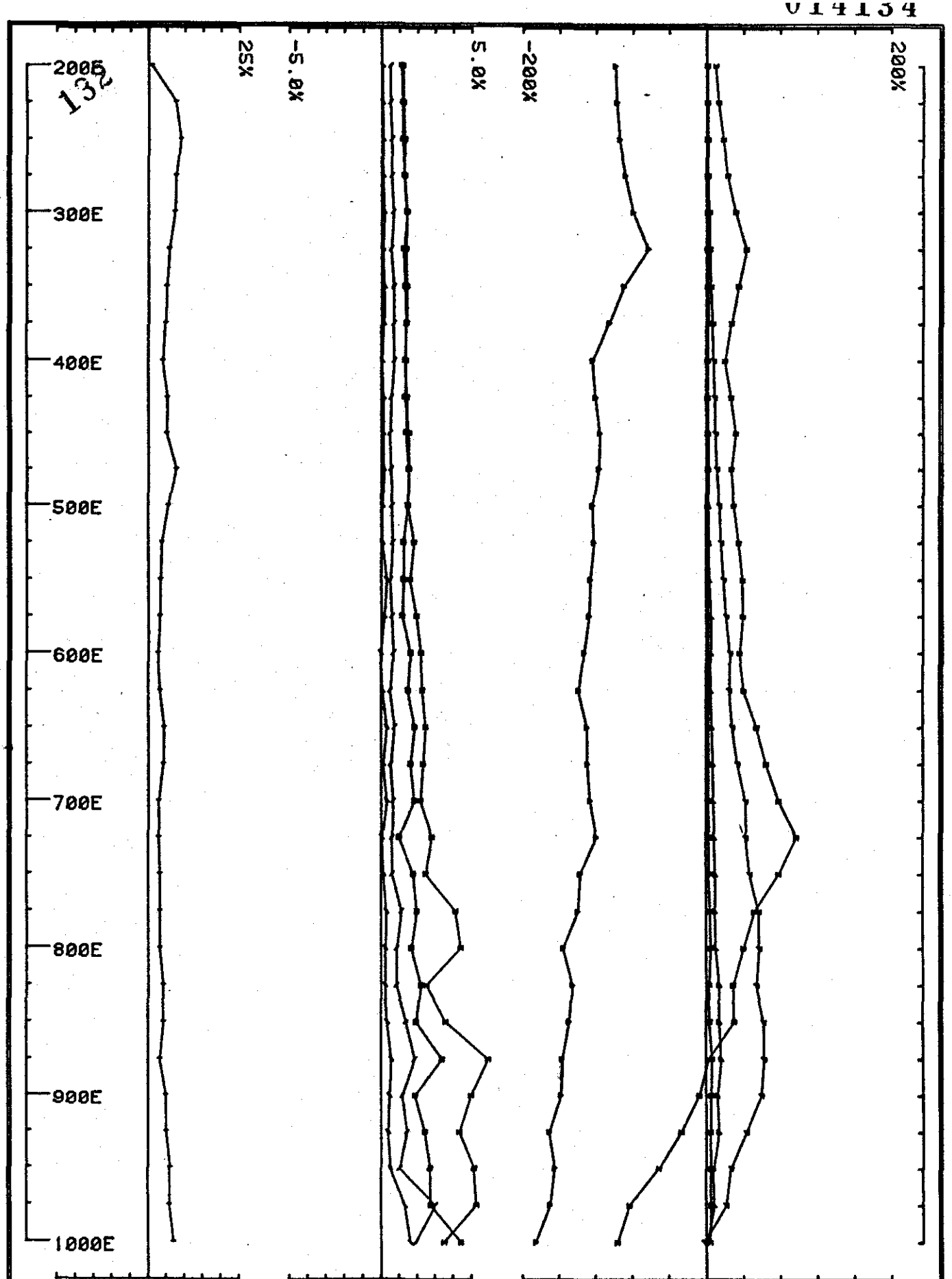
CLIENT :- Goldfields CREW :- PMM GDM

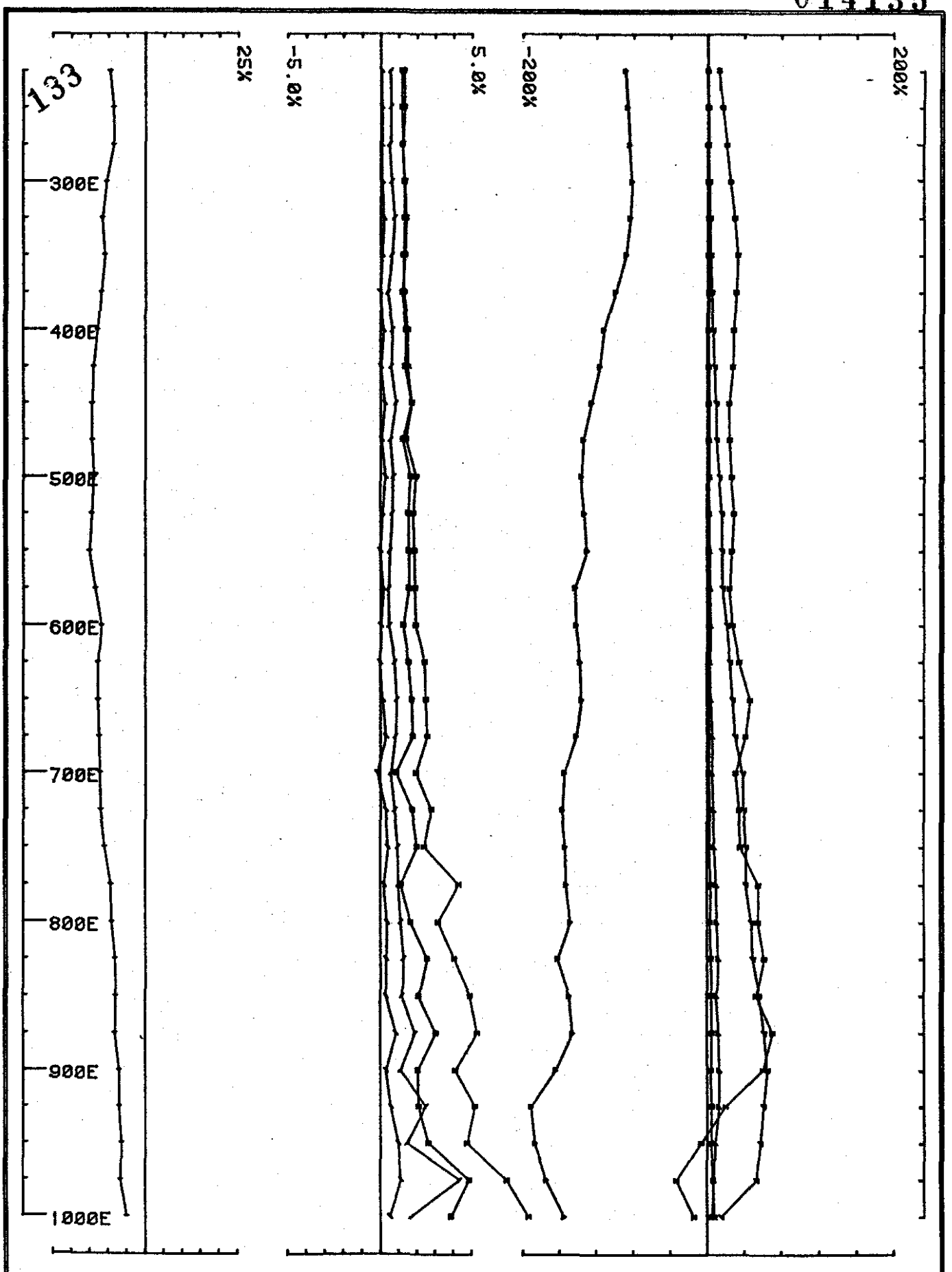
L12-5 N Hz COMPONENT BASE FREQ :- 26.230HERTZ

SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

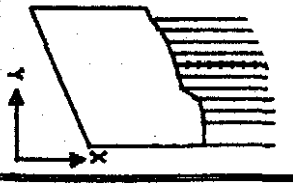


Basin Lake
LOOP 8002
LINE 12.5N
Hz

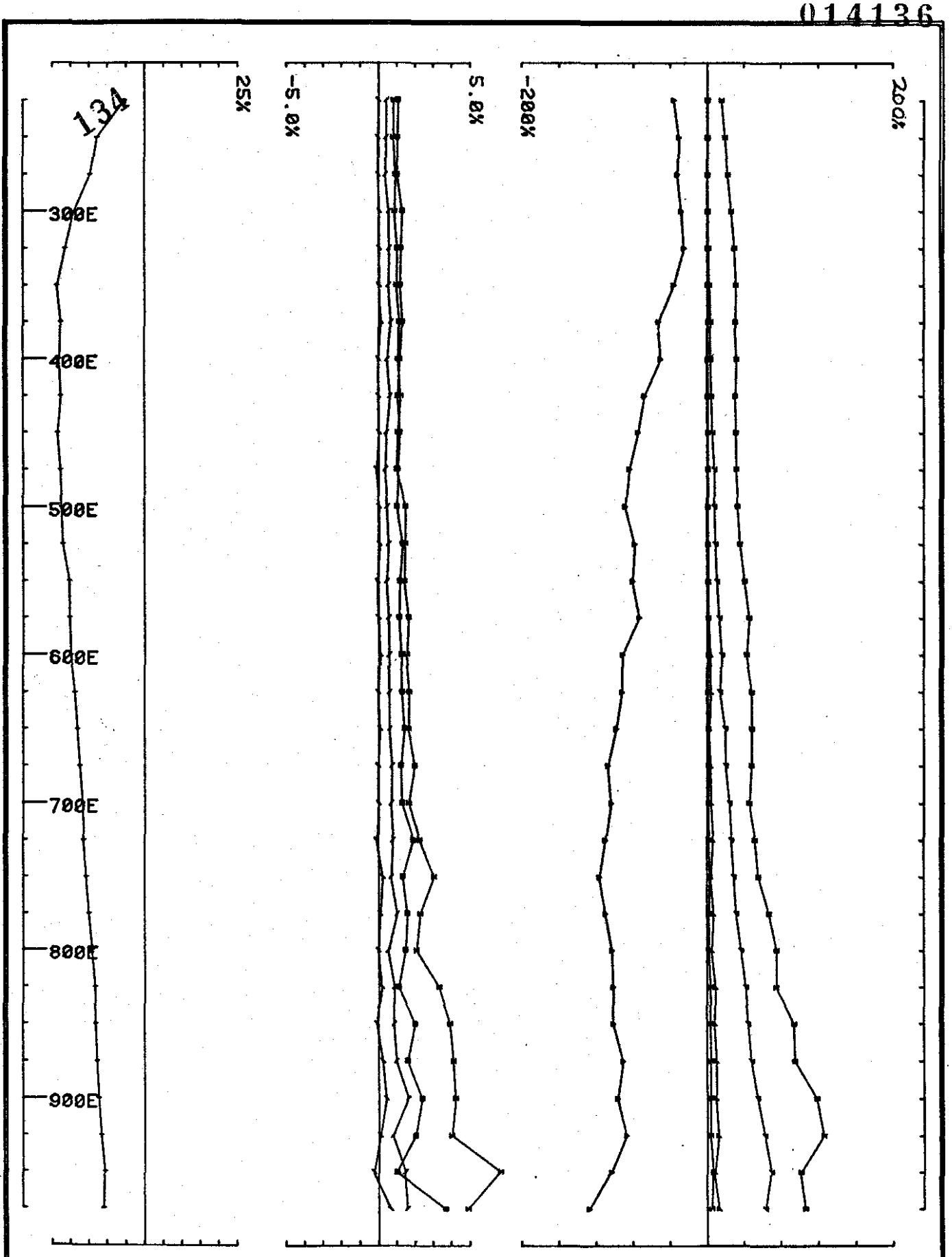

132
25%
-5.0%
5.0%
-200%
200%
200E
300E
400E
500E
600E
700E
800E
900E
1000E
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 12 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION
Y
X
Basin Lake
LOOP 8002
LINE 12 N
Hz



LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 11.5N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



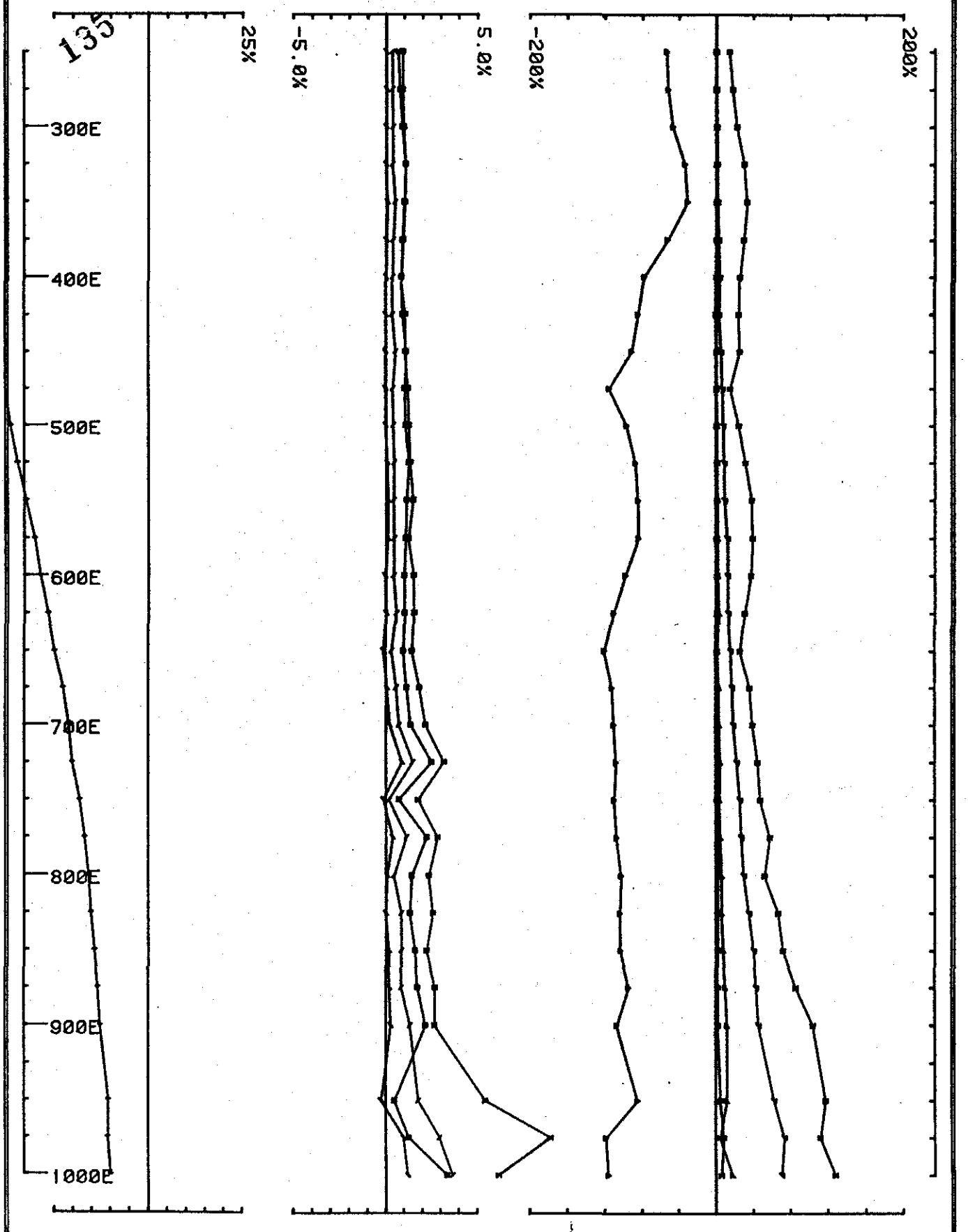
Basin Lake
LOOP 8002
LINE 11.5 N
Hz



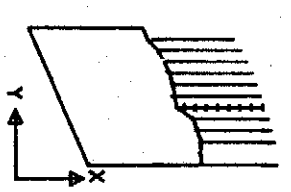
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 11N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

Y
X

Basin Lake
LOOP 8002
LINE 11N
Hz

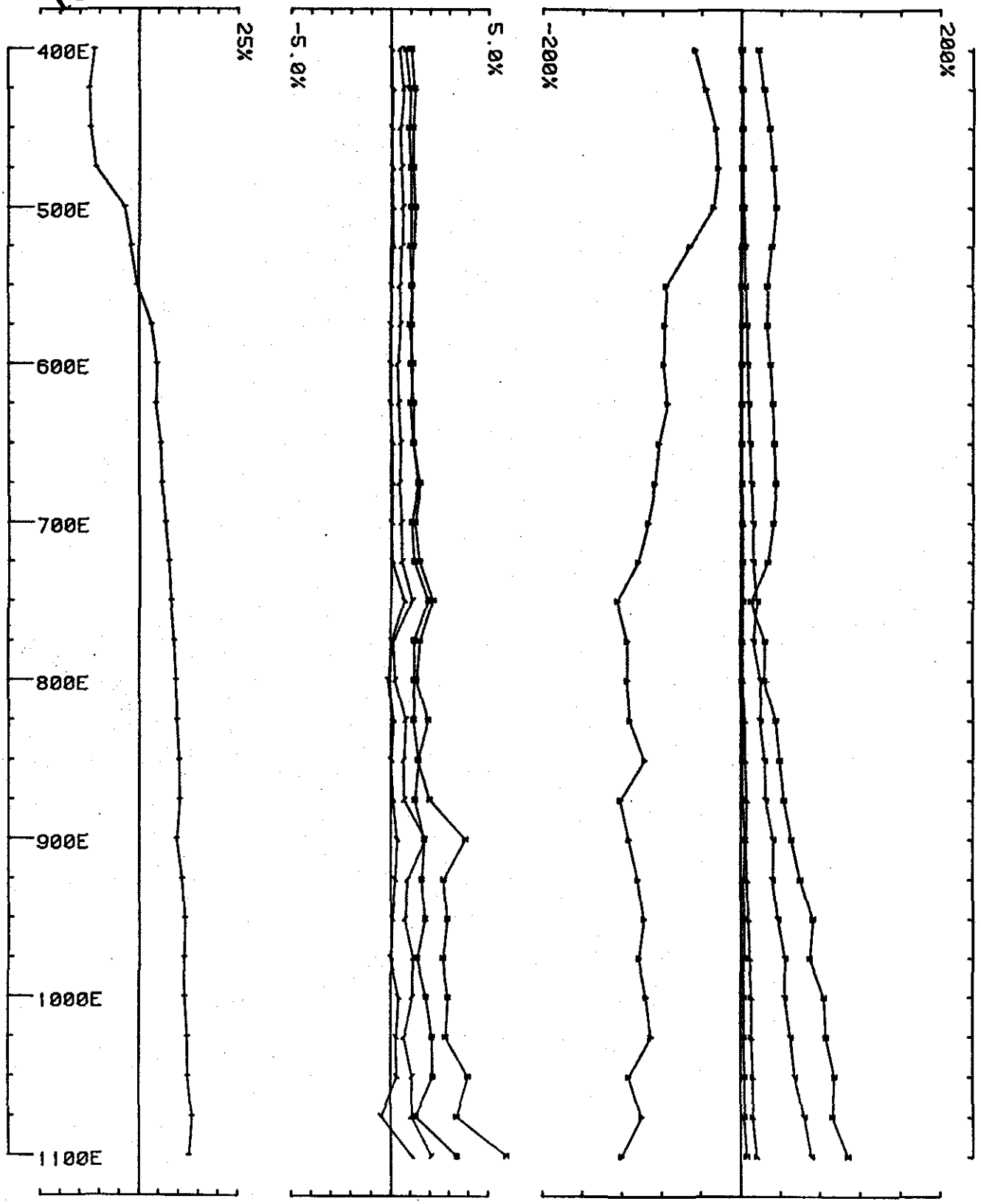


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 105N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

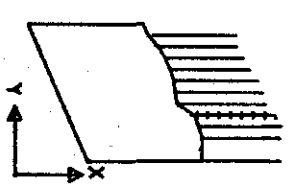


Basin Lake
LOOP 8002
LINE 10-5N
Hz

136

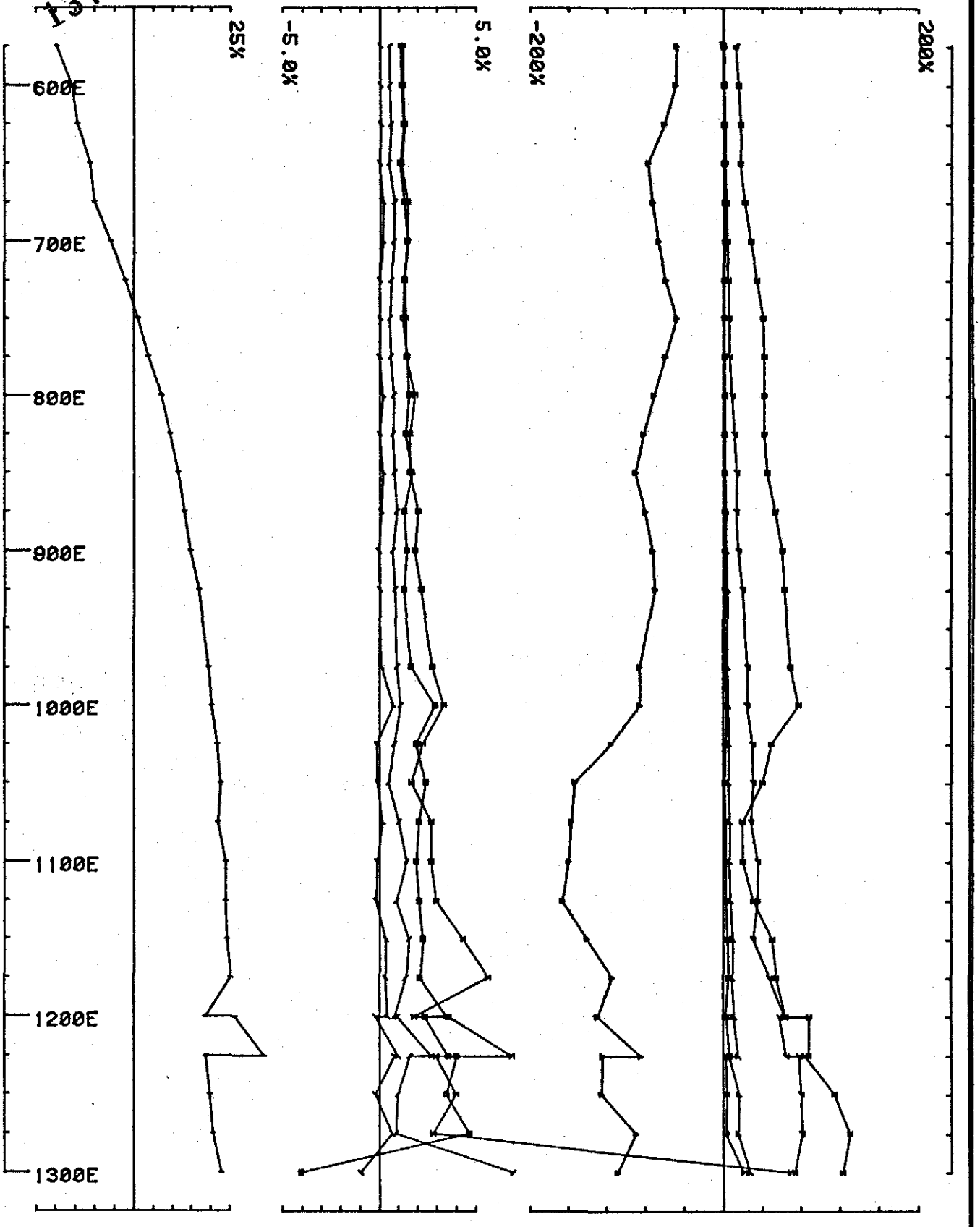


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 10N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

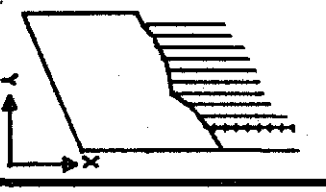


Basin Lake
LOOP 8002
LINE 10N
Hz

137

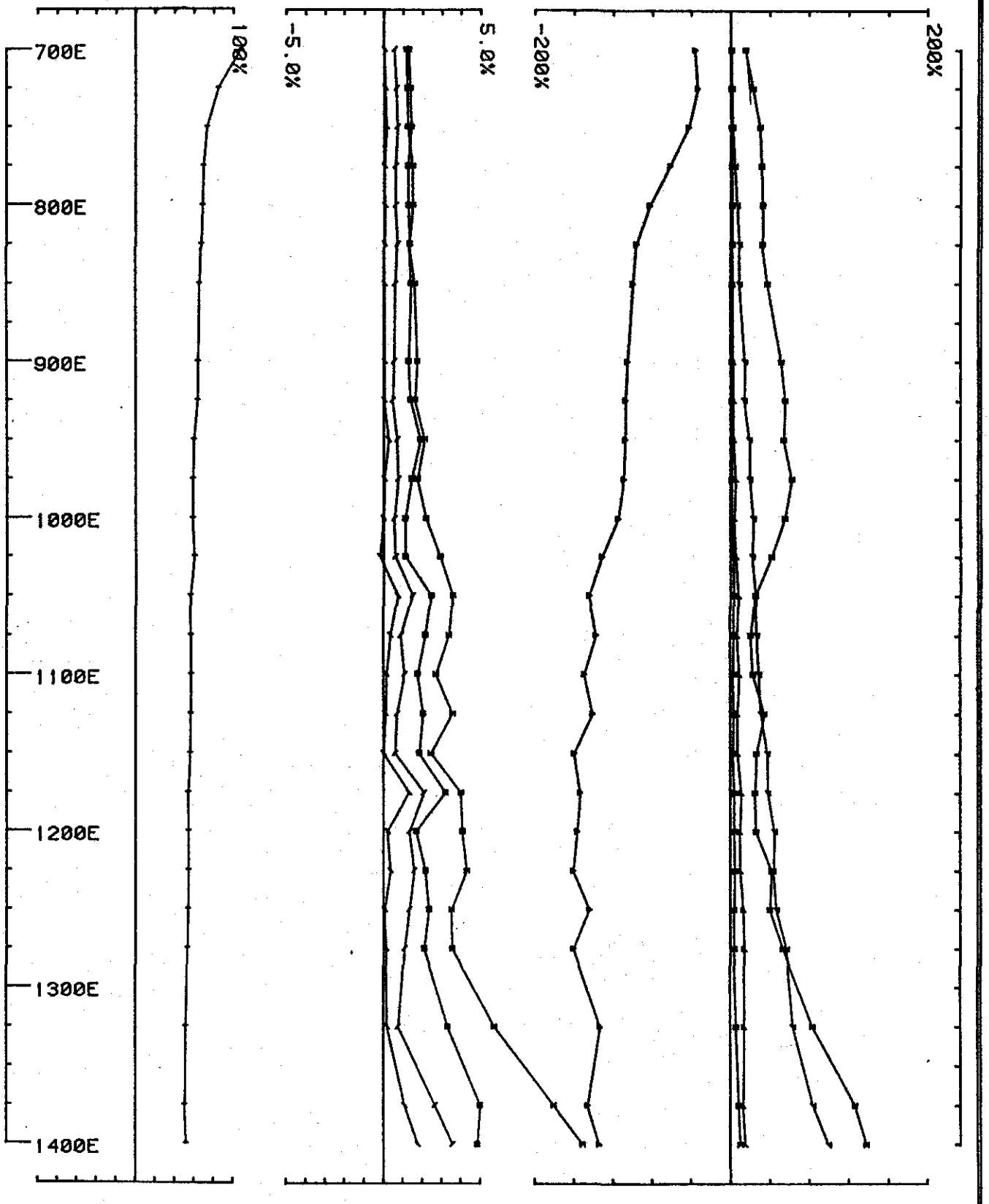


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 9 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

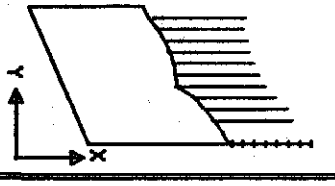


Basin Lake
LOOP 8002
LINE 9 N
Hz

138

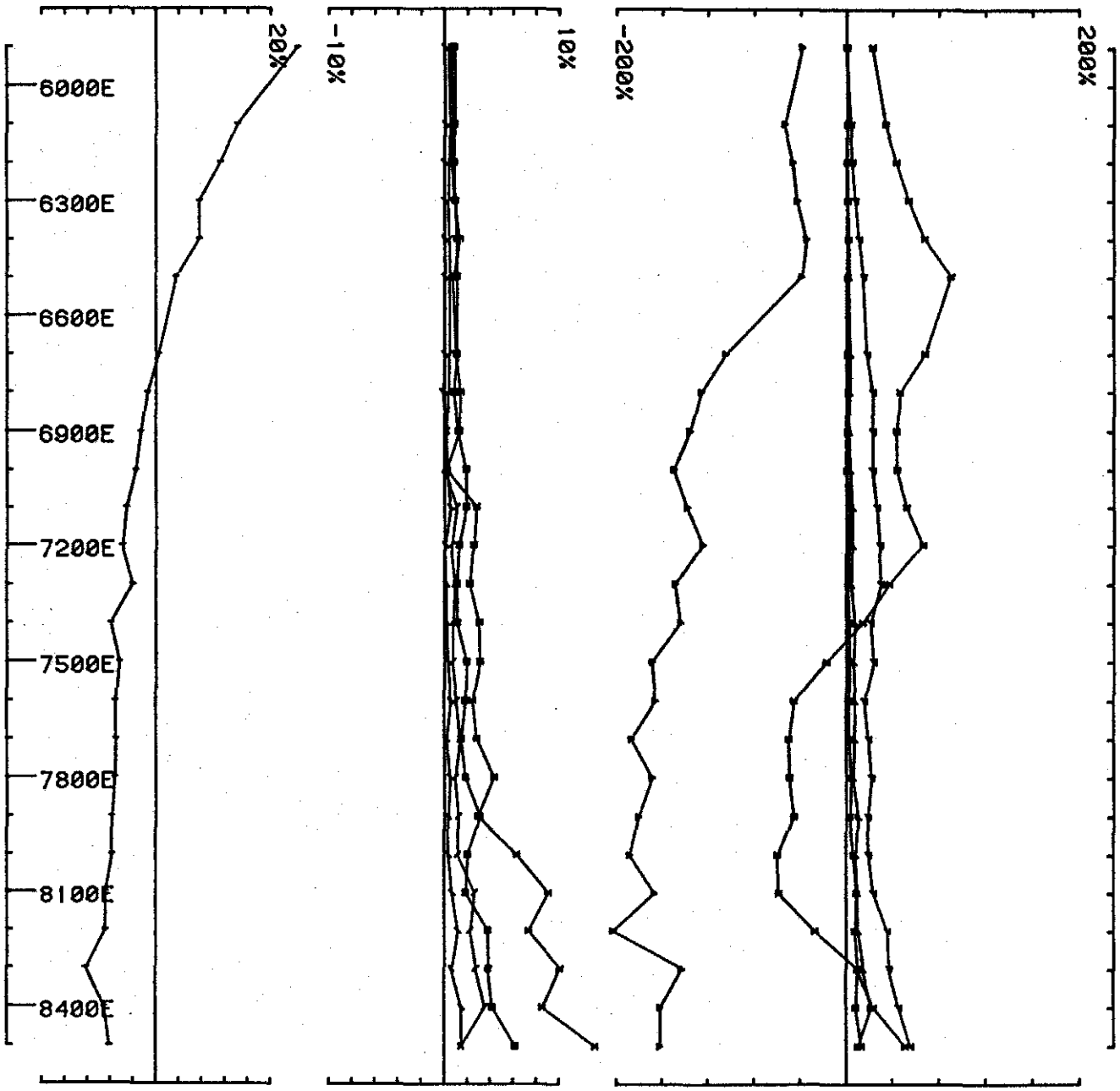


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L8NHz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

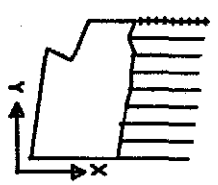


Basin Lake
LOOP 8002
LINE 8 N
Hz

139

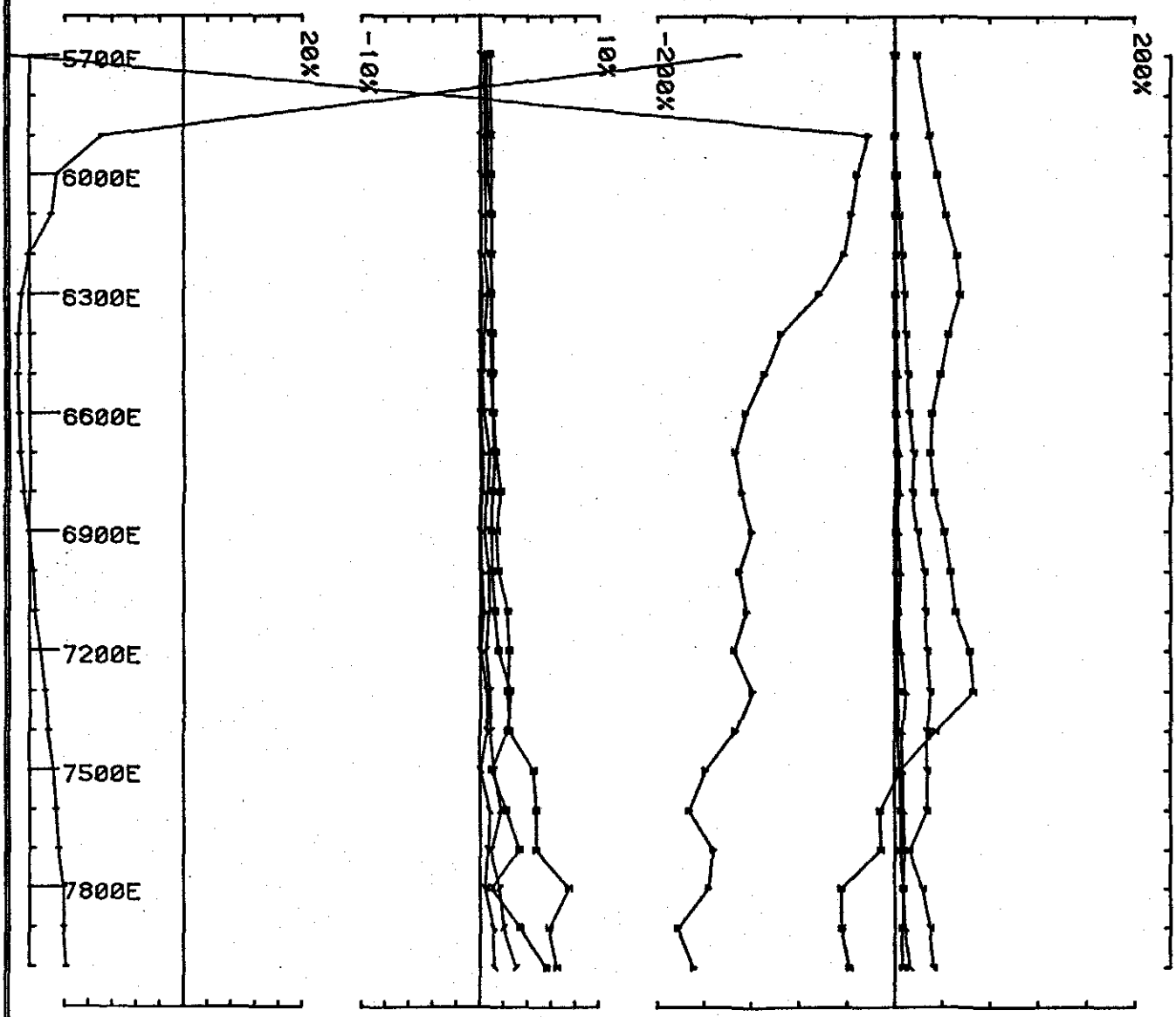


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 05 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

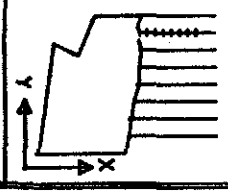


Basin Lake
LOOP 8003
LINE 05
Hz

140

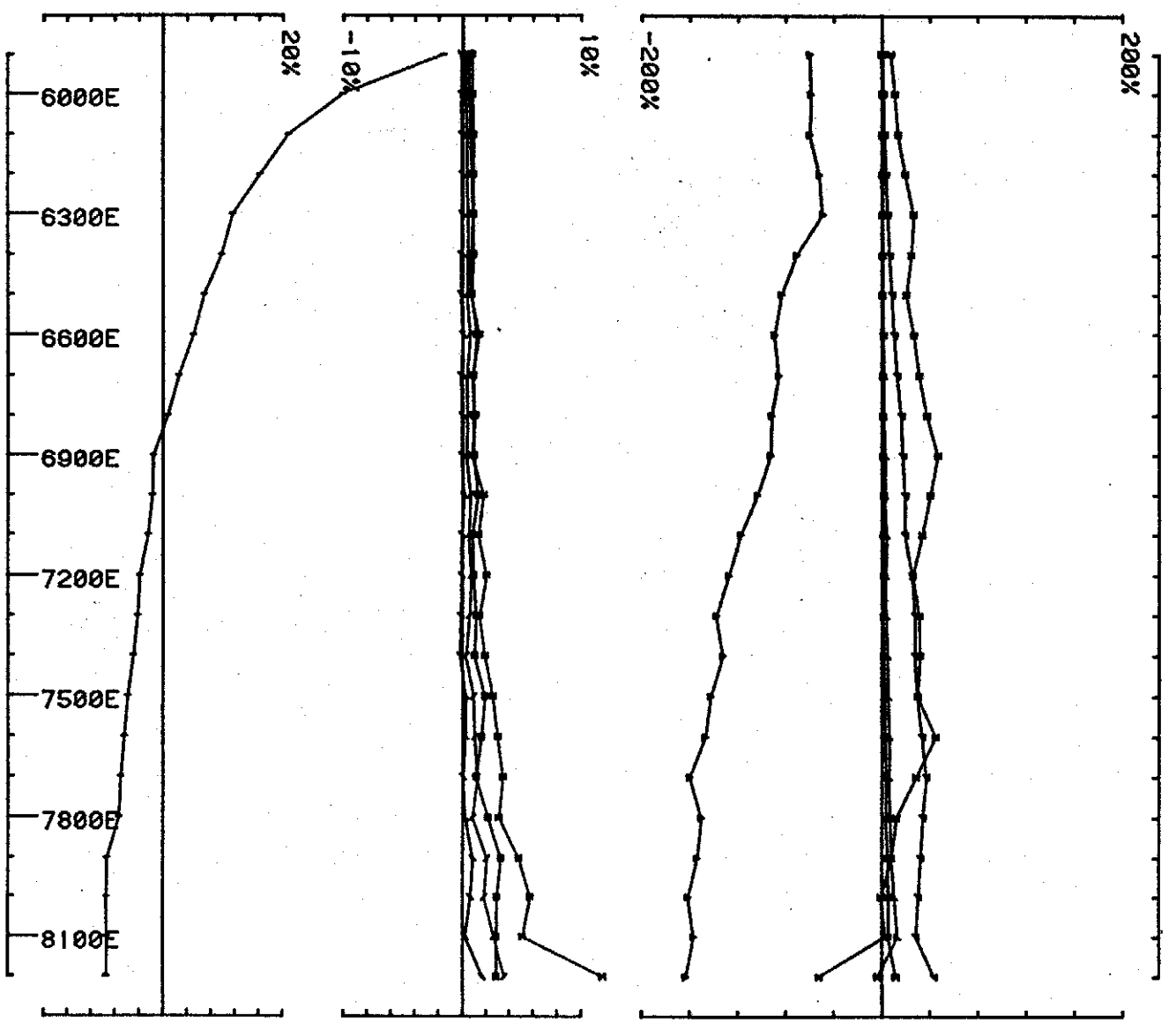


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 65 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

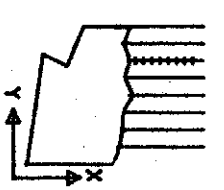


Basin Lake
LOOP 8003
LINE 65
Hz

141

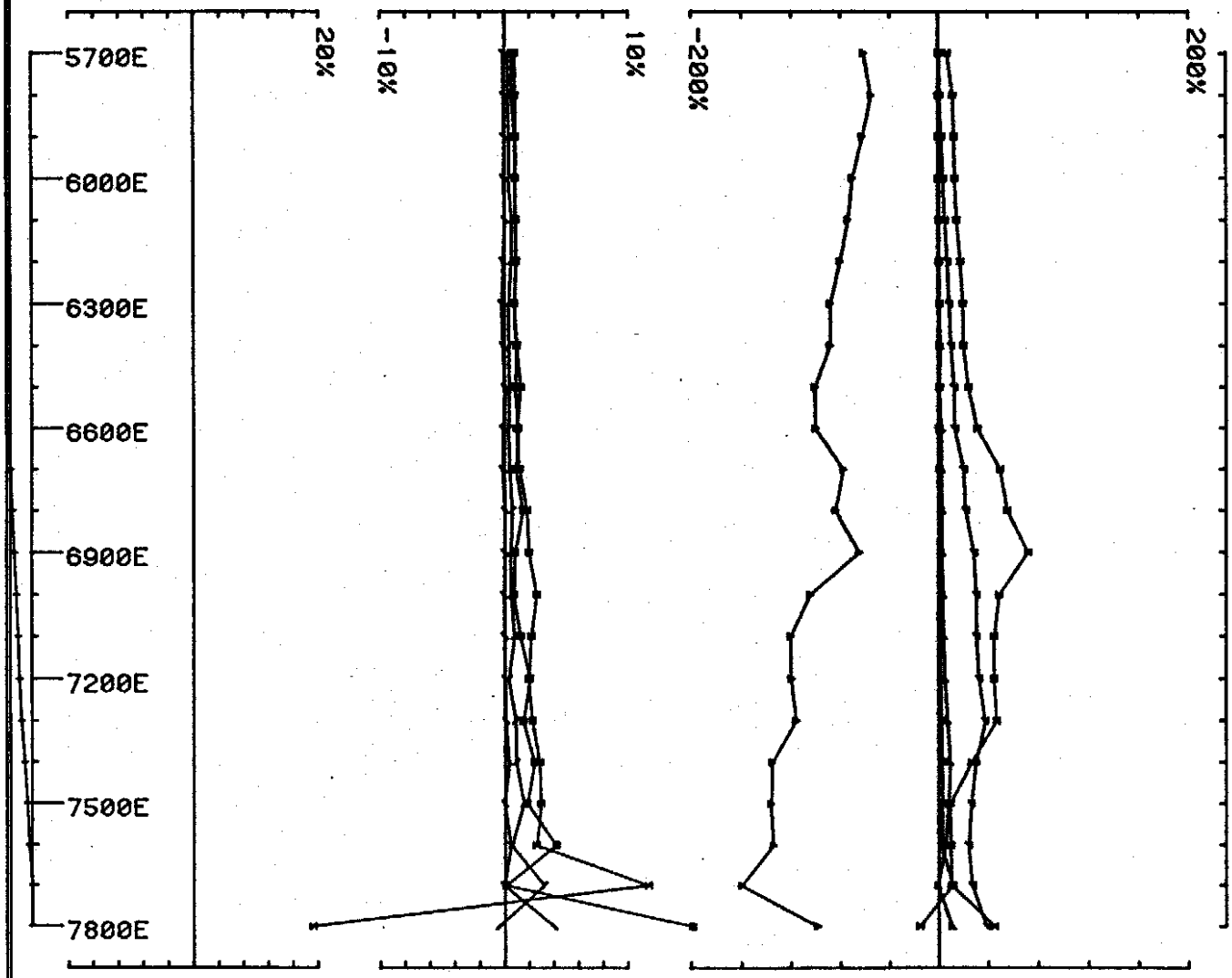


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 125 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

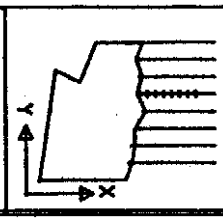


Basin Lake
LOOP 8003
LINE 125
Hz

142

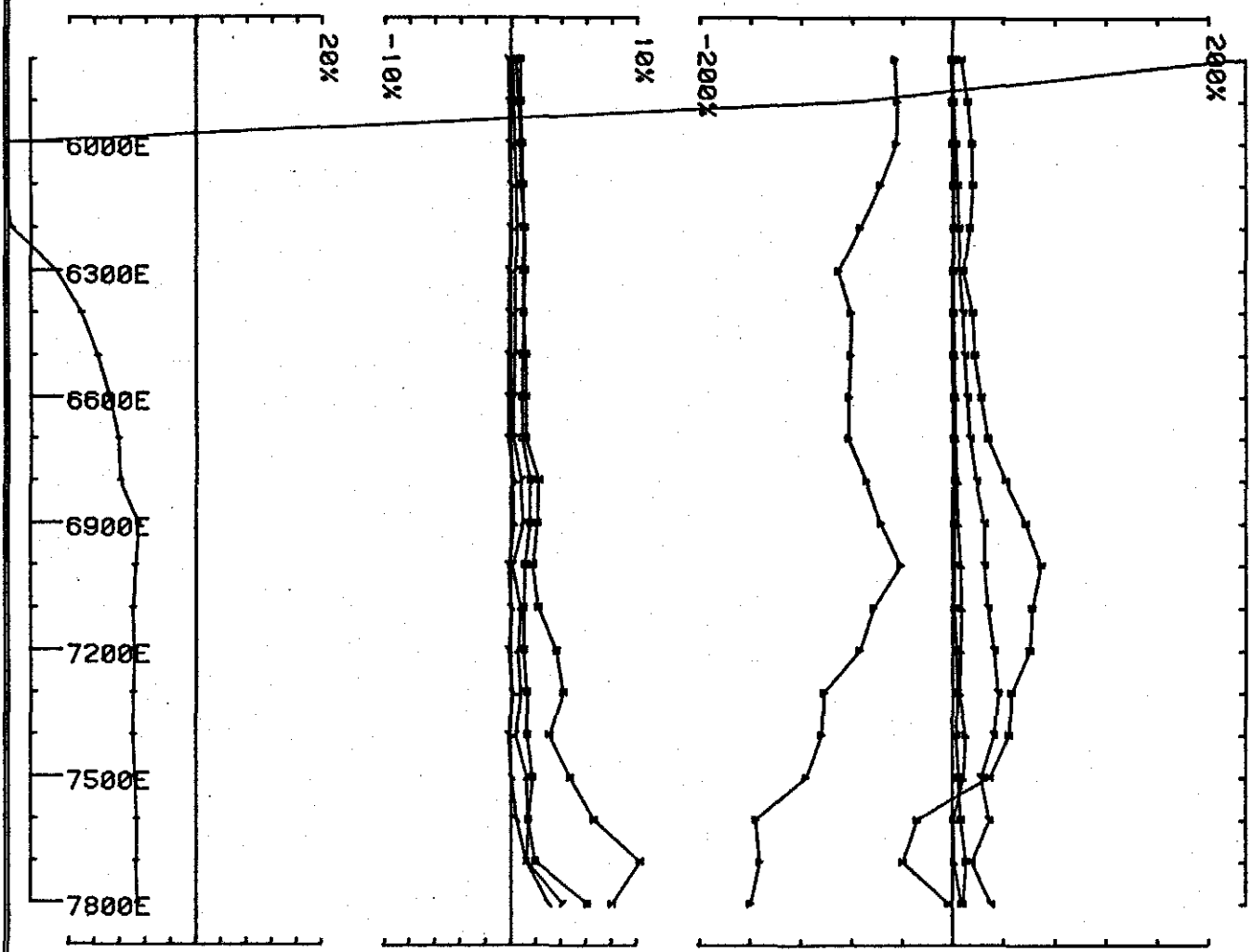


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 185 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

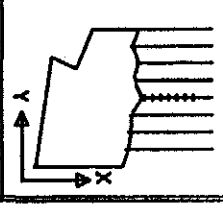


Basin Lake
LOOP 8003
LINE 185
Hz

143

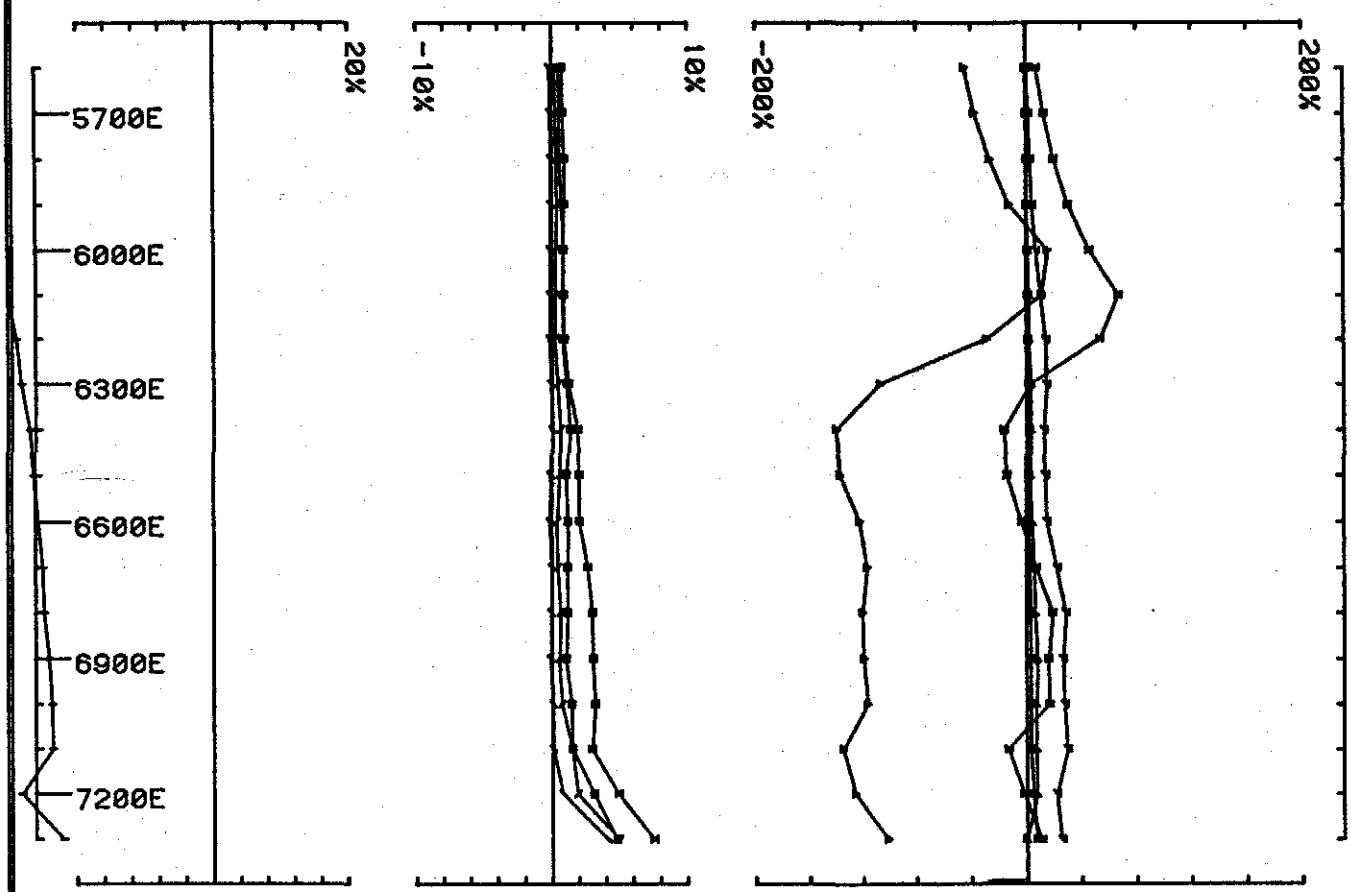


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 245 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

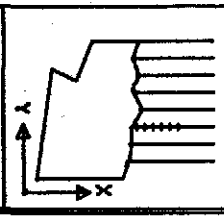


Basin Lake
LOOP 8003
LINE 245
Hz

144

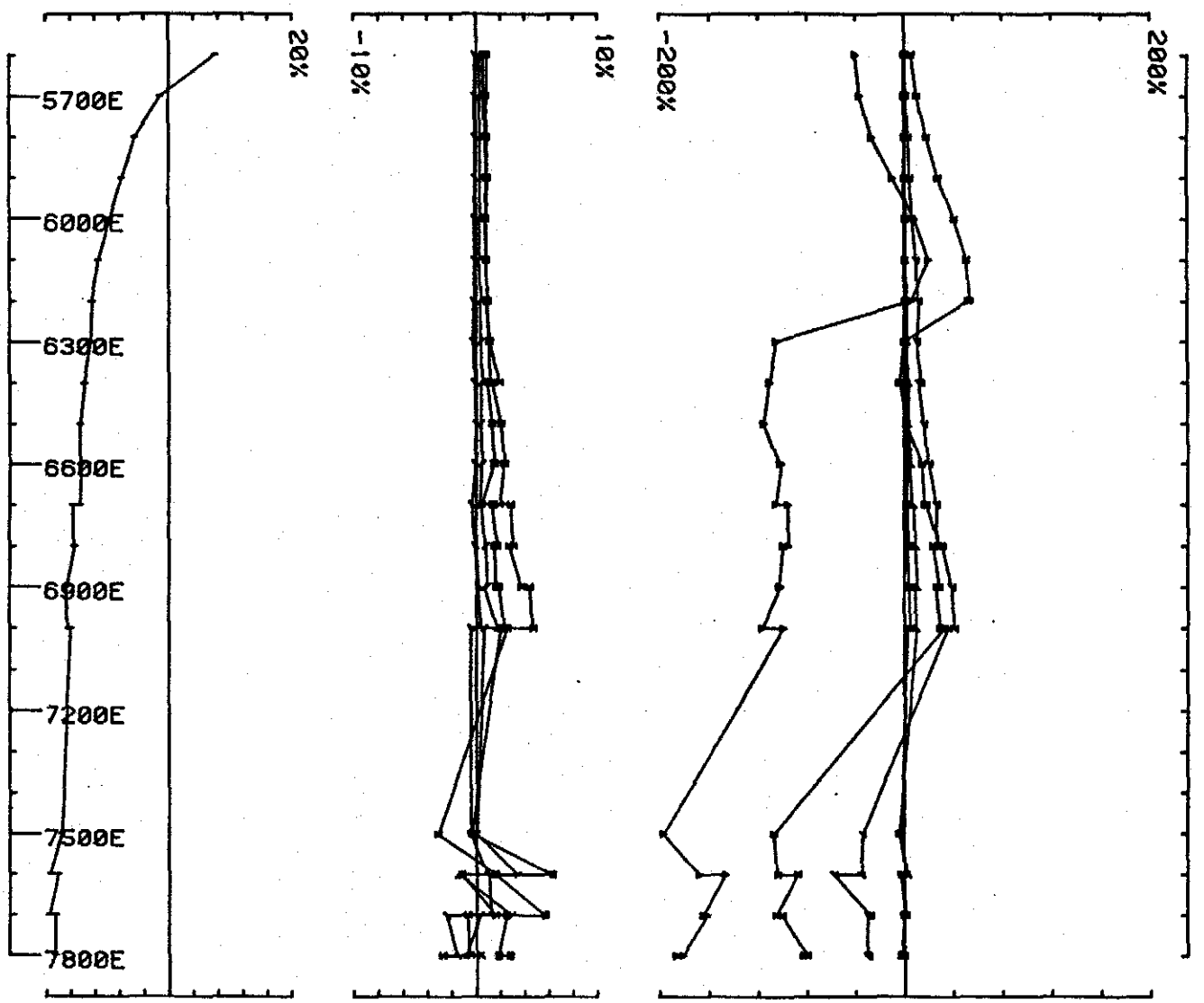


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 30S Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

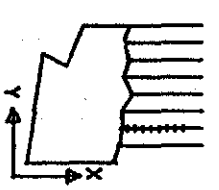


Basin Lake
LOOP 8003
LINE 30S
Hz

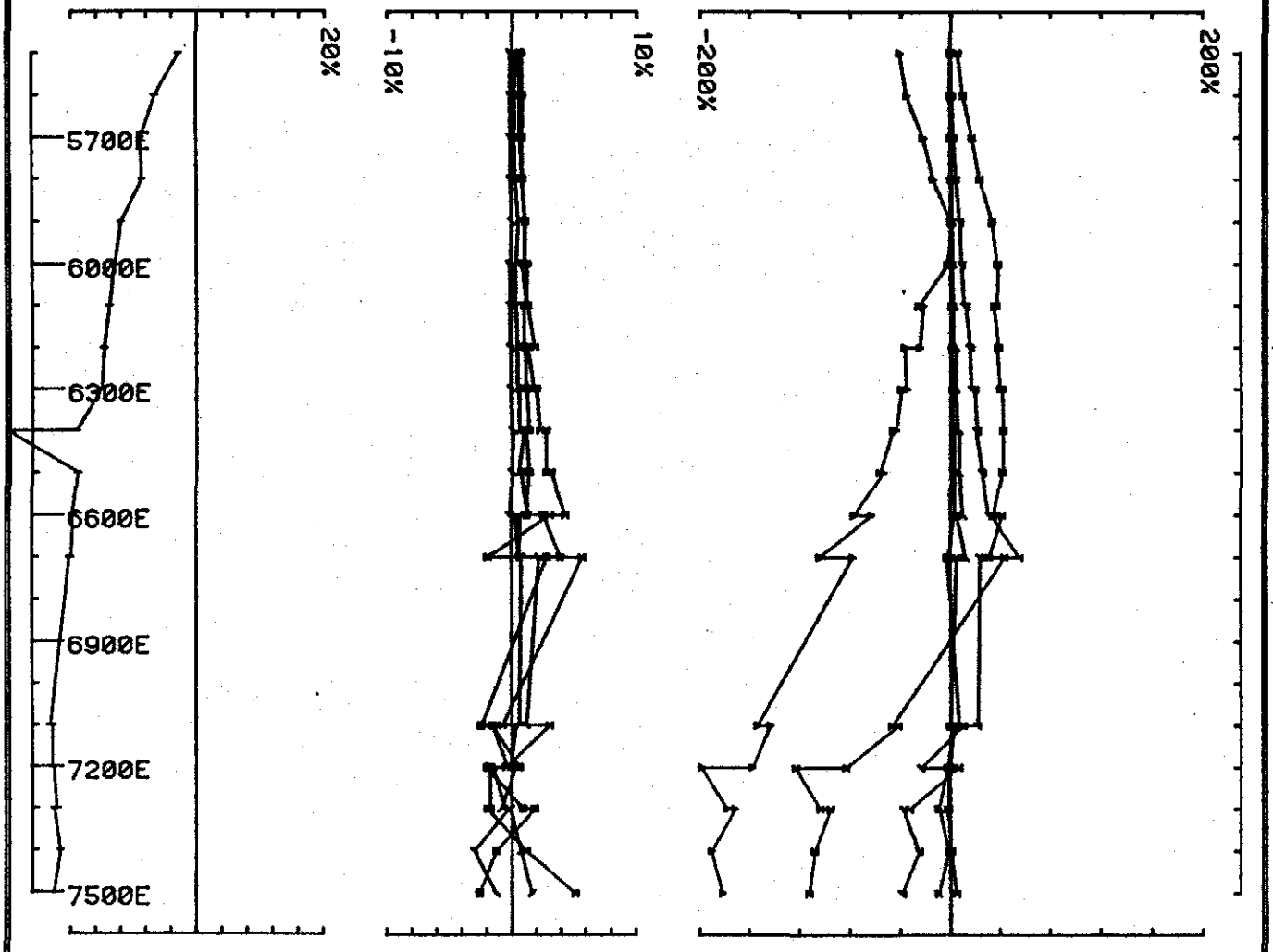
145



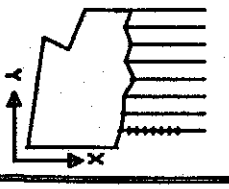
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 36 S Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP 0003
LINE 365
Hz

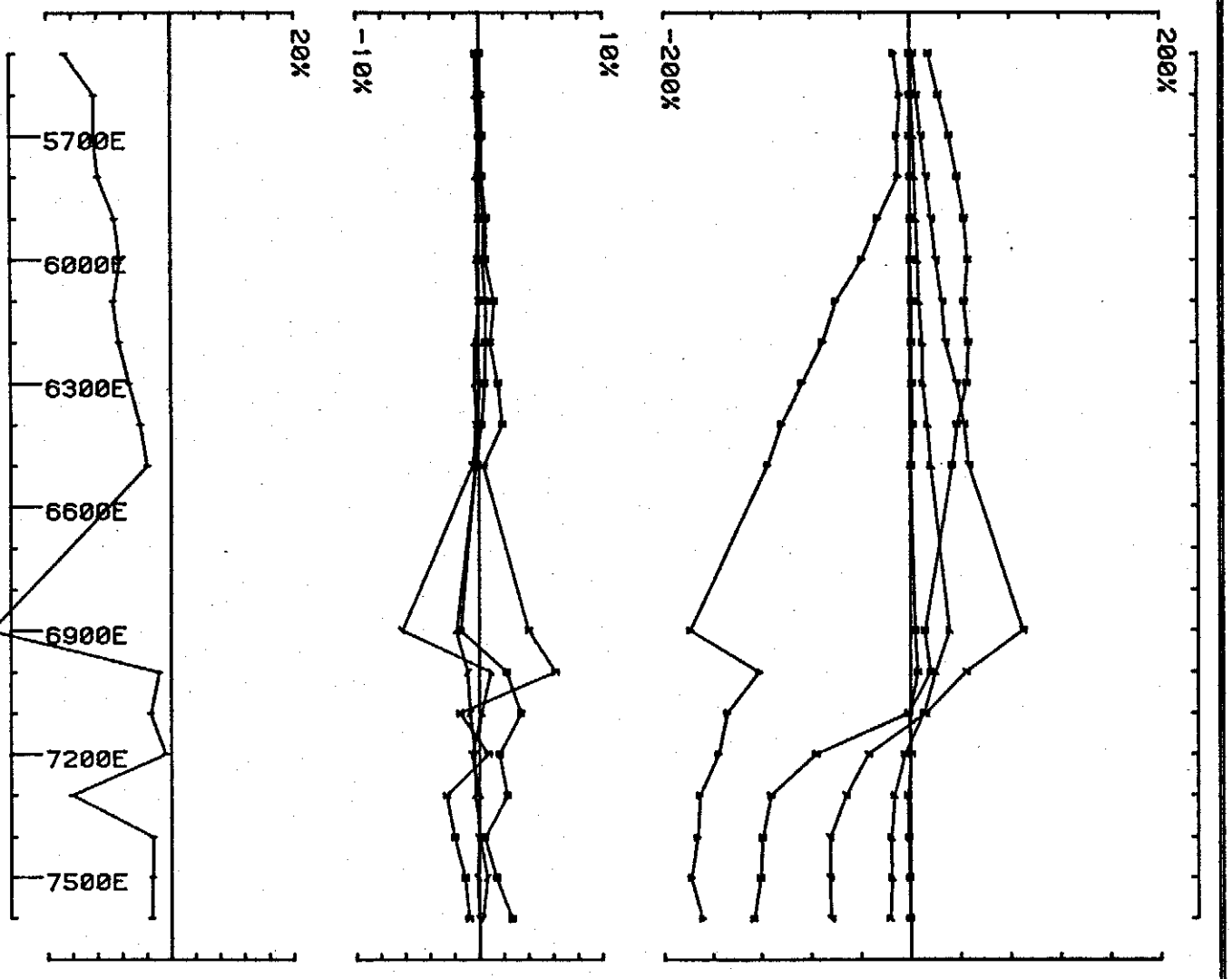


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 425 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

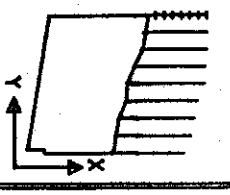


Basin Lake
LOOP 8003
LINE 425
Hz

147

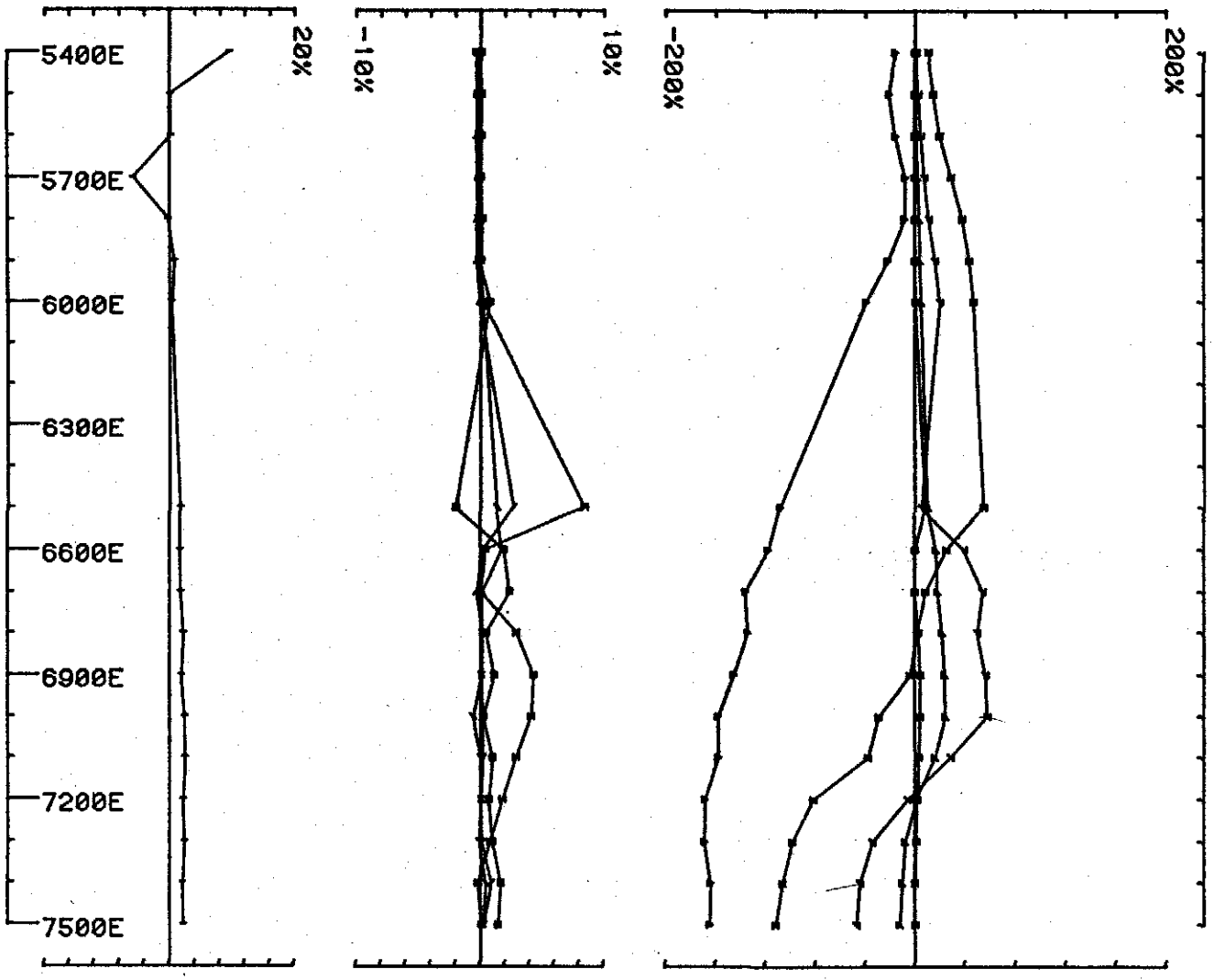


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L48.5 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

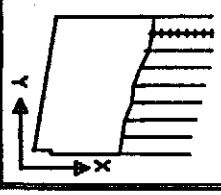


Basin Lake
LOOP 8004
LINE 48.5
Hz

148

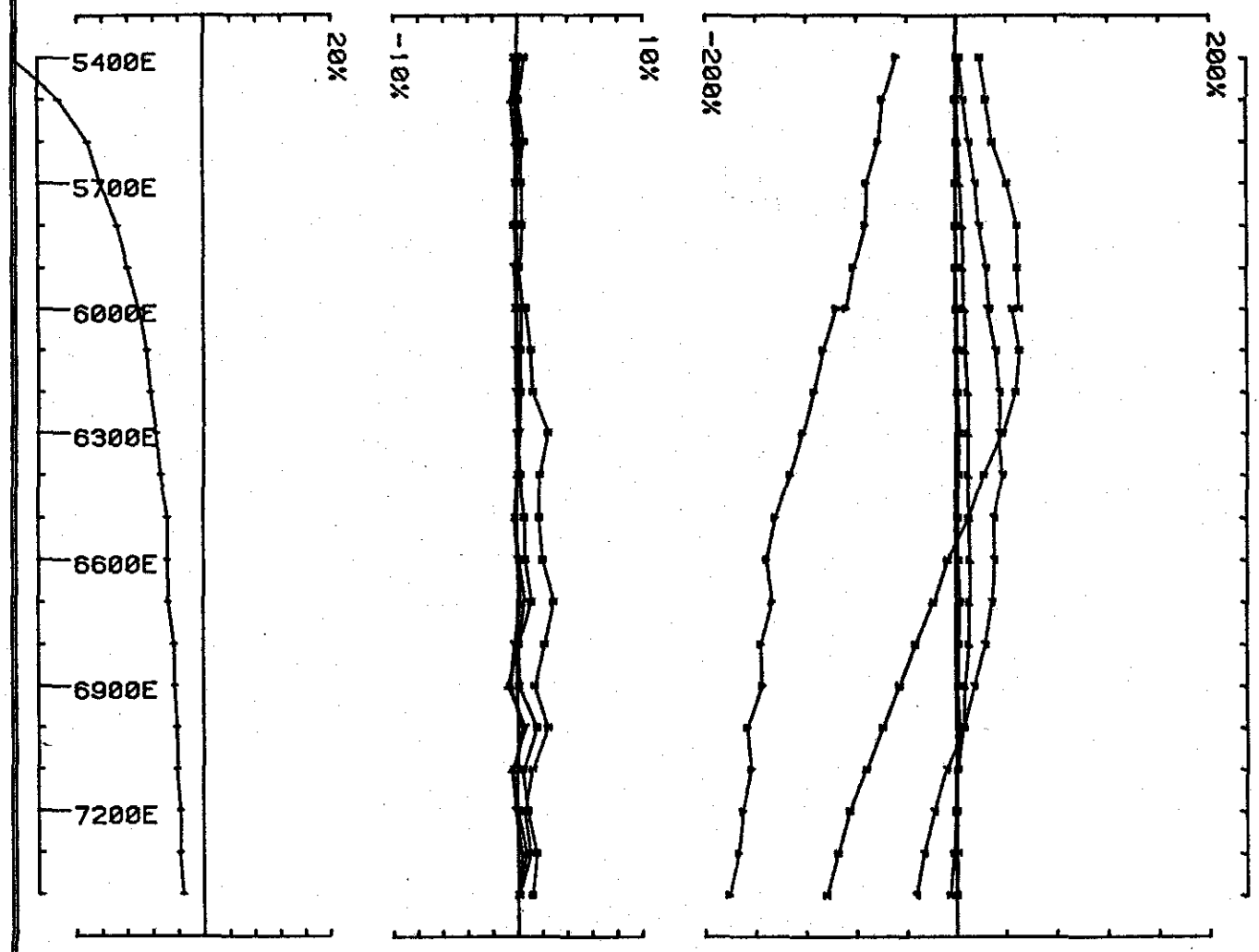


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 545 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

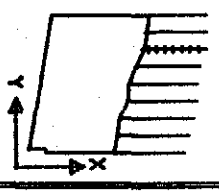


Basin Lake
LOOP 8004
LINE 545
Hz

149

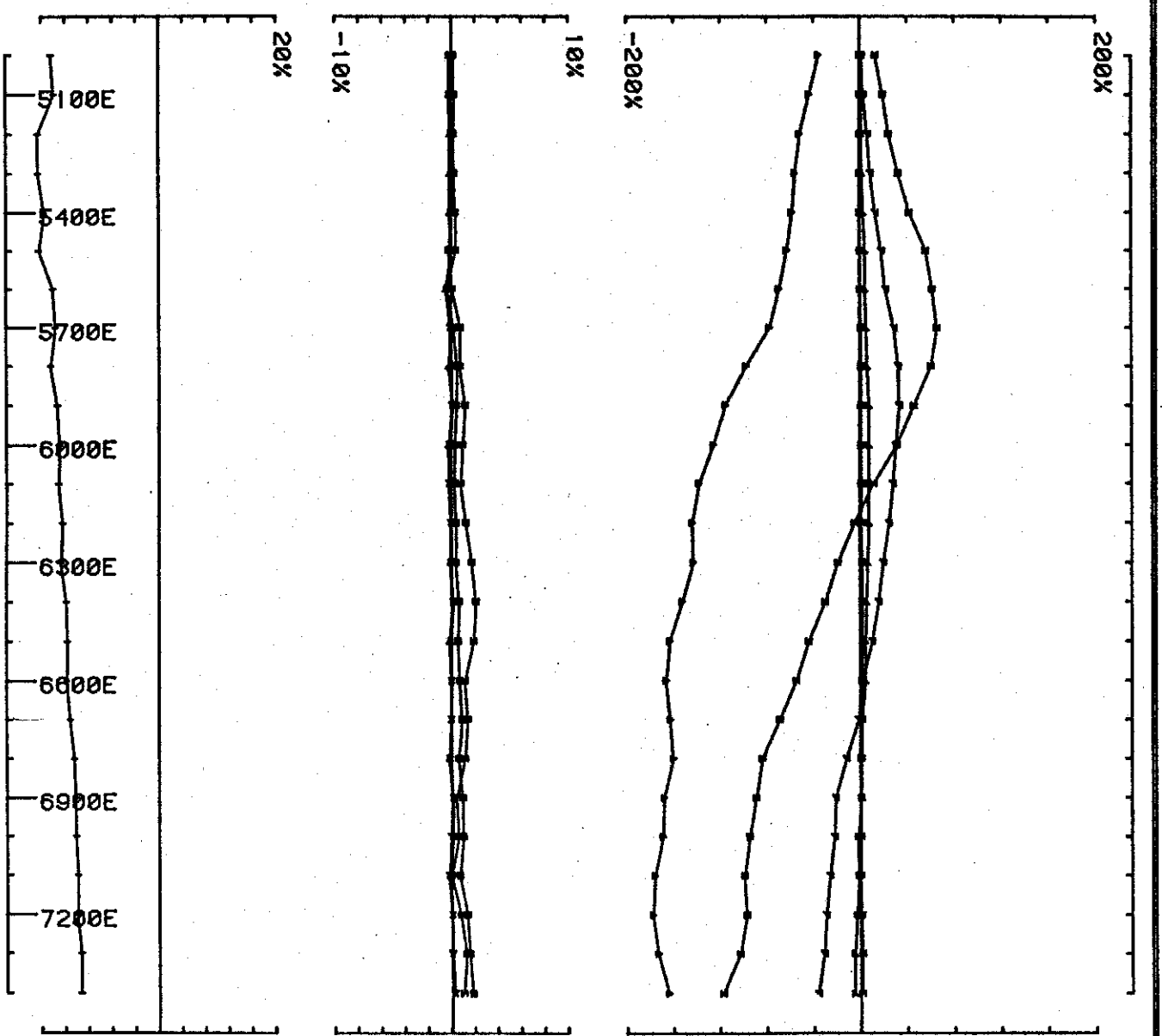


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 605. Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

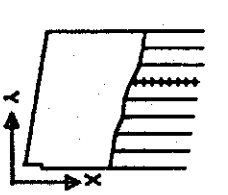


Basin Lake
LOOP 8004
LINE 605
Hz

150

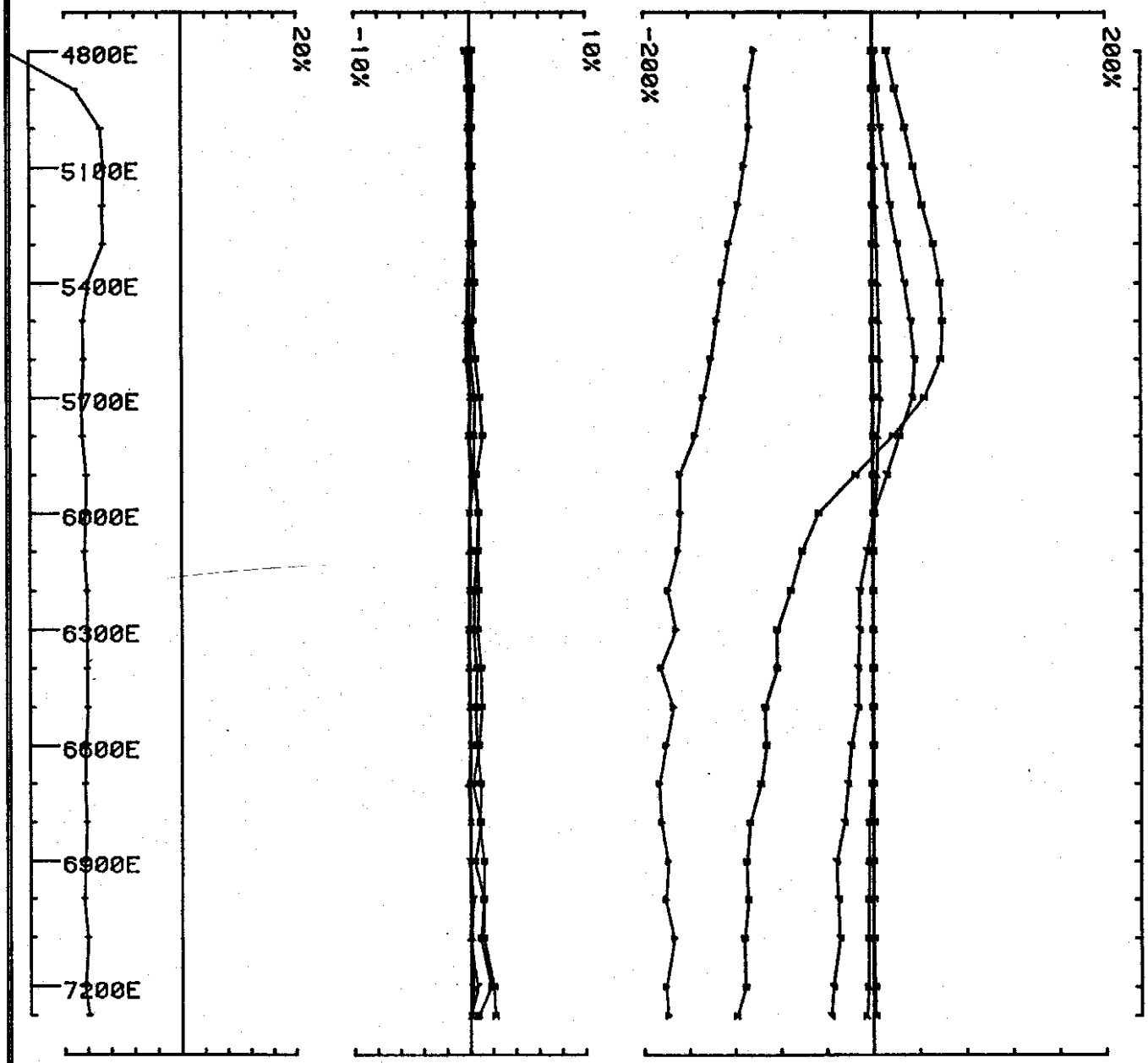


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 665 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

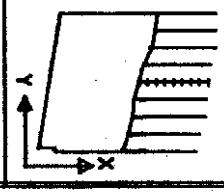


Basin Lake
LOOP 8004
LINE 665
Hz

151

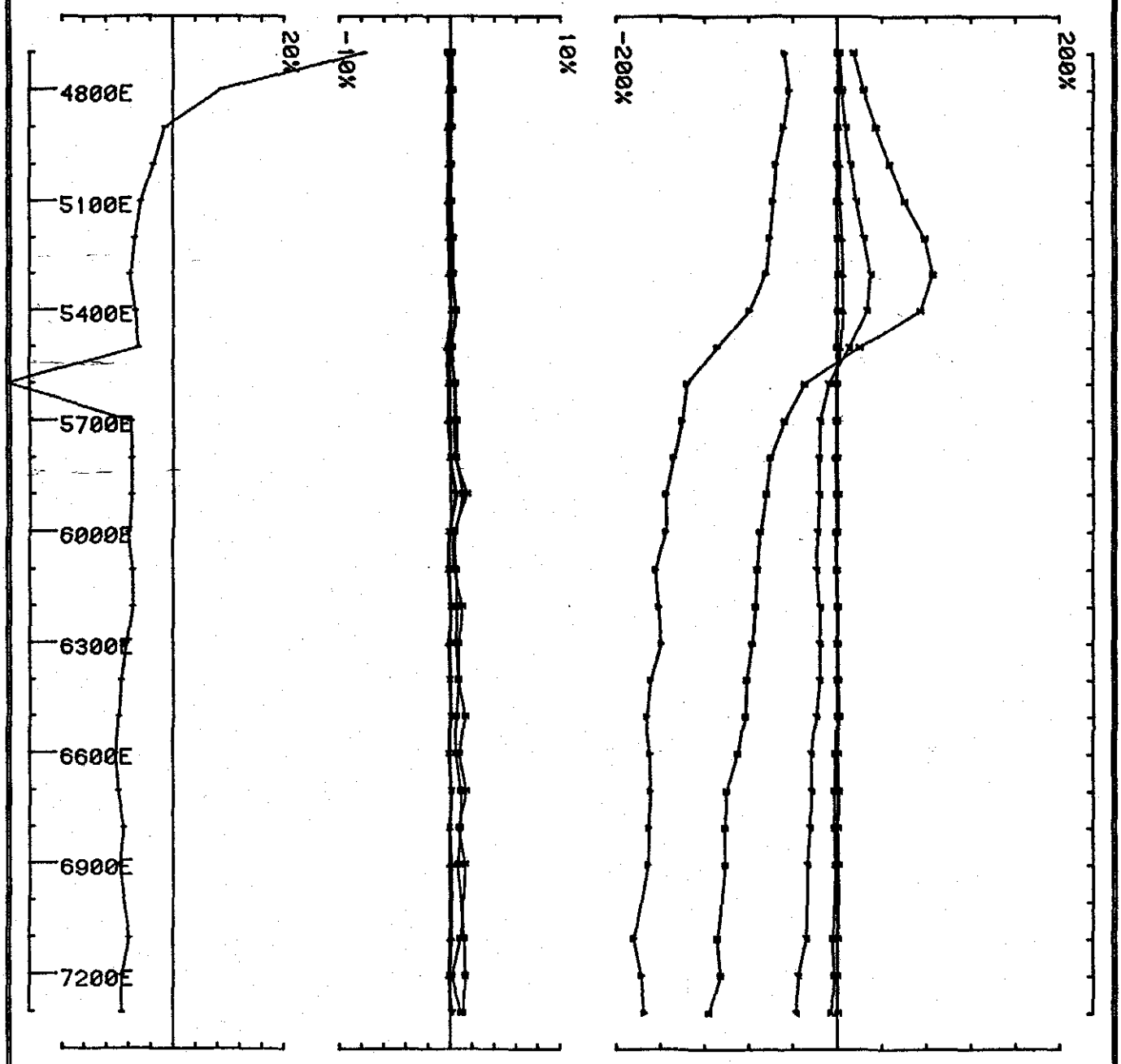


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 725 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

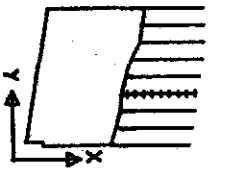


Basin Lake
LOOP 8004
LINE 725
Hz

152.

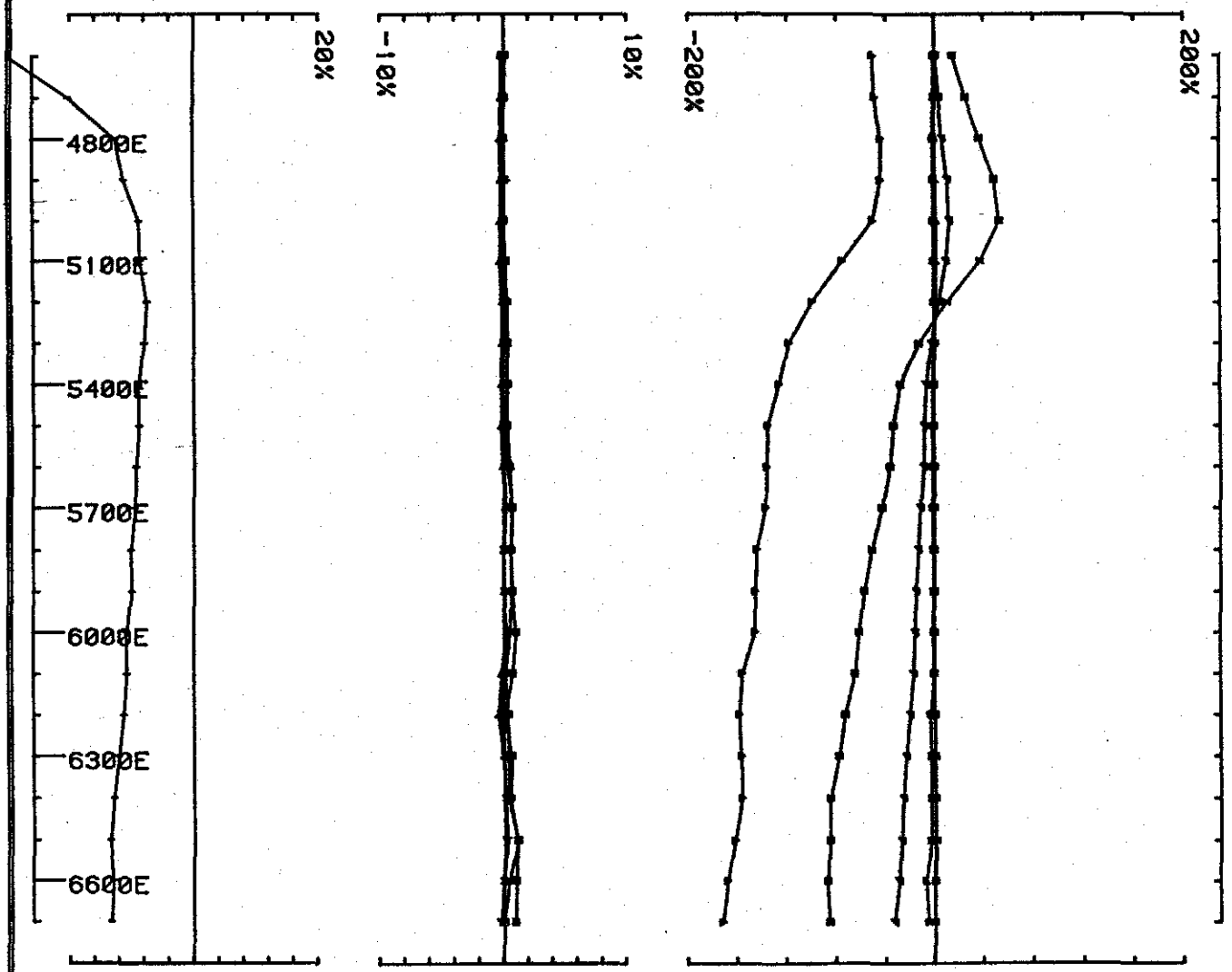


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 785 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

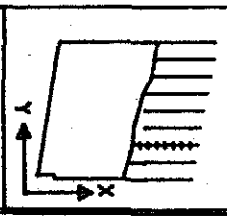


Basin Lake
LOOP 8004
LINE 785
Hz

153

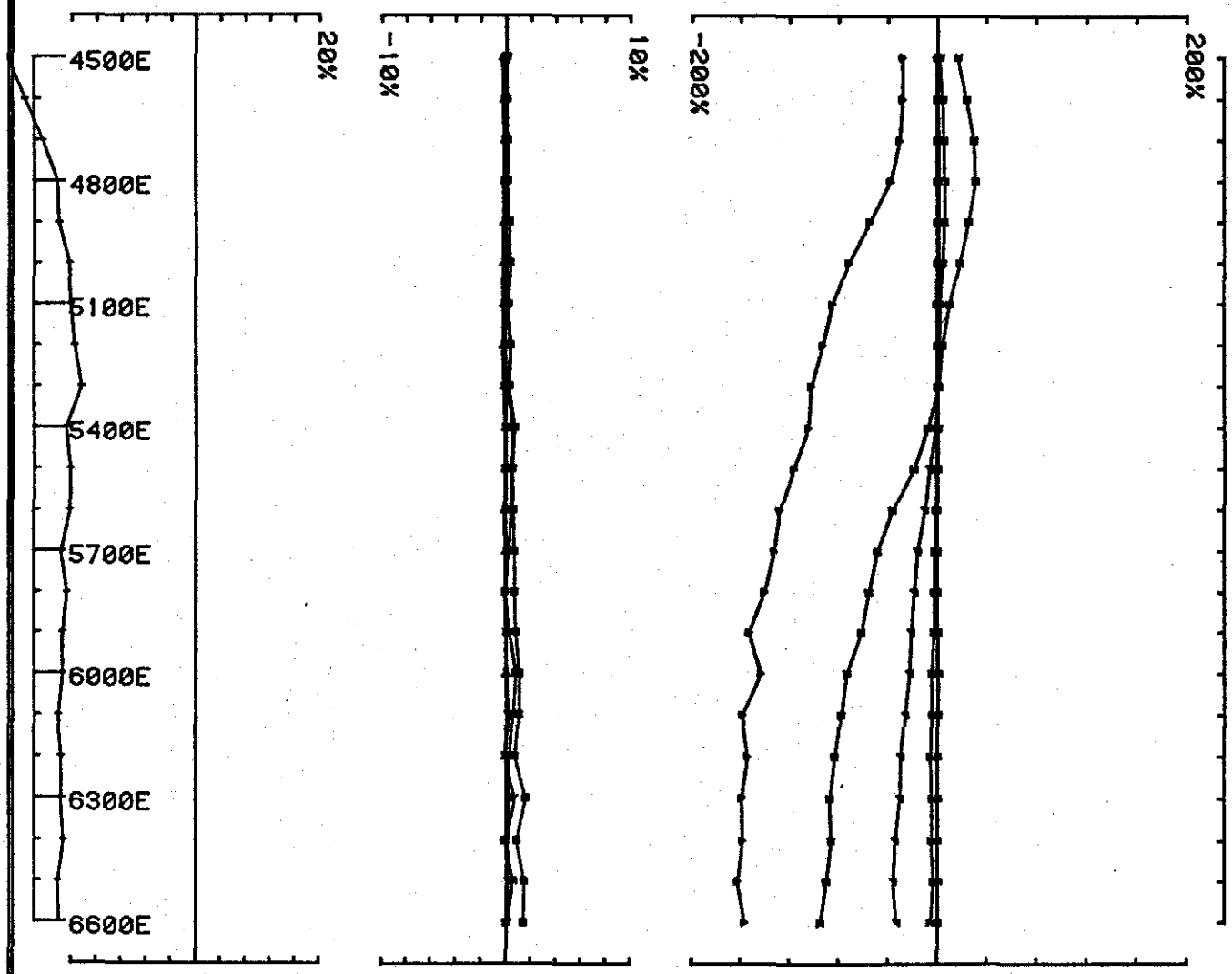


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 845 Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

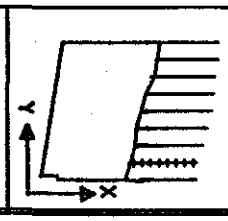


Basin Lake
LOOP 8884
LINE 845
Hz

154



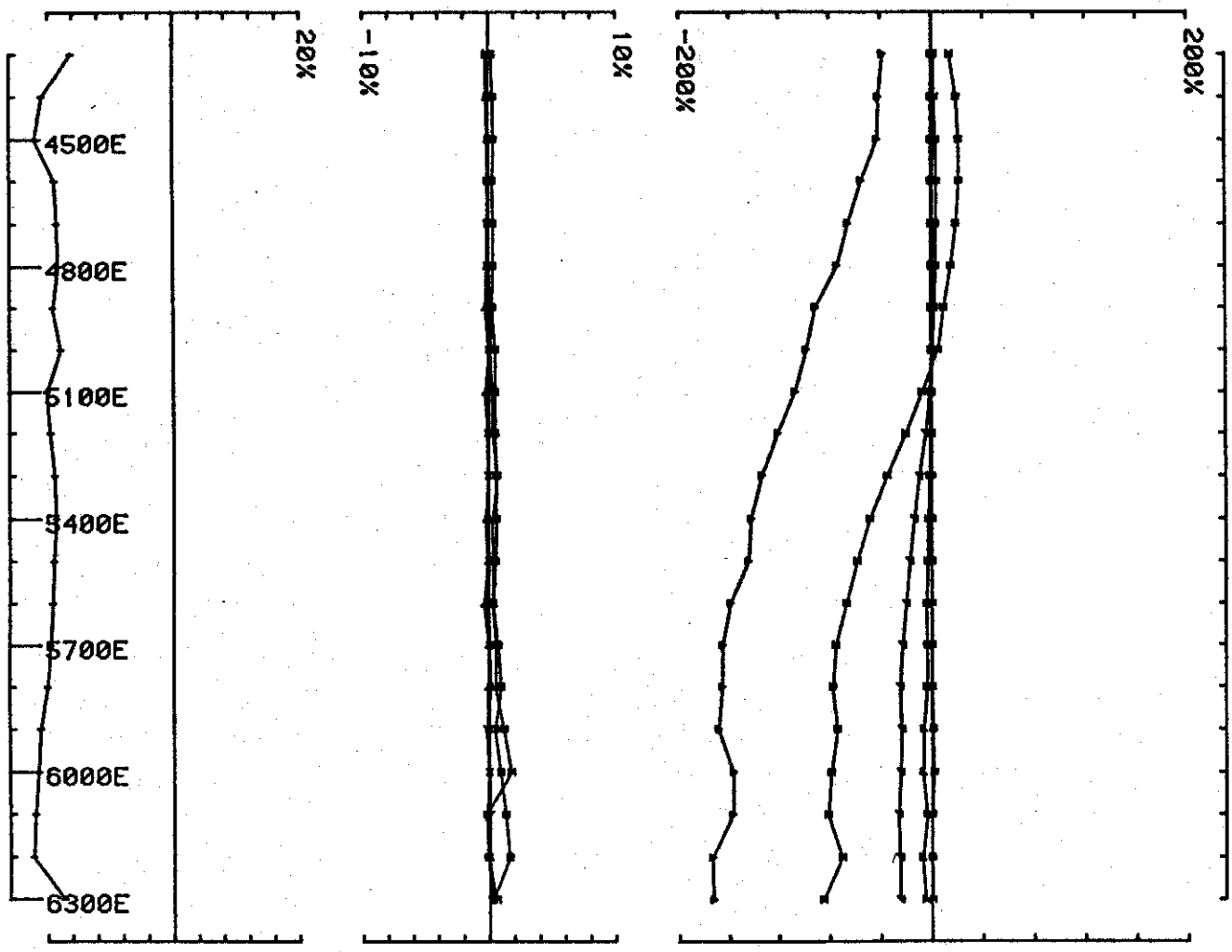
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 90S Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



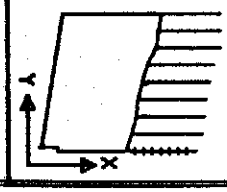
Basin Lake
LOOP 8884
LINE 90S
Hz

014157

155

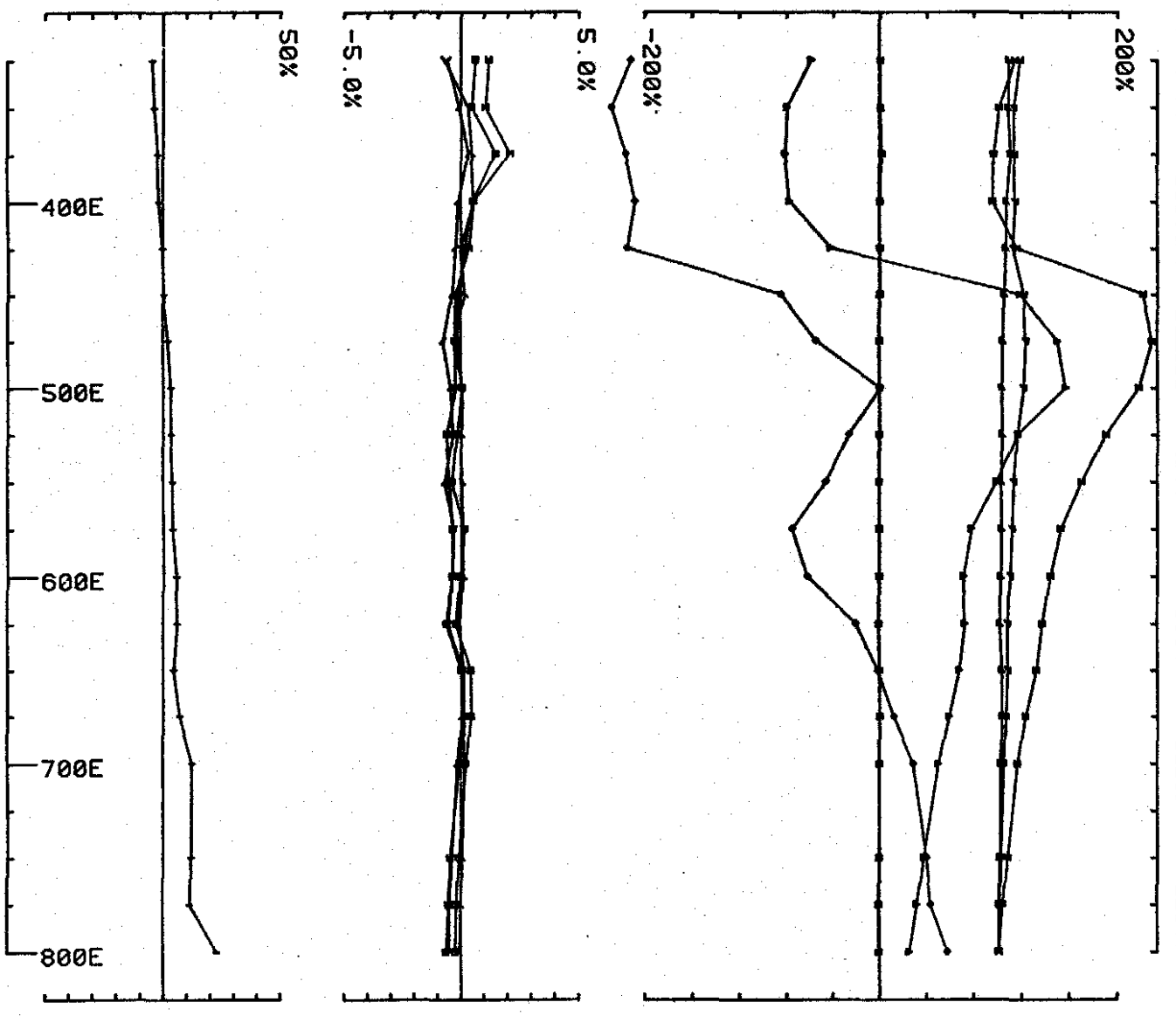


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L.95Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

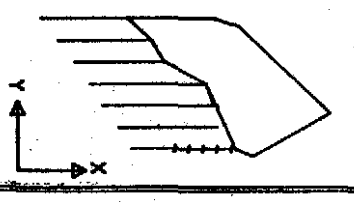


Basin Lake
LOOP 8004
LINE 95S
Hz

156



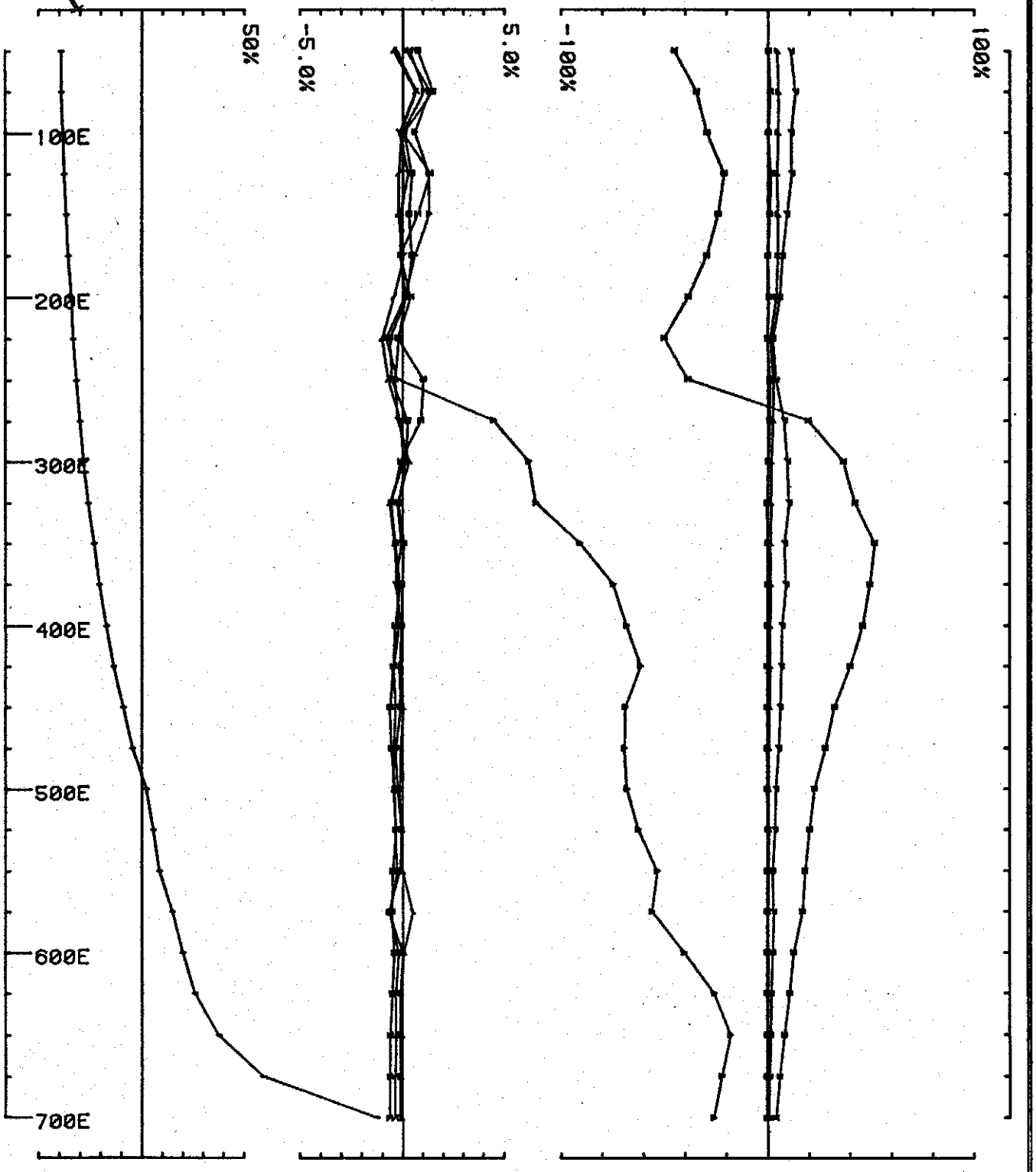
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L1NHz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



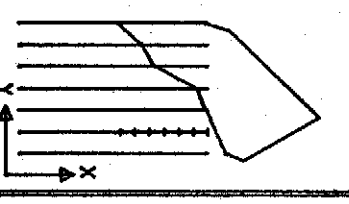
Basin Lake
LOOP 8008
LINE 2N
Hz

014159

157

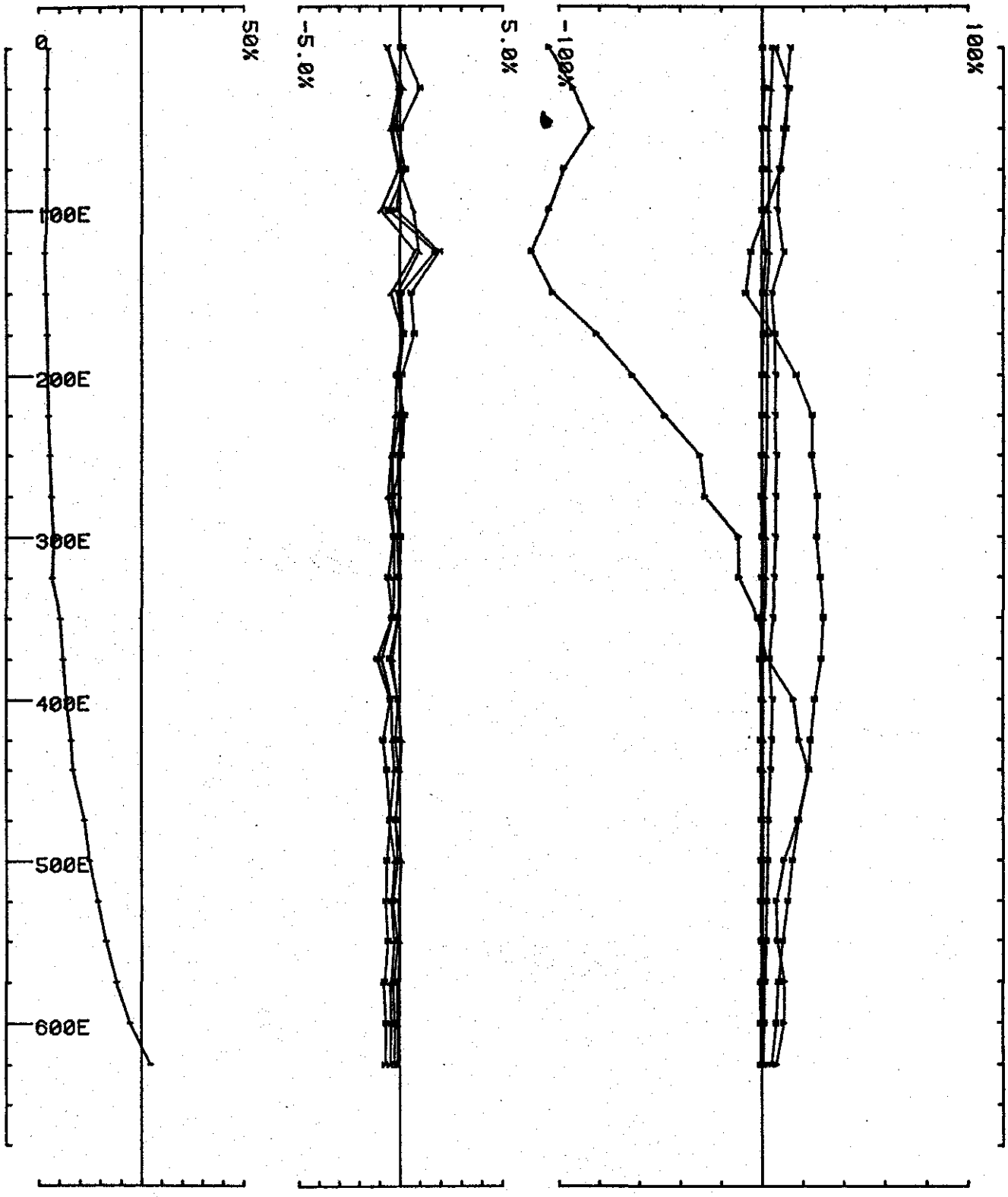


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 4N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

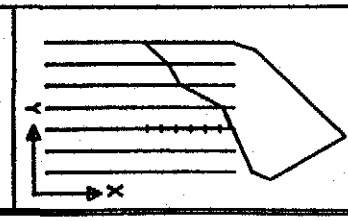


Basin Lake
LOOP 8085
LINE 4N
Hz

158



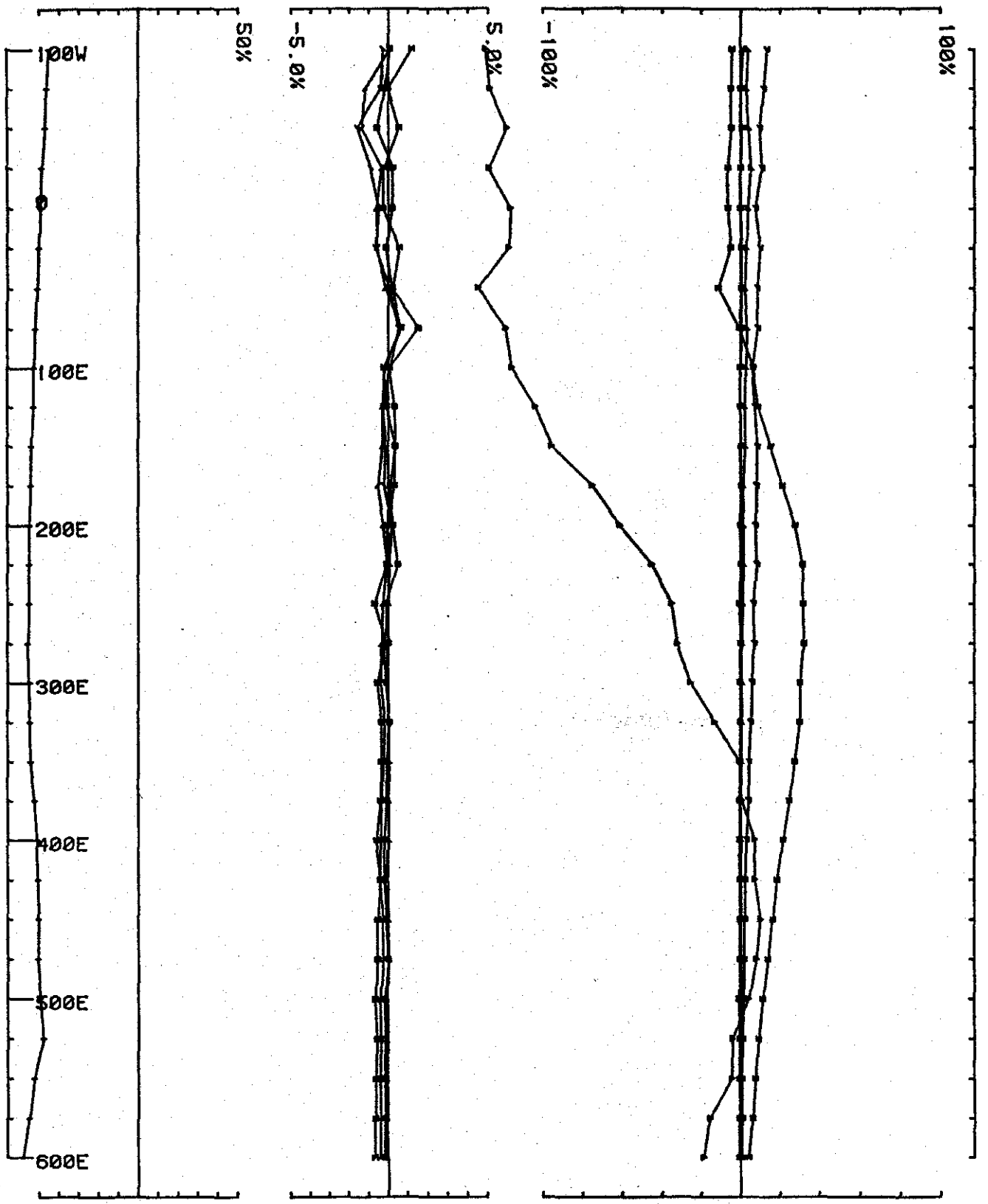
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 45N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP 8005
LINE 45N
Hz

159

014161



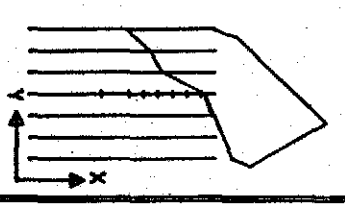
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507

AREA :- Basin Lake

CLIENT :- Goldfields CREW :- PMM GDM

L 5 N Hz COMPONENT BASE FREQ :- 26.230HERTZ

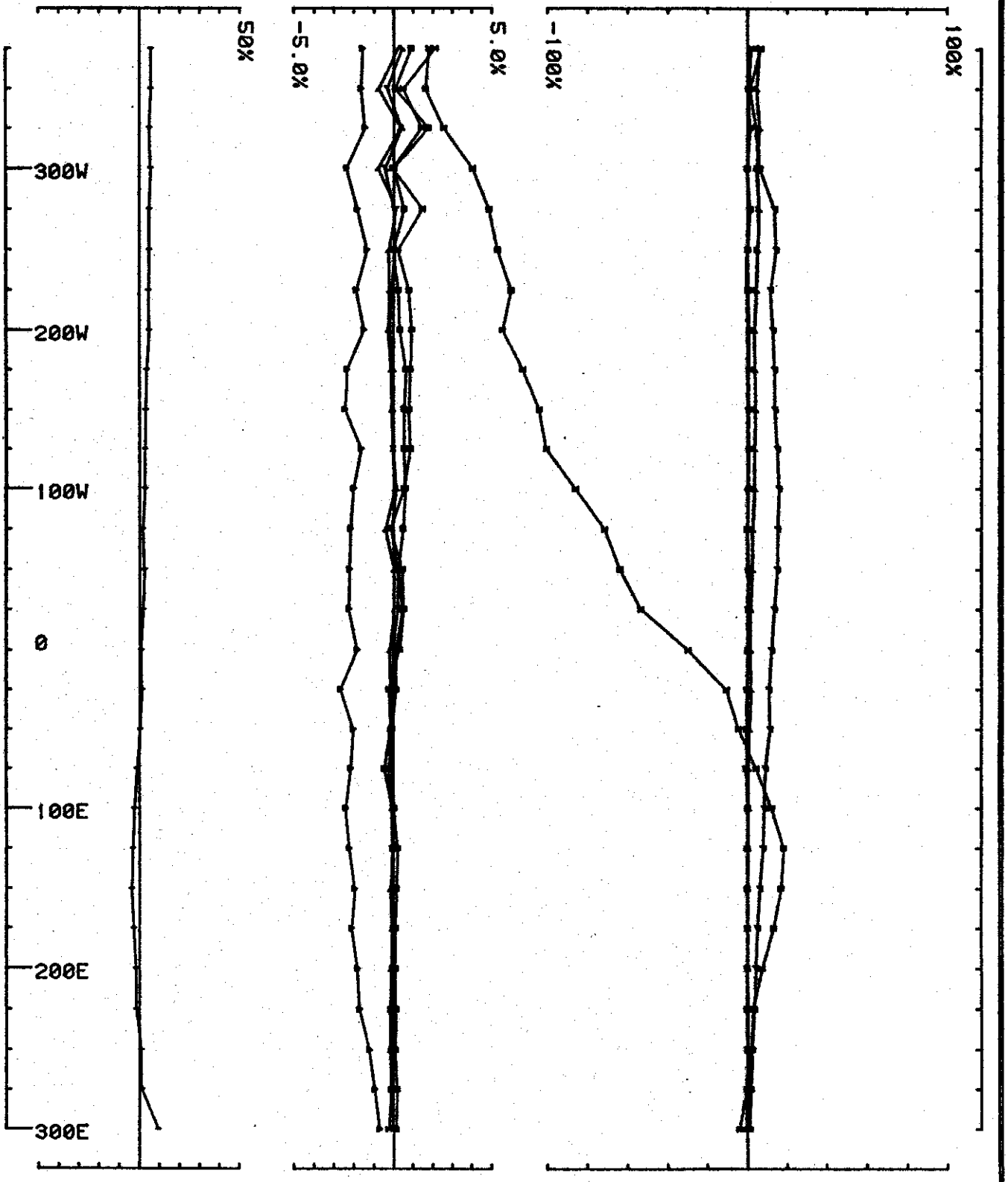
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



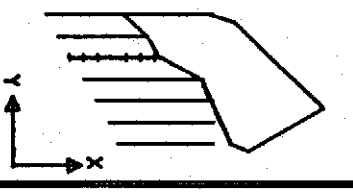
Basin Lake
LOOP 800S
LINE 5 N
Hz

160

014162



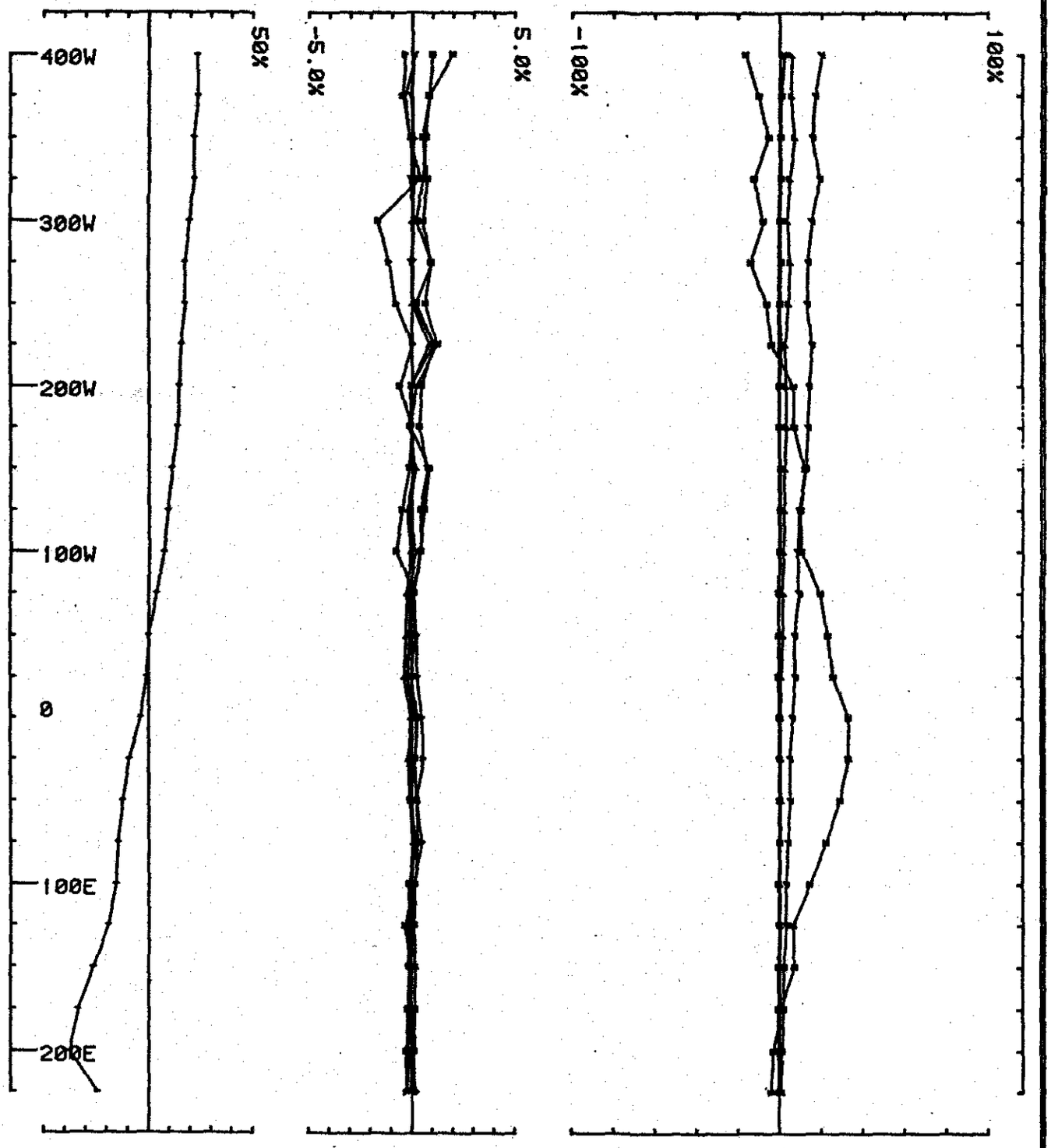
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 6 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



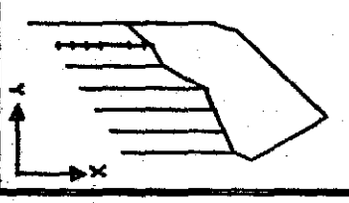
Basin Lake
LOOP 8005
LINE 6 N
Hz

161

014163



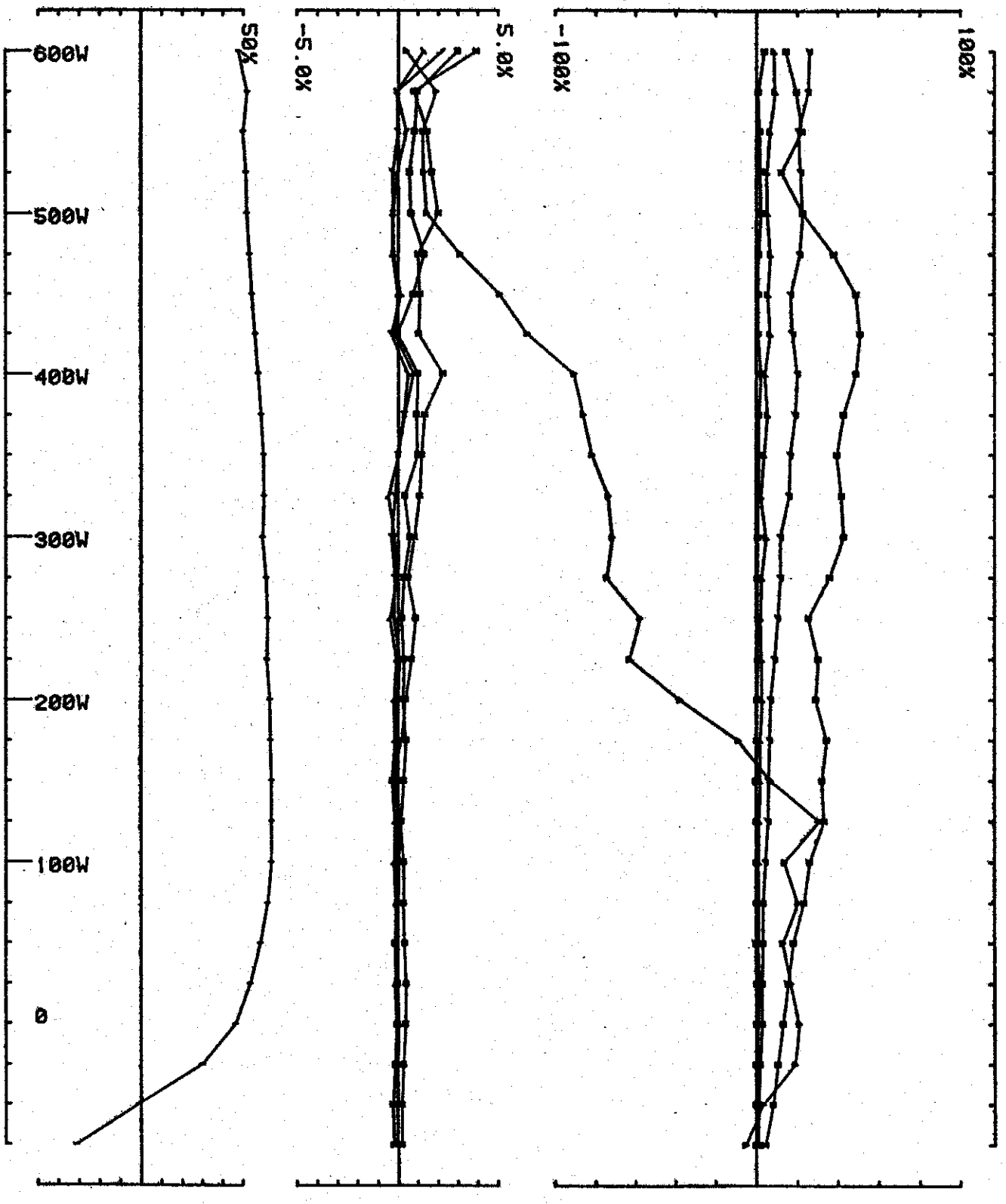
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L7 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



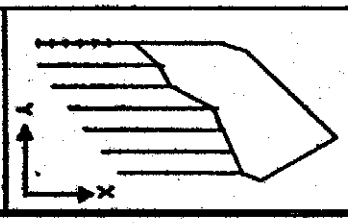
Basin Lake
LOOP 8000S
LINE 7 N
Hz

162

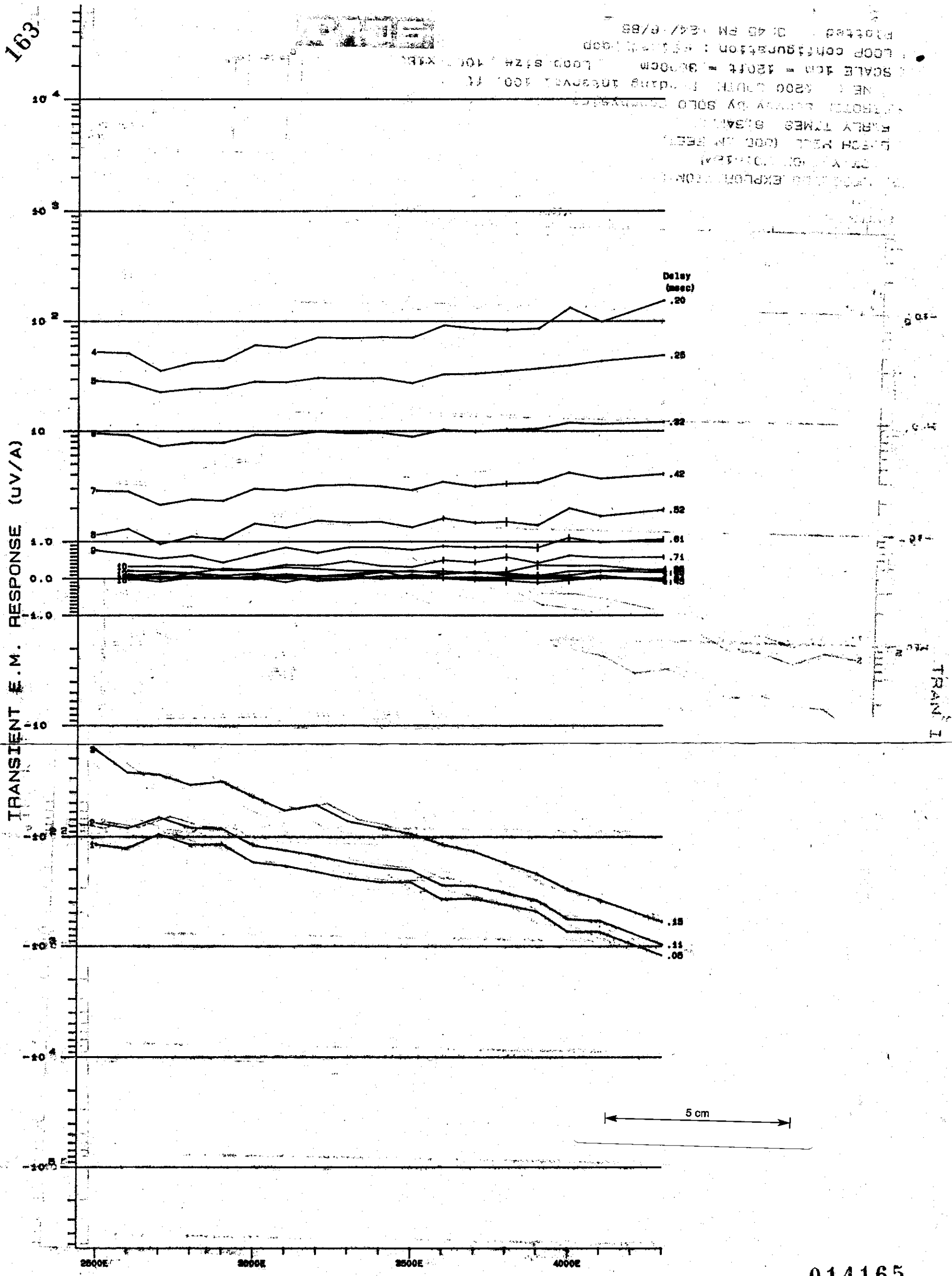
014164



LAMONTAGNE GEOPHYSICS UTEM SURVEY Job 8507
AREA :- Basin Lake
CLIENT :- Goldfields CREW :- PMM GDM
L 6 N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Basin Lake
LOOP 6666
LINE 6 N
Hz



GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.812M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.6AMPS
SIROTEM Survey by SOLO Geophysics & Co. 6/ 5/86
LINE : 1200 SOUTH Reading interval 100 ft
SCALE 1cm = 1200ft = 3600cm Loop size : 1000 x1800ft
LOOP Configuration : Fixed loop
Plotted : 3:45 PM 24/ 6/86

LOOP DIAGRAM

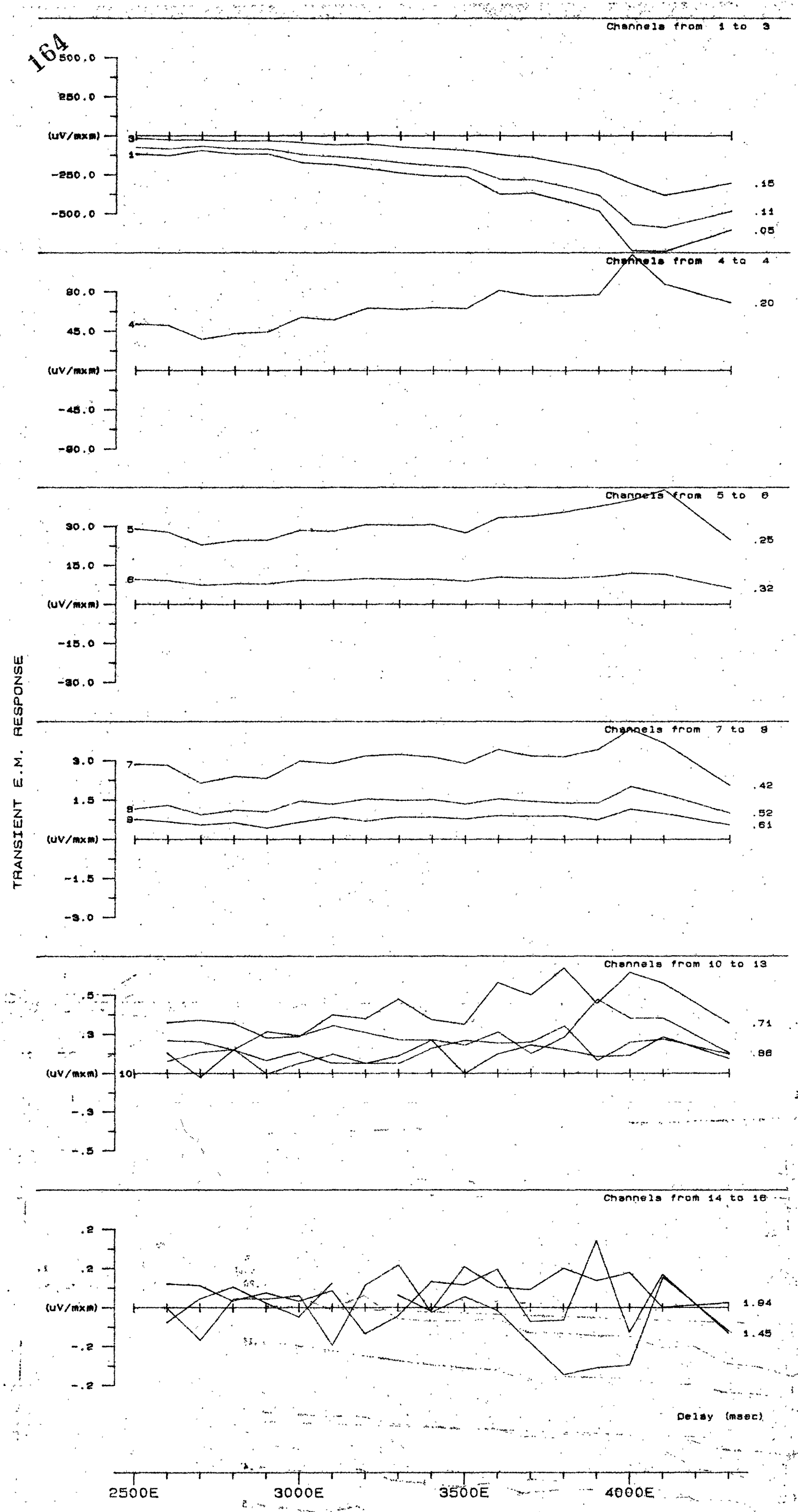
A = (-1200N, 600E)
B = (-3000N, 600E)
C = (-3000N, 5000E)

SOLO

014165

86 2569

164



TRANSIENT E.M. RESPONSE

GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.612M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.6AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 1200 SOUTH Reading interval 100 ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 4:42 PM 24/ 6/86

5 cm

0144166

SOLO

86-2560

165

TRANSIENT E.M. RESPONSE (UV/A)

10^4 10^3 10^2 10 1.0 0.0 -10 -10^2 -10^3 -10^4 -10^5

Delay (msec)
.20
.25
.32
.65

5 cm

2000E 3000E 4000E

GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.612M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.6AMPS
SIROTEM Survey by SOLO Geophysics & Co. 6/ 5/86
LINE : 1800 SOUTH Reading interval 100.
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 3:23 PM 24/ 6/86

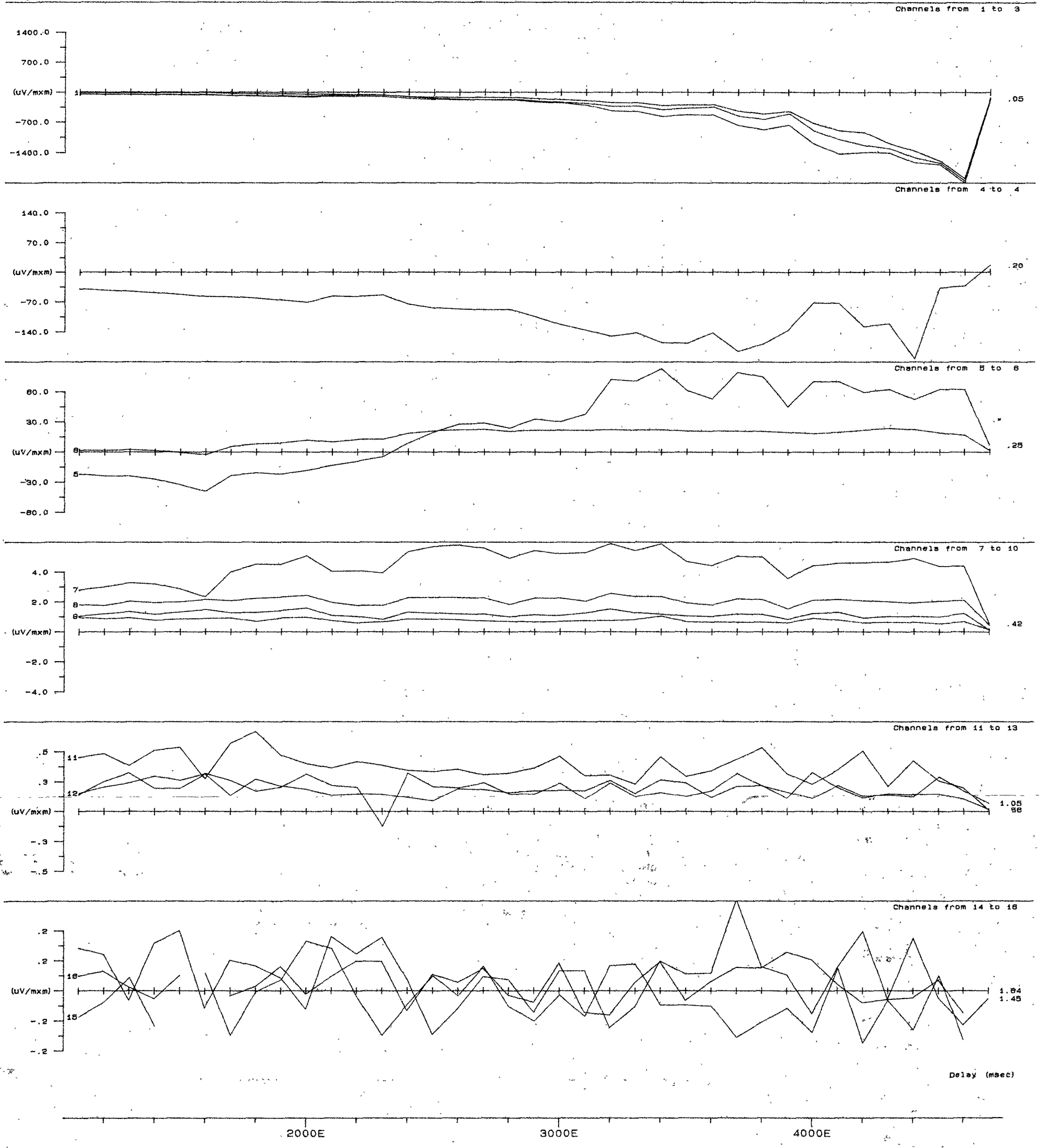
LOOP DIAGRAM

A = (-1200N, 8000E)
B = (-3000N, 8000E)
C = (-3000N, 5000E)

SOLO

014167

86-2560



GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.612M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.6AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 1800 SOUTH Reading interval 100 ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 4:15 PM 24/ 6/88

5 cm

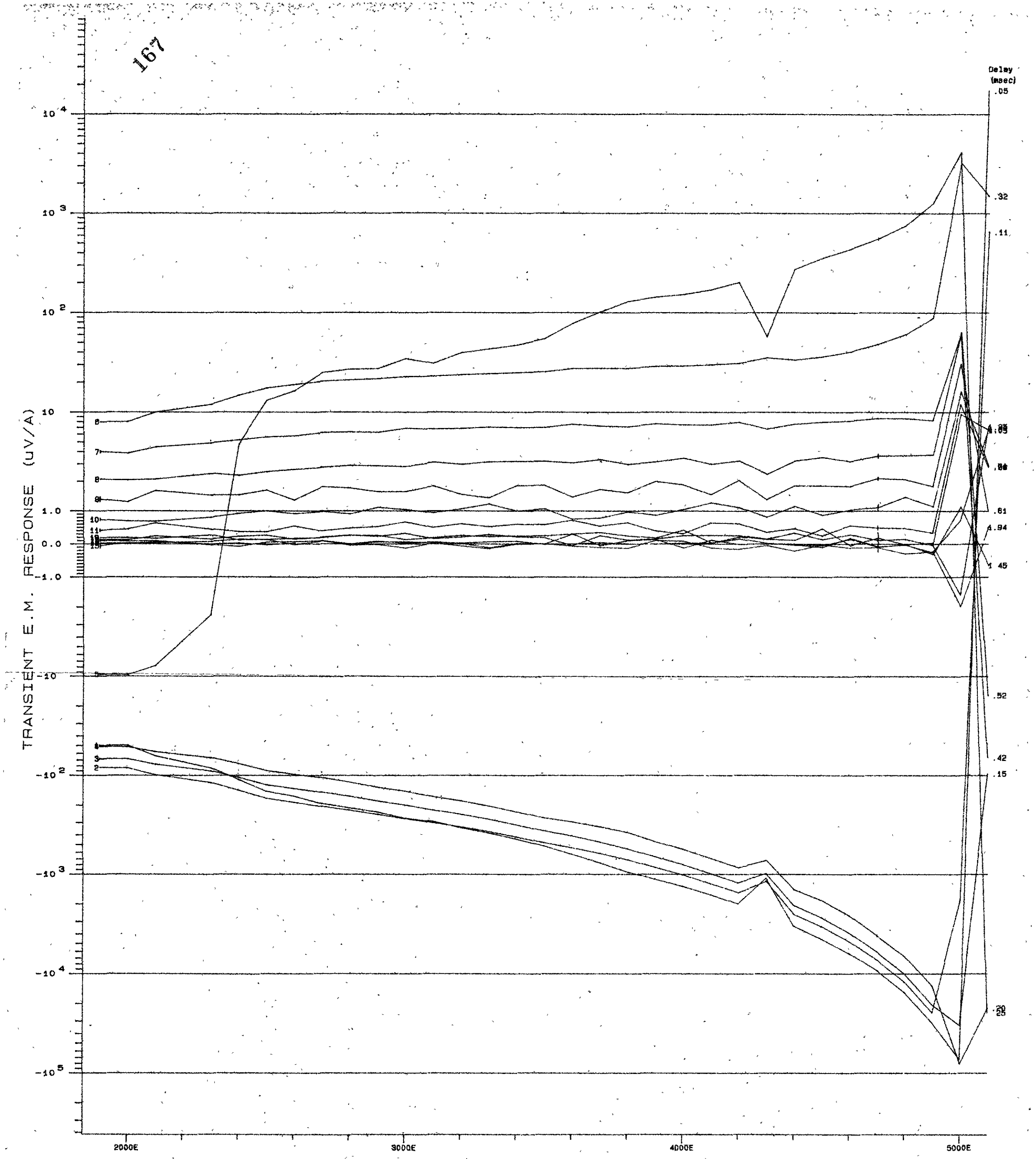
014168

SOLO

86-2566

166

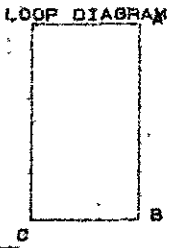
167



GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.612M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.7AMPS
SIROTEM Survey by SOLO Geophysics & Co. 6/ 5/86
LINE : 2400 SOUTH Reading interval 100. ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 3:28 PM 24/ 6/86

5 cm

LOOP DIAGRAM



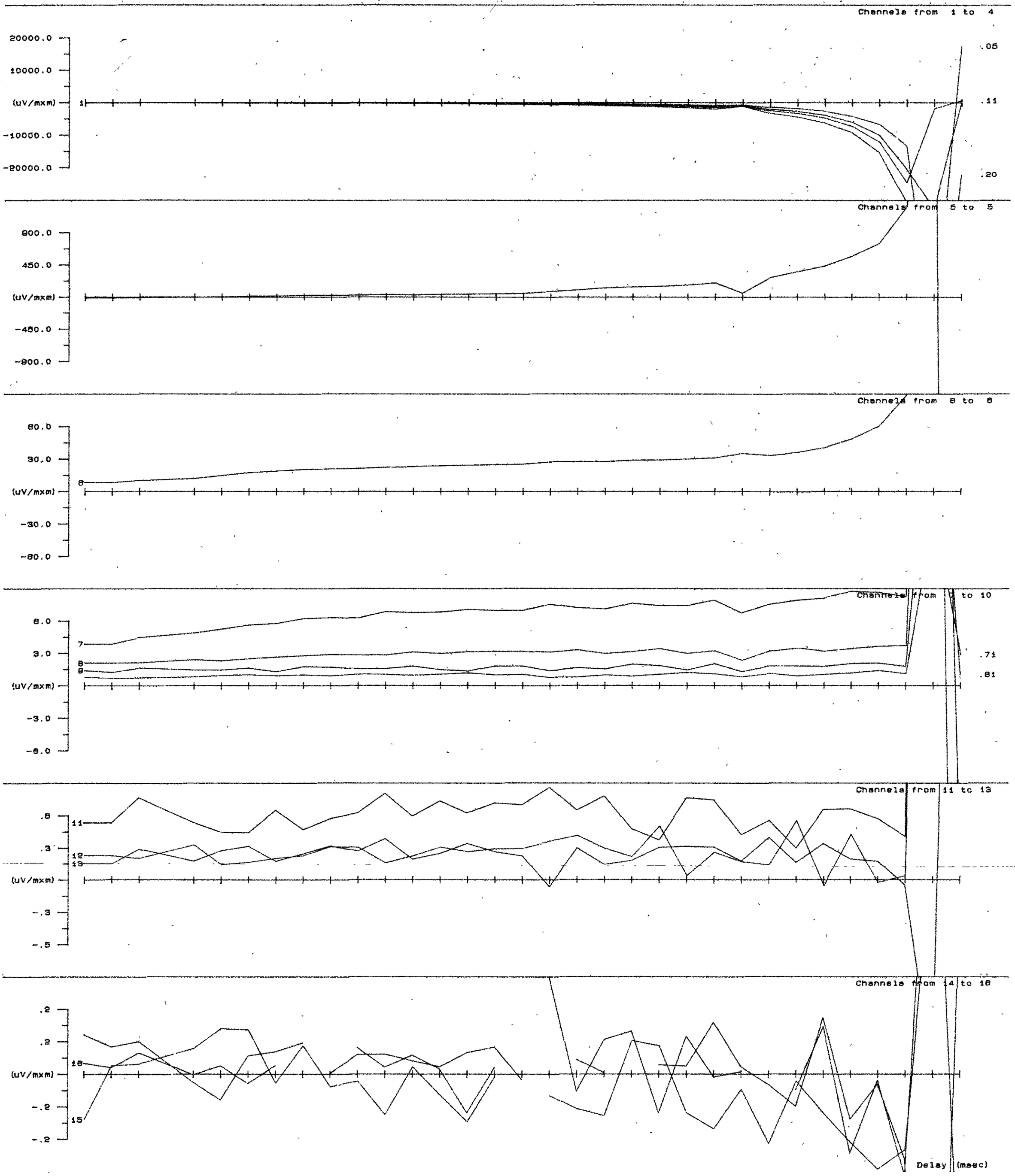
A = (-1200N, 6000E)
B = (-3000N, 6000E)
C = (-3000N, 5000E)

SOLO

014169

86-2566

168



TRANSIENT E.M. RESPONSE

GOLDFIELDS EXPLORATION PTY.LTD
CROTTY (JOB NO.812M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 8.7AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 2400 SOUTH Reading interval 100 ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 4:23 PM 24/ 6/88

5 cm

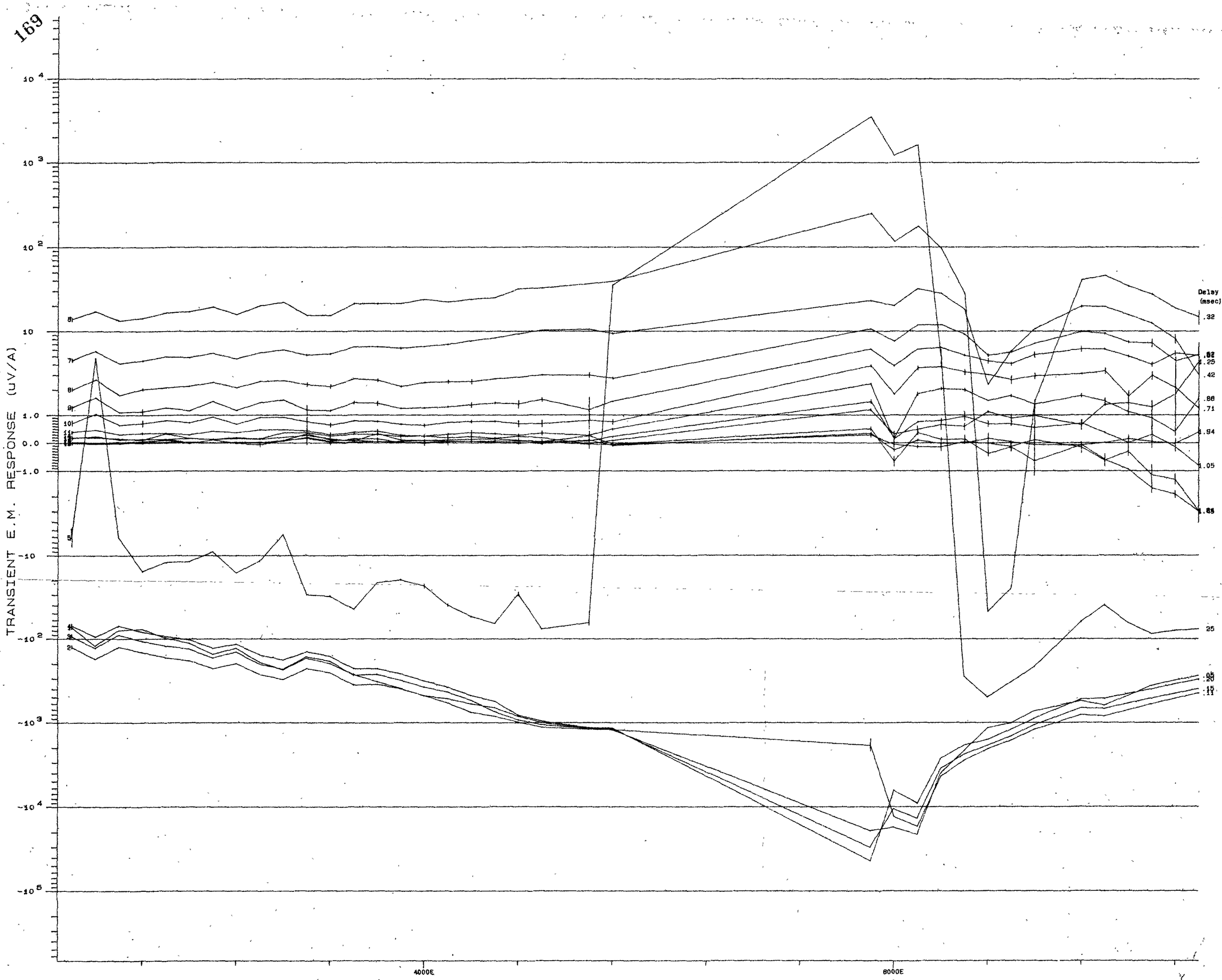
014170

SOLO

86-2566

168

169



GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.812M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 6.6AMPS
SIROTEM Survey by SOLO Geophysics & Co. 6/ 5/86
LINE : 3000 SOUTH Reading interval 100. ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 3:38 PM 24/ 6/86

5 cm

LOOP DIAGRAM

A = (-1200N, 8000E)
B = (-3000N, 8000E)
C = (-3000N, 5000E)

014171

86-2566 1/3

170

TRANSIENT E.M. RESPONSE

Channels from 1 to 4

30000.0
15000.0
(uV/mxm)
-15000.0
-30000.0
1
.05

Channels from 5 to 5

2400.0
1200.0
(uV/mxm)
-1200.0
-2400.0
.25

Channels from 6 to 6

180.0
90.0
(uV/mxm)
-90.0
-180.0
6
.32

Channels from 7 to 8

22.0
11.0
(uV/mxm)
-11.0
-22.0
7
.42

Channels from 9 to 12

4.0
2.0
(uV/mxm)
-2.0
-4.0
9
.61
.71
1.05

Channels from 13 to 16

1.8
.9
(uV/mxm)
-.9
-1.8
1.84
1.45
1.64
Delay (msec)

3000E 4000E 5000E 6000E 7000E

014172

5 cm

GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY (JOB NO.812M)
LEECH HILL (JOB IN FEET)
EARLY TIMES 8.6AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 3000 SOUTH Reading interval 100 ft
SCALE 1cm = 120ft = 3600cm Loop size : 1000 x1800ft
LOOP configuration : Fixed loop
Plotted : 4:34 PM 24/ 6/86

SOLO

86-2566 1/2

014173

GEOPHYSICAL EXPLORATION CONSULTANTS PTY. LTD.
Suite 204, 104 Mount Street, Heidelberg, Victoria 3084 Telephone (03) 459 0533
Telex AA 30825

JUN
DATE: - 3 1986
FILE No: 4503
INITIALS:

2nd June, 1986

Mr P. Roberts,
Gold Fields Exploration Pty. Ltd.,
55 Main Road,
MIVENHOE. TAS. 7320

Dear Paul,

ZIG ZAG HILL AREA SIROTEM

I have studied the three fixed loop Sirotem (H_z') data profiles from the Zig Zag Hill area and offer the following comments about the data. Please refer to both the log-linear (log-lin) and linear-linear (lin-lin) profile plots enclosed - the latter were requested from Solo Geophysics on your behalf.

The data quality

The data is of reasonable quality, although the intermediate to late time channels are affected by scatter (see lin-lin 1600E). This causes uncertainty in the identification of inflexion point position and degree of migration - both these factors are important in determining whether the main anomalous effect is caused by a discrete source or a wide formational/weathering contrast.

The main anomalous effect occurs close to the end of each of the lines traversed. For the loop geometry employed, this position is most susceptible to current channeling effects which result in added uncertainty about the nature of the conductive source.

.../2.

Data interpretation

The three log-lin plots show a series of cross-overs towards the end of each line. These plots assist recognition of the anomaly but are not very useful for detailed interpretation, mainly because logarithmic vertical scale distorts the positions of inflexion points as well as apparent anomaly amplitudes. The lin-lin plots, produced for channels 6 to 14 inclusive, better define the anomaly for interpretation purposes.

A close inspection of each of the lin-lin plots suggests that two of anomalous effects can be correlated across the lines. On lines 381600E and 381800E, A is a sharp inflexion which appears to reflect a near-surface (?) lateral change in resistivity. The interpreted depth is less than 50 metres (based on the sharpness of the roll-over) but it is difficult to determine whether the response represents a discrete sulphide source or a fault zone/edge of a formational unit. On line 381400E, there is evidence of lateral peak (P) migration and this is more likely to be indicative of current channeling into a weakly conductive zone.

B parallels A and is manifest as a subtle and sharp inflexion/trough combination indicating a near-surface (less than 25 metres deep) resistivity contrast.

Discussion

Despite the general indication that A and B are formational or fault-related current channeling responses, A in particular cannot be dismissed because it appears to get broader and more coherent on line 381400E, possibly indicating a confined source. The situation may improve to the west and it may be worth doing some extra work to better define it.

There are some points of concern in reconciling the Sirotem data with the geology. A trends sub parallel to the interpreted position of the West Sedgwick fault. Given the N-S strike of the andesitic intrusive/mafic and mafic/Comstock Tuff contacts, any stratabound scenario for A requires that the stratigraphy bends radically near the fault. Is this a reasonable proposition? Likewise, should A reflect a favourable interval within mafic volcanics, it does not appear to have enough scope for improvement to the west given the proximity of the andesitic intrusive/mafic contact.

.../3.

Based on the interpreted geology, a fault-related cause for A would appear more reasonable. However, a more detailed geological inspection would seem necessary.

With an overly optimistic interpretation of A, the anomaly decay on line 381400E (see enclosed decay plot) is consistent with the response of a weakly conductive galena-sphalerite assemblage (eg. Que River P lens) in the form of a sheet of mineralization with a depth of 100 - 150 metres and depth extent of 50 metres.

In summary, my view is that A and B represent formational/fault-related resistivity contrasts at shallow depth. However, I would be averse to dismissing A totally because on line 381400E it becomes broad and coherent and may possibly reflect a target conductor developing more strongly to the west. I would not recommend drilling but would recommend detailed ground inspection and possibly further TEM work before completely downgrading the area.

Best regards.

Yours sincerely,

Guido Staltari

GUIDO STALTARI
Consultant Geophysicist

GS:MI

Enc...

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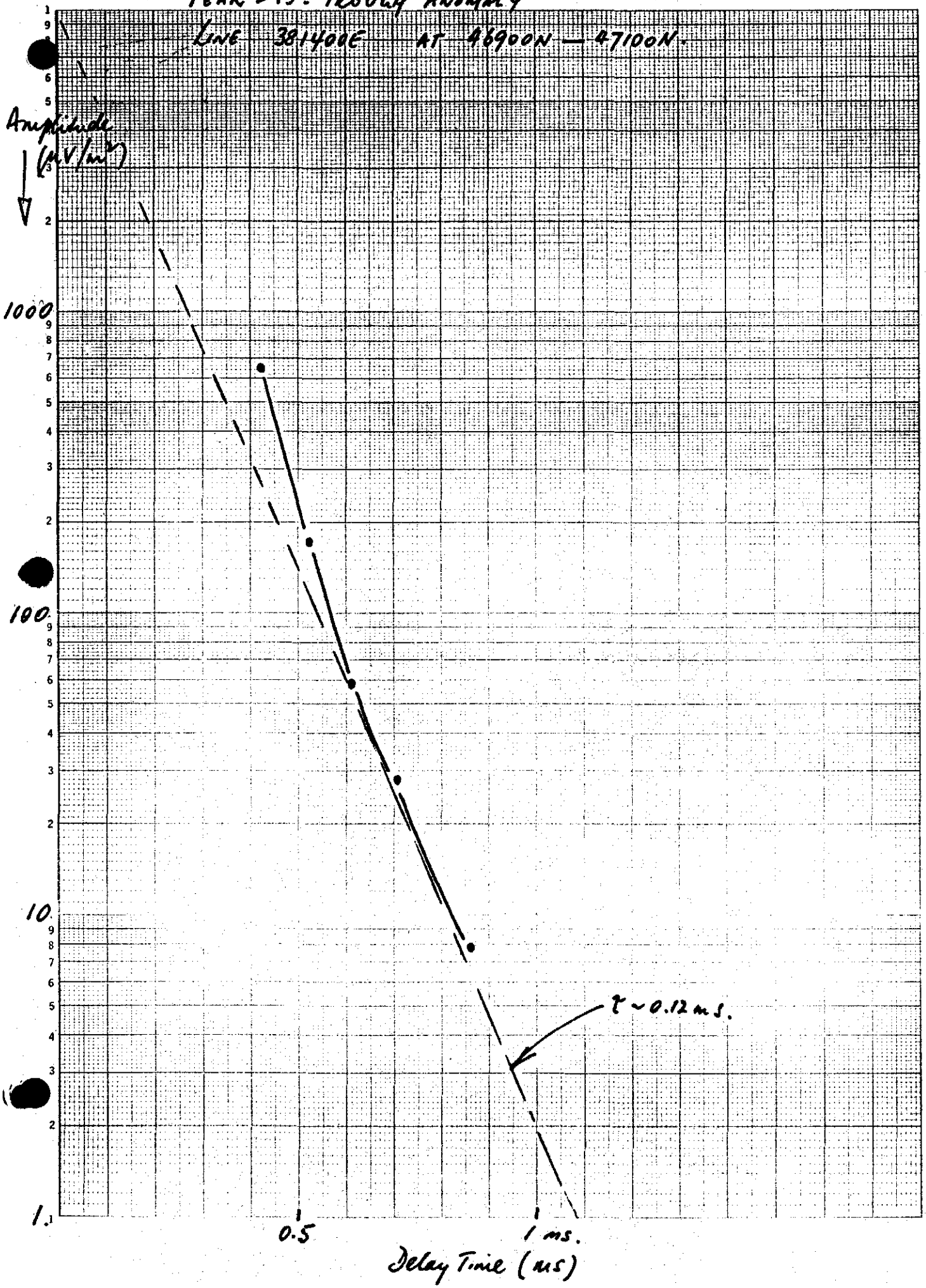
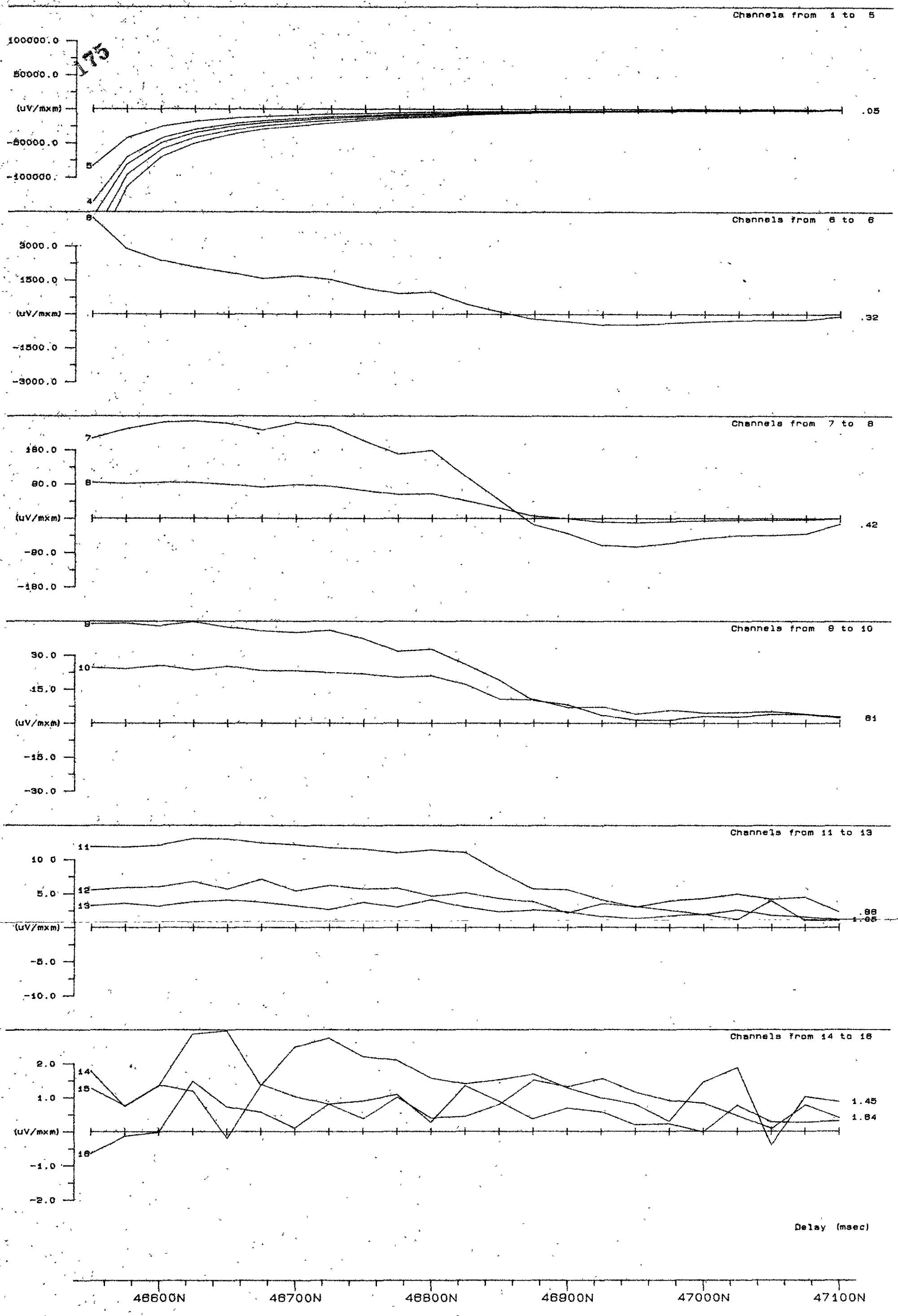
Decay Plot (Log-Lin)

Peak-To-Trough Anomaly

Line 38140OE At 46900N — 47100N.



TRANSIENT E.M. RESPONSE



GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.812K)
ZIG-ZAG, EARLY TIMES
LINE 381800E 700X300M 7.5AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 1800 EAST Reading interval 250m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 10:45 AM 24/ 6/88

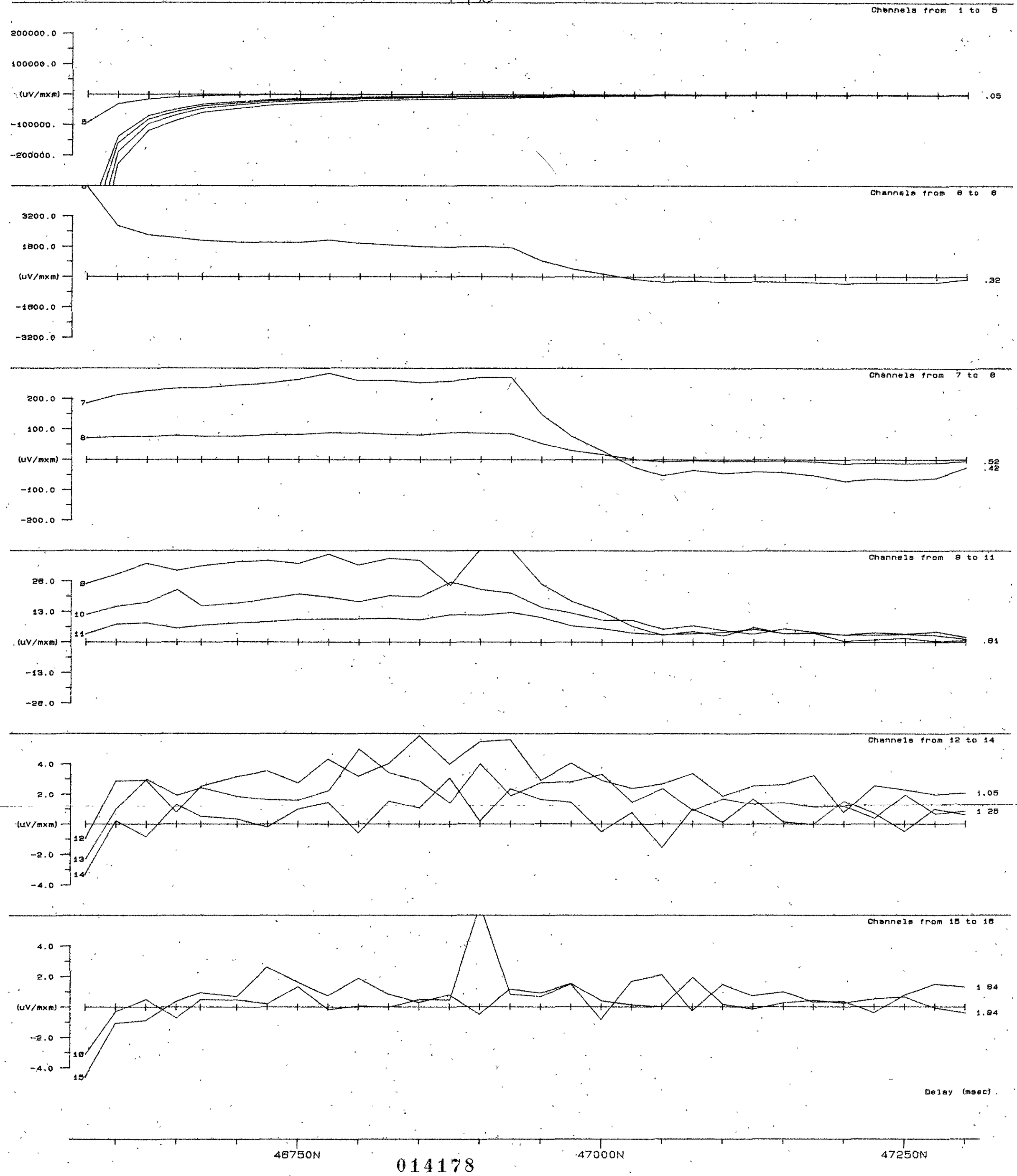
5 cm

014177

SOLO

86-2566 1/3

176



TRANSIENT E.M. RESPONSE

014178

GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.612K)
ZIG-ZAG, EARLY TIMES
LINE 381600E 700X300M 7.6AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 1600 EAST Reading interval 25.0 m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 10:29 AM 24/ 8/86

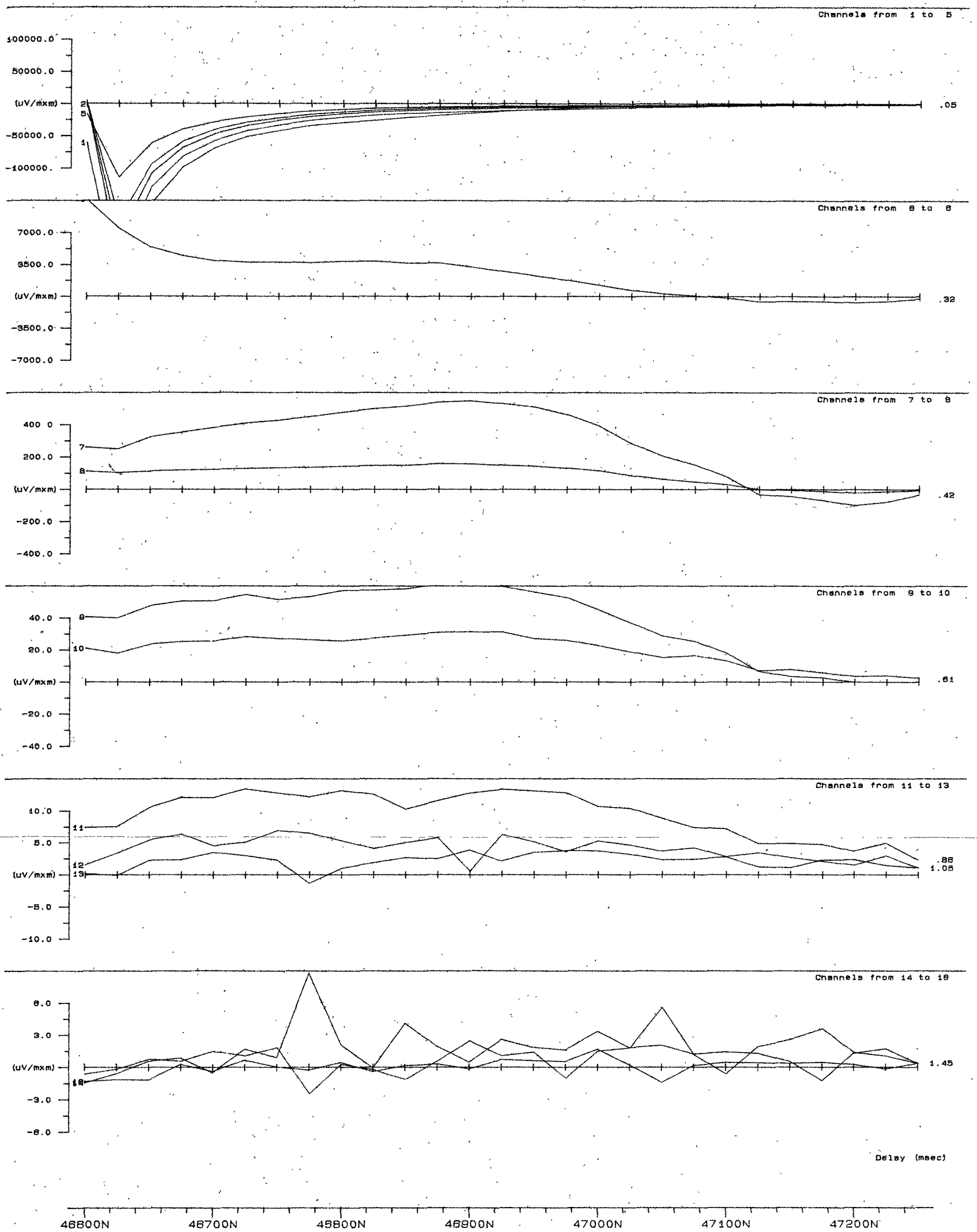
5 cm

SOLO

86-2566 1/3

9/T

177



GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.812K)
ZIG-ZAG, EARLY TIMES
LINE 381400E 700X300M 7.6AMPS
SIROTEM Survey by SOLO Geophysics & Co.
LINE : 1400 EAST Reading interval 25.0 m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 9:58 AM 24/ 6/88

5 cm

014179

86-2566 1/3

SOLO

178

TRANSIENT E.M. RESPONSE (uV/A)

10^4 10^3 10^2 10 1.0 0.0 -1.0 -10 -10^2 -10^3 -10^4 -10^5 -10^6

Delay (msec)

8 7 8 9 10 11 12 13 15 5 4 3 2 1

1.05 .96 .71 .64 .49 .44 .52 .42 .32 .05 .25 .19

46750N 47000N 47250N

014180

GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.612K)
ZIG-ZAG, EARLY TIMES
LINE 381600E 700X300M 7.6AMPS
SIROTEM Survey by SOLO Geophysics & Co. 8/ 5/86
LINE : 1600 EAST Reading interval 25.0 m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 2:29 PM 23/ 6/86

5 cm

LOOP DIAGRAM

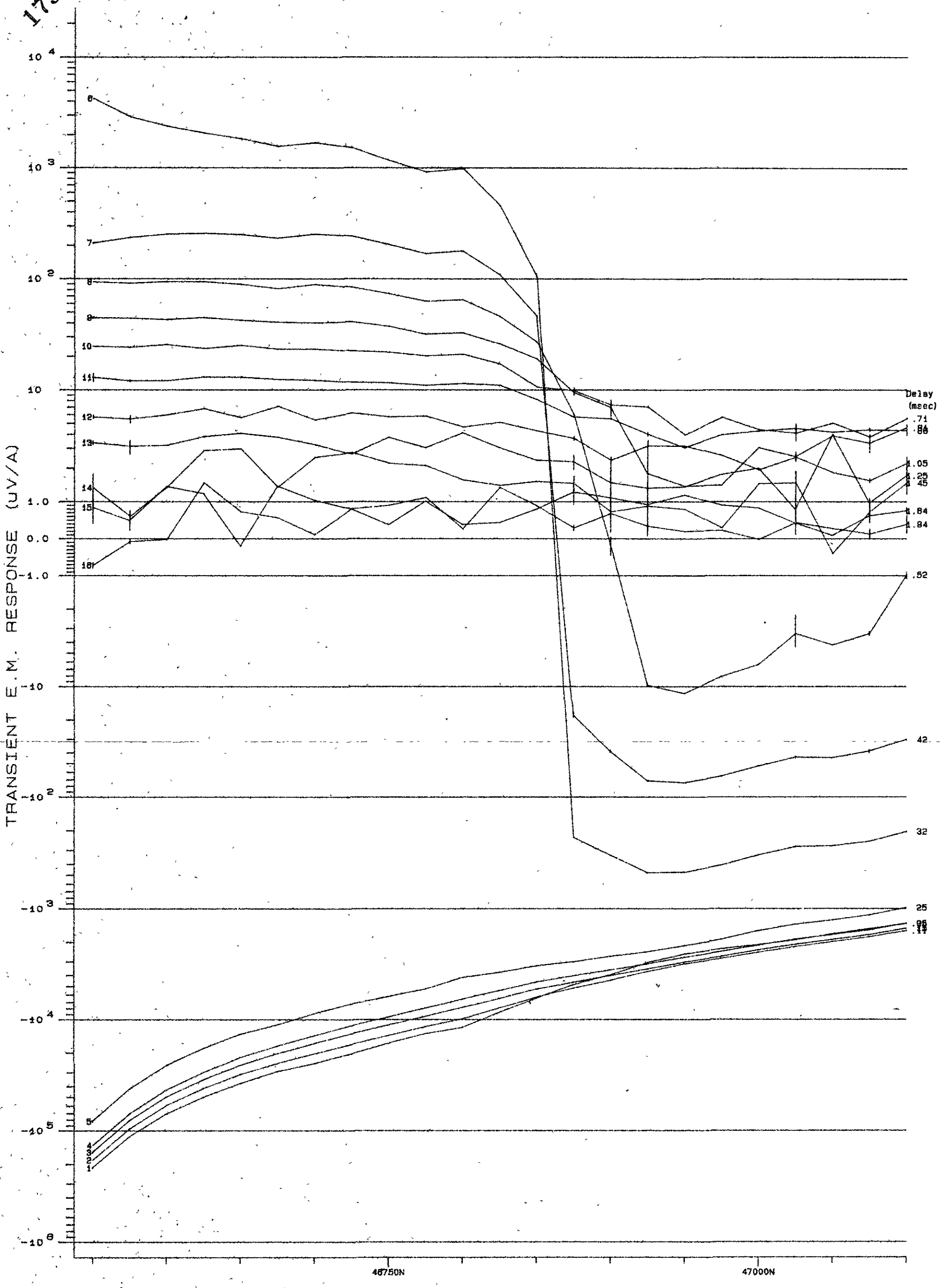
A = (46525N, 381600E)
B = (46225N, 381600E)
C = (46225N, 381200E)

178

SOLO

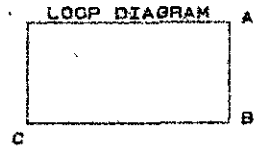
86-2566 1/3

179



GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.612K)
ZIG-ZAG, EARLY TIMES
LINE 381800E 700X300M 7.5AMPS
SIROTEM Survey by SOLO Geophysics & Co. 8/ 5/86
LINE : 1800 EAST Reading interval 25.0 m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 2:37 PM 23/ 6/86

LOOP DIAGRAM



A = (46525N, 381800E)
B = (46225N, 381800E)
C = (46225N, 381200E)

014181

SOLO

86-2566 1/3

5 cm

180

TRANSIENT E.M. RESPONSE (uV/A)

10^4 10^3 10^2 10 1.0 0.0 -1.0 -10 -10^2 -10^3 -10^4 -10^5 -10^6

Delay (msec)

48750N 47000N 47250N

014182

GOLDFIELDS EXPLORATION PTY.LTD.
SEDGWICK (JOB NO.612K)
ZIG-ZAG, EARLY TIMES
LINE 381400E 700X300M 7.6AMPS
SIROTEM Survey by SOLO Geophysics & Co. 9/ 5/86
LINE : 1400 EAST Reading interval 25.0 m
SCALE 1 : 2500 Loop size : 300 m
LOOP configuration : Fixed loop
Plotted : 2:23 PM 23/ 6/86

5 cm

LOOP DIAGRAM

A = (48525N, 381800E)
B = (48225N, 381800E)
C = (48225N, 381200E)

86-2566 1/3

SOLO

181

014183

INTERPRETATION OF DHEM SURVEYS WITHIN E.L. 9/66.

A number of down-hole electromagnetic (DHEM) surveys were carried out down diamond drill-holes within E.L. 9/66 during the 1985/86 field season. None of the surveys detected a conductor.

The holes surveyed were: LS10 & LS13
HX1
SS2

All holes were surveyed by Solo Geophysics using SIROTEM with the early time-base.

LAKE SELINA

The Lake Selina holes were drilled on geochemical and geophysical (as well as geological) targets to find a volcanogenic, massive sulphide base-metal deposit similar to the Hellyer ore-body.

LS10 intersected some disseminated pyrite below 200m (Figure 1). The hole was surveyed with two nominally square 200m x 200m loops (numbered 2 & 3, see Figure 2). The data from both loops was noisey (recorded down to channel 12 or ~1ms). The background response from loop 2 was predominantly negative while that from loop 3 was predominantly positive (see Figures 3a, 3b & 4a, 4b*): These responses reflect the relative orientations of the hole to the loops' EM fields. The spikes' in the data at 30m from loop 3 and at the end of the hole from loop 2 are presumably instrumental since they are not seen in the data from the other loop. No anomalies, in-hole or off-hole, were recorded down DDH LS10.

LS13 intersected weakly disseminated mineralisation between 100m and 300m (Figure 5). This hole was also surveyed with two loops (numbered 1 & 2 in Figure 2). The data was noisey (again, recorded down to channel 12). The cause of the 'noise' here and in LS 10, is not known: there is no apparent cultural source and the same equipment gave smooth results elsewhere. Again, mostly positive (from loop 1, see Figures 6a, 6b) and mostly negative (from loop 2, see Figures 7a, 7b) responses were obtained, with no in-hole or off-hole conductors indicated.

HUXLEY

The target for HX1 was the same as for Lake Selina, although the area's proximity to Queenstown and some structural similarities to North Lyell meant that a copper/?gold deposit was also a possibility. HX1 was drilled into an IP chargeability anomaly and it intersected black shales in a pyritic epiclastic sequence (Figure 8). The hole was surveyed from one 150m x 150m loop (see

---

* Logarithmic and linear plots of all sets of data are included. The former are most useful for recognising (subtle) responses, while the latter are required for interpretation.

Figure 9). No anomalies of interest were obtained (Figures 10a, 10b). The responses at the top of the hole are due to casing left in the hole between 9m and 24m.

Two HX1 core samples were sent for petrophysical measurement (see attached table). The results for inductively measured resistivity indicated that the shales are of low resistivity, however they did not respond to the DHEM survey.

SNAKE SPUR

Although the original target for the UTEM survey at Snake Spur was for a volcanogenic massive sulphide body, the two holes drilled there were targeted on anomalous gold geochemistry. A DHEM survey was carried out since groundwater in the drill-holes was sulphidic and thus there was the possibility of a sulphide body at depth.

The survey was carried out down SS2, which was drilled underneath SS1. This hole intersected some pyritic black shales (see Figure 11), but these were apparently not sufficiently conductive to give a response. The survey used a single 150m x 150m loop (Figure 12). No anomalies were recorded. Casing left in the hole between 90m and 129m causes the sharp response in the centre of the log (Figures 13a & 13b).

J.R. Bishop
June, 1986.

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014185

HUXLEY GRID

PETROPHYSICAL MEASUREMENTS

Samples: outcrop

Sent: 3/6/85. Final Result: 24/8/85.

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

SAMPLE NO.	GFE NO.	RESISTIVITY ohm-m @ 0.01Hz	IP EFFECT milliradians*	PETROLOGY
21/1	T933	2916.	32 (ie, low)	Owen Conglomerate; hematitic fault contact.
21/2	T937	5460.	25 "	Owen Conglomerate: hematitic sandstone.
21/3	T938	^20000.	21 "	Chloritic pyroclastic.
21/4	T940	2852.	14 (ie, very low)	Welded ignimbrite.
21/5	T939	5672.	5 "	pyroclastic breccia.

COMMENT

Although the IP effects were all low, the conglomerates were higher than the volcanics, as was the case in the field: the response in the former apparently being due to hematite. The resistivities between the two rock types were comparable (sample 21/3 being an odd exception): this is in contrast to the field survey where higher values were recorded over the conglomerate. This suggests that the the volcanics are more sheared and/or jointed than the sediments.

---

* The parameter measured is phase angle. 10mr is approximately equivalent to 1 PFE: multiply by 0.6 (+/-) to convert to chargeability (mv/v).

J.R. Bishop
Jan., 1986.

HUXLEY GRID

PETROPHYSICAL MEASUREMENTS

Samples: Core from DDH HX1.

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
23/1	139.3	30 - 40	0.5	2.78	4.8-6.2	$151\frac{1}{2}$ / 275^{2}	$25\frac{1}{2}$ / 105^{2}	black shales
23/2	176.1	15 - 40	0.5	2.80	3.1-9.2	$88\frac{1}{2}$ / 195^{2}	$7\frac{1}{2}$ / 80^{2}	black shales

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).

1 measured with a 4 electrode scan of sample surface.

2 repeat measurement with 4 electrode scan of core ends.

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LIST OF FIGURES

L.S.10
-60°

10mN

140 E.
160 E.
180 E.
200 E.
220 E.
240 E.
260 E.
280 E.
300 E.
320 E.
340 E.
360 E.

JUKES BRECCIA

RHYOLITE LAVA
Quartz phyric
ser - chl, strongly
hematitic

TUFFACEOUS SEDIMENTS
ser - silif - pyritic

VOLCANICLASTIC
pyritic

IGNIMBRITE
massive
weak ser - chl.

40m RHYOLITE LAVA
hematitic

VOLCANICLASTICS
rich in volcanic
fragments
ser-chl. + minor
hematite + pyrite

SHALE
graphitic
chl, pyritic

VOLCANICLASTICS
Tuffaceous sediments and cherts
ser-chl- minor silif- pyritic

223·4 - 246·4 m 0·01 g/t Au
0·13 %Cu
0·26 % Zn
2·1 g/t Ag

2·5 % Py

2404 - 2464 m 0·04 g/t Au
0·44 % Cu
0·22 % Zn
3·5 g/t Ag

8-10 % Py

123m S

EOH 302·6m

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

LAKE SELINA (E.L.9/66)

DHEM SURVEY
DDH LS 10

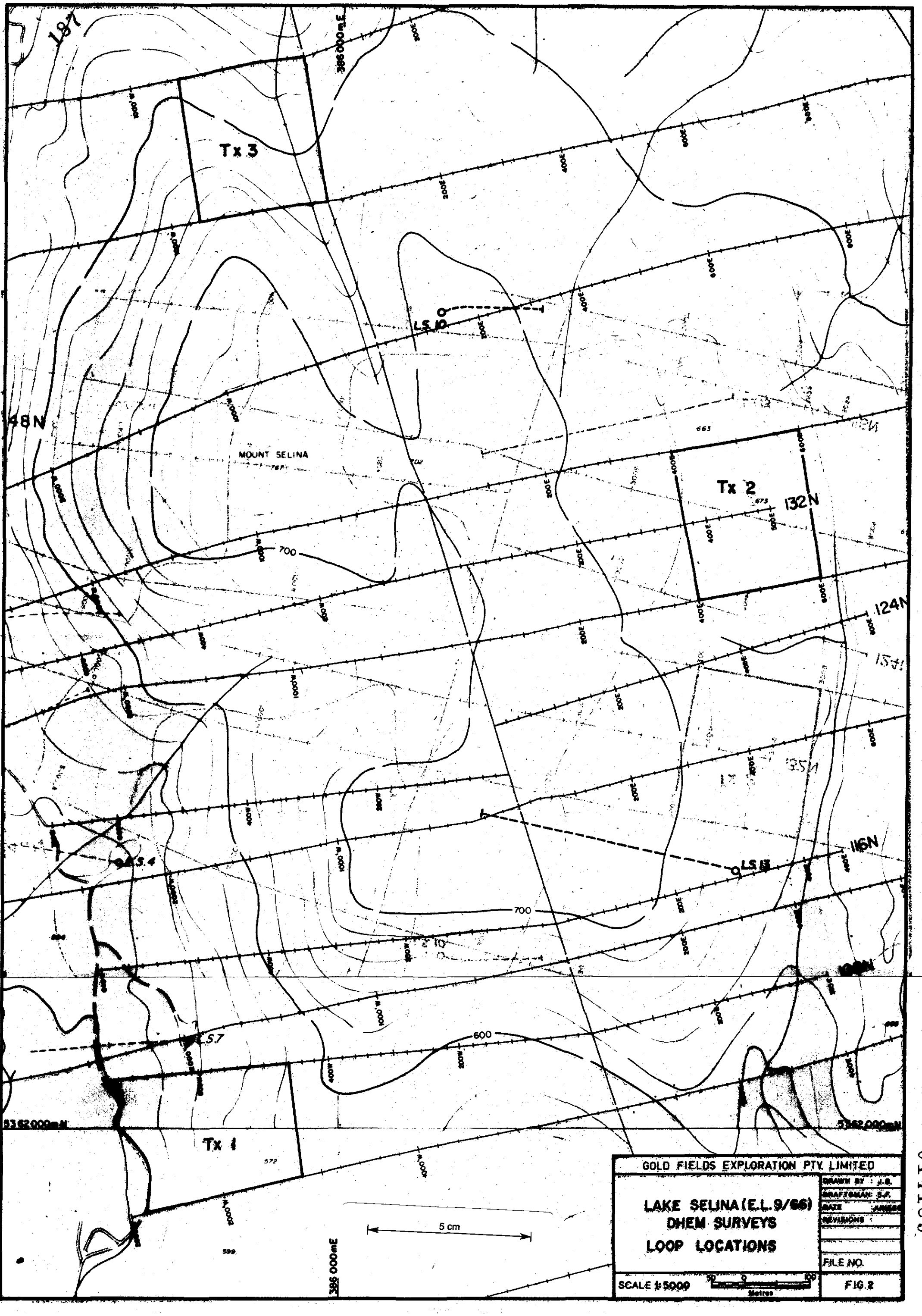
DRAWN BY : J.S.
DRAFTSMAN S.F.
DATE 1JUNE66
REVISIONS :

FILE NO

SCALE 1:1000 10 0 10 20 Metres

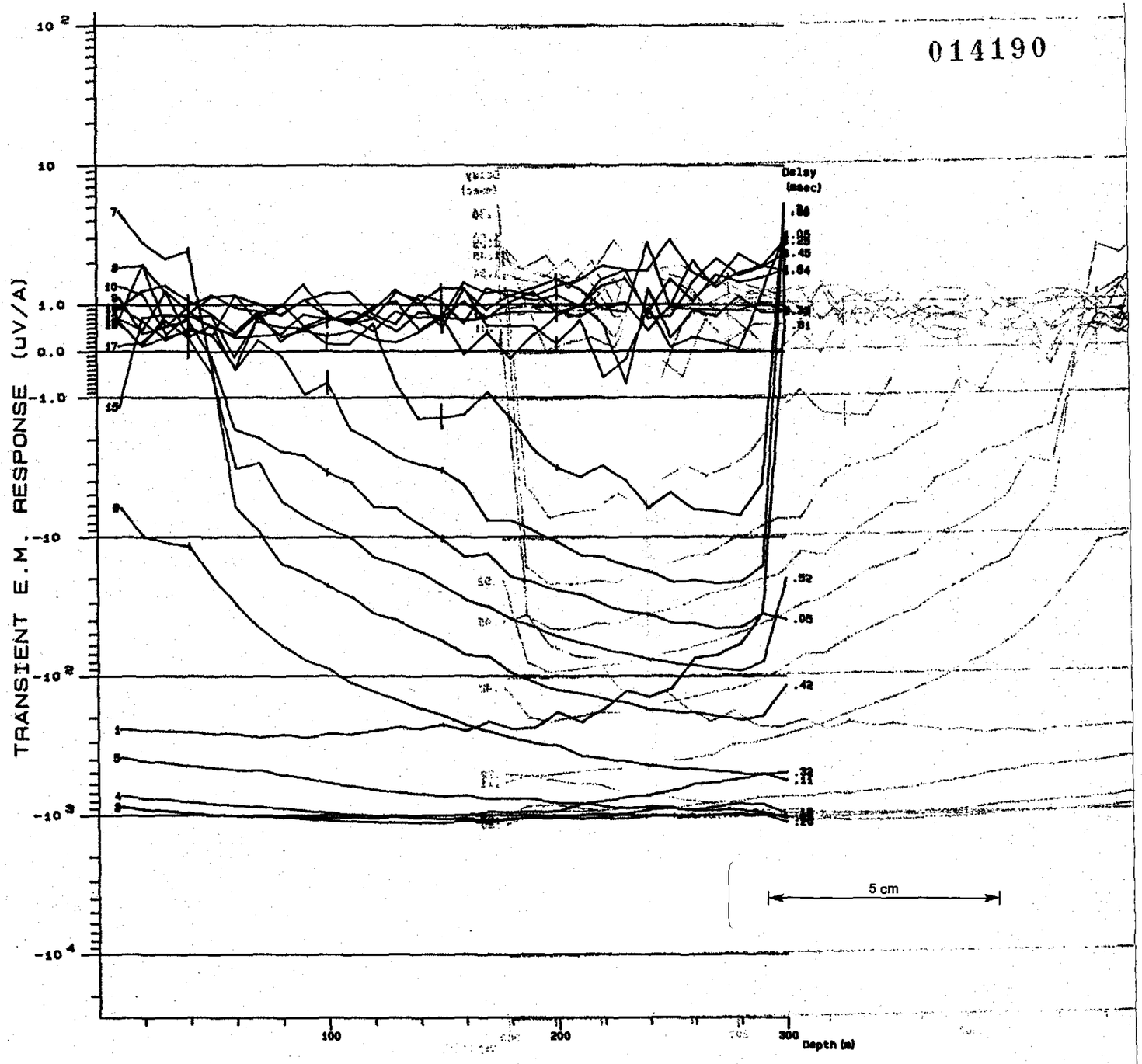
FIG.1

0141188


187
386 000mE
Tx 3
LS 10
48N
MOUNT SELINA
Tx 2
132N
124N
154
135N
116N
LS 6
LS 4
700
600
LS 7
5362000mN
Tx 1
572
5 cm
386 000mE
GOLD FIELDS EXPLORATION PTY. LIMITED
LAKE SELINA (E.L. 9/86)
DHEM SURVEYS
LOOP LOCATIONS
DRAWN BY : J.B.
DRAFTSMAN: S.F.
DATE : JANUARY
REVISIONS :
FILE NO.
SCALE 1:5000
50 0 100
Metres
FIG. 2

C14139

014190



GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.6128)
HOLE LS 10 LOOP #2 CENTRE
SIROTEM Survey by SOLO Geophysics & Co. 22/ 2/88
SOLO hole ref.513 Reading interval 10.0 m
SCALE 1 : 2000 Loop size 300 m
LOOP configuration : Drill hole
Plotted : 2:39 PM 27/ 5/88

SOLO

GOLD FIELDS EXPLORATION PTY. LIMITED

Lake Selina (E.L.9/86)

DHEM SURVEY

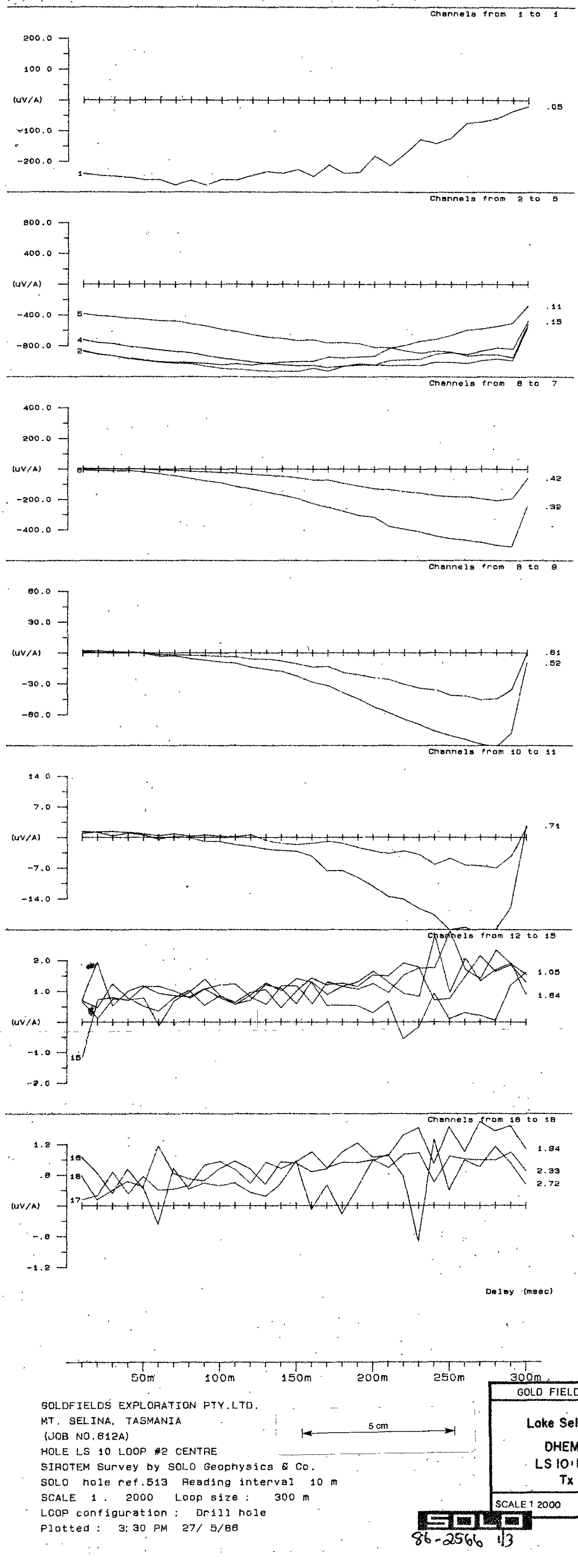
LS10 Log-Lin plot

Tx Loop 2

SCALE 1:2000 Metres

DRAWN BY :
DRAFTSMAN :
DATE :
REVISIONS :
FILE NO.
FIG.3a

188



TRANSIENT E.M. RESPONSE

014191

GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.612A)
HOLE LS 10 LOOP #2 CENTRE
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.513 Reading interval 10 m
SCALE 1 . 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 3:30 PM 27/ 5/86

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED	
Lake Selina (E.L.9/66) DHEM SURVEY LS 10 lin-lin plot Tx loop 2	DRAWN BY DRAFTSMAN. DATE REVISIONS : FILE NO.
SCALE 1 2000 Metres	FIG.3b

SOLO

86-2566 1/3

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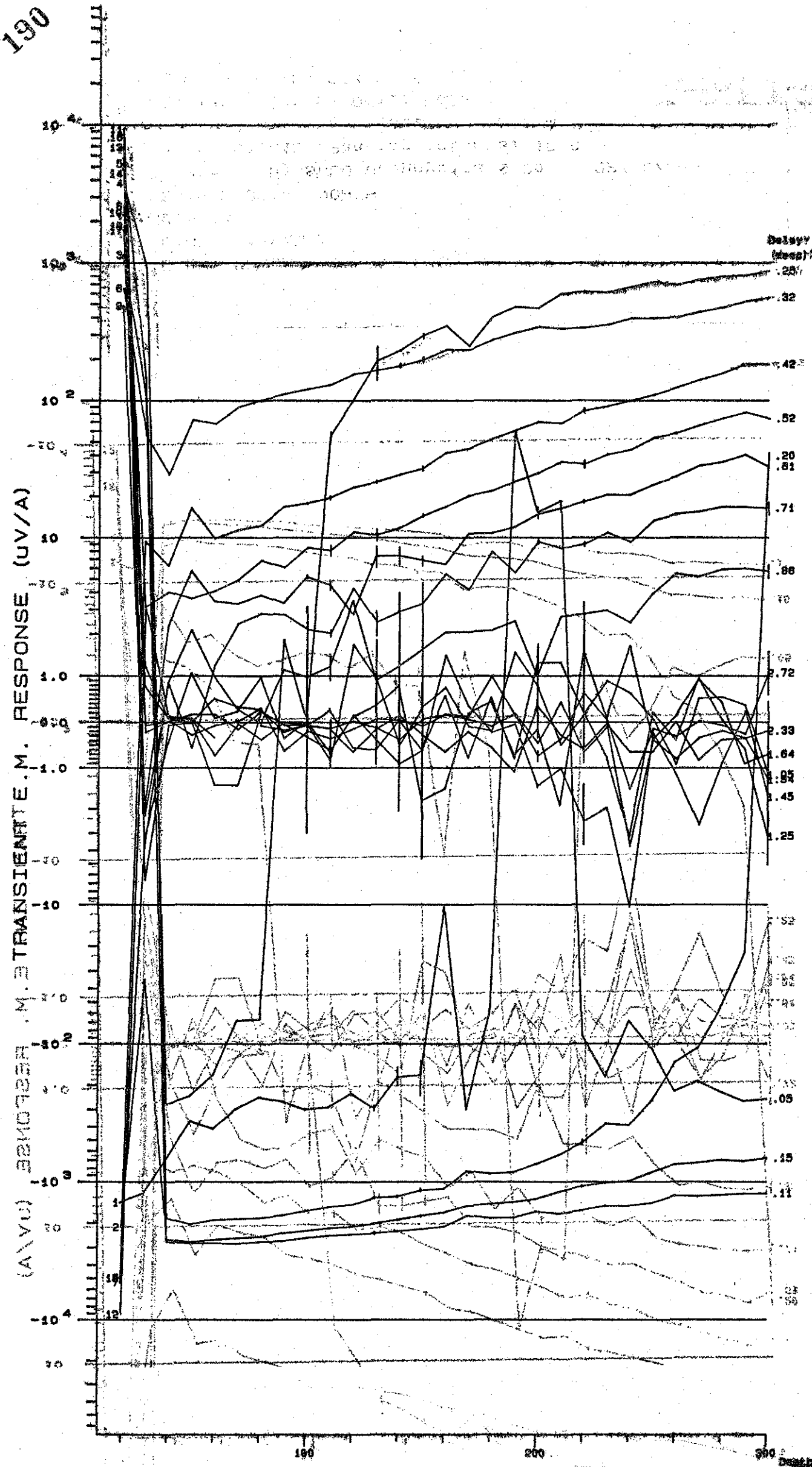


014192

GOLDFIELDS EXPLORATION PTY LTD.
MT. SELINA, TASMANIA
(JOB NO. 612A)
HOLE LS-10 LOOP #3 NORTH
SIROTEM Survey by SOLO Geophysics 6:00 27/ 5/86
SOLO hole ref. 515 Reading interval 10.00 m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 2:48 PM 27/ 5/86

GOLD FIELDS EXPLORATION PTY. LIMITED

Lake Selina (EL 9/86)

DHEM SURVEYS

LS 10 log-lin plot

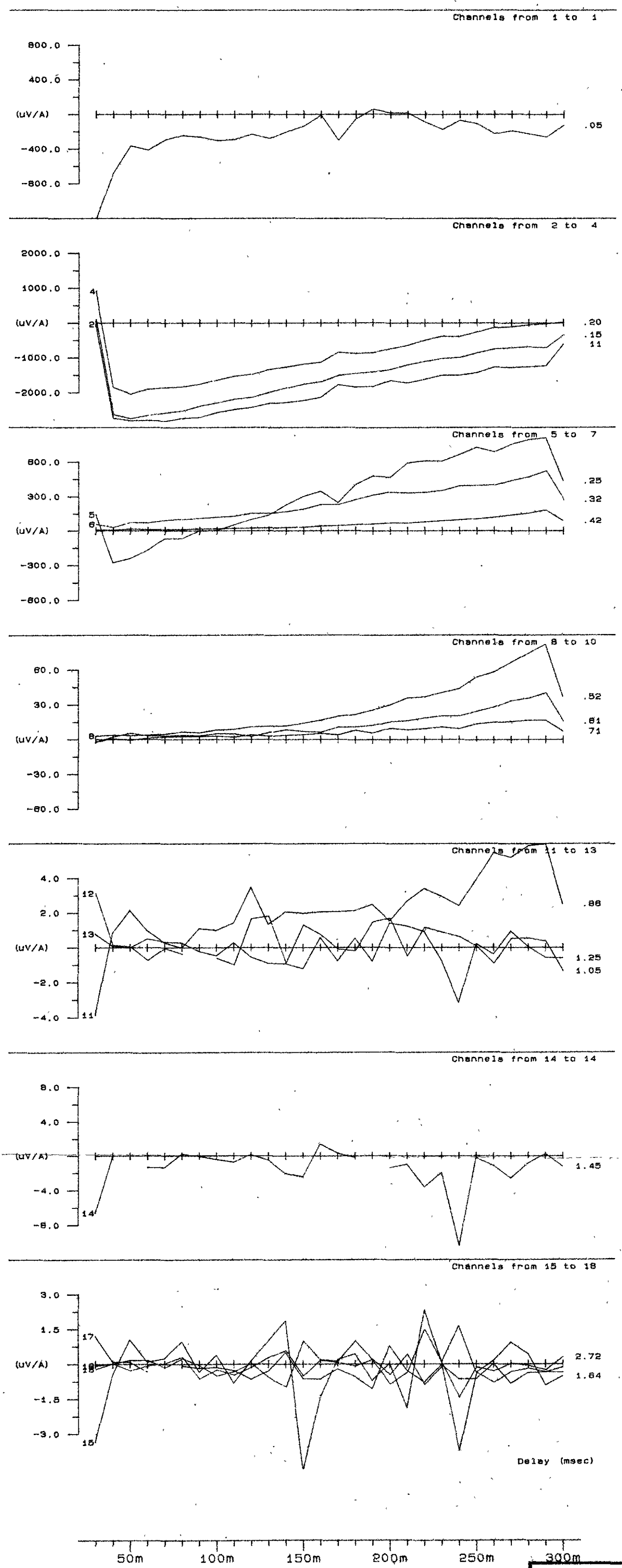
Tx loop 3

DRAWN BY :
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.

SCALE 1:2000 Metres

FIG. 46

5 cm



GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.612A)
HOLE LS-10 LOOP #3 NORTH
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.515 Reading interval 10 m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 3:37 PM 27/ 5/86

GOLD FIELDS EXPLORATION PTY LIMITED	
Lake Selina (E.L.9/66) DHEM SURVEY LS 10: lin - lin plot Tx loop 3	DRAWN BY DRAFTSMAN DATE REVISIONS FILE NO
SCALE 1: 2000 Metres	FIG 4b

SOLO

161

014193

86-2566 1|3

HOLE NO. L.S. 13

GOLD FIELDS EXPLORATION PTY LIMITED

DIAMOND DRILL HOLE PLOT

SCALE 1: 40 20 0 40 80 METRES

5 cm

PLAN VIEW

283° AMG
50° DIP

5 362 382mN
386 489 m E

693·9mRL

FINE GRAINED & CONGLOMERATIC EPICLASTICS
chl. - ser. - mag. - carb.

Weathered

386 600mE

5 362 300mN

100m

200m

300m

400m

>1% sulphides

1-2% sulphide
(py.+ sl.+ gn)

AUTOBRECCIATED FELSIC LAVAS AND VOLCANICLASTICS
chl. - mag. - sil. (hem. - ser.)

457·7mRL

Fine grained Volcaniclastics

385·6mRL

502·6

DIP PROFILE

ALTERATION

chl.	Chloritic
ser.	Sericitic
mag.	Magnetite
carb.	Carbonate
Sil.	Siliceous
hem.	Hematitic

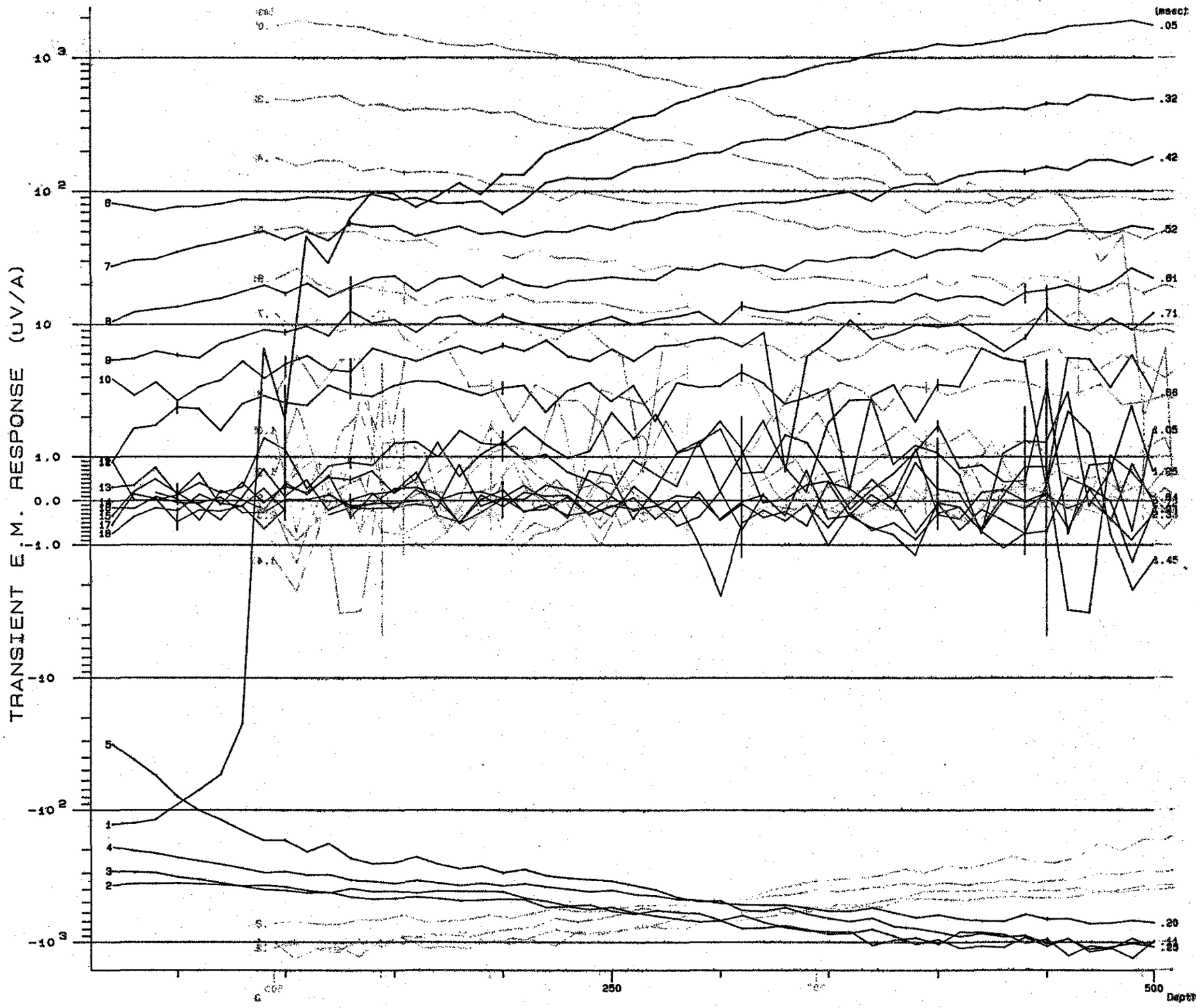
GOLD FIELDS EXPLORATION PTY. LIMITED

LAKE SELINA (E.L. 9/68)
DHEM SURVEY
DDH LS 13

DRAWN BY: J.S.
DRAUGHTSMAN: S.F.
DATE:
PHOTOGRAPH:
FILE NO:

SCALE 1:2000 80 0 40 Metres

FIG. 5



5 cm

014195

GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.612A)
HOLE LS-13 LOOP #1
SIROTEM Survey by SOLO Geophysics & Co. 20/ 2/88
SOLO hole ref.511 Reading interval 10.0 m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 1:47 PM 27/ 5/86

SOLO

GOLD FIELDS EXPLORATION PTY. LIMITED

Lake Selina (E.L.9/66)
DHEM SURVEY
LS13 : log - lin plot
Tx loop 1

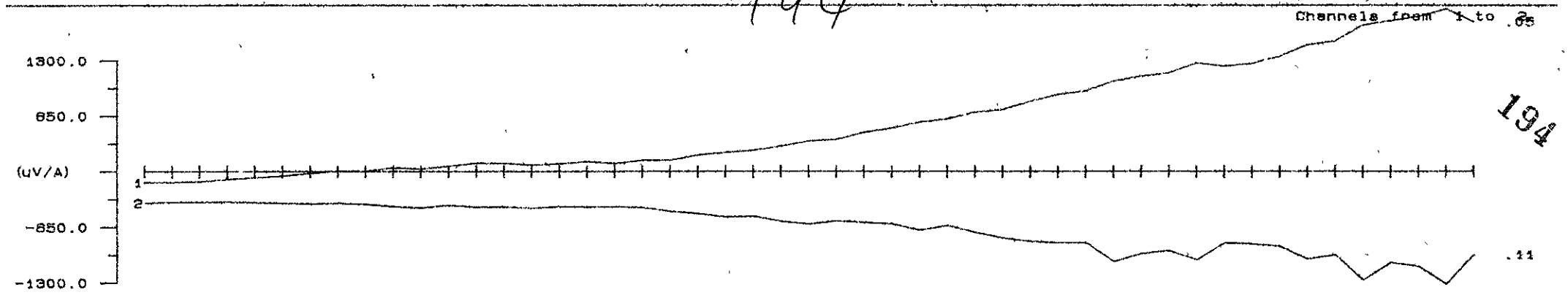
DRAWN BY :
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.
SCALE 1: 2000 Metres
FIG. 6a

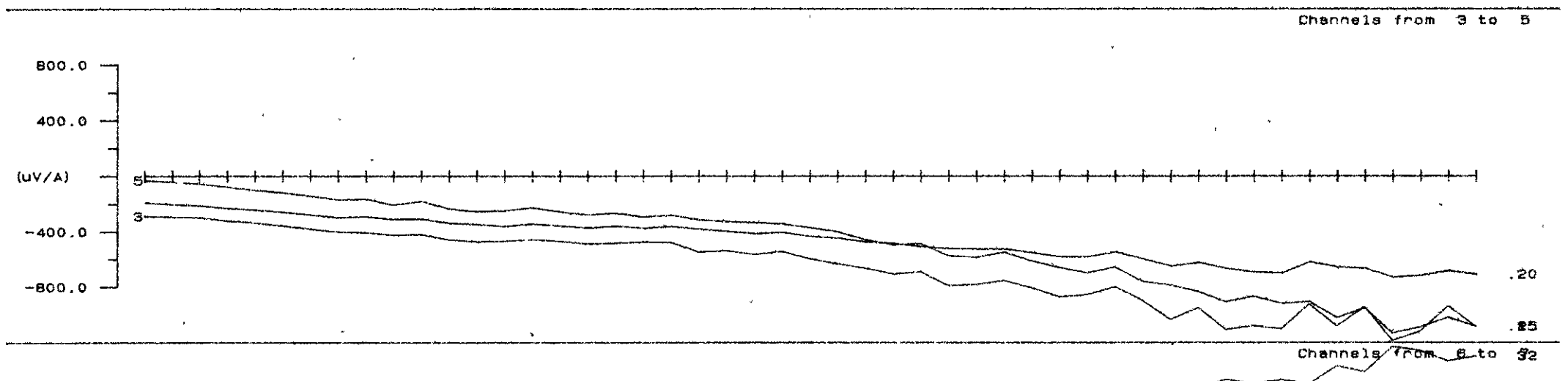
193

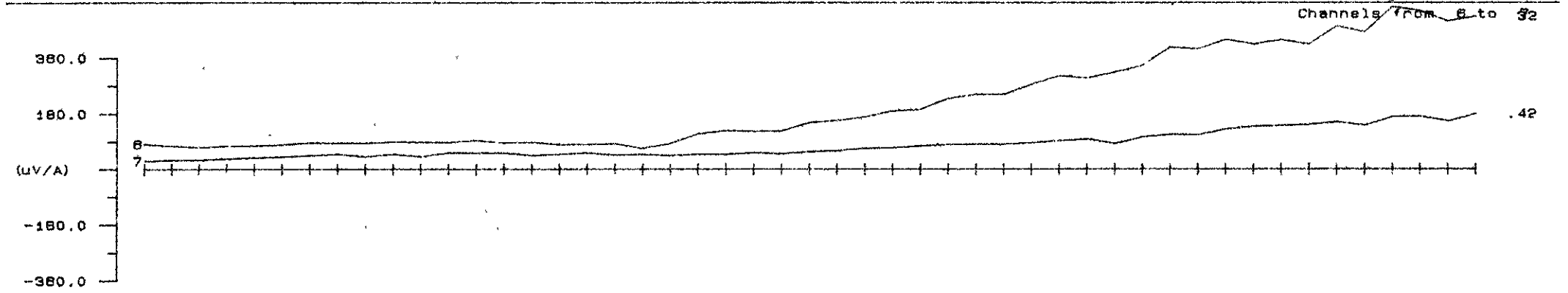
144

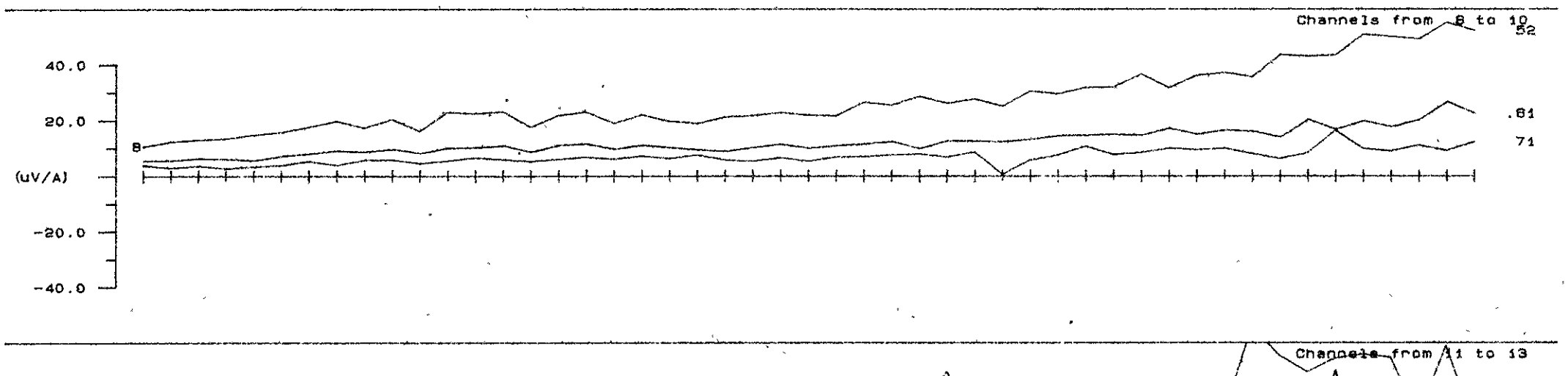
194

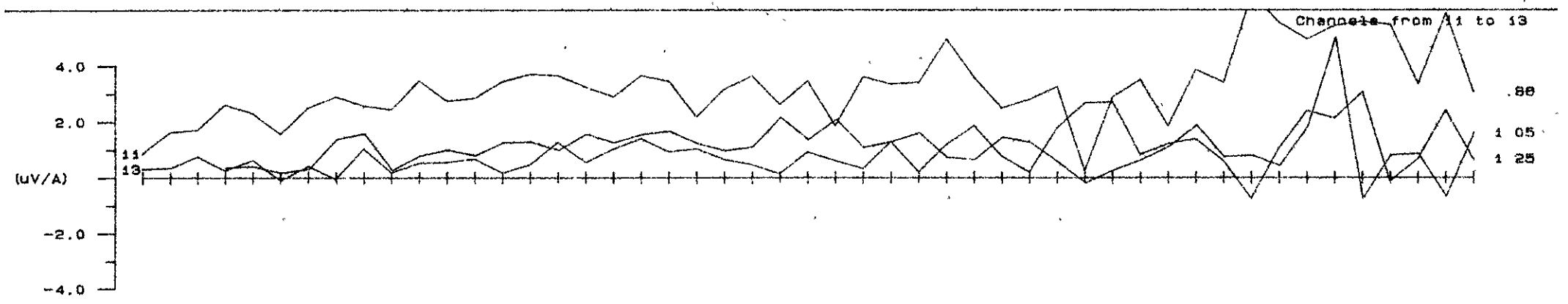
TRANSIENT E.M. RESPONSE

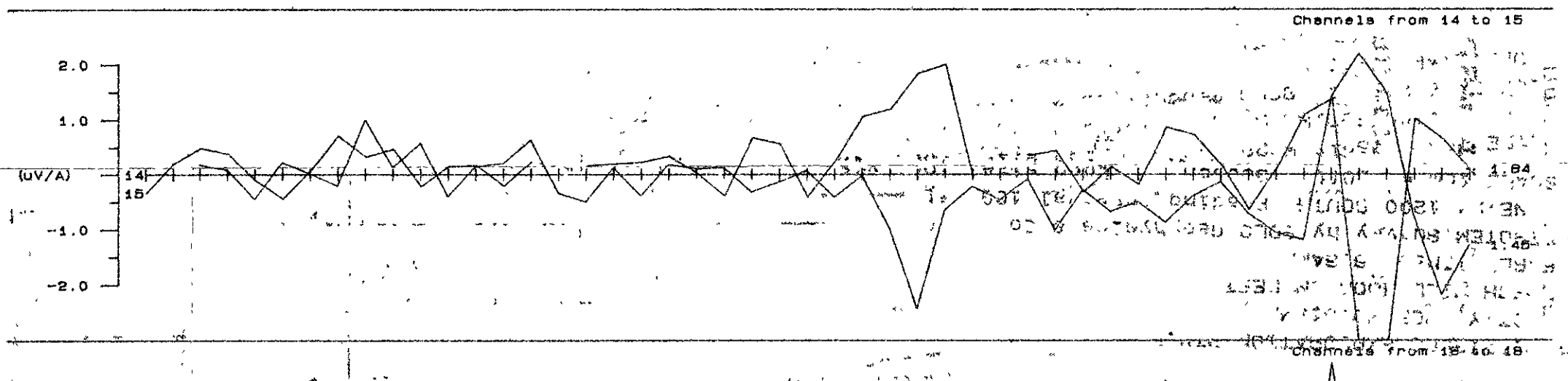


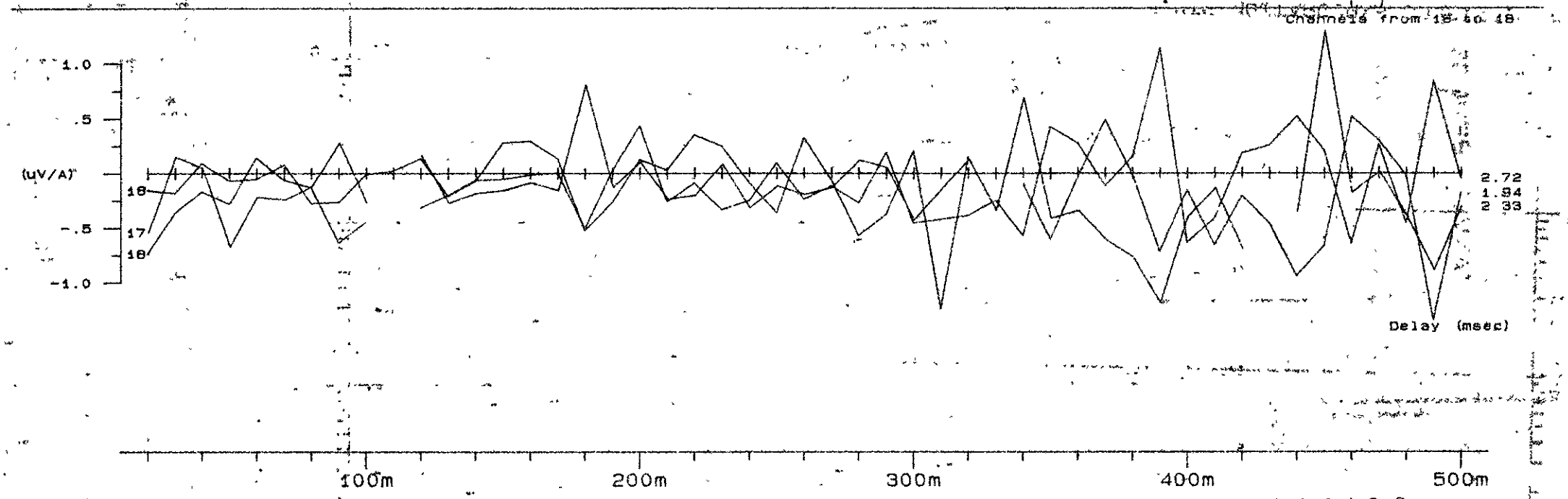












014196

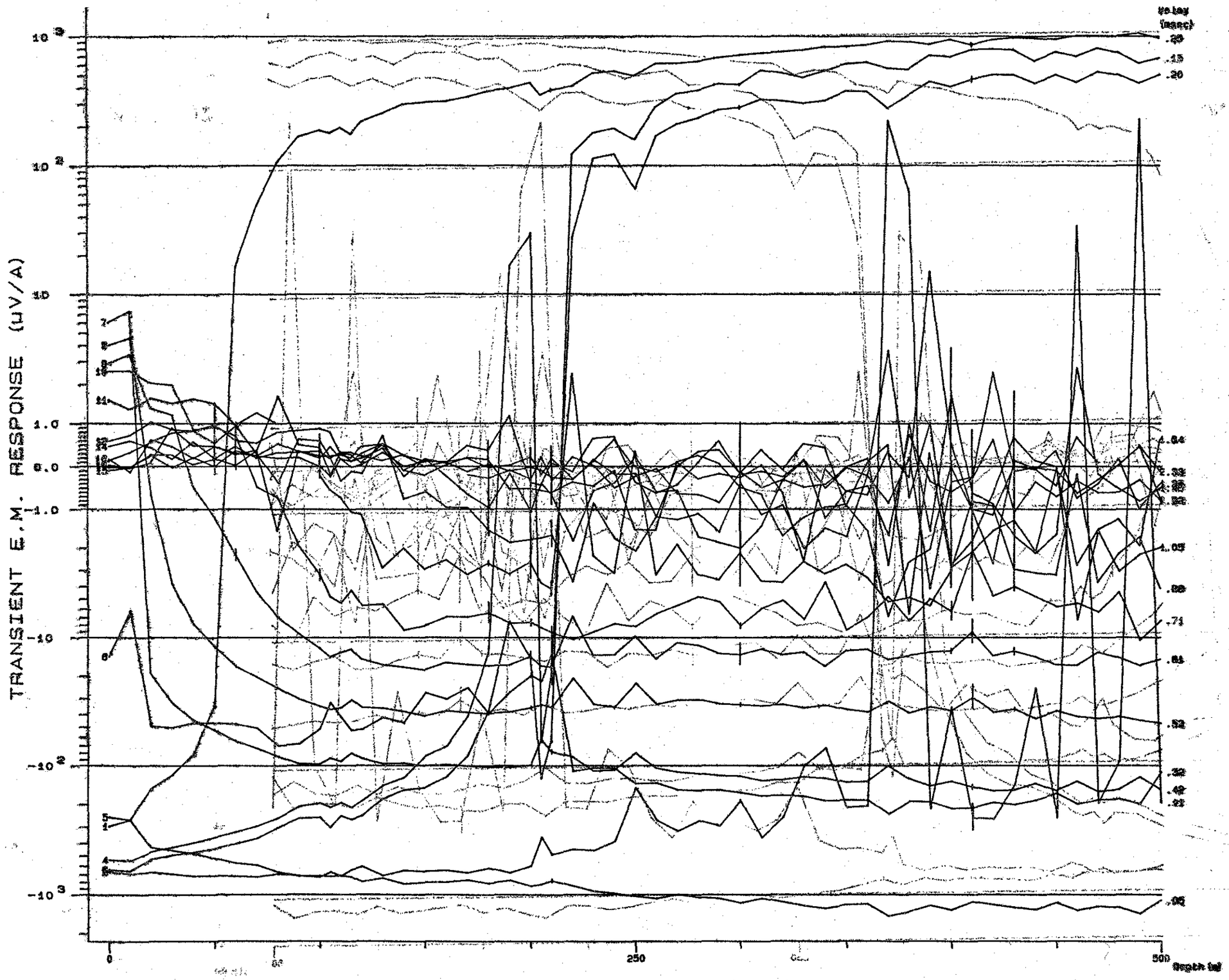
GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.612A)
HOLE LS-13 LOOP #1
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.511 Reading interval 10 m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 3:59 PM 27/ 5/86

5 cm

SOLO

86-2566 1/3

GOLD FIELDS EXPLORATION PTY LIMITED	
Lake Selina (E.L.9/66) DHEM SURVEY LS13 lin - lin plot Tx loop 1	DRAWN BY DRAFTSMAN DATE REVISIONS FILE NO
SCALE 1: 2000 Metres	FIG 6b



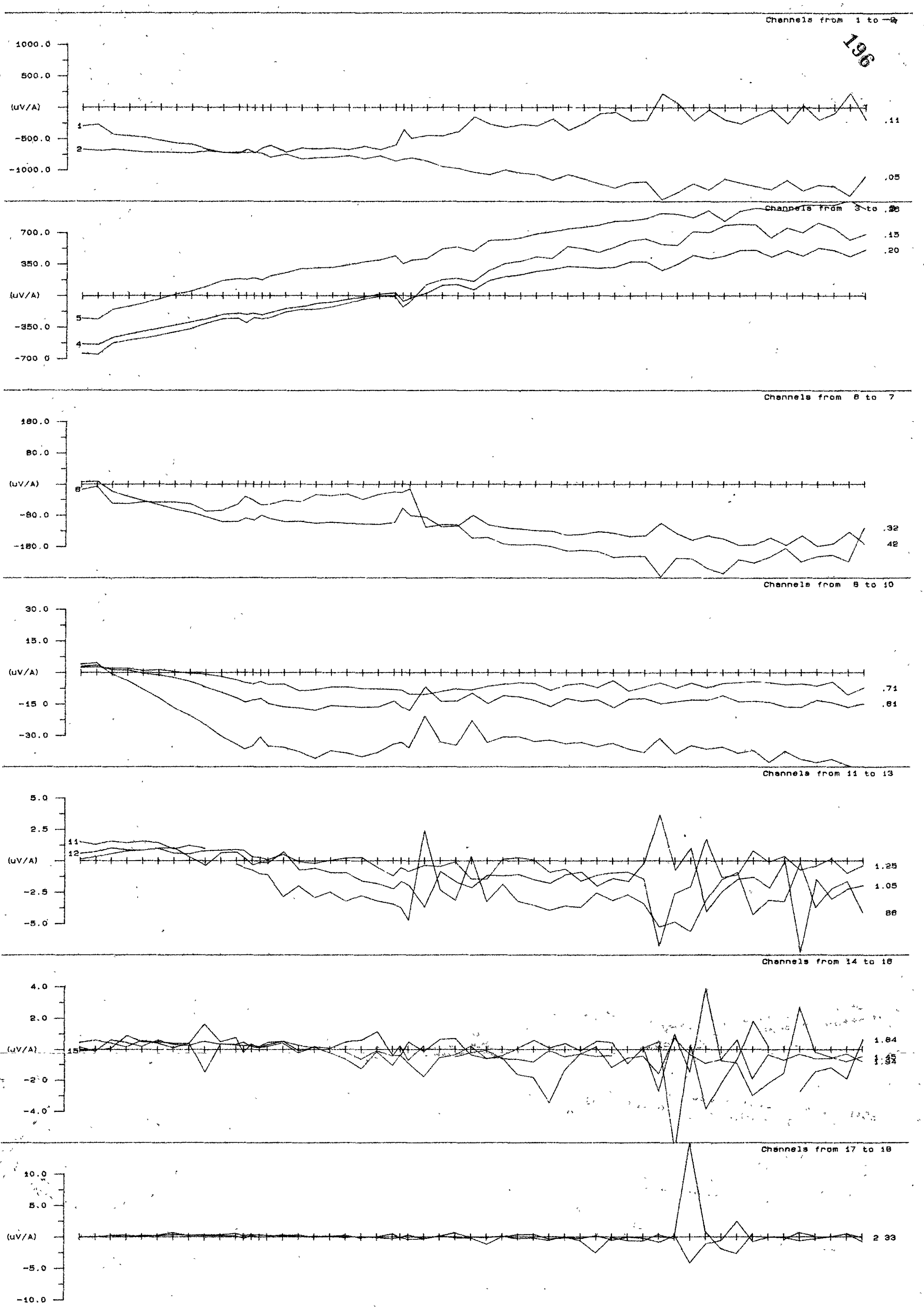
GOLDFIELDS EXPLORATION PTY. LTD.
MT. SELINA, TASMANIA
(JOB NO.812A)
HOLE LS 13 LOOP #2 CENTRE
SIROTEM Survey by SOLO Geophysics & Co. 21/ 2/88
SOLO hole ref.512 Reading interval 5.0m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 2:33 PM 27/ 5/88

SOLO

GOLD FIELDS EXPLORATION PTY. LIMITED	
Lake Selina (E.L.9/66)	DRAWN BY :
	DRAFTSMAN:
	DATE :
DHEM SURVEY	REVISIONS :
LS 13 log-lin plot	
Tx loop 2	FILE NO.
SCALE 1:2000 Metres	FIG. No

014197

5 cm



014198

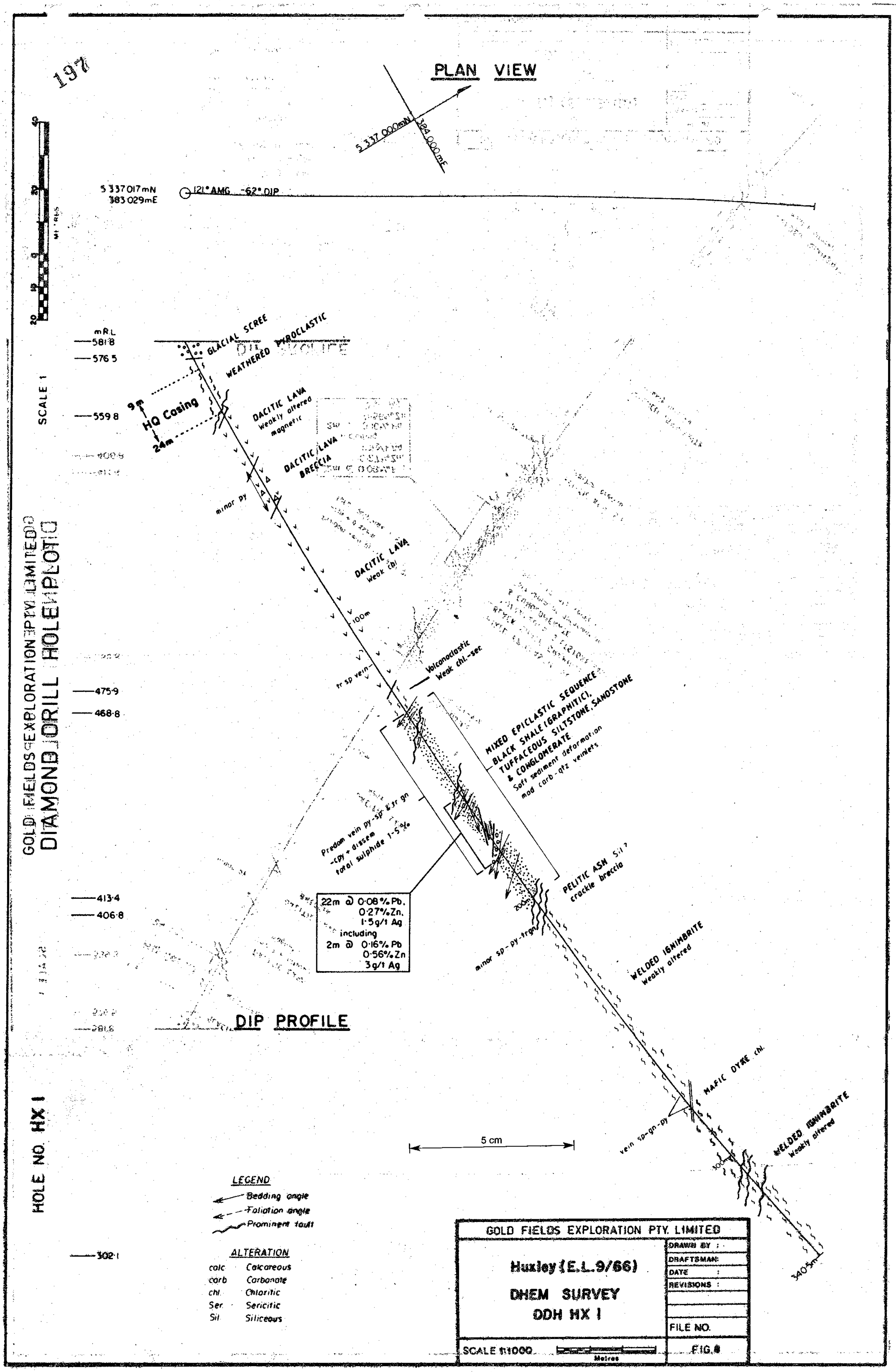
GOLDFIELDS EXPLORATION PTY.LTD.
MT. SELINA, TASMANIA
(JOB NO.612A)
HOLE LS 13 LOOP #2 CENTRE
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.512 Reading interval 5 m
SCALE 1 : 2000 Loop size : 300 m
LOOP configuration : Drill hole
Plotted : 4:15 PM 27/ 5/86

5 cm

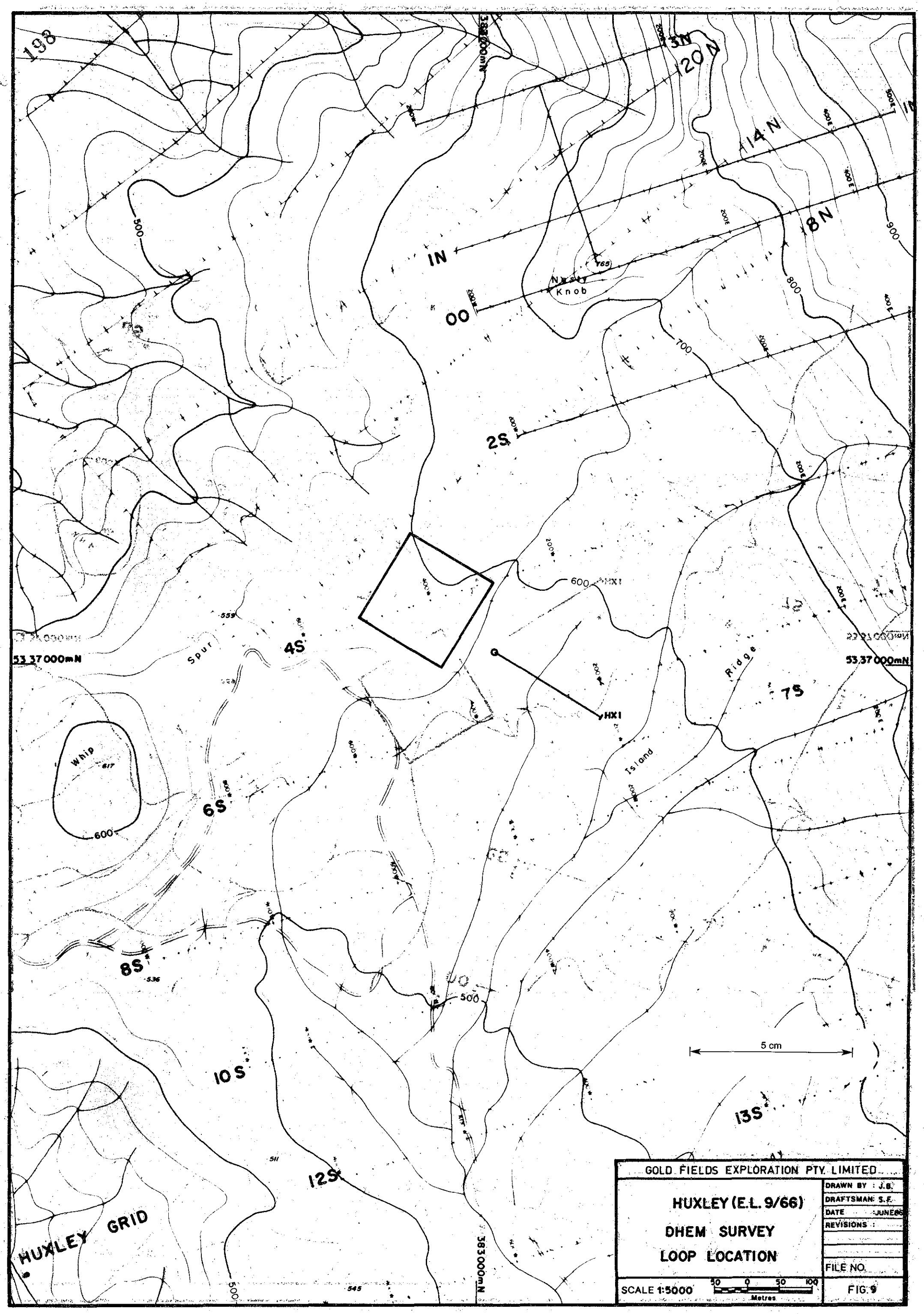
SOLO

86-2566 1/3

GOLD FIELDS EXPLORATION PTY LIMITED	
Lake Selina (E.L.9/66) DHEM SURVEY LS13 : lin-lin plot	DRAWN BY DRAFTSMAN DATE REVISIONS FILE NO
SCALE 1:2000 Metres	FIG 7b

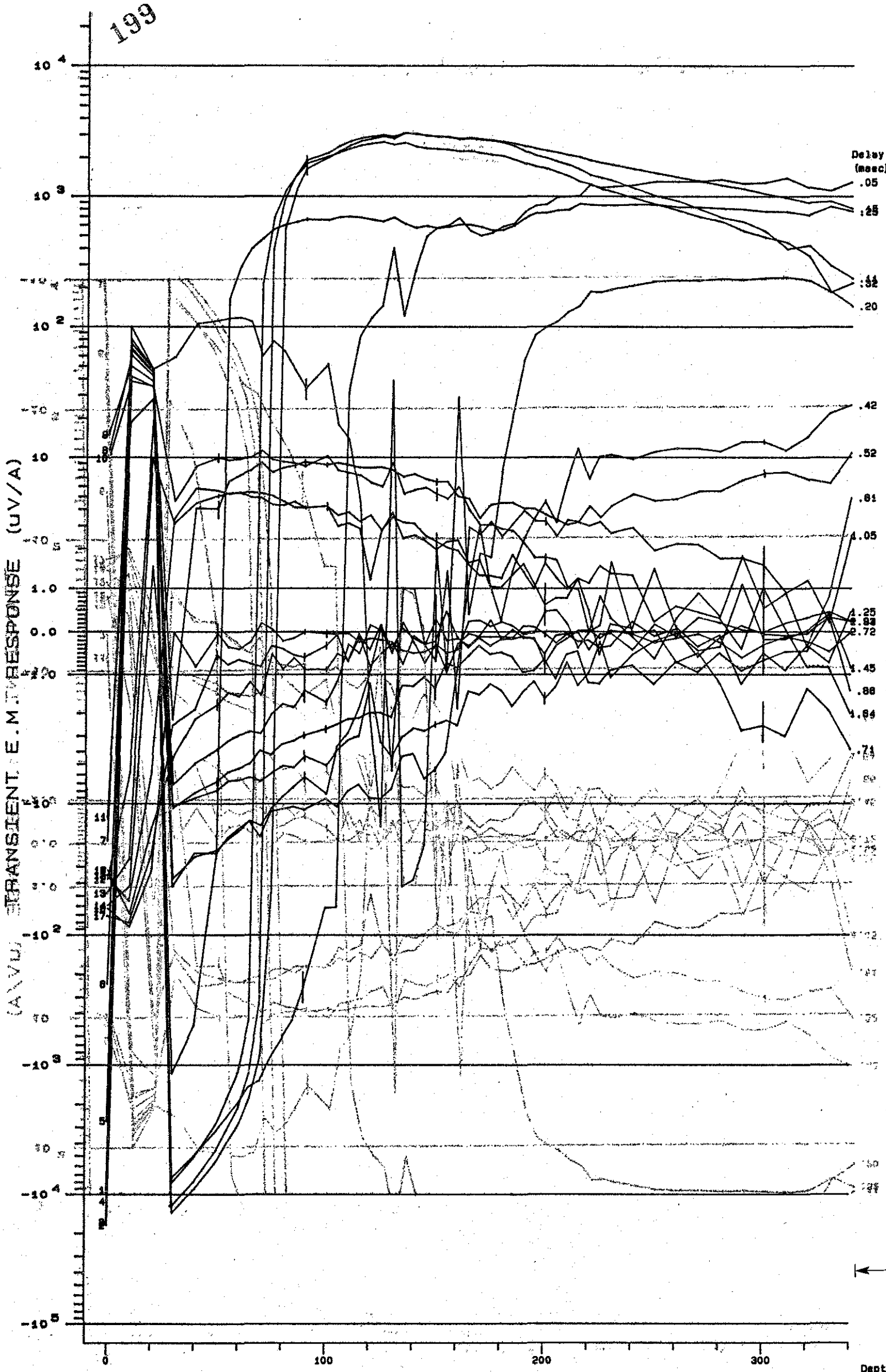

197
PLAN VIEW
5 337 000mN
384 000mE
5 337 017mN
383 029mE
121° AMG -62° DIP
SCALE 1
GOLD FIELDS EXPLORATION PTY. LIMITED
DIAMOND DRILL HOLE PLOT
HOLE NO. HX 1
mRL
581·8
576·5
559·8
475·9
468·8
413·4
406·8
281·8
302·1
GLACIAL SCREE
WEATHERED PYROCLASTIC
9m
HQ Casing
24m
DACITIC LAVA
Weakly altered
magnetic
DACITIC LAVA
BRECCIA
minor py
DACITIC LAVA
Weak chl
100m
tr sp vein
Volcanoclastic
Weak chl.-sec
MIXED EPICLASTIC SEQUENCE
BLACK SHALE (GRAPHITIC),
TUFFACEOUS SILTSTONE, SANDSTONE
& CONGLOMERATE
Soft sediment deformation
mod carb-qtz veinlets
Predom vein py-sp ± gn
-cpy + dissem
total sulphide 1-5%
22m @ 0·08% Pb.
0·27% Zn.
1·5g/t Ag
including
2m @ 0·16% Pb
0·56% Zn
3g/t Ag
PELITIC ASH Sil?
crackle breccia
200m
minor sp-py-trgn
WELDED IGNIMBRITE
Weakly altered
MAFIC DYKE chl.
vein sp-gn-py
300m
WELDED IGNIMBRITE
Weakly altered
340·5m
DIP PROFILE
5 cm
LEGEND
Bedding angle
Foliation angle
Prominent fault
ALTERATION
calc Calcareous
carb Carbonate
chl. Chloritic
Ser. Sericitic
Sil. Siliceous
GOLD FIELDS EXPLORATION PTY. LIMITED
Huxley (E.L.9/66)
DHEM SURVEY
DDH HX 1
DRAWN BY :
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.
SCALE 1:1000
Metres
FIG.8

014199


198
500
13N
12N
11N
10N
9N
8N
7N
6N
5N
4N
3N
2N
1N
00
200E
300E
400E
500E
765
Knob
700
800
900
2S
600
HX1
4S
559
53 37 000mN
Spur
Ridge
7S
Whip
617
600
6S
Island
8S
536
500
10S
12S
511
545
13S
5 cm
HUXLEY GRID
383000mN
GOLD FIELDS EXPLORATION PTY. LIMITED
HUXLEY (E.L. 9/66)
DHEM SURVEY
LOOP LOCATION
DRAWN BY : J.B.
DRAFTSMAN: S.F.
DATE : JUNE86
REVISIONS :
FILE NO.
SCALE 1:5000
50 0 50 100
Metres
FIG. 9

014200

199



GOLDFIELDS EXPLORATION PTY.LTD.
QUEENSTOWN, TASMANIA
HUXLEY (JOB NO.613A)
HOLE HX-1 14.0 AMPS
SIROTEM Survey by SOLO Geophysics & Co. 15/ 2/86
SOLO hole ref.502 Reading interval 5.0 m
SCALE 1 : 2000 Loop size : 150 m
LOOP configuration : Drill hole
Plotted : 3:07 PM 27/ 5/86

GOLD FIELDS EXPLORATION PTY. LIMITED

Huxley (E.L.9/66)
DHEM SURVEY
Hx I : log-lin plot

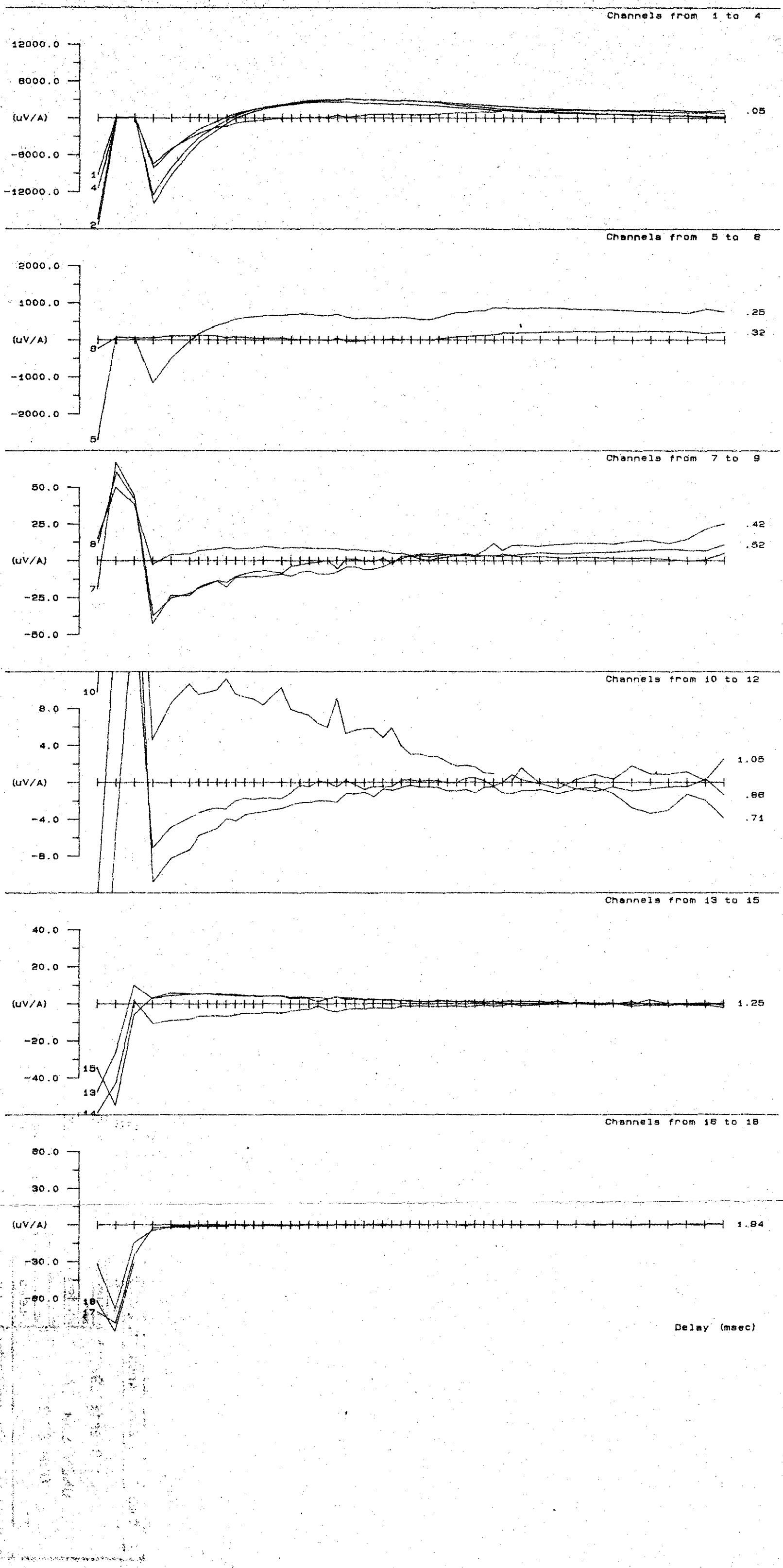
DRAWN BY :
DRAFTSMAN:
DATE
REVISIONS
FILE NO.

SCALE 1:2000 Metres

FIG. 10a

SOLO

014201



200

014202

GOLDFIELDS EXPLORATION PTY.LTD.
QUEENSTOWN, TASMANIA
HUXLEY (JOB NO.613A)
HOLE HX-1 14.0 AMPS
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.502 Reading interval 5 m
SCALE 1 : 2000 Loop size : 150 m
LOOP configuration : Drill hole
Plotted : 4:36 PM 27/ 5/86

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

Huxley (E.L. 9/66)
DHEM SURVEY
Hxl:lin - lin plot

DRAWN BY :
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.

SCALE 1:2000 Metres

FIG.10b

SOLO

86-2566 1/3

014203

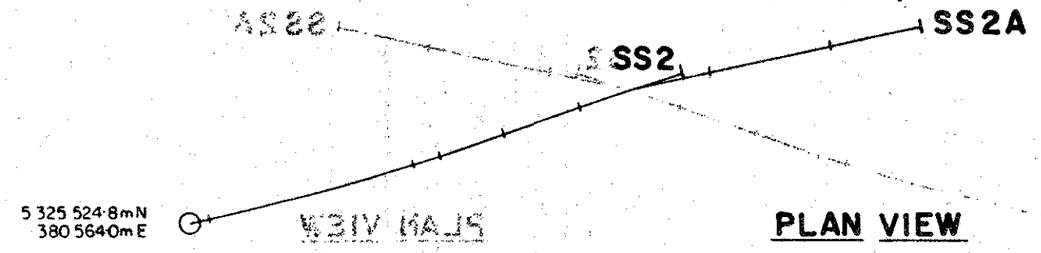
PROJECT **TYNDALL** HOLE NO **SS 2 / SS 2A**

GOLD FIELDS EXPLORATION PTY LIMITED

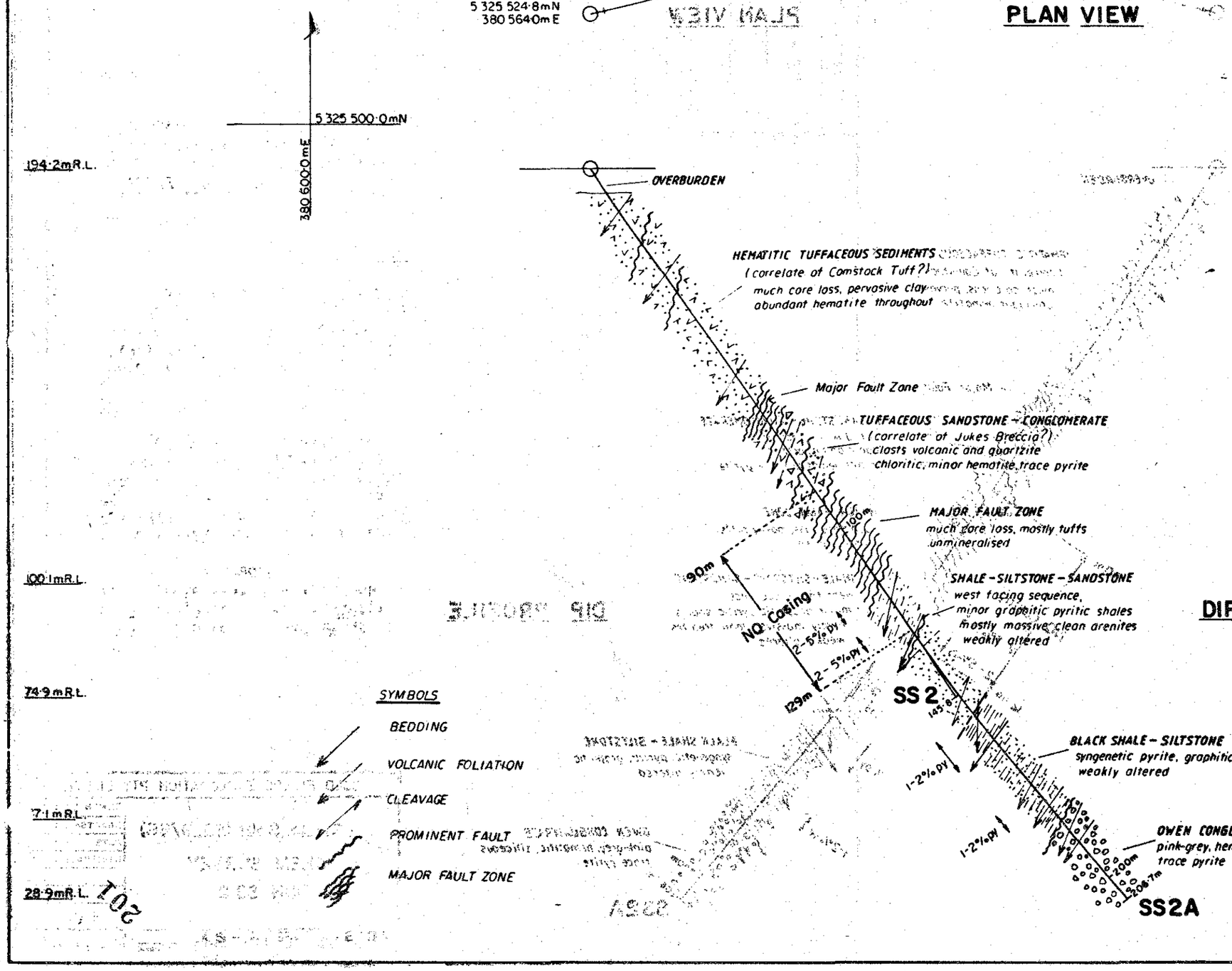
DIAMOND DRILL HOLE PLOT

SCALE 1 — 20 10 0 20 40 METRES

5 cm

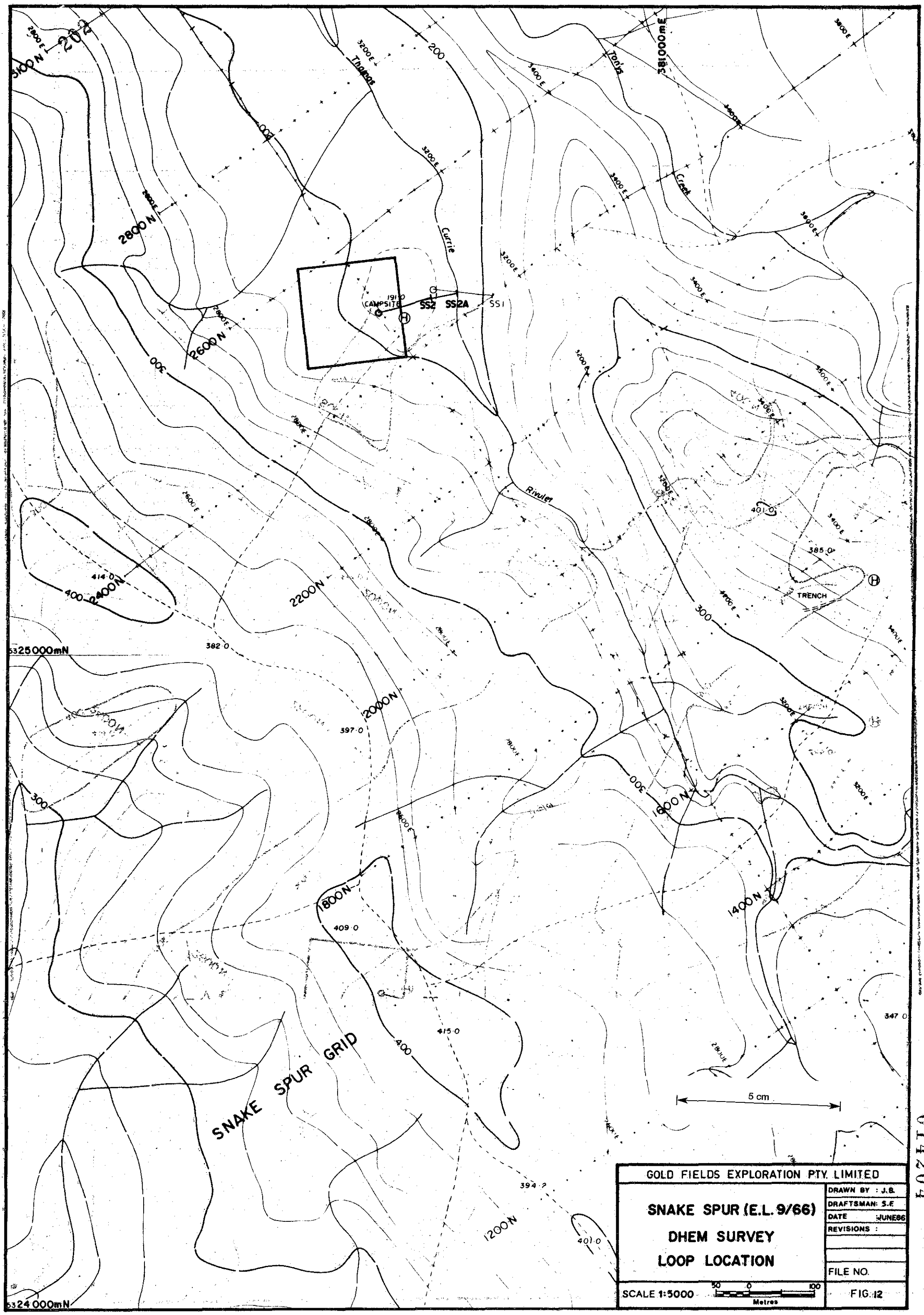


PLAN VIEW



DIP PROFILE

GOLD FIELDS EXPLORATION PTY LIMITED	
Snake Spur (E.L.9/66)	DRAWN BY :
DHEM SURVEY	DRAFTSMAN
DDH SS 2	DATE :
	REVISIONS :
	FILE NO:
SCALE 1:1000 Metres	FIG.11



GOLD FIELDS EXPLORATION PTY. LIMITED

SNAKE SPUR (E.L. 9/66)

DHEM SURVEY

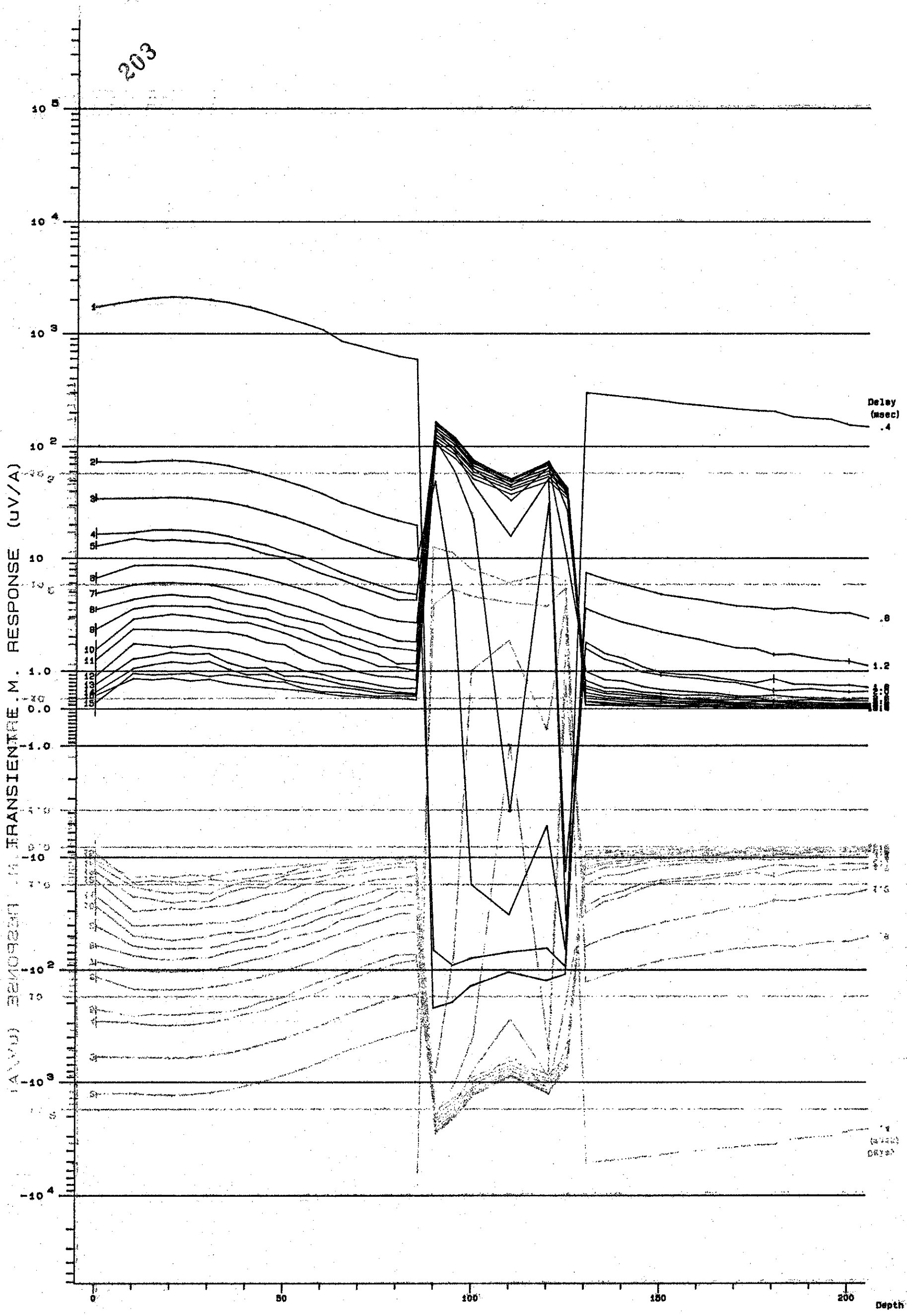
LOOP LOCATION

DRAWN BY : J.B.
DRAFTSMAN: S.E
DATE : JUNE86
REVISIONS :
FILE NO.

SCALE 1:5000 (50 0 100 Metres)

FIG. 12

0142 04



GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY, N.T. (JOB NO.612L)
SNAKE SPUR (STANDARD TIMES)
DH SS2 CURRENT 15.4AMP
SIROTEM Survey by SOLO Geophysics & Co. 1/ 5/86
SOLO hole ref.550 Reading interval 5.0 m
SCALE 1 : 1000 Loop size : 150 m
LOOP configuration : Drill hole
Plotted : 2:43 PM 23/ 6/86

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

Snake Spur (E.L.9/66)

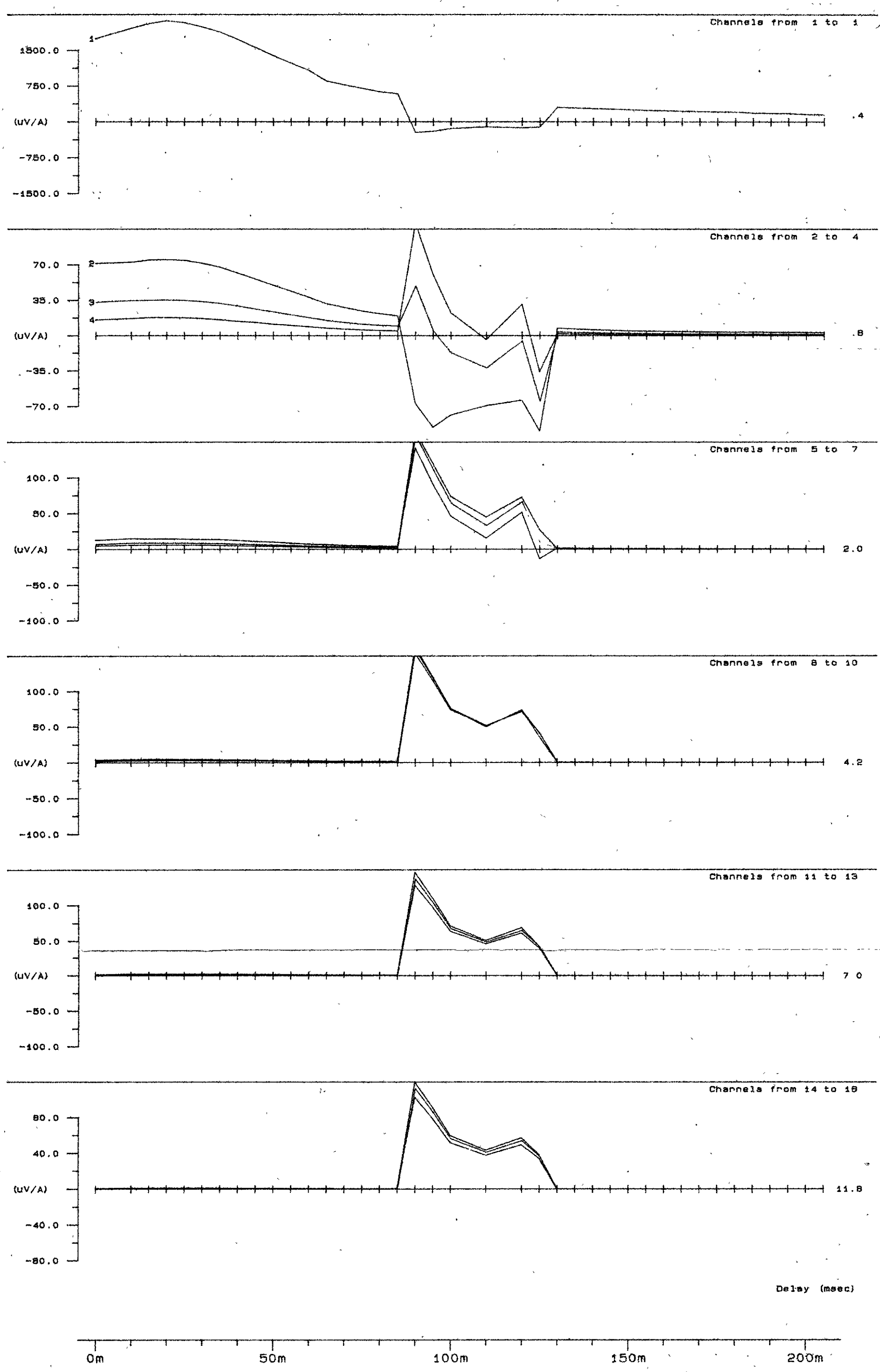
DHEM SURVEY
SS2/2A: log-lin plot

DRAWN BY :
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.

SOLO

SCALE 1:1000 Metres

FIG.13a



TRANSIENT E.M. RESPONSE

GOLDFIELDS EXPLORATION PTY.LTD.
CROTTY, N.T. (JOB NO.612L)
SNAKE SPUR (STANDARD TIMES)
DH SS2 CURRENT 15.4AMP
SIROTEM Survey by SOLO Geophysics & Co.
SOLO hole ref.550 Reading interval 5 m
SCALE 1 : 1000 Loop size : 150 m
LOOP configuration : Drill hole
Plotted : 4:52 PM 24/ 6/86

5 cm

014206

SOLO

86-2566 1/3

GOLD FIELDS EXPLORATION PTY. LIMITED

SNAKE SPUR (E.L.9/66)
DHEM SURVEY
SS 2/2A: lin - lin plot

DRAWN BY
DRAFTSMAN
DATE :
REVISIONS :
FILE NO

SCALE 1:1000 Metres

FIG. 13b

APPENDIX E

SAMPLE DESCRIPTION AND ANALYTICAL DATA SHEETS

BASIN LAKE, WEST QUEEN, TOFFT,

SNAKE SPUR AND FLANNIGANS AREAS

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: FGF 206

PROJECT: TYNDALL PROSPECT: BASIN LAKE SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: JAN '86

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: JAN '86

A1994

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (all ppm)								
				Cu	Pb	Zn	Ag	Au				
T0990	See 1:5000	Basin Lake	Black shale, graphitic, pyritic	86	141	191	0.6	0.009				
T0991	Composite	Sheet	Black shale - grey siltstone, sericitic, minor py	51	56	187	0.2	<0.005				
T0992	"		Intermed. weath. intrusive, clay/ser veins	133	35	98	0.2	0.015				
T0993	"		Coarse grd. epiclastic (mass debris), wkly alt	not assayed								
T0994			Hornblende porphyry; chl-ser-epi-py-trace vein		"							
T0995			Hornblende porph.; wk chl-ser-epi-hematite veins		"							
T0996			Andesitic porph, minor qtz xl, wk perv. chl-ser		"							
T0997	Bradshaw's Rd	Pyrite Zone	Andesitic schist, str ser-py (5%): 3m chip	104	153	191	0.5	0.019				
T0998	"	"	Andesitic schist, mod ser-py (5%): 5m chip	85	195	420	0.4	0.010				
T0999	"	"	Andesitic schist, str ser-py (2-5%): 5m chip	55	138	330	0.7	0.012				
T1000			Siltst-shale, soft sed. deform?, ummin, wkly alt	not assayed								

014208

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: POLTOCK RD

1:250.000 SHEET: TYPE OF SAMPLE: WACKER/ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY, 1986 DATE DISPATCHED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2382	3300N	650E	2m q/z lag o/c f-m weath. feld volc. dk brn-cream	<0.008	10	15	30	<0.5	<2	<10	<10	
2383		650E	o/c mg feld phyric volc. wkly foliated	<0.008	5	10	20	<0.5	<2	<10	<10	
2384		660E	0.8m dk-chocolate brn weath volc	<0.008	10	15	20	<0.5	<2	<10	<10	
2385		670E	2.3m mg q/z-feld volc, o/c lithic (silt/st) pyrocl.	<0.008	10	70	15	<0.5	<2	<10	<10	
2386		680E	1.2m mg weath volc, cream-brn	<0.008	5	10	20	<0.5	<2	<10	<10	
2387		690E	1.1m cream-grn mg volc	<0.008	10	185	85	<0.5	<2	<10	<10	
2388		700E	3.0m cream-grey/grn f-mg, wk sericite volc	<0.008	10	20	85	<0.5	5	<10	<10	
2389		710E	1.1m brn-cream fg tuff. silt/st.	<0.008	10	60	55	<0.5	6	<10	<10	
2390	Standard		0.12g/t Au	0.20	10	5	40	<0.5	<2	10	15	
2391		720E	0.8m dk brn mg tuff. sediment?	<0.008	10	60	230	<0.5	<2	<10	<10	
2392		720E	o/c 25mS line, q/z reef f-mg tuff. sediment	<0.008	10	10	10	<0.5	<2	<10	<10	
2393		730E	2.0m brn-crm f-mg tuff sed. with q/z reef	<0.008	10	25	35	<0.5	<2	<10	<10	
2394		740E	0.9m brn f-mg volc	<0.008	5	<5	20	<0.5	<2	<10	<10	
2395		750E	0.9m brn f-mg volc	<0.008	5	10	40	<0.5	<2	<10	<10	
2396		760E	0.4m crm-brn f-mg tuff sediment c q/z veining	<0.008	5	10	35	<0.5	<2	<10	<10	
2397		770E	1.0m crm fg volc	<0.008	5	<5	30	<0.5	<2	<10	<10	
2398		780E	0.7m pale brn f-mg feld phyric volc, q/z veins	<0.008	5	<5	40	<0.5	<2	<10	<10	014209
2399		790E	1.0m pale brn f-mg volc	<0.008	5	5	60	<0.5	<2	<10	<10	
2400	Standard		blank	<0.008	10	15	50	<0.5	<2	<10	<10	
2401		800E	0.9m dk brn f-mg tuff sediment	<0.008	10	5	45	<0.5	<2	<10	<10	
2402		810E	2-6m crm f-mg volc?	<0.008	5	<5	30	<0.5	<2	<10	<10	

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK 208

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86 A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2403	3300N	820E	4.2m white fg volc, minor f-mg py	<0.008	10	50	475	<0.5	<2	<10	<10	
2404		830E	2.8m crm f-mg volc	<0.008	10	165	325	<0.5	<2	<10	<10	
2405		840E	0.9m pale khaki, f-mg volc	<0.008	5	15	80	<0.5	<2	<10	<10	
2406		850E	7.6m cream-brn fg volc?	<0.008	5	15	460	<0.5	<2	<10	<10	
2407		850E	o/c fg sedimentst, qtz + minor py/FeOx vein	<0.008	10	<5	15	<0.5	<2	<10	<10	
2408		860E	4.0m crm fg volc? py cubes	<0.008	5	55	165	<0.5	<2	<10	<10	
2409		870E	3.0m crm-grn fg volc?	<0.008	10	65	140	<0.5	3	<10	<10	
2410	Standard		blank	<0.008	5	15	35	<0.5	<2	<10	<10	
2411		880E	2.0m grey siltst.	<0.008	20	1950	5650	<0.5	<2	<10	<10	
2412		890E	4.1m blk siltst + grey tuff sandst beds	<0.008	100	35	205	<0.5	25	<10	<10	
2413		900E	0.8m fawn fg siltst.	<0.008	30	10	120	<0.5	<2	<10	<10	
2414		910E	2.8m fgd siltst + xl tuff lenses, qtz rich	<0.008	65	10	165	<0.5	6	<10	<10	
2415		920E	4.5m dk grey siltst, patches fg py	<0.008	65	65	485	<0.5	180	10	<10	
2416		930E	1.2m orange brn; o/c fg siltst + tuff. grit	<0.008	30	60	110	<0.5	55	<10	<10	
2417		940E	1.9m crm fg; o/c yell-orange fg sedimentst	<0.008	25	140	100	<0.5	15	<10	<10	
2418		950E	1.0m yell-orange f-mg sed. Tuff chl	<0.008	15	120	75	<0.5	65	<10	<10	014210
2419		960E	2.0m pale grn mg qtz grit-tuff sandst beds	<0.008	15	120	100	<0.5	9	<10	<10	
2420	Standard		0.36g/t Au	0.28	10	20	60	<0.5	<2	<10	65	
2421		970E	1.4m orange-grn chl feld-qtz phyric volc	<0.008	30	90	335	<0.5	<2	15	<10	
2422		980E	0.9m orange-grn (w facing) feld-qtz tuff. grits	<0.008	15	35	120	<0.5	<2	<10	<10	
2423		990E	1.5m red-orange feld-qtz tuff. grits-sandst	<0.008	10	610	90	<0.5	<2	<10	<10	

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2424	3300N	1000E	5.0m orange-pmtc feld-qtz phyric tuff sed?	<0.008	15	280	205	<0.5	<2	10	<10	
2425		1010E	4.0m pmtc mg qtz-feld volc	<0.008	10	25	110	<0.5	<2	<10	<10	
2426		1020E	0.4m pmtc qtz-feld porph intrusive? fg pmtc	<0.008	15	45	95	<0.5	<2	<10	<10	
2427		1030E	0.5m pale pmtc qtz-feld-mica porph	<0.008	50	50	125	<0.5	<2	<10	<10	
2428		1040E	0.4m pmtc qtz-feld-mica porph	<0.008	10	25	85	<0.5	<2	<10	<10	
2429		1050E	2.2m crm-white f-mg qtz-feld porph ? sericitic	<0.008	15	30	40	<0.5	<2	<10	<10	
2430	Standard		0.60g/t Au	0.46	5	30	125	<0.5	<2	<10	25	
2431		1060E	2.2m white mgd qtz porph. sericitic	<0.008	15	20	35	<0.5	<2	10	<10	
2432		1070E	0.4m grey-grn mg felsic volc, some qtz xl	<0.008	15	50	65	<0.5	4	<10	<10	
2433		1080E	0.4m orange-brn f-mg feld-qtz volc, chloritic	<0.008	10	25	90	<0.5	<2	<10	<10	
2434		1090E	0.5m pmtc-grn mg feld-qtz volc	<0.008	30	20	215	<0.5	<2	<10	<10	
2435		1100E	0.8m orange mg feld-qtz volc	<0.008	15	55	265	<0.5	<2	<10	<10	
2436		1110E	0.8m mg feld-qtz volc	<0.008	15	90	235	<0.5	<2	<10	<10	
2437		1120E	0.6m grey-grn clayey soil	<0.008	15	20	85	<0.5	<2	<10	<10	
2438		1130E	0.5m dkgrn-brn clayey soil	<0.008	30	40	90	<0.5	3	<10	<10	
2439		1140E	0.7m orange clay (not bedrock)	<0.008	15	15	55	<0.5	<2	<10	<10	
2440	Standard		blank	<0.008	10	20	40	<0.5	3	<10	<10	
2441		1150E	o/c massive qtz-feld volc - intrusive or extrusive?	<0.008	10	20	45	<0.5	<2	<10	<10	
2442		1160E	o/c massive qtz-feld lava or intrusive	<0.008	15	25	35	<0.5	<2	<10	<10	
2443	4200N	510E	2.8m crem fg tuff. siltst, massive	<0.008	35	580	65	<0.5	20	15	<10	
2444		520E	0.4m pale grey tuff siltst.	<0.008	15	35	50	<0.5	<2	<10	<10	

014211

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK 210

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2445	4200N	530E	0.5m pale brn fg siltst	<0.008	10	80	40	<0.5	<2	<10	<10	
2446		540E	0.5m pale brn fg siltst	<0.008	10	30	40	<0.5	<2	<10	<10	
2447		550E	0.7m pale brn fg tuff sedmnt	<0.008	20	75	50	<0.5	<2	<10	<10	
2448		560E	0.8m pale brn fg tuff. sediment	<0.008	10	30	25	<0.5	<2	<10	<10	
2449		570E	0.6m grey-grn f-mg tuff. sediment	<0.008	10	30	90	<0.5	<2	<10	<10	
2450	Standard		blank	<0.008	10	10	40	<0.5	<2	<10	<10	
2451		580E	2.8m grey-grn f-mg tuff sedmnt	<0.008	10	40	60	<0.5	<2	10	<10	
2452		590E	1.0m pale brn fgd sedmnt?	<0.008	5	30	55	<0.5	<2	<10	<10	
2453		600E	0.8m pale brn f-mg sediment?	<0.008	20	30	85	<0.5	<2	<10	<10	
2454		610E	3.0m crm-pale grn fg volc	<0.008	10	30	40	<0.5	<2	<10	<10	
2455		620E	1.5m pale yell/brn ofc cg wkly chloritic airfall tuff	<0.008	10	50	65	<0.5	<2	10	<10	
2456		630E	4.0m kohky-white f-mg sheary volc	<0.008	10	25	90	<0.5	<2	10	<10	
2457		640E	3.4m grn F-mg feld-phyric volc, wkly chloritic	<0.008	15	60	180	<0.5	<2	<10	<10	
2458		650E	1.0m crm-orange fg volc	<0.008	10	45	40	<0.5	<2	15	<10	
2459		660E	2.2m crm fg sedimnt?	<0.008	5	25	30	<0.5	<2	<10	<10	
2460	Standard		blank	<0.008	5	30	30	<0.5	<2	15	<10	
2461		670E	0.8m grey-grn fg volc?	<0.008	5	45	70	<0.5	<2	<10	<10	
2462		680E	4.5m crm fg volc c qtz vnls	<0.008	10	30	35	<0.5	<2	10	<10	
2463		690E	3.8m crm-white fg volc	<0.008	10	35	40	<0.5	<2	<10	<10	
2464		700E	1.0m pale brn f-mg volc?	<0.008	10	25	25	<0.5	<2	<10	<10	
2465		710E	0.5m pale brn volc?	<0.008	15	15	40	<0.5	<2	<10	<10	

014212

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK 211

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A1996.

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2466	4200N	720E	0.2m grey-grn mg feld-phyric volc, chloritic	<0.008	10	25	50	<0.5	<2	<10	<10	
2467		730E	0.3m brn clc grey-grn fg massive sed. or lava?	<0.008	10	45	20	<0.5	<2	<10	<10	
2468		740E	O/c fg grey-brn massive sed. or lava?	<0.008	10	25	25	<0.5	<2	<10	<10	
2469		750E	0.4m fg volc, kakki	<0.008	5	50	35	<0.5	<2	<10	<10	
2470	Standard		blank	<0.008	10	30	40	<0.5	<2	<10	<10	
2471		760E	?m pale brn fg volc	<0.008	5	40	25	<0.5	<2	10	<10	
2472		770E	1.2m yell-brn f-mg massive qtz+lithic volc arenite	<0.008	10	25	35	<0.5	<2	10	<10	
2473		780E	3.0m crm fg volc	<0.008	10	20	15	<0.5	<2	<10	<10	
2474		790E	3.3m crm brn-white f-mg volc c glass shards	<0.008	10	25	20	<0.5	<2	10	<10	
2475		800E	1.3m crm-pink fg volc	<0.008	10	45	50	<0.5	<2	<10	<10	
2476		810E	1.7m crm-yell/brn f-mg volc	<0.008	10	50	40	<0.5	<2	15	<10	
2477		820E	0.8m crm-pink f-mg feld phyric volc	<0.008	5	35	25	<0.5	<2	<10	<10	
2478		830E	1.4m crm f-mg lithic volc, minor chlorite, banding	<0.008	5	25	30	<0.5	<2	<10	<10	
2479		840E	1.5m crm-white fg silt?	<0.008	5	30	25	<0.5	<2	10	<10	
2480	Standard		1.70 g/t Au	1.26					<2	<10	160	
2481		850E	1.6m crm-orange clc fg volc (non sedimentary)	<0.008	10	35	25	<0.5	80	<10	<10	0142113
2482		860E	1.6m crm-pale pink fg volc	<0.008	5	30	30	<0.5	<2	<10	<10	
2483		870E	1.7m crm-orange fg massive volc	<0.008	5	35	35	<0.5	<2	<10	<10	
2484		880E	4.2m crm-orange fg volc - qtz veining	<0.008	10	25	40	<0.5	5	<10	<10	
2485		890E	3.8m crm-yell/brn fg volc	<0.008	5	35	45	<0.5	7	10	<10	
2486		900E	2.0m pink fg volc	<0.008	50	90	50	<0.5	15	10	<10	

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLSTOCK 212

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 1 MAY '86

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T2487	4200N	910E	3.2m white fg volc, qtz veining	<0.008	5	25	25	<0.5	<2	<10	<10	
2488		920E	0.5m crm-brn fg sediment?	<0.008	35	30	65	<0.5	<2	<10	<10	
2489		930E	0.5m pale brn fg sed?	<0.008	5	20	40	<0.5	<2	<10	<10	
2490	Standard		0.60g/t Au	0.44					<2	<10	30	
2491		940E	0.5m crm fg sediment & bedding 080.70	<0.008	5	15	30	<0.5	<2	15	<10	
2492		950E	0.3m pale-brn fg sed.	<0.008	5	15	30	<0.5	<2	10	<10	
2493		960E	0.3m pale brn fg sed & disrupted bedding	<0.008	5	20	25	<0.5	<2	<10	<10	
2494		970E	0.3m pale brn fg sed	<0.008	<5	20	20	<0.5	<2	<10	<10	
2495		980E	0.3m pale brn fg sed.	<0.008	5	15	30	<0.5	<2	15	<10	
2496		990E	% fg sed, bedding 355,90?	<0.008	5	25	25	<0.5	<2	<10	<10	
2497		1000E	1.9m pale brn-white fg sed?	<0.008	5	35	30	<0.5	<2	10	<10	
2498		1010E	1.0m brn-brn fg volc	<0.008	5	20	25	<0.5	<2	<10	<10	
2499		1020E	0.8m	<0.008	5	20	30	<0.5	<2	<10	<10	
2500	Standard		2.90g/t Au	2.35					<2	15	200	
3401		1030E	0.6m crm fg volc	<0.008	5	15	30	<0.5	<2	<10	<10	
3402		1040E	% mg poorly sorted tuff. sediment	<0.008	5	20	35	<0.5	<2	<10	<10	
3403		1050E	0.6m pale brn fg sed?	<0.008	5	20	25	<0.5	<2	10	<10	
3404		1060E	0.5m grey-brn f-mg sed.	<0.008	5	20	25	<0.5	<2	<10	<10	
3405		1070E	0.5m crm-brn f-mg qtzose sed.	<0.008	5	20	20	<0.5	<2	<10	<10	
3406		1080E	0.5m pale brn fg sed?	<0.008	5	20	20	<0.5	<2	<10	<10	
3407		1090E	0.5m pale brn qtz phyric volc	<0.008	5	60	25	<0.5	<2	<10	<10	

014214

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL PROSPECT: WEST QUEEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: POLITOCK 213

1:250.000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86 DATE DISPATCHED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T3408	4200N	1100E	1.0m pale brn mg qtz phenocrysts volc	<0.008	5	20	15	<0.5	<2	<10	<10	
3409		1110E	1.0m brn-cream mg qtz phyric volc	<0.008	5	15	20	<0.5	<2	<10	<10	
3410	Standard			<0.008					<2	<10	<10	
3411		1120E	0.8m	<0.008	5	15	30	<0.5	<2	<10	<10	
3412		1130E	1% mg qtz phyric volc	<0.008	5	5	20	<0.5	<2	<10	<10	
3413		1140E	1.0m cream mg 1% qtz phyric volc	<0.008	40	20	35	<0.5	<2	<10	<10	
3414		1150E	0.5m cream mg 1% qtz phyric volc	<0.008	20	15	30	<0.5	<2	<10	<10	
3415		1160E	1% mg 1% qtz phyric volc, mod sericitic	<0.008	10	10	30	<0.5	<2	<10	<10	

011215

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: POLTOCK 214

PROJECT: TYNDALL PROSPECT: TOFFT SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WHEKER/ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A1996.

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T3416	4800N	1000E	% cg volcaniclastic, frags. felsl lava ≤5mm, chloritic	<0.008	10	45	45	<0.5	<2	<10	<10	
3417		1010E	0.3cm grn % volcaniclastic, chloritic	<0.008	10	45	70	0.5	<2	15	<10	
3418		1020E	0.4m grey-grn	<0.008	10	15	65	<0.5	<2	<10	<10	
3419		1030E	% cg volc. clastic limonitic clasts	<0.008	25	100	75	0.5	<2	<10	10	
3420	standard		0.12g/t Au	0.10					<2	<10	10	
3421		1040E	0.8m brn-white f-gd B-C	<0.008	10	40	45	<0.5	<2	<10	<10	
3422		1050E	0.3m grey-grn	<0.008	10	80	45	<0.5	<2	<10	<10	
3423		1060E	0.8m grey-grn % cg lithic volcanic, sericitic	<0.008	5	25	50	<0.5	<2	<10	<10	
3424		1070E	% sericitic lithic volcs.	<0.008	10	15	35	<0.5	<2	<10	<10	
3425		1080E	% mg lithic rich volc. clastic	<0.008	5	20	70	0.5	<2	<10	<10	
3426		1090E	% mg volc (change lithology)	<0.008	5	10	50	<0.5	<2	<10	<10	
3427		1100E	% f-mg granular volc	<0.008	10	20	55	<0.5	<2	<10	<10	
3428		1110E	% f-mg granular volc	<0.008	5	90	70	<0.5	<2	<10	<10	
3429		1120E	1.8m crm-grn fg volc	<0.008	5	55	45	<0.5	<2	<10	<10	
3430	standard			<0.008					<2	<10	<10	
3431		1130E	0.8m crm-grn fg granular text. volc	<0.008	10	15	95	<0.5	<2	<10	<10	
3432		1140E	0.4 grn-crm fg-mg granular text volc	<0.008	10	20	50	<0.5	<2	<10	<10	
3433		1150E	% f-mg volc	<0.008	5	10	60	<0.5	<2	<10	<10	
3434		1160E	% f-mg volc	<0.008	5	10	40	<0.5	<2	<10	<10	
3435		1170E	0.8m grey-grn f-mg volc	<0.008	10	20	50	<0.5	<2	<10	<10	
3436		1180E	% mg granular text volc or sed?	<0.008	10	15	25	<0.5	<2	<10	<10	

014216

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK 215

PROJECT: TYNDALL PROSPECT: TOFFT SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER / ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T3437	4800N	1190E	% mg granular text. volc	<0.008	5	10	45	<0.5	<2	10	<10	
3438		1200E	% f-mg granular text volc	<0.008	5	15	35	<0.5	<2	<10	<10	
3439		1210E	1.0m grey-grn volc	<0.008	5	15	35	<0.5	3	75	<10	
3440	Standard		blank 0.0	<0.008					<2	<10	<10	
3441		1220E	0.9m grey-grn volc	<0.008	5	20	40	<0.5	<2	<10	<10	
3442		1230E	1.0m grey-grn volc	<0.008	5	15	35	<0.5	<2	<10	<10	
3443		1240E	0.9m brn-grey volc	<0.008	5	10	30	<0.5	<2	<10	<10	
3444		1250E	0.8m crm-brn fg volc	<0.008	15	15	30	<0.5	<2	<10	<10	
3445		1250E	% chloritic volc.	<0.008	125	20	140	<0.5	<2	15	<10	
3446		1260E	0.7m crm-brn mg volc, maybe part of soil horizon	<0.008	20	10	35	<0.5	<2	<10	<10	
3447		1270E	0.6m grey-grn f-mg massive volc, % adj gran. sed?	<0.008	10	30	55	<0.5	<2	10	<10	
3448		1280E	0.7m crm-grn mg feld phyric volc, v.k'chl.	<0.008	20	185	55	<0.5	<2	<10	<10	
3449		1290E	1.1m grn chloritic volc	<0.008	10	15	90	<0.5	<2	<10	<10	
3450	Standard		0.36 g/t Au	0.34					<2	25	70	
3451		1300E	1.6m kahki chloritic volc	<0.008	5	20	50	<0.5	<2	15	<10	
3452		1310E	0.8m kahki chloritic volc	<0.008	25	30	80	<0.5	<2	15	<10	
3453		1320E	% chloritic volc	<0.008	20	30	170	<0.5	<2	15	<10	
3454		1330E	1.0m pale brn-grn volc	<0.008	40	15	60	<0.5	<2	<10	<10	
3455		1340E	0.6m grey-grn volc	<0.008	<5	20	25	<0.5	<2	10	<10	
3456		1350E	0.8m grey-grn volc	<0.008	90	40	70	<0.5	<2	<10	<10	
3457		1360E	0.6m grey-grn volc	<0.008	15	10	45	<0.5	<2	20	<10	

014211

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: POLTOCK 216

PROJECT: TYNDALL PROSPECT: TOFFT SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: WACKER/ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86

A195

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T3458	4800N	1370E	0.4m grey-grn volc	<0.008	30	10	65	<0.5	<2	<10	<10	
3459		1380E	⅔c chloritic volc	<0.008	170	5	105	<0.5	<2	10	<10	
3460	standard		2.90 g/Mg	224					<2	<10	200	
3461		1390E	⅔c grey-grn f-mg volc, minor pyrite	<0.008	30	145	75	<0.5	10	<10	<10	
3462		1400E	⅔c grey/grn f-mg volc, wkly chloritic	<0.008	15	80	70	<0.5	3	15	<10	
3463	4750N	1200E	⅔c pod/vf chloritic alteration v.thin f-mg volc	<0.008	10	35	90	<0.5	<2	<10	<10	
3464	4100N	1200E	⅔c m-cg qtz-phyric volcaniclastic, lithics <10mm	<0.008	5	65	60	<0.5	<2	<10	<10	
3465		1210E	1.3m yell-brn f-mg volc, minor qtz xl	<0.008	10	90	80	<0.5	<2	<10	<10	
3466		1220E	0.3m yell-brn f-mg volc, qtz	<0.008	15	65	85	<0.5	<2	10	<10	
3467		1230E	0.8m pale brn-crm f-mg volc, minor qtz xl	<0.008	10	35	105	<0.5	<2	<10	<10	
3468		1240E	1.4m pale brn-crm f-mg volc, minor qtz xl	<0.008	10	90	105	<0.5	<2	10	<10	
3469		1250E	0.8m pale grn-crm, f-mg volcaniclastic, qtz phyric	<0.008	5	95	115	<0.5	<2	<10	<10	
3470	standard			<0.008					<2	<10	<10	
3471		1260E	1.1m pale grn-crm f-mg volc minor qtz xl	<0.008	10	40	120	<0.5	<2	<10	<10	
3472		1270E	2.4m crm-grn f-mg volc, qtz xl	<0.008	5	25	140	<0.5	<2	20	<10	
3473		1280E	1.2m fawn qtz xl volc, ⅔c m-cg lithic volc. clastic	<0.008	10	25	105	<0.5	<2	<10	<10	
3474		1290E	5.2m pale grn mg volc	<0.008	10	40	95	<0.5	<2	<10	<10	
3475		1300E	1.9m crm-grn volc + qtz veining	<0.008	10	15	75	<0.5	<2	15	<10	
3476		1310E	⅔c m-cg volcaniclastic	<0.008	10	35	110	<0.5	<2	<10	<10	
3477		1320E	⅔c m/g clastic beds in cg "air-fall" tuffs, weak foliation	<0.008	5	75	110	<0.5	<2	<10	<10	
3478		1330E	0.8m pale-grn mg volc	<0.008	10	60	75	<0.5	<2	<10	<10	

014218

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL PROSPECT: TOFFT SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: POLTOCK

1:250.000 SHEET: TYPE OF SAMPLE: WALKER ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MAY '86 DATE DISPATCHED: 21/7 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	As	W	Bi	
T3479	4100N	1340E	0.6m fawn m-cg qtz phyric volcaniclastic	<0.008	10	45	95	1.0	<2	<10	<10	
3480	Standard		0.60g/t Au	0.59					<2	<10	25	
3481		1350E	1.0m gray-grn m-cg qtz phyric Vdc. clastic	<0.008	10	65	100	1.0	<2	<10	<10	
3482		1360E	1.6m crm-grn mg qtz phyric vol	<0.008	10	125	85	1.0	<2	<10	<10	
3483		1370E	0.7m glacial gravels	<0.008	<5	20	60	1.0	<2	10	<10	
3484		1380E	0.6m (gray-grn glacial cover?	<0.008	<5	20	60	<0.5	<2	<10	<10	
3485		1390E	1.4m glacial cover with sandst. fragments	<0.008	<5	50	15	<0.5	<2	<10	<10	
3486		1410E	1.6m pink-grn glacial - volcanic contact	<0.008	5	60	65	<0.5	<2	10	<10	
3487		1420E	0/c m-cg Vdc, abundant lithics, qtz phyric	<0.008	5	145	50	<0.5	<2	<10	<10	
3488		1430E	0/c f-mg volcaniclastic, lenses in coarser vdc	<0.008	5	65	60	<0.5	<2	20	<10	
3489		1440E	2.1m grey-grn glacial cover	<0.008	<5	40	100	<0.5	<2	<10	<10	
3490	Standard		blank	<0.008								
3491		1480E	4.0m crm fg Vdc, no qtz xl	<0.008	5	30	60	1.0	<2	<10	<10	
3492		1520E	1.0m pale brn mg qtz phyric Vdc	<0.008	<5	80	70	1.0	<2	10	<10	
3493		1530E	1.8m pale grn mg qtz phyric vdc, qtz veins	<0.008	<5	15	<5	<0.5	<2	10	<10	
3494		1540E	2.2m Crm-grn mg qtz phyric Vdc	<0.008	<5	40	30	<0.5	<2	<10	<10	
3495		1550E	0/c mg qtz phyric volcaniclastic	<0.008	<5	55	35	<0.5	<2	10	<10	
3496		1560E	1.2m khaki + pale grn vdc	<0.008	<5	35	40	<0.5	<2	15	<10	
3497		1610E	4.0m Crm-grn mg qtz phyric vdc	<0.008	<5	20	5	<0.5	<2	<10	<10	
3498		1680E	0/c m-cg Obben conglomerate (dip slope)	<0.008	<5	45	15	<0.5	<2	<10	<10	
3499		1620E	3.3m pale grn mg qtz phyric vdc	<0.008	<5	25	25	<0.5	<2	<10	<10	

014219

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: POLTOCK

PROJECT: TYNDALL PROSPECT: TOFFT SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 218

1:250,000 SHEET: TYPE OF SAMPLE: WACKER/ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 17AY'86

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Au	Cu	Pb	Zn	Ag	As	W	Bi
T3500	standard		1.70g/t Au	1.41					<2	<10	180
3501	4100N	1630E	2.0m gray-grn m-cg qtz phyric lithic rich volc.	<0.008	<5	25	20	1.0	<2	<10	<10
3502		1640E	1.4m pale brn m-cg qtz phyric lithic rich volc	<0.008	10	15	15	<0.5	<2	<10	<10
3503		1650E	1.0m pale brn m-cg qtz phyric lithic volc.	<0.008	<5	40	20	1.0	<2	<10	<10
3504		1660E	1.4m pale brn glacial cover over volcs?	<0.008	<5	20	10	1.0	<2	20	<10

014220

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyrdall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs. COLLECTED BY: Poltocks

1:250.000 SHEET: TYPE OF SAMPLE: Wuchs / Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: 219 DATE RECEIVED: A196

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES Au	Ag	As	Cu	Pb	Zn			
T1257	1000N	3175E	1·9m Cream weathered rock f-m grained	<0·008	<0·1	<2	6	8	28			
1258	"	3150E	1·0m Cream br weath. rock - thin f-m grained Qtz veinlet	0·021	"	2	10	39	43			
1259	"	3125E	0·7m Weath. cream brn BR f-med grained	0·008	"	2	11	28	62			
1260	"	3100E	1·2m Weath BR cream-khaki f-m gr. ? chl. mafic gr qtz pheno.	0·015	"	<2	8	8	56			
1261	"	3075E	0·7m Weath BR cream-brn f-m gr. no qtz phen	<0·008	"	2	5	2	22			
1262	"	3050E	0·7m Weath BR Cream-brn f-m gr. no qtz phen.	"	"	<2	8	8	51			
1263	"	3025E	Rock Chip Grey-green f-med gr. weakly chl. Felsic vole.	0·015	"	"	6	51	65			
1264	"	3000E	0·5m BR grey-green f-m grained	<0·008	"	"	10	13	46			
1265	BLANK											
1266	800	2750E	2·6m WBR f-m cream/brn no pheno apparent. felsic vol	<0·008	<0·1	<2	16	5	39			
1267	"	2775E	2·2m WBR white f gr. possibly rhyl. lavas?	"	"	"	15	5	21			
1268	"	2800E	5·5m WBR orange-brn. fine grained rhyl lava?	"	"	"	31	5	62			
1269	"	2825E	3·0m WBR Cream-brn f·gr. dc f-m gr. felds physic	0·011	"	"	34	6	34			
1270	800N ?	2850E	2·2m Wuches WBR grey-orange-brn f-m gr.	<0·008	"	"	10	6	35			
1271	800N	2850E	Rock Chip dc m. gr. felsic physic vdc sericitized qtz veining	"	"	"	5	<1	13			
1272	"	2875E	0·8m WBR Yellow-brn minor hematite dc felds physic f-m gr.	"	"	5	30	8	46			
1273	"	2900E	1·4m WBR Cream; weakly limonitic f-m gr. ? some hard qtzose frags	"	"	2	10	11	43			
1274	BLANK											
1275	800N	2925E	1·3m BR grey-green wkly chl. dc sericic / felds physic volcanic f-m gr.	<0·008	<0·1	<2	13	4	41			
1276	"	2950E	1·5m WBR cream-brn f-m gr. dc med felds physic vdc	"	"	"	10	15	28			

0114221

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: Pollocks.

PROJECT: Tyndall PROSPECT: Snake Spur Grid SAMPLE STORAGE REQ'D: LABORATORY: Amdaks DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacker / Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 22/9 A19E

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1277	800N	2975E	WBR cream f-m gr. Felsic phyric 0.7m qtz vein 1-2m thick trending 015	<0.008	<0.1	<2	6	9	21			
T1278	"	3000E	0.5m WBR cream-brown f-med grained	0.010	"	"	7	4	39			
T1279	600N	3000E	1.4m WBR cream-brn weak chl M-gr.	0.011	"	"	6	3	26			
T1280		3050E (3037E?)	0.4m BR White f-med gr.	0.022	"	"	4	<1	28			
T1281		3050E (3051E?)	4.8m WBR cream f-med gr. No qtz phens.	0.014	"	"	4	12	27			
T1282	BLANK											
T1283	600N	3075E	BR 1.7m cream chl calc f-med gr.	<0.008	<0.1	<2	5	13	55			
1284		3100E	0.6m BR pale green. Sericitized qtz veined Volc	"	"	"	6	8	55			
1285		3125E	0.9m Wacker BR Mottled chl-limonitic f-med gr.	"	"	"	20	122	120			
1286		3150E	Rock. Weakly chloritic m-gr. felds phyric - 1 gram	"	"	"	5	92	100			
1287		3150E	0.5m BR mottled green/pink	"	"	2	10	21	69			
1288		3175E	0.8m BR Cream-pale green f med gr.	0.016	"	<2	11	37	62			
1289		3200E	1.4m WBR Cream-brn. f-med grained.	<0.008	"	"	12	21	74			
1290		3225E	0.4m BR Cream-pale green	"	"	"	7	4	118			
1291		3250E	0.6m BR grey-green - scattered qtz phens. Med gr.	0.009	"	"	6	13	121			
1292		3275E	0.8m BR Cream f-med grained Volc	<0.008	"	3	4	9	75			
1293		3300E	2.4m WBR Brn-cream fine grained.	0.016	"	3	4	6	51			
1294		3325E	0.8m BR Cream fine grained.	<0.008	"	<2	3	<1	25			
1295		3350E	4.8m BR Grey-green Phyl lava - felt phenos. f gr.	"	"	5	20	37	109			
1296		3375E	3.7m BR fine gr. Grey-green - phyric	0.008	"	4	5	24	100			

014222

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pollocks 221

PROJECT: Tyndall | PROSPECT: Snake Spur Grid | SAMPLE STORAGE REQ'D: | LABORATORY: Analabs | DATE DISPATCHED:

1:250,000 SHEET: | TYPE OF SAMPLE: | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1297	600N	3400E	2.6m BL Grey-green fine grained	<0.008	<0.1	6	7	187	96			
1298	B L	A N K										
T1299	600N	3425E	2.8m BL Grey-green fine grained: rhyl lava?	0.011	<0.1	<2	58	24	88			
T1300	"	3450E	1.5m BL Grey-green fine Rhyl lava	0.056	1.3	"	46	41	46			
1301	"	3475E	0.2m BL Grey-green fine gr. Rhyl lava O/c [illegible]	<0.008	<0.1	<2	14	6	13			
1302	"	3500E	Rock Chip O/c fine gr. grey-green Rhyl lava	"	0.3	20	7	8	15			
1303	800N	3600E	1.6m Pink-cream s/s grit O/c or scree?	"	<0.1	2	5	<1	9			
1304	"	3625E	0.8m Cream-pink sandst. o/c or scree?	0.016	0.1	3	3	"	4			
1305	"	3575E	1.2m BL hematite s/s frags cream-brn bedrock Sand	0.016	<0.1	<2	3	7	9			
1306	"	3550E	0.4m WBL Cream-brn.	<0.008	"	"	7	5	13			
1307	"	3525E	Rock Chip o/c Rhyl lava snowflake text chl sml feld Phenos	0.011	"	2	31	8	33			
1308	"	3500E	Rock Chip o/c Rhyl lava wkly chloritized	<0.008	"	4	35	12	23			
1309	"	3475E	0.6m BL Grey-green chloritized Rhyl lava	"	"	<2	22	18	40			
1310	"	3450E	0.5m BL Grey-green fine grained Rhyl lava	0.009	"	"	8	26	41			
1311	"	3425E	1.2m WBL Cream-brn fine grained	<0.008	"	"	3	52	27			
1312	"	3400E	2.4m BL cream fine gr. Qtz veining o/c wkly foliated; weakly chl. fine volc lava?	0.021	"	"	4	11	25			
1313	"	3375E	0.5m WBL Cream-brn. fine grained	<0.008	"	"	2	7	33			
1314	"	3350E	Rock Chip o/c f-med gr sericitic chl poss. ignimbrite? Foliated 30% feldsp lyrs	"	"	"	3	102	120			
1315	"	3325E	Rock Chip o/c fine-coarse lithics <50mm - ignim text? sericitized 14%	0.009	"	3	3	75	195			
1316	"	3300E	1.4m BL Grey-green chloritized f-med gr. volcanic	<0.008	"	<2	6	36	113			

014223

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pollachs 222

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs. DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacka. Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T 1317	800N	3275E	0.6m BR Cream-green Weakly chl - igneous? fc med gr. felds phyric	<0.008	<0.1	2	6	39	111			
1318	B L A N K											
1319	800N	3250E	0.9m BR grey-green med gr. ~~felds~~ felds phyric	<0.008	<0.1	<2	5	34	106			
1320	"	3225E	0.6m BR Mottled pink-green - feld phyric - med gr.	"	"	4	4	11	110			
1321	"	3200E	1.4m WBR khaki-cream	"	"	<2	8	71	49			
1322	"	3175E	0.4m BR cream-pale green	"	"	"	5	18	111			
1323	"	3150E	1.1m BR Grey-green med gr. feld phyric chl	"	0.3	"	12	58	146			
1324	"	3125E	3.7m BR Grey-green fine gr. sericitic c/ med } Weakly chloritic feld. phyric vsfc?	"	<0.1	"	13	27	111			
1325	"	3100E	1.7m BR Grey-green fine grained	"	"	"	7	8	46			
1326	"	3075E	1.0m BR Cream-grey fine grained	"	"	"	5	42	47			
1327	"	3050E	0.7m WBR cream f.gr. c/c 15% weak med gr. felsp } Phyric vsfc	"	"	"	5	5	47			
1328	"	3025E	1.3m WBR Brn-cream fine grained	"	"	"	7	9	32			
1329	B L A N K											
1330	1000N	2975E	1.2m WBR Grey-green fine gr. clayey c/ qtz vein	0.010	"	"	12	14	26			
1331	"	2950E	2.0m WBR Cream brn fine-med gr.	<0.008	"	"	9	12	22			
1332	"	2925E	1.1m BR Grey-green fine-med feld phyric	"	"	"	7	6	31			
1333	"	2900E	2.2m WBR Orange-green med gr. felds phyric	"	"	5	12	10	40			
1334	"	2875E	2.2m WBR Orange-pale green fine grained	0.008	"	"	12	48	70			
1335	"	2850E	9.4m WBR Cream-khaki - minor limonite - f.gr.	<0.008	"	"	23	7	125			
1336	"	2825E	1.1m WBR Cream-orange limonite f-med gr.	0.008	"	"	25	4	115			

0142224

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: Poltocks 223

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacka - RokChip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: A19

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T 1337	1000N	2800E	1.2m BR Grey green Med gr. feldsp plugne	0·024	<0·1	<2	16	6	83			
T 1338	"	2775E	0.2m WBR Cream f-med gr. o/c 135% wk M.gr (grim ⑤) chl-feld plugne	0·033	"	"	4	1	36			
1339	"	2750E	1.0m BR Grey-green f-med gr. feld plugne	0·015	"	"	6	3	61			
1340	"	2725E	5.6m WBR Cream limonitic f-m gr. wlt-qtz veining	0·056	"	2	13	11	27			
1341	BLANK											
1342	1000N	2700E	1.4m WBR Pale Brn - cream fine grained	0·040	"	<2	4	3	26			
1343	"	2675E	1.6m WBR Cream-brn fine grained	0·024	"	"	4	3	25			
1344	"	2650E	1.4m BR cream o/c weath cream m.gr. feldsplugne dyke	0·021	"	"	5	8	61			
1345	"	2625E	Rock Chip o/c fine gr. sericite wisky hem. lava	<0·008	"	"	5	4	24			
1346	"	2625E	1.2m Wacka WBR Creambrn fine grained	"	"	"	5	7	19			
1347	"	2600E	0.6m BR Cream pale green - fine gr - rhyl lava	0·035	"	6	16	1	31			
1348	"	2575E	0.6m BR Cream fine grained	0·008	"	<2	4	<1	21			
1349	"	2550E	1.2m WBR Brn-cream med-grained	<0·008	"	"	4	"	17			
1350	"	2525E	1.5m BR Pink-wisky chlorite sericite veinlets <1 mm ? vdc qtz	0·034	"	2	5	"	23			
1351	"	2500E	1.0m BR White-green grey fine gr. wisky chl.	<0·008	"	<2	3	1	19			
1352	BLANK											
1353	1200N	2425E	0.3m BR white fine grained vdc	0·016	"	"	3	2	9			
1354	"	2450E	0·8m BR Cream fine-medium grained.	<0·008	"	"	3	<1	11			
1355	"	2475E	Rock Chip o/c 2450-2475 130% Chl-feld med volcanic	0·018	"	2	3	"	12			
1356	"	2500E	1.6m BR Grey-green f-m grained	<0·008	"	3	83	6	58			

014225

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollocks 22A

1:250.000 SHEET: TYPE OF SAMPLE: Wacke - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T 1357	1200N	2525E	20m WBR Cream-brn fine grained	<0.008	<0.1	<2	4	2	30			
1358	"	2550E	0.7m BR Brn-cream fragmts fine gr.-rhyl lava?	0.012	"	"	9	2	31			
1359	"	2575E	1.8m BR Pink-brn fine Rhyl lava?	0.009	"	"	5	2	24			
1360	"	2600E	0.5m BR Cream-pale green. Weak sericitic gr. rhyl lava?	0.011	"	"	5	<1	29			
1361	"	2625E	0.8m WBR Cream brn fine-med grained.	<0.008	"	"	8	1	18			
1362	"	2650E	0.7m WBR Cream brn fine grained	0.018	"	"	8	2	29			
1363	"	2675E	0.8m BR? Fine grained silicified fragments	<0.008	"	2	5	<1	70			
1364	"	2700E	2.5m BR Grey green fine grained	0.026	"	<2	6	14	55			
1365	BLANK											
1366	"	2725E	Rock Chip of fine pink cream rhyl lava? grey feld phenos	0.016	"	20	6	7	68			
1367	"	2725E	Wacke 0.9m WBR Pink-brn (limonitic) fine gr.	<0.008	"	<2	4	3	55			
1368	"	2750E	1.4m WBR Cream-brn. fragmts pink-brn rhyl lava	0.010	"	2	3	1	41			
1369	"	2775E	0.3m BR Cream fine gr. weakly silicified foliated	0.011	"	<2	5	5	40			
1370	"	2800E	1.0m WBR cream - limonitic	0.013	"	"	4	31	44			
1371	"	2825E	1.2m BR cream fine grained	0.018	"	"	5	3	44			
1372	"	2850E	0.3m BR Brown clay - white rock	<0.008	"	"	7	6	27			
1373	"	2875E	2.1m BR Cream - pale green med. gr.	0.042	"	"	8	13	50			
1374	"	2900E	1.2m WBR grey green	0.012	"	"	5	15	109			
1375	"	2925E	1.4m WBR cream-brn. fine grained rhyl lava?	0.017	"	"	8	9	40			
1376	"	2950E	1.6m BR grey green fine gr.	0.018	"	"	8	7	50			

011226

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pollocks 225

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacka - Rab Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85

A19966

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1377	1200N	2975E	0.1m WBR cream-brown f-m grained	<0.008	<0.1	<2	5	8	35			
1378	"	3000E	Rock Chip o/c 15% med feld phyric chloritised ignim?	0.011	"	4	4	7	26			
1379	BLANK											
1380	1200N	3025E	1.0m WBR f-m grained cream-green qtz veinlets	0.020	"	2	3	5	23			
1381	"	3050E	1.0m WBR Cream; weakly clayey	<0.008	"	<2	3	5	30			
1382	"	3075E	1.4m BR Grey-green; f-med gr. felds phyric	0.024	"	"	5	8	30			
1383	"	3100E	0.6m WBR Cream brn fine grained	0.022	"	"	7	30	24			
1384	"	3125E	1.5m BR khaki	0.043	"	4	20	29	34			
1385	"	3150E	0.4m BR Cream-grey f-med grained	0.011	"	<2	8	18	30			
1386	"	3175E	1.8m BR cream-green f-m grd., abund qtz float	0.013	"	"	4	10	25			
1387	"	3200E	1.5m WBR khaki clayey, wlt. qtz frags	0.041	"	15	15	66	40			
1388	"	3225E	3.7m WBR Cream-pale green f-med grained	0.011	"	<2	7	52	49			
1389	"	3250E	7.4m BR Cream-pale green qtz veining & limonite	0.014	"	"	8	86	32			
1390	"	3275E	5.8m WBR Cream-yel brn clayey	<0.008	"	"	7	54	53			
1391	"	3300E	2.2m WBR Cream & limonite stringers fine grained	"	"	"	12	26	39			
1392	"	3325E	3.8m BR Grey-green med grnd felsl phyric	"	"	"	9	76	300			
1393	"	3350E	1.2m BR Grey-green & limonite. Med gr. felds. Phyric	"	"	"	8	35	470			
1394	"	3375E	2.4m WBR Pink-limonite f-m grained	"	"	"	24	350	420			
1395	BLANK											
1396	"	3400E	0.5m WBR grey-green med gr. felds phyric	0.018	"	"	7	72	730			

01422 21

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollocks 226

1:250.000 SHEET: TYPE OF SAMPLE: Wacka / Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: NOV · 85 A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1397	1200N	3425E	1.6m BR Cream f-med grained	<0.008	<0.1	<2	3	53	450			
1398	"	3450E	1.8m WACKA B/R Grey green f-med d/c 10% Med grained fold physic - sericite	"	"	4	2	165	280			
1399	"	3475E	Rock Chip d/c 10% foliated. fold physic with <50cm L.thins	"	"	<2	2	5	22			
1400	"	3500E	Rock Chip o/c <2 Massive hem. chert lavas	"	"	2	5	5	13			
T1601	1400N	3000E	Rock Chip 12% foliation fold physic wedge ignims	"	"	3	4	15	32			
1602	"	3025E	Rock Chip	"	"	2	3	4	20			
1603	"	3050E	0.5m Brown-cream	"	"	<2	4	19	21			
1604	"	3075E	0.6m WBR Cream brown	0.014	"	<2	6	18	37			
1605	"	3100E	0.7m WBR Cream brn-grey wedge fold physic	<0.008	"	5	4	4	16			
1606	"	3125E	Rock Chip 110% fol. Drag green sericite m.gr felspphyr	"	"	<2	3	5	21			
1607	"	3150E	Rock Chip o/c grey-green 320% fol	0.012	"	5	4	10	25			
1608	1425N	3175E	Rock Chip Med grnd grey-green fold physic	<0.008	"	2	9	13	28			
1609	1800N	2475E	0.6m BR grey green foliated sericite	"	"	<2	4	12	35			
1610	"	2450E	2.4m BR % sericite cream-green	"	"	"	3	10	59			
1611	BLANK											
1612	1800N	2925E	1.2m WBR Cream-brown foliated	"	"	"	4	8	15			014228
1613	"	2900E	0.6m WBR Cream brown	"	"	"	4	16	20			
1614	"	2875E	0.6m BR % Cream brown	0.008	"	"	5	37	22			
1615	"	2850E	0.9m WBR Cream-brown	<0.008	"	3	3	5	21			
1616	"	2825E	0.8m WBR " " Medium grained	0.014	"	<2	4	7	27			

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Poltock 27

1:250,000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: Nov '85

A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1617	1800N	2800E	0.8m BR Cream - pale green	<0.008	<0.1	<2	3	4	34			
1618	"	2775E	2.0m WBR " " - limonitic	"	"	7	6	6	14			
1619	"	2750E	Rock Chip 1 cream f.mod felds phyric	"	"	3	11	4	20			
1620	"	2725E	0.6m BR cream - sericitic schist	"	0.3	<2	8	13	16			
1621	"	2700E	Rock Chip o/c 14% sericitic schist - feld phyric qtz	"	<0.1	"	4	5	14			
1622	"	2675E	0.4m BR cream sericite schist - no qtz phenos.	"	"	3	2	<1	10			
1623	"	2650E	1.2m BR " " " - 3ml qtz phenos	"	"	<2	3	2	9			
1624	"	2625E	1.8m BR Brown limonitic - cream sericite schist	"	"	"	3	4	24			
1625	"	2600E	0.8m BR Cream - limonitic	"	"	4	3	8	24			
1626	"	2575E	Rock Chip o/c med grnd - qtz feld phyr v.s.c - ?silicified	"	0.1	<2	3	<1	10			
1627	"	2550E	0.4m BR cream Foliated	0.010	<0.1	4	4	1	12			
1628	"	2525E	0.5m BR mod qtz phyric cream - limonitic	<0.008	"	2	2	<1	13			
1629	"	2500E	0.5m BR cream brown	"	"	<2	2	4	14			
1630	"	2550E	Rock Chip Silicified qtz phyric volcanic	0.013	0.1	8	2	29	8			
1631	1600N	3000E	Rock Chip Dk grey felds phyric med gr ignim with qtz veining	<0.008	0.1	4	9	43	88			
1632		3025E	Rock Chip o/c 290.85% sericitic feld phyric M. gr.	"	<0.1	<2	2	8	15			
1633		3050E	Rock Chip o/c % weak chl. Mod gr. Felds phyric.	0.032	"	"	6	2	31			
1634		3075E	Rock Chip o/c 305/80 Gray-green felt phyric Mod gr.	0.034	"	"	5	2	30			
1635		3100E	Rock Chip o/c Sericitic felds phyric mod gr.	0.019	0.1	"	4	1	12			
1636		3150E	Rock Chip o/c % felt phyric mod gr.	0.028	<0.1	"	5	15	21			

014229

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyrdall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollocks 228

1:250.000 SHEET: TYPE OF SAMPLE: Wacka - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov' 85 DATE DISPATCHED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T 1637	1600N	3175E	Rock Chip o/c of Med gr. Feld phyric	0·012	<0·1	<2	3	4	14			
1638	1800N	3000E	Rock Chip o/c of Grey green med gr. feld phyr	0·010	"	5	3	8	41			
1639		3025E	Rock Chip o/c Med feld phyric & qtz veining Micapy	0·020	"	2	10	36	32			
1640		3050E	Rock Chip o/c 110% felds phyric Med grained	0·034	0·1	7	4	3	24			
1641		3100E	Rock Chip o/c of grey-green Med gr. felspp phyric	0·052	0·1	5	4	3	18			
1642		3125E	Rock Chip	0·016	0·1	4	5	<1	3			
T 1701	2200N	2700E	0·9m BR with brown weathered vein qtz phyric	0·022	<0·1	<2	3	"	12			
1702		2725E	1·0m o/c grn phyric sericite schist.	0·019	"	4	3	5	15			
1703		2750E	2·1m light fawn/tan - quartz fragments	0·012	"	<2	3	2	11			
1704		2775E	1·2m WBR ~~fawn~~ white/grey semi schist - felds no qtz	<0·008	"	4	3	6	17			
1705		2800E	0·9m WBR Fawn with yellow tinge	0·016	0·1	2	2	<1	18			
1706		2825E	0·9m WBR light tan-greyish	0·031	0·2	50	20	85	24			
1707		2850E	1·8m WBR light cream tan	0·258	<0·1	10	5	21	23			
1708		2875E	4·2m BR foliated White limonite - sericite	0·067	"	9	5	19	32			
1709		2900E	2·0m WBR Brown limonitic	0·027	"	7	5	11	33			
1710		2925E	2·5m BR grey-pink orange fine gr. pass. shale	0·028	"	2	41	9	57			
1711		2950E	1·0m WBR orange-brn limonitic fine grained	0·029	"	20	8	32	37			
1712		2975E	1·4m WBR cream-orange brown. foliated	0032	"	110	31	630	32			
1713		3000E	1·8m BR Cream-lt grey fine gr. Pass shale	<0·008	"	110	66	110	32			
1714		3025E	0·6m BR cream	0·026	"	3	8	7	12			

014230

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Poltocks

1:250.000 SHEET: TYPE OF SAMPLE: Wacha / Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DATE DISPATCHED: Nov. 85

229

A19

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn		Bi	
T1643	2000N	3000E	2.7m BR brn-white f-med grained									
1644		3025E	1.4m WBR Grey-brown									
1645		3050E	Rock Chip o/c & med gr felds phyric	<0.008	0.3	1	2	2	19			
1646		3075E	Rock Chip o/c Currie River to 3075. Fine Gr. Poss Clasts	"	0.5	1	7	3	28			
1647		2975E	1.0m WBR Grey-green fine gr. with qtz vein	0.041	<0.1	1	4	5	14			
1648		2950E	0.5m BR & white-greenish.	0.019	"	1	4	7	18			
1649		2925E	0.4m BR cream-pale green	0.017	"	<1	3	10	17			
1650		2900E	0.4m BR cream-green	<0.008	0.1	"	4	11	18			
1651		2875E	0.5m BR grey-cream fine grained	"	<0.1	"	3	2	27			
1652		2850E	3.2m WBR cream-limonite fine grained	0.048	"	26	12	94	41			
1653		2825E	2.0m WBR " " " "	0.035 0.019	"	5	10	22	34			
1654		2800E	0.8m BR Cream	<0.008	"	<1	3	5	17			
1655		2775E	0.4m WBR Cream-brown	0.030	0.3	"	6	11	33			
1656		2750E	0.7m WBR " "	<0.008	0.1	"	5	<1	16			
1657	BLANK		K / Au = 0.471 B44									
1658		2725E	1.0m WBR Cream-brown	0.008	<0.1	<1	4	5	43			
1659		2700E	0.5m BR White foliated	<0.008	"	1	5	<1	10			
1660	2400N	2450E	0.4m WBR Cream-brown-schist.	"	"	<1	14	4	25			
1661		2475E	3.1m BR White sericite schist	"	"	1	4	1	6			
1662		2500E	0.4m BR cream-pale green	"	0.1	2	11	14	182			

014231

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall | PROSPECT: Snake Spur | SAMPLE STORAGE REQ'D: | LABORATORY: Analabs | COLLECTED BY: Pollocks 230

1:250.000 SHEET: | TYPE OF SAMPLE: Wacka - Rock Chip | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE DISPATCHED: Nov '85 | DATE RECEIVED:

A195

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1663	2400N	2525E	1.3m BR cream sericite schists	<0.008	<0.1	1	5	3	16			
1664		2550E	1.4m WBR fine gr. Brown with qtz phenos	"	"	<1	4	1	14			
1665		2575E	1.6m WBR Cream-brn - minor " "	"	"	2	4	2	16			
1666	BLANK											
1667		2600E	2.2m BR Cream/green fine mlt qtz veining	"	"	<1	3	<1	9			
1668		2625E	2.0m WBR cream-brown	"	"	1	5	<1	6			
1669		2650E	1.8m BR cream sericitic schist	"	0.2	26	6	102	32			
1670		2675E	0.5m BR cream-brown sericitic schist	"	<0.1	1	3	2	24			
1671		2700E	Rock Chip % sericite schist & qtz phenos 3107	0.008	0.4	<1	3	1	11			
1672		2725E	1.0m WBR Cream sericitic schist	<0.008	<0.1	2	3	26	16			
1673		2750E	Rock Chip % qtz felt phyre sericite schist - py strin	"	0.4	6	2	9	17			
1674		2775E	1.0m WBR Pale m/grey	"	<0.1	<1	5	16	15			
1675		2800E	1.2m WBR cream-brown	0.011	"	4	7	6	13			
1676		2825E	0.8m WBR cream-brown mlt qtz veining	<0.008	"	2	6	1	23			
1677	BLANK		(Au = 0.291, 0.317 B70)									
1678		2850E	1.0m BR grey green sericite schist	<0.008	<0.1	1	4	<1	36			
1679		2875E	0.9m WBR cream-brown	"	"	<1	3	"	14			
1680		2900E	0.7m BR cream fine grained sericite	"	"	"	3	4	32			
1681		2925E	1.2m WBR cream - limonitic	"	"	3	5	7	17			
1682		2950E	1.4m WBR mottled cream - pink limonite clayey	"	"	10	8	10	31			

014232

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollacks 231

1:250,000 SHEET: TYPE OF SAMPLE: Laterite - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: Nov. 85

DATE RECEIVED: A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Ag	As	Cu	Pb	Zn				
T1683	2400N	2975E	6.8m WBR khaki-cream clayey	0.010	<0.1	10	21	4	55				
1684		3000E	5.5m BR grey-maroon fine grained ?Sed.	<0.008	"	4	13	8	15				
1685	BLANK												
1686	2600N	3075E	4.3m WBR Yel-orange weakly clayey	"	"	9	74	6	64				
1687		3050E	3.9m BR cream sericitic foliated	"	"	1	6	5	12				
1688		3025E	9.1m WBR White-brown fewlge(10mm) qtz phenos	"	0.1	<1	9	11	35				
1689		3000E	WBR Cream-brown fine grained	"	<0.1	3	10	20	32				
1690		2975E	4.0m WBR Pale green-fine clayey poss. fine dtl. Sed?	"	"	6	49	6	65				
1691		2950E	0.8m WBR Cream-maroon fine grained?	"	0.1	3	8	560	33				
1692		2925E	0.8m WBR Cream-orange clayey	"	0.1	19	9	58	25				
1693		2900E	1.0m WBR cream(pale green) mottled f.gr maroon lim	0.010	0.1	3	5	8	25				
1694		2875E	1.5m WBR light tan to cream	<0.008	<0.1	6	9	13	41				
1695		2850E	3.1m WBR light green under tan/brn WBR qtz veining bleach?	"	0.1	8	9	2	21				
1696		2825E	1.4m WBR light fawn-grey	"	0.1	1	3	4	22				
1697		2800E	3.6m WBR Tan/yellow/brn under tan/brn host clay	"	<0.1	400	18	38	48				
1698	2800N	3000E	9.8m WBR khaki-orange brn clayey	0.010	"	31	53	8	37				
1699		3375E	BR Pink-brown S/S	<0.008	0.1	8	3	<1	13				
1700		3350E	1.0m BR cream-brn S/S	"	<0.1	3	3	3	14				
T1715	2200N	2925-2975E	Rock Chip	"	0.3	1	23	8	240				
T1716	2200N	2725-2750E	Rock Chip										
1717	BLANK												

014233

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall | PROSPECT: Snake Spur | SAMPLE STORAGE REQ'D: | LABORATORY: Amdel | COLLECTED BY: Pollocks

1:250.000 SHEET: | TYPE OF SAMPLE: Wash/Rock Chip | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE DISPATCHED: Nov '85 | DATE RECEIVED:

232

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1718	2800N	3325E	0.8m WBR? White qtzite - pale brn weath c/s	0.020	0.1	2	4	<1	9			
1719		3300E	0.9m BR Cream - pink c/s	0.016	0.1	1	5	4	10			
1720		3275E	1.2m BR? Hematitic - purple - Sandy?	<0.008	0.6	11	55	5	27			
1721		3250E	1.5m BR? + veneer gravels? Chl foliated vfc?	0.012	0.2	2	18	10	40			
1722		3225E	4.0m BR - chl - fine grained - sed?	<0.008	0.1	3	32	7	61			
1723		3200E	2.3m BR - brn - chloritic	"	<0.1	8	58	10	91			
1724		3175E	3.0m BR khaki-green - chlorite f-m gr.	"	"	4	65	4	164			
1725	B L A N K		(Au : 0.117, 0.114 B71)									
1726		3150E	2.7m WBR Cream clayey	"	0.1	2	7	21	24			
1727		3125E	0.6m WBR Tan - cream	"	0.1	3	7	16	26			
1728		3100E	1.0m WBR Tan - yellow; gritty	"	0.1	3	11	16	32			
1729		3075E	2.6m WBR Cream clayey - light tan " Wlrock	0.013	0.1	3	6	<1	16			
1730		3050E	4.7m WBR Tan, slightly gritty, greenish beige	<0.008	<0.1	480	69	7	98			
1731		3025E	1.0m WBR Dirty khaki - tan gritty section	"	"	11	46	9	120			
1732		2975E	0.8m WBR Tan with brown vein	"	0.1	2	3	7	28			
1733		2950E	WBR Tan/brown, gritty	"	<0.1	43	14	28	46			
1734		2925E	1.2m WBR Tan clayey - tan; slightly gritty	"	"	11	7	20	44			
1735		2900E	3.7m WBR Light cream/grey	<0.008 0.039	0.1	7	7	22	46			
1736		2875E	1.2m WBR " " / gold	0.019	0.1	2	6	22	87			
1737		2850E	0.9m WBR light khaki, under brn clayey gritty soil	<0.008	0.1	1	6	10	28			

01142334

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Holtsch 233

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
J 1738	2800N	2825E	12m WBR Brown Slightly gritty	<0.008	0.1	2	7	9	33			
1739		2800E	WBR Cream - Rock chip across approx 2.5mm	"	0.1	1	5	4	6			
1740	3100N	3000E	0.9m WBR Fawn - light brown	0.016	<0.1	<1	5	2	27			
1741		2975E	0.8m WBR Tan/yellow Gritty	0.020	"	18	7	3	24			
1742		2950E	0.9m WBR Fawn with banding vein at right end	<0.008	0.1	18	7	4	21			
1743		2900E	N.B. 1.4m WBR Fawn, slightly sandy	"	0.1	1	5	8	40			
1744		2925E	WBR Fawn with tan/beige sandy sections	"	0.1	2	14	4	24			
1745		2875?	Rock Chip	0.017 0.020	<0.1	4	1	1	9			
1746		2850?	Rock Chip	0.014	0.1	3	2	2	4			
1747		2825?	Rock Chip	0.023	<0.1	3	2	1	5			
1748		2800?	Rock Chip	<0.008	"	2	3	3	115			
1749		3025E	3.2m WBR light grey/cream with greenish tinge	0.010	"	2	5	8	33			
1750		3050E	3.4m WBR light green	<0.008	"	19	10	14	270			
1751		3075E	0.7m WBR light tan with brown sections	"	"	4	8	4	43			
1752		3100E	0.2m WBR Tan/yellow	"	"	38	6	15	29			
1753		3125E	0.8m WBR Fawn/khaki flecky soft like rock	"	"	3	12	52	78			
1754		3150E	0.2m WBR Cream/grey	0.017	"	1	5	2	34			
1755		3175E	1.4m WBR Tan/yellow Slightly Gritty	<0.008	"	52	42	9	41			
1756		3200E	0.5m Gravels Dirty green/grey clayey - unable to Penetrate blocks - (flood plain)	"	"	12	23	21	33			
1757		3250E	Rock Chip	"	"	1	6	<1	19			
1758		3225E	3.0m WBR Grey/blue under qtz gravels - flood plain	0.009	"	3	10	5	80			

0142335

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollocks 234

1:250.000 SHEET: TYPE OF SAMPLE: Wacha. Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DATE DISPATCHED: Nov '85

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1759	3300N	3000E	10m WBR Tan/green. cream mottled	<0.008	<0.1	1	5	<1	72			
1760		3025E	1.2m WBR Tan/brown under fawn gk clays	"	"	41	15	23	20			
1761		3050E	0.4m WBR light khaki under tan clays	"	"	8	8	17	86			
1762		3075E	0.3m WBR Grey with green tinge	"	"	2	4	<1	61			
1763		3100E	0.5m WBR light grey/green	"	"	2	4	<1	62			
1764		3125E	1.1m WBR " " "	"	"	2	5	2	32			
1765		3150E	1.3m WBR? Grey, gritty	0.010	"	3	7	2	22			
1766		3175E	Rock Chip over 10m section	0.013	0.1	12	6	4	7			
1767		2975E	0.8m WBR light cream/grey	0.015	<0.1	1	2	<1	30			
1768		2950E	Rock Chip	0.014	0.1	<1	2	2	7			
1769		2925E	Rock Chip	<0.008	0.1	3	2	6	61			
1770		2900E	Rock Chip	"	0.1	2	5	7	63			
1771		2875E	Rock Chip	"	<0.1	3	2	<1	20			
1772		2850E	Rock Chip	"	"	5	3	<1	19			
1773		2825E	Rock Chip	0.015	0.1	1	4	<1	24			
1774		2800E	Rock Chip	0.031	<0.1	1	3	<1	19			
1775	3450 N	3000E	Rock Chip on creek at junction of baseline	<0.008	0.1	41	2	<1	30			
1776		2975E	Rock Chip	0.012	<0.1	3	2	"	15			
1777		2950E	Rock Chip	<0.008	"	1	2	"	19			
1778		2925E	Rock Chip	"	"	1	2	"	22			

014236

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs. COLLECTED BY: Pollochs 235

1:250.000 SHEET: TYPE OF SAMPLE: Wacha / Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DATE DISPATCHED: Nov. '85

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Pb	As	Cu	Pb	Zn				
T1779	3450N	2900E	0.6m WBR Tawn - light tan	0.011	0.5	3	5	6	27				
1780		2875E	WBR Tan/brown under fawn chips sandy	<0.008	0.4	40	3	23	32				
1781		2850E	0.4m WBR	"	0.4	3	2	<1	25				
1782		2825E	0.9m WBR Tawn	"	0.3	3	3	2	26				
1783		2800E	Rock Chip	0.033	0.1	1	1	<1	11				
1784		2775E	Rock Chip	<0.008	<0.1	3	3	1	21				
1785		2750E	3.2m WBR Tawn	0.008	0.4	<1	4	5	29				
1786		2725E	0.6m WBR Tawn	<0.008	0.4	1	3	6	21				
1787		2700E	Rock Chip	<0.008	0.3	2	1	<1	13				
1788		2675E	Rock Chip	<0.008	<0.1	<1	1	<1	8				
1789		2650E	Rock Chip	0.020	0.1	2	2	<1	6				
1790		2625E	Rock Chip	0.008	<0.1	1	1	<1	3				
1791		2600E	Rock Chip	0.015	<0.1	<1	1	<1	5				
1792		2575E	0.6m WBR Tawn/cream	0.012	0.5	2	2	3	9				
1793		2550E	0.8m WBR Tawn	<0.008	0.5	1	15	53	9				014283
1794		2585E	0.9m WBR Cream/grey	"	0.7	3	4	2	7				
1795		2500E	0.7m WBR Tan under buff clays	0.008	0.4	1	18	11	18				
1796	3800N	2500E	0.9m WBR Grey/Tawn	<0.008	0.3	<1	2	<1	20				
1797		2525E	0.7m WBR Tawn	0.010	0.4	4	2	<1	9				
1798		2550E	1.3m c WBR Tan/Brown	<0.008	0.7	1	14	20	13				

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall — PROSPECT: Snake Spur — SAMPLE STORAGE REQ'D: — LABORATORY: Analabs — COLLECTED BY: McHoche

1:250,000 SHEET: — TYPE OF SAMPLE: Wache - Rock Chip — SAMPLE PREP. REQ'D: — ANALYSIS REQ'D: — DATE DISPATCHED: — DATE RECEIVED: Nov '85

236

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Hg	As	Cu	Pb	Zn			
T1799	3800N	2575E	0.6m WBR Fawn	<0.008	0.5	<1	2	1	7			
1800		2600E	0.3m WBR Fawn with slight greenish tinge	"	0.4	"	3	3	33			
1801		2625E	0.2m WBR light green rocky fawn c. w/rock	0.008	0.5	3	3	1	30			
1802		2650E	2.6m WBR Tan, green + cream	0.010	0.4	2	3	16	187			
1803		2675E	1.2m WBR Tan + green	0.021	0.3	10	13	40	67			
1804		2700E	1.0m WBR Cream to fawn	0.009	0.5	1	5	4	27			
1805		2725E	0.7m WBR Tan/brown, slightly gritty	0.033	0.4	2	5	2	17			
1806		2750E	WBR Brown, slightly gritty	0.021	0.5	<1	2	1	16			
1807		2775E	1.2m WBR Fawn/brown with qtz floaters or vein?	<0.008	0.5	3	4	6	12			
1808		2800E	1.6m WBR Fawn/brown	"	0.4	1	3	4	13			
1809		2825E	0.6m WBR Fawn	"	0.3	3	24	5	340			
1810		2850E	0.5m WBR "	"	0.5	4	3	<1	26			
1811		2875E	0.6m WBR Cream/buff	"	0.5	5	2	<1	24			
1812		2900E	0.4m WBR Fawn with brown vein 2mm wide	"	0.4	<1	2	1	31			
1813		2925E	0.5m WBR Fawn	"	0.5	"	2	<1	30			
1814		2950E	0.6m WBR Fawn	"	0.4	1	2	"	26			
1815		2975E	2.7m WBR Cream/fawn	"	0.5	<1	3	"	22			
1816	4000N	2950E	Rock Chip	"	0.4	6	1	"	22			
1817		2925E	0.8m WBR Fawn	"	0.4	<1	2	"	14			
1818		2900E	0.5m WBR "	"	0.5	10	3	"	12			

014238

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Polfachs 231

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1819	4000N	2875E	0·6m WBR light cream with greenish tinge	<0·008	0·4	1	5	<1	38			
1820		2850E	0·6m WBR Fawn	"	0·3	1	2	2	31			
1821		2825E	0·4m WBR "	0·013	0·3	2	2	1	31			
1822		2800E	0·2m WBR Cream sericitic schist	<0·008	0·3	<1	3	3	36			
1823		2775E	0·4m WBR Cream brown foliated & qtz veinlets	"	0·4	"	4	1	12			
1824		2750E	0·8m BR Cream sericite / qtz	"	0·4	"	3	4	24			
1825		2725E	0·6m Cream - orange brown clayey	0·017	0·3	26	29	7	15			
1826		2700E	0·7m BR grey-green sericite	<0·008	0·3	4	6	21	117			
1827		2675E	0·6m BR cream sericitic & qtz phenos	"	0·3	<1	3	2	10			
1828		2650E	0·7m BR cream / sericite "m'ac fine qtz phenos	"	0·4	"	2	4	9			
1829		2625E	0·6m WBR Cream - dark brown	0·009 0·019	0·3	"	3	23	15			
1830		2600E	0·5m WBR cream sericitic	<0·008	0·4	"	2	10	35			
1831		2575E	0·5m BR brown "	0·011	0·4	"	2	2	18			
1832		2550E	0·4m BR grey-green "	<0·008	0·3	"	2	1	35			
1833		2525E	0·7m BR " " "	0·010	0·4	5	3	12	61			
1834		2500E	0·6m BR cream	<0·008	0·4	16	6	76	260			
1835	4200N	2500E	Rock Chip fine tuff. sediment, sericitic (phyllite)	"	0·4	6	2	2	10			
1836		2525E	Rock Chip " "	"	0·4	6	2	4	10			
1837		2550E	Rock Chip " "	0·010	0·4	1	2	<1	13			
1838		2575E	Rock Chip qtz > feld mgd ignimbrite	<0·008	0·3	<1	3	1	8			

0142239

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Snake Spur SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Politachs

1:250.000 SHEET: TYPE OF SAMPLE: Wacker - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: Nov 85 DATE RECEIVED:

238

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	Au	Ag	As	Cu	Pb	Zn		
T1834	4200N	2600E	Rock Chip qtz-feldspar mg ignimbrite	<0.008	0.3	<1	2	1	6		
1840		2625E	Rock Chip " "	0.008	0.3	"	2	<1	13		
1841		2650E	Rock Chip " "	<0.008	0.3	3	8	3	11		
1842		2675E	Rock Chip " "	"	0.4	5	2	<1	4		
1843		2700E	Rock Chip Sericitic volcaniclastic	"	0.4	7	4	2	6		
1844		2725E	" " siltstone, bedding 325.80	0.014	0.3	14	5	8	51		
1845		2750E	" " fg sediment	0.020	0.4	4	5	4	35		
1846		2775E	" " "	0.018	0.3	4	10	8	73		
1847		2800E	" " F-mg chloritic sediment (reworked) pebbles	0.015	0.3	<1	3	3	30		
1848		2825E	" " " "	0.008	0.4	"	2	4	52		
1849		2850E	" " rhyolitic lava, massive weakly altered	<0.008	0.4	5	2	1	10		
1850	BLANK		(Au! 0.015 B ?)								
1851		2875E	" " rhyolitic lava, weakly altered	<0.008	0.4	<1	3	1	19		
1852		2900E	" " " "	0.014	0.3	"	2	1	17		

014240

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pelhedes 239

PROJECT: TINDALL PROSPECT: Flannagans SAMPLE STORAGE REQ'D: LABORATORY: DATE DISPATCHED: Nov 85

1:250.000 SHEET: TYPE OF SAMPLE: Mucha - Rock chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1853	3000N	600E	11m khaki clay - WBR Pink brown	0·008	0·2	3	5	2	25			
1854		580E	1.0m WBR khaki - pink	0·012	0·2	<1	10	8	38			
1855		560E	1.1m WBR cream orange med. grained	0·023	0·2	2	11	6	29			
1856		540E	0.8m BR khaki med gr. feld. rich; chloritized dacite ignim?	0·025	0·2	<1	9	3	74			
1857		530E	1.4m WBR khaki-pink med. gr. feld. rich	0·016	0·3	1	10	4	70			
1858		520E	1.2m WBR khaki-white	0·026	0·3	2	14	6	36			
1859		510E	1.3m WBR khaki	0·025	0·2	2	4	4	34			
1860	BLANK		(Au = 0·495, 0·440 B44)									
1861		500E	0.2m WBR cream	0·015	1·0	60	21	420	36			
1862		490E	0.3m WBR cream brown	<0·008	0·3	1	5	19	18			
1863		480E	1.0m WBR " "	"	0·4	4	6	25	40			
1864		470E	1.2m WBR " " & med gr. qtz phenos	0·010	0·3	5	7	20	27			
1865		460E	0.5m BR " silicified	<0·008	0·4	2	10	12	12			
1866		450E	0.8m WBR " brown clayey med gr qtz phenos	0·017	0·4	6	10	17	13			
1867		440E	1.2m WBR " limonitic med qtz phenos + veins?	0·026	0·4	7	8	12	8			
1868		430E	1.7m WBR khaki - brown clayey with qtz phenos	0·027	0·4	47	12	12	12			
1869		420E	0.5m WBR cream brown	0·010	0·4	4	24	24	9			
1870	BLANK		(Au = 0·564, 0·600 B44)									
1871		410E	0.5m WBR cream brown	0·025	0·7	1	5	13	10			
1872		400E	0.2m WBR " "	<0·008	0·4	<1	5	5	8			
1873		390E	1.7m BR white & limonitic bands - med. gr. qtz phenos	0·029	0·3	11	8	13	12			

0142411

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs. COLLECTED BY: Poltocks 240

1:250.000 SHEET: TYPE OF SAMPLE: Wucha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: Nov '85

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1874	3000N	380E	2·7m WBR white-orange clayey m.gr. qtz. pheno.	0·010	0·3	1	6	18	15			
1875		370E	4·5m WBR " limonitic f-m. gr. qtz. phenos	0·009	0·2	5	14	29	41			
1876		360E	0·5m WBR cream	0·032	0·4	8	12	19	14			
1877		350E	0·5m WBR white-pale brown	<0·008	0·4	<1	3	1	8			
1878		340E	0·5m WBR cream-brown possibly silst?	0·008	0·3	3	3	5	11			
1879		330E	0·5m WBR? cream-pale brown?	0·015	0·4	3	2	1	36			
1880	BLANK		Au = 0·447, 0·442 B44									
1881		320E	4·8m WBR fine grained - cream	0·009	0·3	4	4	2	16			
1882		300E	1·5m WBR cream-dk brn-min white qtz float	0·016	0·3	1	5	3	20			
1883		280E	9·0m WBR? White - limonitic	0·012	0·2	4	8	13	22			
1884		260E	2·5m BR?? White sand min qtz frags	<0·008	0·1	6	2	<1	3			
1885		240E	2·4m WBR grey-limonitic - cream	0·009	0·4	1	2	1	7			
1886		220E	2·2m WBR? cream-brn sandy	0·023	0·4	1	2	<1	13			
1887		200E	2·0m WBR? white sand	0·026	0·1	<1	3	4	3			
1888	2800N	580E	0·2m BR fresh chloritic	0·019	0·3	"	5	12	50			
1889		560E	0·5m BR pale green	0·024	0·2	"	7	2	40			
1890	BLANK											
1891		540E	WBR cream-orange 50m N of line	0·026	0·2	7	3	4	88			
1892		520E	0·5m BR cream - limonitic+clay.	0·010	<0·1	5	21	21	59			
1893		510E	0·6m BR cream min chlor limonite	<0·008	<0·1	5	15	16	28			
1894		500E	0·5m BR cream	"	0·1	<1	10	2	12			

01424 2

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL | PROSPECT: Flannigans | SAMPLE STORAGE REQ'D: | LABORATORY: Analabs | COLLECTED BY: Pollocks 24.1
1:250,000 SHEET: | TYPE OF SAMPLE: Wucha - Rock Chip | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE DISPATCHED: Nov 85 | DATE RECEIVED: A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				As	Ag	Bi	Cu	Pb	Zn				
T1895	2800N	490E	Rock Chip m-cg volcaniclastic	<0.003	0.1	5	5	2	11				
1896		480E	Rock Chip " "	"	0.1	1	12	12	13				
1897		470E	0.4m BR cream	"	0.1	4	7	13	8				
1898		460E	1.2m BR cream & lt qtz frags - qtz lag?	"	0.1	9	7	3	8				
1899		450E	1.2m WBR cream-brown	0.019	0.1	3	9	2	10				
1900	BLANK												
1901		440E	1.2m WBR dk cream-brn	<0.008	0.1	2	25	14	13				
1902		430E	1.6m BR White (A) ~ Brn (B) - cream BR	"	0.1	1	7	<1	6				
1903		420E	1.0m BR White (A) ~ B (dk Brn) - cream block	0.004	0.1	<1	6	"	10				
1904		410E	1.2m BR " " " "	<0.008	<0.1	1	7	"	11				
1905		400E	0.8m BR cream	"	0.1	1	6	"	19				
1906		390E	Rock Chip BR med grn feld qtz xt wk sect. lithics	0.168	0.4	2	13	1	29				
1907		380E	Rock Chip " " " " "	0.017	0.4	3	6	1	27				
1908		360E	1.3m WBR cream-brown	<0.008	0.2	2	12	34	11				
1909	2790E	360E	Rock Chip (qtz silicified equiv T01907)	"	0.4	3	4	2	9				
1910	BLANK		(Au = 1.464 Bi 65)										
1911	2800N	350E	1.5m WBR cream - limonitic	0.023	<0.1	18	15	23	45				
1912		340E	2.2m WBR " "	0.008	"	8	26	61	28				
1913		330E	1.0m WBR " weakly limonitic	0.010	"	<1	13	37	28				
1914		320E	0.5m BR cream & white qtzite scree	0.011	0.1	2	26	33	26				
1915		300E	1.3m WBR " Med gr. qtz feld xt qtzite scree	0.016	<0.1	<1	17	2	16				

014243

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pollocks 242

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1916	2800N	280E	8.0m BR pale grey possibly siltstone	0.015	0.2	1	15	12	22			
1917		260E	2.5m WBR cream possibly silt. qtzite c/c 250E	<0.008	<0.1	8	26	10	13			
1918		240E	Rock Chip c/c grey green micaceous qtzite-grit	0.206	0.4	1	5	2	13			
1919		220E	Rock Chip c/c 305-60 qtzite pebble conglom.	<0.008	0.1	2	5	<1	2			
1920	BLANK		(Au = 0.110 B 71)									
1921	2400N	600E	Rock Chip c/c med/coarse & fine grained lenses or clasts?	0.133	0.2	8	18	9	19			
1922		580E	0.4m BR cream-pink med grnd felds-qtz & lithics	0.021	0.3	2	71	<1	21			
1923		560E	1.2m WBR white-cream (sandy text-backing)	0.137	0.2	7	2	<1	4			
1924		540E	0.5m WBR?? grey brn m-coarse qtze or BR?? coarse grnd	0.143 0.104	0.2	<1	2	<1	2			
1925		520E	0.5m WBR cream brown	0.022	0.3	<1	2	"	12			
1926		500E	1.2m WBR brn limonite (B/c) - cream fresh BR	0.030	0.2	100	20	8	49			
1927		480E	1.0m WBR orange limonite - cream	0.066	0.2	46	9	13	22			
1928		470E	1.2m WBR " " "	0.029	0.2	52	21	11	57			
1929		460E	2.5m WBR yellow-brown cream	0.021	0.3	2	19	13	20			
1930	BLANK		(Au = 0.414 B 44)									
1931		450E	2.0m BR white - sericitized c/v	0.019	0.3	7	15	17	18			
1932		440E	1.8m WBR cream - grey green	<0.008	0.4	<1	25	13	26			
1933		430E	0.3m BR cream	"	0.5	1	15	5	10			
1934		420E	0.5m WBR white(leached) - cream fresh BR	0.025 0.009	0.4	<1	11	8	19			
1935		410E	0.5m WBR cream	<0.008	0.4	"	3	8	46			
1936		400E	0.5m WR? pale brn clayey & qtz. grain - BR	0.021	0.4	2	70	360	58			

01424 41

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: Pollocks 243

PROJECT: TYNDALL PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs. DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rocha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov. 85 A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1937	2400N	390E	1.0m BR grey-green	0.028	0.3	<1	43	42	51			
1938		380E	2.5m Qtz gravel + no BR*	<0.008	0.3	5	2	5	7			
1939		370E	2.2m Gravel - qtz	"	0.3	2	2	<1	3			
1940	BLANK											
1941		360E	1.5m Dk brn clayey c qtz pebbles. Gravel?	"	0.4	4	3	3	6			
1942		350E	1.6m WBR dk brn - White BR	0.021	0.4	<1	9	6	18			
1943		340E	2.0m Gravel - WBR grey green	<0.008	0.3	"	4	3	23			
1944	2415N	340E	Rock Chip o/c qtz Fold xt, chloritic	0.023	0.3	2	11	8	48			
1945	2410N	330E	Rock Chip Chloritized coarse grnd. vclc/clastic	0.027 0.037	0.3	<1	9	16	67			
1946	2400N	320E	1.2m Qtzite gravel noBR	<0.008	0.3	"	3	<1	4			
1947		310E	4.2m BR cream-chloritic	"	0.2	"	12	20	49			
1948		300E	3.4m Gravel-sand quartzite. No BR	"	0.2	1	3	1	4			
1949		290E	1.0m Gravel sand quartzite	"	0.2	<1	4	<1	6			
1950	BLANK											
1951		280E	2.8m WBR cream	"	0.2	5	16	2	24			
1952		260E	5.6m BR?? White sericite + frags micaceous sh	"	0.3	<1	6	16	10			
1953		240E	5.8m White sand + mica qtzite frags - Scree??	"	0.3	"	3	1	3			
1954		220E	7.2m Gravel - sand: white qtzite.	"	0.2	"	2	1	3			
1955		200E	5.0m WBR? cream m grd. May be Ex??	"	0.3	2	2	1	3			
1956		180E	2.0m Gravel: scree?. White qtzose	"	0.3	<1	2	<1	2			
1957		160E	Rock Chip o/c white qtzite pebbly grit	"	0.1	8	4	<1	3			

014245

244

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall | PROSPECT: Flannigans | SAMPLE STORAGE REQ'D: | LABORATORY: Analabs. | COLLECTED BY: Pollocks

1:250.000 SHEET: | TYPE OF SAMPLE: Wocka - Rock Chip | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE DISPATCHED: | DATE RECEIVED: Nov '85

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1458	2000N	600E	0.3m BR orange cream med grnd qtz felt xt.	<0.008	0.3	21	8	8	32			
1459		580E	1.5m WBR cream-pale green - Sericitic seed med gr qtz feld phyric	"	0.3	10	4	1	11			
1460	BLANK		(Au = 0.141 B 71)									
1461		560E	3.5m BR fine grnd chloritic - may be seed?	"	0.3	16	11	5	52			
1462		540E	4.2m BR fine chloritic with scattered lithics <.05 mm	"	0.2	12	3	7	23			
1463		520E	1.8m BR fresh - cream - weakly chloritic	"	0.4	9	3	7	45			
1464		500E	5.1m BR cream - weakly clayey	"	0.2	22	3	16	66			
1465		480E	6.5m BR fine gr. grey green hffac. seed?	"	0.3	8	5	25	35			
1466		460E	6.5m BR? brn fine gr. "cream qtzose (lake gravels??)	"	0.3	4	3	3	6			
1467		440E	4.2m WBR grey green {CAUTION sample just into BR - qtzose gravels}	"	0.1	<1	3	1	67			
1468		430E	5.0m BR cream med gr qtz felt xt. overlying may contain.	"	0.3	17	8	13	18			
1469		420E	6.0m BR cream - med grained xt.	"	0.3	8	29	43	80			
1470	BLANK		(Au = 0.606 B 74)									
1471		410E	4.8m WBR cream med xt. CAUTION sample close to and may include gravel - BR interface	"	0.3	<1	5	6	9			
1472		400E	10.5m BR cream - sericite - med gr. xt.	"	0.2	"	13	9	18			
1473		340E	1.7m Qtzite blocks - sample ~~mica~~ micaqtzite?	"	0.3	"	2	<1	2			
1474		380E	2.5m Gravel qtzose micaceous - BR fine gr. brn Silic Mudst	"	0.2	"	13	5	13			
1475		370E	3.5m Gravel - mica qtzite	"	0.2	14	4	<1	4			
1476		360E	10.5m BR cream sericite	"	0.2	<1	10	1	13			
1477		350E	7.8m pale-dk. brn WBR - fine grained	"	0.3	10	19	17	25			
1478		340E	3.5m Gtz. - qtzite gravel. 3 attempts	0.008	0.2	<1	2	<1	4			

0142246

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Poltocks 245

1:250.000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: Nov' 85

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T1974	2000N	330E	4.8m mica gravel? - brn frg. Mudstone (CONTAMINATION)	<0.008	0.3	<1	2	2	8			
1980	BLANK		(Au = 1.711 B 65)									
1981		320E	5.0m mica qtzite gravel? NO BR	"	0.3	"	5	2	9			
1982		310E	Gravel qtz mica qtzite. No. BR	"	0.2	"	2	<1	2			
1983		300E		"	0.2	"	1	"	2			
1984		210E	Rock Chip o/c Silicified qtz veined grit sls									
1985		200E	Rock Chip o/c Mica qtzite	"	0.2	"	6	"	7			
1986		180E	Rock Chip o/c mica qtzite - qtz	"	0.2	"	7	"	7			
1987		160E	Rock Chip o/c 30:80 mica grey qtzite (phyllite lenses)	0.200	0.2	"	5	"	10			
1988	1800N	180E	Rock Chip o/c qtzite	0.260	0.1	"	2	"	3			
1989		205E	Rock Chip Shallow test trench s.e. creek. qtzite	0.011	0.3	"	2	"	2			
1990	BLANK											
1991		220E	8.0m BR cream fine gr. with minor py.	0.052	0.1	7	3	3	102			
1992		240E	7.5m BR soft cream - pale green.	0.016	0.2	5	1	<1	46			
1993		250E	5.3m BR cream - clayey	0.017	0.2	<1	1	"	32			
1994		260E	3.8m BR cream sericite	<0.008	0.3	"	5	"	26			
1995		270E	2.0m BR grey-brn fine gr siltst. qtz vnlts (CAUTION veneer) gravels	"	0.2	"	18	10	32			
1996		280E	7.1m BR cream sericite	"	0.2	4	7	<1	410			
1997		290E	Wacha 2.2m BR Siltstone & dk. qtzite blocks - fault breccia	"	0.3	33	15	52	97			
1998		290E	Rock Chip o/c Silt fault breccia & black mica qtzite blocks									
1999		300E	7.0m BR khaki weakly chl. med. gr.	"	0.1	14	9	7	83			
2000	BLANK		(Au = 0.124 B 71)									

011241

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Pollocks 246

PROJECT: Tyndall PROSPECT: Flannigins SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED: Nov 85

1:250.000 SHEET: TYPE OF SAMPLE: Wucka - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T 2101	1800N	310E	6.5m WBR cream-grey clayey	<0.008	0.1	1	14	9	31			
2102		320E	0.8m BR cream brn silt. qtzose gravel interface	0.012	0.2	<1	5	35	19			
2103		330E	2.0m BR cream brn f-vegr. siltstone	0.013	0.2	"	2	<1	16			
2104		340E	10.4m BR khaki, weakly chloritic, med.gr.	<0.009	0.1	19	6	14	54			
2105		350E	2.0m GRAVEL white qtzite-qtz-compacted.	"	0.1	<1	1	<1	3			
2106		360E	2.0m " " qtz-qtzite- "	"	0.1	"	3	<1	4			
2107		370E	1.0m "	"	0.1	"	1	<1	1			
2108		380E	4.0m BR brn-khaki f-med gr.	"	0.2	"	8	19	49			
2109		390E	8.8m WBR cream-grey - minor pyrite	"	0.2	26	7	10	110			
2110	BLANK											
2111		400E	7.0m BR white - wk. chl. clayey	"	0.2	<1	4	2	66			
2112		410E	3.2m BR cream f-med gr.	0.025	0.3	"	7	65	40			
2113		420E	2.0m WBR f-med gr. cream-khaki	<0.008	0.2	"	4	16	13			
2114		430E	3.0m BR cream-pale khaki f-med gr. hfl-sed?	"	0.2	"	7	42	77			
2115		440E	3.0m BR cream brn-khaki siltst?	"	0.2	8	5	15	33			
2116		460E	6.2m BR grey-cream f-med gr tuffac sed?	"	0.1	<1	7	24	47			
2117		480E	2.5m BR orange BC horizon-grey green med gr. BR	"	0.2	"	4	3	50			
2118		500E	4.9m WBR khaki med gr.	"	0.1	"	6	17	103			
2119		520E	3.9m BR khaki med gr.	"	0.1	13	6	18	65			
2120	BLANK		Au : 0.293 B 70									
2121		540E	6.6m WBR orange brn med gr. C qtz vein	"	0.1	<1	7	2	77			

0142248

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Amdel's COLLECTED BY: Pollocks

1:250.000 SHEET: TYPE OF SAMPLE: Wacha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: Nov '85

DATE RECEIVED: A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T2122	1800N	560E	3.8m WBR orange brown	<0.008	0.2	<1	7	4	74			
2123	1800N	570E	3.0m khaki-orange BR	"	0.2	"	14	10	47			
2124	1600N	140E	6.2m Gravel white qtzose	"	0.2	10	4	<1	6			
2125		160E	2.0m Gravel " "	"	0.2	13	3	4	6			
2126		180E	2.8m " " "	"	<0.1	<1	4	"	6			
2127		200E	8.0m WBR pale green clayey	"	0.1	"	5	1	121			
2128		220E	6.5m BR green med.grained	"	0.1	12	4	3	74			
2129		230E	7.5m BR cream	"	0.2	<1	4	1	33			
2130	BLANK											
2131		240E	10.3m BR white f-med gr.	"	0.2	"	8	<1	22			
2132		250E	2.0m GRAVEL white qtzose	"	<0.1	"	3	"	3			
2133		260E	0.8m " " " Grav.	"	"	"	3	"	3			
2134		270E	5.0m BR brn with siltstone (sml. sample 1/3 tube qtzose gravel)	Insufficient	0.2	"	34	250	57			
2135		280E	3.8m WBR brn silt. *Gravel/siltst. interface*	"	0.1	"	6	8	19			
2136		290E	3.4m WBR brn cream silt. *interface gravel/bedrock*	"	0.2	"	13	27	11			
2137		300E	4.0m BR cream-med gr. qtz+tal-sericited, v.min. py	"	0.3	2	5	104	30			
2138		310E	0.8m WBR Med gr. yellow-brn	"	0.3	<1	5	16	8			
2139		320E	1.1m WBR dk. brn clayey (Bic) - yellow BR.	0.011	0.2	"	3	3	8			
2140	BLANK		(Au: 2.783, 2.731, B24)									
2141		330E	4.5m BR green chloritic f-med gr.	<0.009	0.1	18	7	31	88			
2142		340E	4.0m BR yellow-brn-khaki f-med gr. biff. sed?	"	0.1	2	57	12	127			

A11249

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollock 248

1:250.000 SHEET: TYPE OF SAMPLE: Washa - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85 DATE DISPATCHED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T2143	1600N	350E	3.1m BR chl f-med gr. tuffac. sed?	<0.008	0.1	<1	16	8	91			
2144		360E	6.0m BR chl. f-med gr. tuffac. sed.	"	<0.1	"	21	3	79			
2145		370E	6.0m WBR Yellow-khaki	"	0.1	34	21	21	40			
2146		380E	9.0m BR Yellow orange clayey	"	0.1	4	10	17	62			
2147		390E	2.0m BR Yellow brown clayey	"	<0.1	4	3	3	41			
2148		400E	3.0m Clay khaki & white grease gravel. NO BR	"	0.2	<1	4	8	14			
2149		410E	1.0m WBR cream brn.-f-c gr. siltst?	"	<0.1	"	5	8	22			
2150	BLANK											
2151		440E	0.3m WBR cream brn f-med gr. tuffac. sed?	"	"	"	7	12	33			
2152		460E	3.2m BR orange-grey f-m gr. tuffac. Sed.	"	0.2	"	8	25	39			
2153		480E	6.0m BR khaki-grey. f-med tuffac. sed.	"	0.1	2	7	15	92			
2154		500E	1.9m Gravel - khaki WBR* CONTAMINATION? Mixed?	"	0.3	16	12	10	43			
2155		520E	1.5m BR ~~grey-green~~ f-med gr. * CONTAMINATION FROM GRAVEL Mixed?	"	0.2	<1	4	7	100			
2156		540E	2.8m BR ~~grey green~~ med gr. tuffac. sed.	"	0.2	"	7	7	124			
2157	1200N	440E	1.0m WBR green	"	0.2	"	5	11	46			
2158		420E	1.0m Gravel Grav.	"	0.3	"	5	8	5			
2159		400E	3.0m BR ~~grey green~~	"	0.2	"	6	9	86			
2160	Blank		(Au: 0.099 B71)									
2161		390E	2.5m BR fine grained white	"	0.3	"	3	2	5			
2162		380E	4.8m BR f-med gr. tuffac-sed.	0.015	0.3	"	5	21	41			
2163		370E	5.2m BR tuffac-sed? chl.	<0.008	0.2	"	6	12	54			

014250

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigan's SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Poltocks

1:250,000 SHEET: TYPE OF SAMPLE: Washa - Rab Creek SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DATE DISPATCHED: Nov '85

A1991

SAMPLE NUMBER	LOCATION		DESCRIPTION		ANALYSES								
					Sn	Ag	As	Cu	Pb	Zn			
T2164	1200N	360E	6.5m BR f-med gr. pale green tuffac sed.		0.012	0.2	<1	6	7	51			
2165		350E	2.7m BR f-med gr. tuffac sed? gravel/BR interface	Mixed?	0.114	0.1	"	7	5	109			
2166		340E	2.6m WBR * interface gravel/bedrock	Mixed?	<0.008	0.2	4	17	42	25			
2167		330E	1.2m Med grd.		0.031	0.2	<1	4	14	38			
2168		320E	2.0m BR cream. * gravel/bedrock interface	Mixed?	0.021	0.2	"	6	14	11			
2169		310E	6.5m Clay gravel no BR	Grav	0.028	0.2	"	6	9	14			
2170	BLANK												
2171		300E	4.5m Gravel - sand no BR	Grav	<0.008	0.2	"	3	3	6			
2172		290E	4.5m Gravel - no BR	Grav	"	0.3	"	1	2	4			
2173		280E	2.1m Gravel sand no BR	Grav	"	0.1	5	1	1	3			
2174		270E	5.3m BR white fine grained.		"	0.2	34	2	6	17			
2175		260E	1.6m Gravel no BR	Grav	"	0.2	<1	1	1	11			
2176		250E	2.4m WBR * gravel/BR interface	Mixed?	0.025	0.3	7	8	10	28			
2177		240E	1.8m Gravel no BR	Grav	<0.008	0.2	<1	3	6	4			
2178		230E	3.4m Gravel - dk brn. WBR?	Mixed?	"	<0.1	"	5	7	6			
2179		220E	1.8m Gravel qtzose & mica cream-dk brn	Mixed?	"	"	"	3	1	6			
2180	BLANK		(Au = 0.085 Bi 71)										
2181		210E	1.3m Gravel - white qtzose.	Grav	"	"	"	2	<1	5			
2182		200E	3.6m BR dk brn-cream Siltst/mudst.		"	0.1	"	3	2	25			
2183		180E	5.6m Micaceous sand fine gravel	Grav.	"	0.1	"	4	<1	8			
2184		160E	3.0m Qtzose gravels.	Grav	0.013	0.1	"	6	1	7			

014251

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Amdaf's COLLECTED BY: Pollock 250

1:250.000 SHEET: TYPE OF SAMPLE: Wacha Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: Nov 85

DATE RECEIVED: A199

SAMPLE NUMBER	LOCATION		DESCRIPTION		ANALYSES								
					Au	Mo	As	Cu	Pb	Zn			
T2185	1200N	140E	2.0m Mica sand gravel.	Grav.	<0.008	0.1	<1	3	3	5			
T2186		120E	0.6m BR? Mica s/s		0.009	0.1	1	3	<1	5			
T2187		100E	0.6m Mica s/s BR - scree?		<0.008	0.1	<1	3	"	3			
T2188	1000N	100E	2.7m BR Mica s/s		"	0.1	2	3	"	3			
T2189		120E	2.0m BR? Mica s/s		"	<0.1	1	6	"	3			
T2190	BLANK				"								
2191		140E	3.0m BR/Gravel? Mica s/s qtz	Mixed	"	"	<1	5	4	6			
2192		160E	3.7m BR grey mica silst.		"	"	4	21	<1	13			
2193		180E	2.5m sand/gravel (micaceous s/s)	Grav.	0.008	"	"	5	2	4			
2194		200E	2.2m GRAVEL	Grav	<0.008	"	"	3	<1	2			
2195		210E	3.6m GRAVEL - qtzose	Grav	0.021	"	1	4	"	1			
2196		220E	2.2m Qtzite sand/gravel	Grav	<0.008	0.1	<1	4	"	1			
2197		230E	1.2m GRAVEL - qtz - qtzite	Grav	"	0.1	1	6	1	1			
2198		240E	3.0m GRAVEL/sand qtzose	Grav	0.029	<0.1	1	6	<1	1			
2199		250E	3.8m GRAVEL qtz qtzite	Grav	0.012 0.017	"	2	5	"	1			
T2001	1000N	260E	1.5m GRAVEL	Grav.	<0.008	"	<1	9	1	8			
2002		270E	1.0m GRAVEL	Grav.	"	0.1	"	9	3	15			
2003		280E	4.6m WBR mgr Volcaniclastic		"	<0.1	"	34	28	34			
2004		290E	4.7m GRAVEL, clay, quartzose	Grav.	"	0.1	"	5	3	10			
2005		300E	2.0m GRAVEL, WBR?	Grav.	0.013	0.1	10	16	14	15			
2006		310E	2.0m BR cream brn, gravel micaceous		0.019	<0.1	<1	10	10	9			

014252

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs COLLECTED BY: Pollocks 251

1:250,000 SHEET: TYPE OF SAMPLE: Waiha - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85 DATE DISPATCHED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	Bi	Cu	Pb	Zn			
T 2007	1000N	320E	0.6m GRAVEL, qtzose Grav.	0·012	<0·1	<1	3	<1	3			
2008		340E	8.3m WBR cream, clayey f-mg tuff. sediment	<0·008	<0·1	"	14	10	12			
2009		360E	8.0m WBR clayey	"	1.0	"	71	330	69			
2010	BLANK		(Au = 0·475 B44)									
2011		380E	1.0m GRAVEL mica qtzite qtz Grav.	"	"	"	3	<1	3			
2012		400E	1.0m GRAVEL mica qtzite Grav	"	"	"	5	4	4			
2013		420E	6.0m GRAVEL grey-green clay Grav.	0·013	0·1	"	3	1	20			
2014		440E	2.0m BR cream-grey/green tuff. sediment	0·011	<0·1	"	4	4	24			
2015	2200N	620E	Rock Chip m-cg qtz-feld w tuff, scattered lithics	<0·008	"	"	4	<1	10			
2016		600E	Rock Chip m-cg Volcaniclastic	"	"	"	6	4	12			
2017		580E	Rock Chip " "	0·044	0·1	"	13	10	13			
2018		560E	Rock Chip " "	<0·008	<0·1	"	5	2	10			
2019		540E	0·4m BR mg wk chl volcaniclastic	"	0·1	3	14	30	48			
2020	BLANK											
2021		520E	3.1m BR cream mg qtz>feld	0·012	<0·1	<1	6	21	28			
2022		500E	3.1m BR mg qtz>feld xt c qtz vein	0·019	"	7	12	5	15			
2023		480E	2.0m WBR f-mg cream	0·009	"	1	6	5	15			
2024		460E	3.0m GRAVEL/WBR kokki & minor qtzite Mixed	<0·008	"	5	30	43	48			
2025		450E	1.5m WBR mg cream-brn	"	"	<1	9	6	11			
2026		440E	1.7m WBR mg cream-brn gravel interface	"	"	"	14	9	17			
2027		430E	1.6m WBR brn clayey - BR cream	"	"	"	5	2	9			

014263

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: P. Hocks 252

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Weka - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Nov 85

A19

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn			
T2028	2200N	420E	1.2m WBR brn-cream	0·010	0·1	<1	8	2	8			
2029		410E	3·5m WBR brn-cream	<0·008	<0·1	"	10	6	14			
2030	BLANK		(Au = 2·064 B.24)									
2031		400E	3.1m BR-GRAVEL? white-grey/grn some qtz frags	"	0·1	"	7	2	15			
2032		390E	4·0m BR chloritic - gravel interface	"	<0·1	2	21	6	103			
2033		380E	2.7m gravel qtzite	"	"	<1	3	<1	3			
2034		370E	7.0m BR cream mg qtz feld x/l	0·012	"	1	5	2	115			
2035		360E	6.4m WBR? mica qtzose sand gravel	<0·008	0·2	4	36	39	13			
2036		350E	4.0m WBR-GRAVEL dk brn BR./Grav	"	<0·1	<1	7	<1	24			
2037		340E	1.4m GRAVEL mica qtzite blocks Grav	"	0·1	"	2	"	3			
2038		330E	1.5m GRAVEL Gravel	0·010	<0·1	"	6	1	5			
2039		320E	1.5m GRAVEL qtzite, congl. scree Grav	<0·008	"	"	2	<1	3			
2040	BLANK											
2041		310E	1·5m GRAVEL qtzite scree !! Grav	"	0·1	"	3	1	6			
2042		300E	4.5m GRAVEL Grav	"	<0·1	"	3	1	6			
2043		290E	6.0m BR dk grey s/stone	"	"	21	15	24	82			
2044		280E	5·0m BR f-mg grey	"	"	1	34	11	68			
2045		260E	2.5m GRAVEL Grav	0·008	0·1	<1	5	2	7			
2046		240E	2.8m GRAVEL Grav	<0·008	<0·1	"	5	1	6			
2047		220E	1.2m GRAVEL Grav	"	"	2	4	3	7			
2048		200E	Rock Chip qtzite with qtz veining	"	"	<1	3	<1	3			

0142541

1

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: Poltocks 253

PROJECT: Tyndall PROSPECT: Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED: Nov '85

1:250,000 SHEET: TYPE OF SAMPLE: Wacka - Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A195

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Au	Ag	As	Cu	Pb	Zn		Au Dup
T2049	2200N	180E	Rock Chip qtzite - pebble conglomerate	0.010	<0.1	<1	3	<1	2		
T2050	BLANK		(Au = 0.253, 0.333 B70)								
T2051	2200N	160E	Rock Chip qtzite grit, siltst. lenses 310.90	<0.009	<0.1	<1	4	<1	5		
T2052			80# Samples in Creel	0.027 0.033	<0.1	6	21	4	32		0.051 0.188
T2053			Duplicate " " " "	<0.009 0.055	0.3	<1	83	6	27		0.043 0.023

014255

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: FGF/PAR/CP

PROJECT: Tyndall PROSPECT: Snake Spur / Flannigans SAMPLE STORAGE REQ'D: LABORATORY: Analabs DATE DISPATCHED: Dec 83

1:250,000 SHEET: TYPE OF SAMPLE: Rocks SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A19

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	As	Cu	Pb	Zn	Ba			
T965	1000N	3260E	grn-grey volcaniclastic, wk ser	<0.008	5	6	87	128	270			
966	1000N	3325E	Img volcaniclastic, minor qtz veins	"	<1	6	60	75	120			
967	1000N	3415E	m-cg xl lithic feld volcaniclastic, MnOx, sericitic	"	"	5	230	530	270			
968	2200N	2980E	dk grey shale, graphitic	"	44	27	380	34	150			
969	2200N	2850E	m-cg pyroclastic feld xl rich	"	9	6	20	66	85			
970	2400N	3150E	tuffaceous siltst.-sandst. mod ser, FeOx pits	"	1	27	62	26	160			
971	As 15780 (RAT) (Flannigans)		Owen/Eldon Gp: qtzite brx minor py	"	<1	6	6	13	20			
972	20m Downstream of above		Owen/Eldon Gp: mica qtzite fault brx, greenish	"	"	5	10	20	20			
973	Flum Creek		massive uniform xlline volc. v. minor fracture py	"	"	4	8	47	70			
974	"	"	laminated shale - siltst.	"	"	3	23	14	4600			
975	"	"	lithic rich volcaniclastic, qtz ± chl veins	"	"	6	6	16	395			
976	1300N	290E	grey shale - siltst brx		Petrology?							
977	1800N	180E	qtzite brx, micaceous (Eldon Gp)	"	"	3	2	5	15			
978	1800N creek	175E	Eldon Gp/Owen: qtzite, mica	"	"	3	3	5	20			
979	" "	155E	Eldon Gp/Owen: congl. - mica qtzite	0.009	6	4	3	5	20			
980	2000N	175E	Eldon Gp/Owen: micaceous qtzite	<0.008	<1	5	15	20	15			
981	2000N	160E	Eldon Gp/Owen: micaceous qtzite	0.008	"	5	5	18	30			
982	2000N	140E	Eldon Gp/Owen: micaceous qtzite	<0.008	"	4	5	9	15			
983	2000N	130E	Eldon Gp/Owen: micaceous qtzite	"	"	4	4	12	20			

014256

GOLD FIELDS EXPLORATION PTY. LIMITED

014257

86-2566
V2

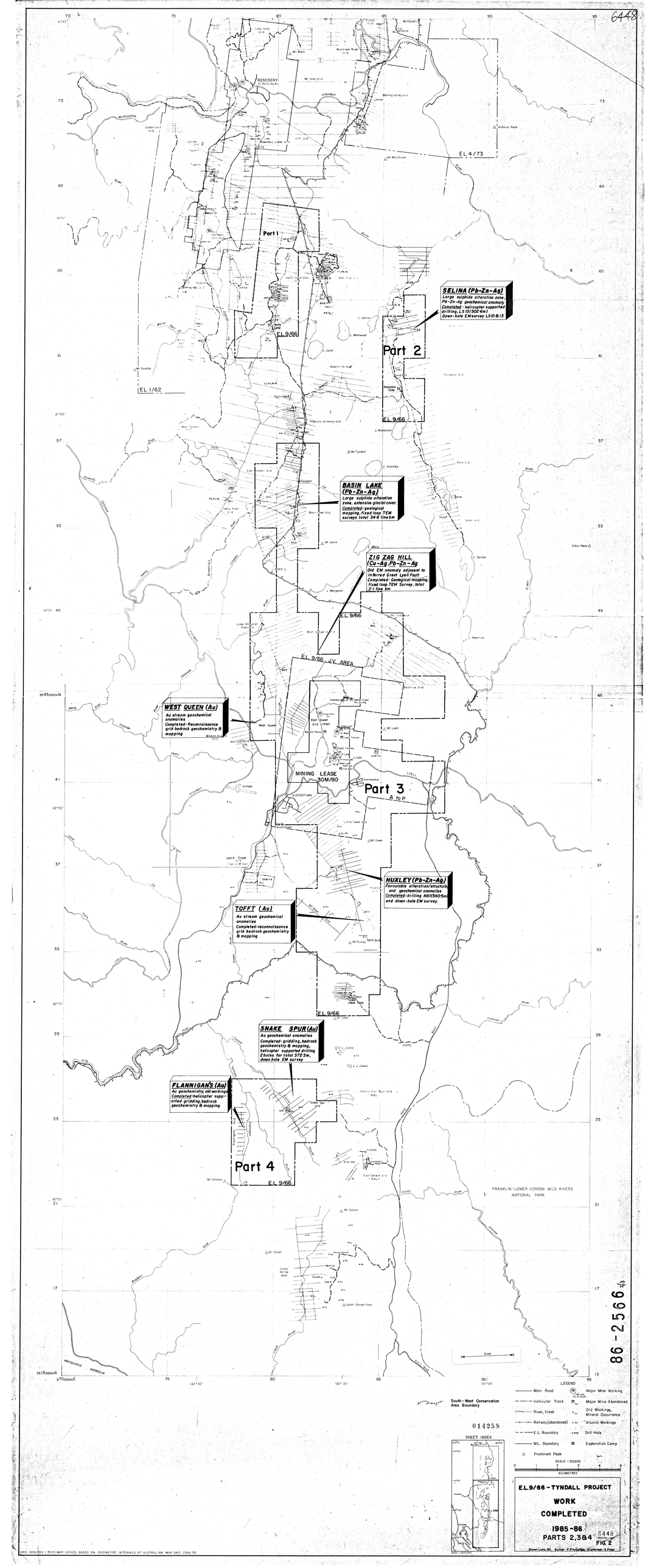
E.L.9/66 - TYNDALL AREA, TASMANIA

ANNUAL REPORT 1985/86

FOR

PARTS II, III & IV

VOLUME 2 - FIGURES 2 TO 15



86-2566 d3

GRID DENOTES 1:1000 MAP SERIES BASED ON 1000METRE INTERVALS OF AUSTRALIAN MAP GRID ZONE 55

6449

INTER. HENTY FAULT SEQUENCE

greywakes, shales and minor conglomerates

SOUTH (EAST) HENTY FAULT

EAST TYNDALL GRID

E.L.9/66

GREAT LYELL FAULT (POSITION APPROX.)

BRADSHAW'S ROAD PYRITE ZONE

LEECH HILL PYRITE ZONE

BASIN LAKE GRID

TERMINAL MORAINE >100m THICK

BASIN LAKE

LEGEND

QUATERNARY

Qm PLEISTOCENE MORAINE, including recent alluvium

UPPER CAMBRIAN – LOWER ORDOVICIAN

€Oo OWEN CONGLOMERATE and correlates including Newton Creek Sandstone Member

CAMBRIAN – MT. READ VOLCANICS

TYNDALL GROUP

Ct UNDIFFERENTIATED VOLCANICS predominantly quartz-phyric lava, pyroclastics and minor epiclastics

CENTRAL SEQUENCE

Cco 'OXIDE FACIES' predominantly epiclastic sequence of hematitic-calcareous sediments,some felsic pyroclastics

Ccs 'SULPHIDES FACIES' predominantly intermediate pyroclastics interbedded with epiclastics, pyrite – sericite chlorite alteration common

Ccb BLACK SHALES prominent black shale and siltstone lenses within 'sulphide facies'

Cca ANDESITIC VOLCANICS predominantly lavas and pyroclastics with some epiclastic units (shales and siltstones)

Cch HORNBLENDE FELDSPAR PORPHYRY both intrusive and extrusive lavs and feeder stock complex

WESTERN SEQUENCE

Cwf FELSIC PYROCLASTICS ignimbrites, agglomerates and vitric tuffs with lesser argillaceous sediments

Cws SEDIMENTARY SEQUENCE greywackes, siltstones and minor shales, volcanics uncommon

Cwp QUARTZ FELDSPAR PORPHYRY high level intrusive bodies

GEOLOGICAL CONTACTS

5 cm

——— Accurate boundary

– – – – Approximate boundary

– –?– – Inferred boundary

—·—·— Limit of thick glacial moraine cover

——— Major fault

SOURCE OF GEOLOGICAL DATA

N.W. Sheppard 1975
P. Komyshan 1981
J.G. Purvis et.al. 1983
K.D. Corbett 1984
F.G. FitzGerald 1986

SHEET REFERENCE

HALL 1:5000 | BASIN LAKE AREA | TYNDALL 1:5000 | LANGDON 1:5000 | GEIKIE 1:5000

86-2566 2/3

014259

GOLD FIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 – TYNDALL PROJECT **BASIN LAKE AREA**	DRAWN BY F.G.F DRAFTSMAN T.G.D.S DATE May 1986 REVISIONS
GEOLOGICAL INTERPRETATION	FILE NO.
SCALE 1:5000 100 50 0 100 200 METRES	FIG. 3

5551 100mN
378000mE

6449

6450


EAST
TYNDALL
GRID
BASIN
LAKE
GRID
E.L.9/66
E.L.9/66
Anthony Road
H.E.C.
Bradshaws
RIVER
HENTY
Leech Hill (Mines Dept.)
TYN 2
BL 2
BL 3
BL 4
BL 5
BL 801
BL 802
MT8
18N
17N
16.5N
16N
15.5N
15N
14.5N
14N
13.5N
13N
12.5N
12N
11.5N
11N
10.5N
10N
9N
8N
7N
6.5N
6N
5.5N
5N
4.5N
4N
2N
00
3N
3S
6S
12S
18S
24S
30S
36S
42S
48S
54S
60S
66S
69S
72S
75S
78S
80S
82S
84S
90S
95S
LEGEND
× Rock Chip Sample
Continuous Channel Sample
5 cm
SHEET REFERENCE
HALL 1:5000
TYNDALL 1:5000
BASIN LAKE AREA
LANGDON 1:5000
GEIKIE 1:5000
86 - 2566
2/3
014260
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L. 9/66 - TYNDALL PROJECT
BASIN LAKE AREA
SAMPLE LOCATIONS
DRAWN BY : F.G.F.
DRAFTSMAN : S.F.
DATE : June, 86
REVISIONS :
FILE NO.
SCALE 1:5000
METRES
FIG. 4
5351 300mN
378 000mE

6450

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.9/66 - TYNDALL PROJECT

BASIN LAKE AREA

ROCK & SOIL GEOCHEMISTRY

COPPER

DRAWN BY	F.G.F.
DRAFTSMAN	S.F.
DATE	June,86
REVISIONS	
FILE NO.	

SCALE 1:5000

FIG.5


6452
EAST TYNDALL GRID
BASIN LAKE GRID
E.L.9/66
Anthony Road
H.E.C.
RIVER
HENTY
Bradshaws
Leech Hill I (Mines Dept.)
TYN 2
T1
T3
BL 2
BL 3
BL 5
BL 801
BL 802
18N
17N
16N
16.5N
15.5N
15N
14.5N
14N
13.5N
13N
12.5N
12N
11.5N
11N
10.5N
10N
9N
8N
7N
6.5N
6N
5.5N
5N
4.5N
4N
2N
00
3N
3S
6S
12S
18S
24S
30S
36S
42S
48S
54S
60S
66S
69S
72S
75S
78S
80S
82S
84S
90S
95S
LEGEND
· -80# Soil sample
A, B or C Soil horizon sampled
G Glacial moraine sample
x Rock chip sample
Continuous channel sample
5 cm
SHEET REFERENCE
HALL 1:5000
BASIN LAKE AREA
TYNDALL 1:5000
LANGDON 1:5000
GEIKIE 1:5000
86-2566 2/3
014262
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L.9/66 - TYNDALL PROJECT
BASIN LAKE AREA
ROCK & SOIL GEOCHEMISTRY
LEAD
DRAWN BY : F.G.F.
DRAFTSMAN: S.F.
DATE :June, 86
REVISIONS :
FILE NO.
SCALE 1:5000
METRES
FIG.6
5351 300mN
378000mE

6453

EAST TYNDALL GRID
BASIN LAKE GRID
E.L.9/66
HENTY RIVER
Anthony Road
Bradshaws Road
H.E.C.
Leech Hill I (Mines Dept.)
TYN 2
BL 2
BL 3
BL 4
BL 5
BL 801
BL 802
MT8
18N
17N
16.5N
16N
15.5N
15N
14.5N
14N
13.5N
13N
12.5N
12N
11.5N
11N
10.5N
10N
9N
8N
7N
6.5N
6N
5.5N
5N
4.5N
4N
3N
2N
00
6S
12S
18S
24S
30S
36S
42S
48S
54S
60S
66S
69S
72S
75S
78S
80S
82S
84S
90S
95S
LEGEND
· -80# Soil sample
A, B or C Soil horizon sampled
G Glacial moraine sample
× Rock chip sample
Continuous channel sample
5 cm
SHEET REFERENCE
HALL 1:5000
BASIN LAKE AREA
TYNDALL 1:5000
LANGDON 1:5000
GEIKIE 1:5000
86-2566
2|3
014263
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L. 9/66 - TYNDALL PROJECT
BASIN LAKE AREA
ROCK & SOIL GEOCHEMISTRY
ZINC
DRAWN BY: F.G.F.
DRAFTSMAN: S.F.
DATE: June, 86
REVISIONS:
FILE NO.
SCALE 1:5000
METRES
FIG. 7
5351 500mN
378 000mE
6453


6454
EAST
TYNDALL
GRID
BASIN
LAKE
GRID
E.L.9/66
Anthony Road
LEGEND
· -80# Soil sample
A, B or C Soil horizon sampled
G Glacial moraine sample
x Rock chip sample
Continuous channel sample
5 cm
014264
SHEET REFERENCE
HALL 1:5000
TYNDALL 1:5000
BASIN LAKE AREA
LANGDON 1:5000
GEIKIE 1:5000
86-2566 2/3
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L.9/66 - TYNDALL PROJECT
BASIN LAKE AREA
ROCK & SOIL GEOCHEMISTRY
SILVER
DRAWN BY : F.G.F.
DRAFTSMAN : S.F.
DATE : June 86
REVISIONS :
FILE NO.
SCALE 1:5000
METRES
FIG. 8

6455

EAST TYNDALL GRID

BASIN LAKE GRID

E.L.9/66

Road

Anthony Road

H.E.C. X-ing

Leech Hill (Mines Dept.)

RIVER

BL 1

BL 2

BL 3

BL 4

BL 5

BL 801

BL 802

TYN 1

TYN 2

T1

T3

MTS △ 555 411

LEGEND

- 80# Soil sample
- A, B or C Soil horizon sampled
- G Glacial moraine sample
- x Rock chip sample
- Continuous channel sample

5 cm

SHEET REFERENCE

HALL 1:5000 | BASIN LAKE AREA | TYNDALL 1:5000 | LANGDON 1:5000 | GEIKIE 1:5000

014265

86-256 AB

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.9/66 - TYNDALL PROJECT

BASIN LAKE AREA

ROCK & SOIL GEOCHEMISTRY

GOLD

DRAWN BY: F.G.F.
DRAFTSMAN: S.F.
DATE: June. 86
REVISIONS:
FILE NO.

SCALE 1:5000 100 50 0 100 200 METRES

FIG. 9

5551 100mN
378 000mE

6455

6456
L 18N 1500W
L 18N 400E
EAST TYNDALL GRID
BASIN LAKE GRID
Tx1
Tx2
Tx3
Tx4
Tx5
Tx6
E.L.9/66
POWER LINE
H.E.C.
Anthony Road
Leech Hill (Mines Dept.)
TYN 2
BL 2
BL 3
BL 5
BL 801
BL 802
18N
17N
16.5N
16N
15.5N
15N
14.5N
14N
13.5N
13N
12.5N
12N
11.5N
11N
10.5N
10N
9N
8N
7N
6.5N
6N
5.5N
5N
4.5N
4N
2N
3S
6S
12S
18S
24S
30S
36S
42S
48S
54S
60S
66S
69S
72S
75S
78S
80S
82S
84S
90S
95S
LEGEND
ANOMALIES
low amplitude
pronounced
Survey Coverage
UTEM
9-5
Channels on which anomaly can be recognised
UTEM Survey by: Lamontagne Geophysics
date: November 1985
NB. UTEM channels 9-2 cover time 0·05 to 6ms
SIROTEM
SIROTEM Survey by: Solo Geophysics
date: April 1986
NB. SIROTEM early time-base used
SIROTEM channels 1-16 cover time 0·05 to 2ms
Quantitative interpretation
M Migration
Location uncertain, possibly in direction indicated
Tx1 Transmitting loop position
5 cm
014266
86 - 2566 2/3
SHEET REFERENCE
HALL 1:5000
TYNDALL 1:5000
BASIN LAKE AREA
LANGDON 1:5000
GEIKIE 1:5000
Ref: GF/MG86/04
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L.9/66 – TYNDALL PROJECT
BASIN LAKE AREA
FIXED-LOOP TEM INTERPRETATION
DRAWN BY
DRAFTSMAN
DATE
REVISIONS
FILE NO.
SCALE 1:5000
METRES
FIG. 10
5351 300mN
378000mE

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 9/66 – TYNDALL PROJECT

BASIN LAKE AREA

GRADIENT ARRAY IP

CHARGEABILITY (Milliseconds)

ANOMALOUS ZONES

DRAWN BY: J.B.	DRAFTSMAN: S.F.
DATE: FEB. 86	REVISIONS:
FILE NO.	FIG. 11

SCALE 1:5000 — 100 50 0 100 200 METRES

6458


EAST TYNDALL GRID
BASIN LAKE GRID
E.L.9/66
Leech Hill I (Mines Dept.)
MT8
Bradshaws Road
H.E.C.
Anthony Road
HENTY RIVER
RIVER
BL2
BL3
BL5
BL 801
BL 802
DATA SOURCE, SURVEY DETAILS
1. Scintrex Report 025,1974: A.W. Howland-Rose
Receiver: IPR-7
Coverage: 2N-10,15N-18N East Tyndall Grid
2. Scintrex Report 025B,1974: A.W. Howland-Rose
Receiver: IPR-7
Coverage: 3N-96S Basin Lake Grid
3. Scintrex Report 054C,1978: A.W. Howland-Rose
Receiver: IPR-7
Coverage: 9N-6S, 66S-82S Basin Lake Grid
4. Scintrex Survey 1982: P. Komyshan (Mt. Lyell Report)
Receiver: IPR-8
Coverage: 10N-15N East Tyndall Grid
5 cm
SHEET REFERENCE
HALL 1:5000
BASIN LAKE AREA
TYNDALL 1:5000
LANGDON 1:5000
GEIKIE 1:5000
86-2566 2/3
014268
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L.9/66 - TYNDALL PROJECT
BASIN LAKE AREA
GRADIENT ARRAY I.P.
RESISTIVITY
(Ohm-m)
DRAWN BY: J.B.
DRAFTSMAN: S.F.
DATE: FEB.86
REVISIONS:
FILE NO.
SCALE 1:5000
METRES
FIG. 12
378000mE
5351300mN

6458

6459

EAST TYNDALL GRID

BASIN LAKE GRID

E.L.9/66

Bradshaws Road

Leech Hill (Mines Dept)

BL 1

BL 2

BL 3

BL 4

BL 5

BL 801

BL 802

RIVER

HENTY

GROUND MAGNETICS DATA SOURCE

1. EAST TYNDALL GRID
   - Contractor : Scintrex
   - Date : Feb.1982
   - Instrument : Scintrex MP 2 (Proton)
   - Base Station : Bradshaws Road 70mN of Line 2N
2. BASIN LAKE GRID
   - Contractor: Mt Lyell field assistants
   - Date : 1975
   - Instrument: Geometrics Proton
   - Base Station : Line 12005.00E

NOTE: ALL VALUES ARE IN GAMMAS +60000

014269

5 cm

SHEET REFERENCE

HALL 1:5000 | BASIN LAKE AREA | TYNDALL 1:5000 | LANGDON 1:5000 | GEIKIE 1:5000

86-2566 2/3

GOLD FIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 – TYNDALL PROJECT **BASIN LAKE AREA** **GROUND MAGNETICS DATA** **(SMOOTHED CONTOURS)**	DRAWN BY : F.G.F. DRAFTSMAN: S.F. DATE : June.86 REVISIONS : FILE NO.
SCALE 1:5000 (100 50 0 100 200 METRES)	FIG. 13

5351 100mN
378000mE

6459

6460

LEGEND

QUATERNARY
- Qt — Recent talus
- Qm — Pleistocene moraine

JURASSIC
- Jdl — Dolerite

PERMIAN
- Pt — Tillite

SILURIAN – EARLY DEVONIAN
- S-D — Eldon Group: undifferentiated sedimentary rocks

ORDOVICIAN
- Ogl — Gordon Limestone
- Oop — Pioneer Beds

LATE CAMBRIAN – EARLY ORDOVICIAN
- €Oos — Owen Conglomerate: predominantly hematitic sandstone and shale
- €Ooc — Owen Conglomerate: interbedded siliceous conglomerate and sandstone with minor shale, often hematitic

CAMBRIAN

Mt. Read Volcanics:– Tyndall Group
- €tj — Jukes Breccia (incl Dora Conglomerate): volcanic breccias and conglomerates
- €tc — Comstock Tuff: felsic tuffs, agglomerates, lavas and minor quartz–muscovite porphyry
- €ts — Tuffaceous fine grained sediments: including pelitic ash, calcareous sediment and fossiliferous limestone beds

Mt. Read Volcanics:– Lyell Schists
- €sf — Felsic Schist: quartz podded and banded sericitic schists principally derived from felsic volcanics
- €si — Intermediate Schist: chloritic schists with quartz pods and bands intermediate between €sf and €sm
- €sm — Mafic Schist: chloritic schists derived from mafic–intermediate volcanics and intrusives
- €su — Undifferentiated Schist: felsic to mafic, often unrecognizable due to intense leaching and weathering

Mt. Read Volcanics:– Central Sequence
- €cef — Fine–Grained Epiclastics: predominantly shales and siltstones, minor sandstones
- €cec — Coarse–Grained Epiclastics: predominantly mass debris deposits and volcanic conglomerates, minor shales and siltstones
- €cf — Felsic Pyroclastics: ignimbrites, tuffs and agglomerates
- €cr — Rhyolitic Lavas: often flow banded, ± quartz–phyric, minor associated pyroclastics
- €cd — Dacitic–Rhyolitic Lavas: often endogenous domes with breccias, some sub–volcanic intrusives
- €ca — Andesitic Intrusives: minor lavas and breccias
- €cm — Mafic–Intermediate Volcanics: pyroclastic tuffs, agglomerates and lavas
- €cu — Undifferentiated Volcanics: mostly unrecognizable pyroclastics and epiclastics due to intense leaching and weathering

Mt. Read Volcanics:– Western Sequence (Q'town Pyroclastics)
- €wf — Felsic Pyroclastics: ignimbrites, tuffs and agglomerates
- €wm — Mafic–Intermediate Volcanics: predominantly intrusives, minor lavas and breccia tuffs
- €ws — Sediments: interbedded vitric tuffs, shales, sandstones and greywackes, dominantly marine sequence, including Miners Ridge Sandstone (mrs)
- €wp — Quartz–Feldspar Porphyry: mostly high level intrusives

ALTERATION AND MINERALISATION
- Intense hematite – (silica–barite) alteration eg North Lyell and Comstock "chert" bodies
- Silica Heads, large and small pods or boudins of silica–pyrite within Lyell Schists, pyrite content 0–20%, boundaries approximate
- Boudinaged beds of massive pyrite, observed and inferred, boundaries approximate
- Disseminated sulphides exceeding 5%, mostly pyrite, minor chalcopyrite and bornite
- Massive sulphide, copper (gold, silver) orebodies showing level of projection
- Galena present

PROSPECTS AND WORKINGS
- Trench or costean
- Adit
- Shaft
- Alluvial wokings
- Open cut
- Waste dump
- Surface exploration diamond drill hole NB. not all holes shown in areas of dense drilling, now mined out

SYMBOLS
- Lithological boundary:– position accurate, approximate or inferred
- Unconformity:– definite or inferred
- Fault:– position accurate, approximate or inferred, teeth indicate dip of fault plane
- Cover:– showing limit of significant glacial moraine or scree cover
- Bedding:– showing strike and dip
- Bedding:– showing facing direction
- Cleavage:– showing strike and dip
- Cleavage:– showing differentiated phase
- Anticline:– showing axial trend
- Syncline:– showing axial trend

SOURCE GEOLOGICAL DATA

NS	PK	N.W. SHEPPARD 1975
NS/KC[1]	KC[1]/PK	M.J. HUTTON 1980
	MH/KC[2]	K.D. CORBETT 1981,[1] 1982 [2]
		P. KOWYSHAN 1985

SHEET INDEX

Longdon	Gelert	Spicer
Yolande	MARGARET	Beatrice
Diamond	Mine	Lyell

86-2566 2/3

GOLD FIELDS EXPLORATION PTY LIMITED	
MT LYELL AREA	DRAWN BY FGF
MARGARET SHEET	DRAFTSMAN TGDS
GEOLOGICAL INTERPRETATION	DATE May 1986
5460	REVISIONS
	FILE NO.
SCALE 1 5000	FIG. 14

COMSTOCK GRID

E.L. 9/66

381 200 E
381 400 E
381 600 E
381 800 E
381 500 E
381 700 E
381 900 E
382 000 E
382 100 E
382 200 E
382 300 E
382 400 E
382 600 E
382 800 E
381 300 E

7300 N
7250 N
7100 N
7000 N
6950 N
6925 N
6900 N
6850 N
6800 N
6300 N

2°
4°
A
B
Tx

ZIG ZAG HILL
AGGLOMERATE HILL
A TO P

LEGEND

5 cm

1958 RIO TINTO TURAM EM SURVEY

- 2° — Phase Difference contour, location approximate

1981 MT. LYELL, GRADIENT ARRAY IP SURVEY

- ▲ Narrow sharp increase in chargeability and drop in resistivity, possibly concealed Great Lyell Fault?
- △ Weak–moderate chargeability high ±drop in resistivity
- □ Drop in resistivity ±drop in chargeability adjacent to sharp rise in resistivity (Sedgwick Fault/Owen Conglomerate response)

1986 GFEL, SIROTEM EM SURVEY

- Line coverage
- Tx — Transmitting loop location
- A — Sirotem response: shallow resistivity contrast – geological contact or ?Pb–Zn sulphides
- B — Sirotem response: near surface resistivity contrast – fault or geological contact (Sedgwick Fault?)

014271

86-256A 2|3

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 9/66 TYNDALL

ZIG ZAG HILL, WEST SEDGWICK

GEOPHYSICAL INTERPRETATION

6461

DRAWN BY	F.G.F.
DRAFTSMAN	T.G.D.S.
DATE	June '86
REVISIONS	
FILE NO.	

SCALE 1:5000 — 50 0 50 100 METRES

FIG. 15

GOLD FIELDS EXPLORATION PTY. LIMITED

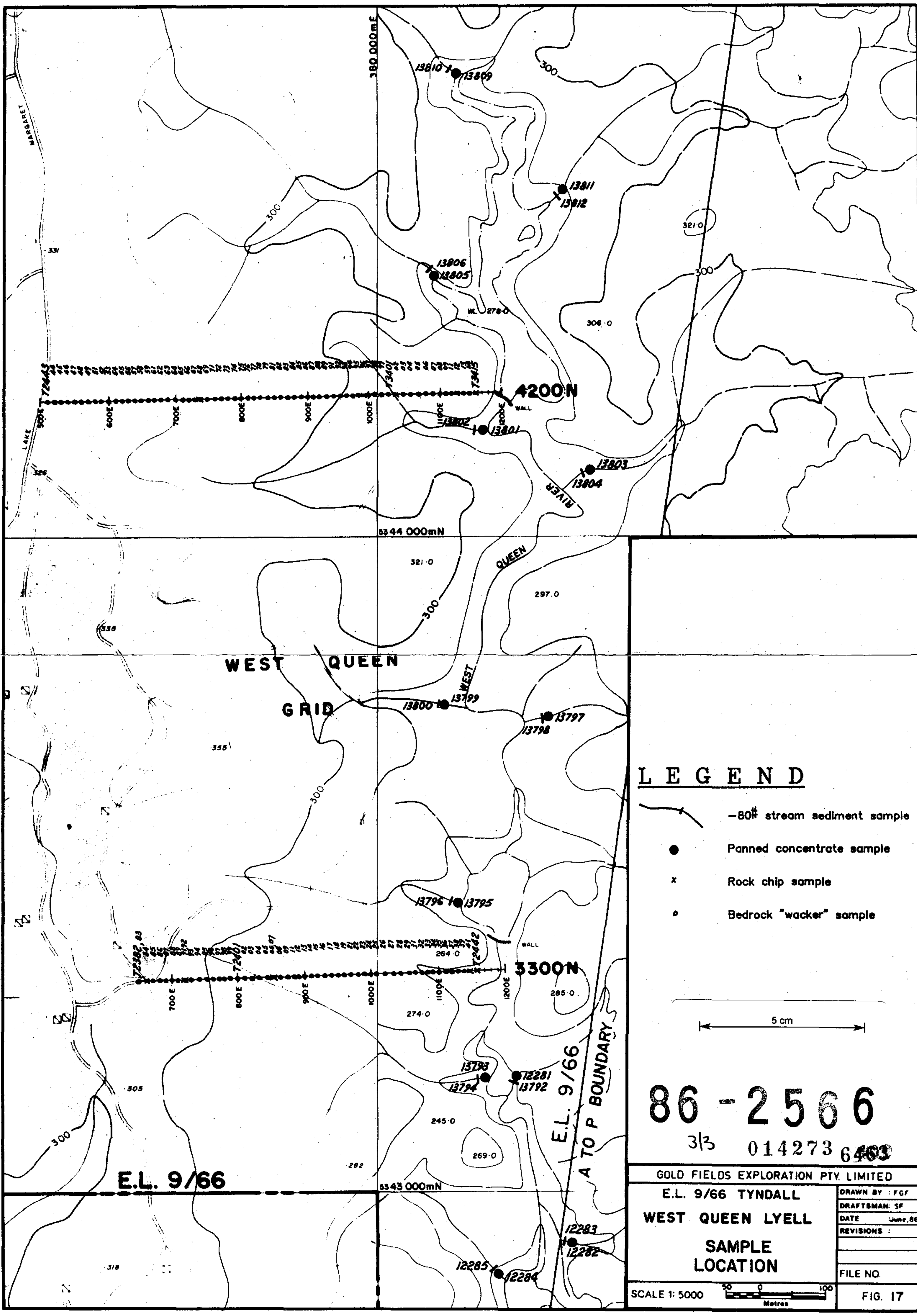
E.L.9/66 - TYNDALL AREA, TASMANIA

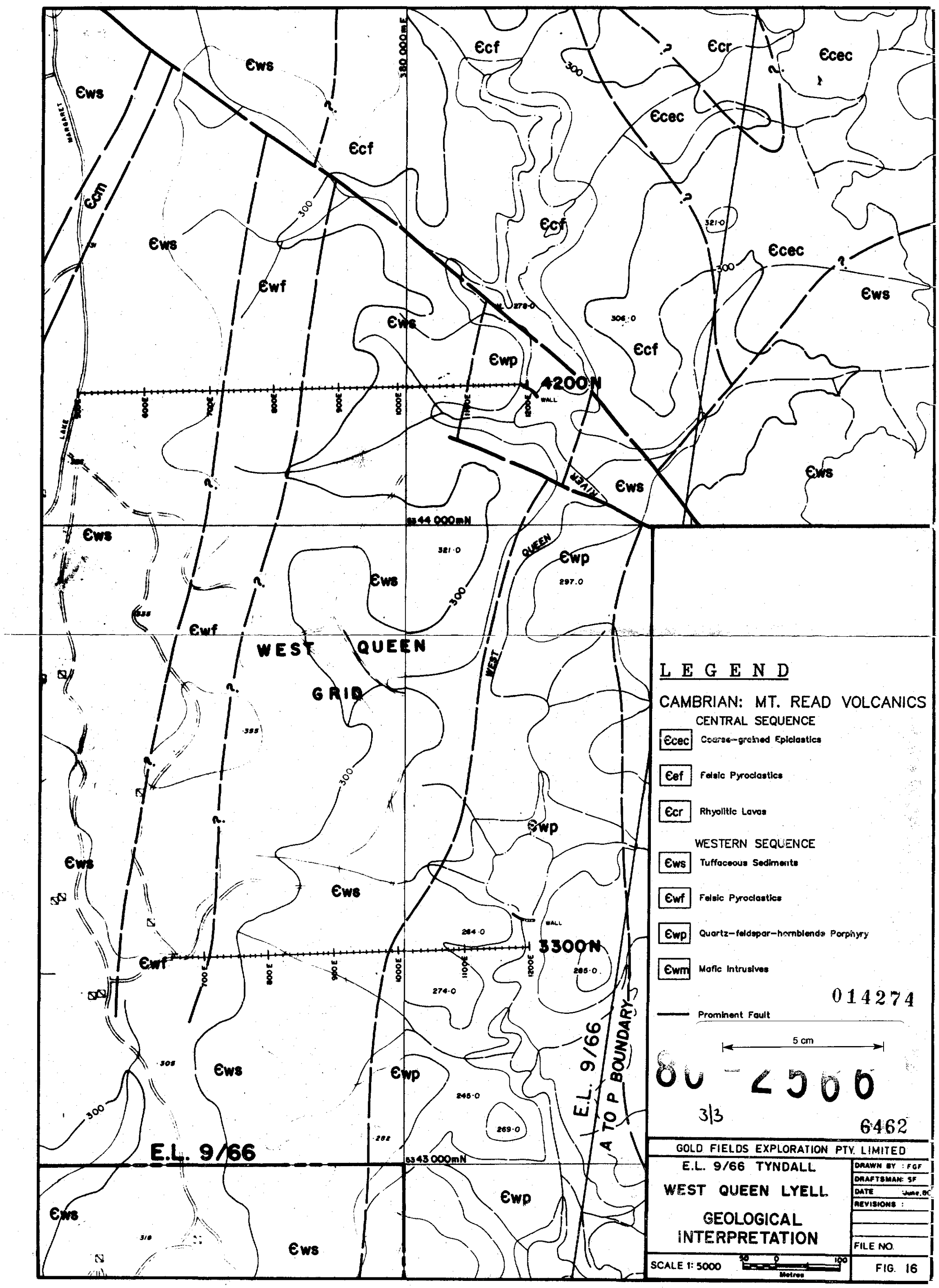
ANNUAL REPORT 1985/86

FOR

PARTS II, III & IV

VOLUME 3 - FIGURES 16 TO 34


380 000mE
5344 000mN
5343 000mN
MARGARET
LAKE
RIVER
QUEEN
WEST
WEST QUEEN GRID
4200N
3300N
WALL
300
13810
13809
13811
13812
13806
13805
13802
13801
13803
13804
13800
13799
13797
13798
13796
13795
13793
13794
12281
13792
12283
12282
12285
12284
72443
73401
73415
72382, 83
72401
72442
500E
600E
700E
800E
900E
1000E
1100E
1200E
WL 278·0
306·0
321·0
297.0
264·0
274·0
285·0
245·0
269·0
331
326
338
355
305
282
318
E.L. 9/66
E.L. 9/66
A TO P BOUNDARY
LEGEND
−80# stream sediment sample
Panned concentrate sample
Rock chip sample
Bedrock "wacker" sample
5 cm
86 - 2566
3|3
014273 6463
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L. 9/66 TYNDALL
WEST QUEEN LYELL
SAMPLE LOCATION
DRAWN BY : FGF
DRAFTSMAN: SF
DATE June.86
REVISIONS :
FILE NO.
SCALE 1: 5000
50 0 100
Metres
FIG. 17


Ews
Ecf
Ecr
Ecec
Ecm
Ewf
Ewp
300
MARGARET
LAKE
RIVER
WALL
QUEEN
WEST
4200N
3300N
6344 000mN
6343 000mN
E.L. 9/66
A TO P BOUNDARY
WEST QUEEN
GRID
321·0
306·0
297·0
284·0
285·0
274·0
269·0
245·0
LEGEND
CAMBRIAN: MT. READ VOLCANICS
CENTRAL SEQUENCE
Ecec Coarse-grained Epiclastics
Ecf Felsic Pyroclastics
Ecr Rhyolitic Lavas
WESTERN SEQUENCE
Ews Tuffaceous Sediments
Ewf Felsic Pyroclastics
Ewp Quartz-feldspar-hornblende Porphyry
Ewm Mafic Intrusives
Prominent Fault
5 cm
014274
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L. 9/66 TYNDALL
WEST QUEEN LYELL
GEOLOGICAL INTERPRETATION
DRAWN BY : FGF
DRAFTSMAN: SF
DATE June, 80
REVISIONS :
FILE NO.
SCALE 1: 5000
Metres
FIG. 16

386 000mE
387 000mE
388 000mE
5 364 000mN
5 363 000mN
5 362 000mN
5 361 000mN
5 360 000mN

160N
152N
144N
136N
132N
128N
124N
120N
116N
112N
108N
104N
96N
56N
48N
40N

SELINA GRID

Proposed Anthony Dam

L.S.12
L.S.10
L.S.9
L.S.6
L.S.5
L.S.4
L.S.13
L.S.7
L.S.1
L.S.2
L.S.3

△ MOUNT SELINA
△ 767

STRONG PYRITIC ZONE

DORA CGLT. / JUKES BRECCIA

STRONGLY PYRITIC

VOLCANICLASTIC WITH LAVA FRAG. CONTENT INCREASING

AUTOBRECCIATED MASSIVE RHYO-DACITIC LAVAS WITH MINOR VOLCANICLASTIC LENSES

STICHT RANGE BEDS (SUCCESS CREEK GROUP CORRELATES)

VOLCANICLASTICS WITH MINOR EPICLASTICS

GLACIALS

DORA / JUKES

OWEN CGLT. CONTACT BENEATH GLACIALS

△ MT 23

E.L. 9/66 BOUNDARY

ANTHONY LAKE

Proposed H.E.C.

5 cm

014275

86-2566 3/3

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.9/66 - TYNDALL PROJECT
SELINA GRID
INTERPRETIVE GEOLOGY

DRAWN BY : A.C.
DRAFTSMAN : T.G.D.S.
DATE : JUNE '85
REVISIONS :
FILE NO.

SCALE 1:5000
100 50 0 50 100 150 200 METRES

FIG. 18

SECTION BEARING: 283° AMG

AMG co-ords!

MT SELINA GEOCHEMICAL ANOMALY ZONE

maximum values: 24 g/t Ag, 0·4% Pb, 1·35% Zn

800mRL

700mRL

600mRL

500mRL

400mRL

py.

LS 13

MIXED PYROCLASTIC - EPICLASTIC SEQUENCE

fine - course grained epiclastics wk - mod chl - ser minor carb - mag weathered

fine - coarse grained quartz - phyric epiclastic sequence wk - mod. chl. - ser. - carb, common dissem. mag.

minor dissem. + veinlet sulphides <1% py-gn-sp

1-2% dissem. + veinlet sulphides py-gn-sp

Best Assay
270·0 - 271·0m
1m @ 4·8% Zn

autobrecciated quartz porphyry lava moderate chl. - mag. - hem.

fine grained volcanoclastics str. chl. - mag. autobrecciated dacitic lava with volcanoclastic lenses

rare veinlet sulphides py - cpy - gn

5026

DACITIC LAVA

often autobrecciated with volcanoclastics chlorite - magnetite veins

PREDOMINANTLY EPICLASTIC SEQUENCE

Tuffaceous shale - siltstone

STICHT RANGE BEDS

5 cm

014276

86-2566 3/3

6465

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 9/66 — TYNDALL

SELINA AREA

DRILL SECTION LS 13

LINE 116N

DRAWN BY : F.G.F.

DRAFTSMAN: S.F.

DATE : June, 86

REVISIONS :

FILE NO.

SCALE 1:2000 40 20 0 40 80 METRES

FIG. 19

80 81 82 83 84 85

38 37 36 35

RHYOLITE LAVA

Tuffaceous sediments cherts tuffs

RHYOLITE IGNIMBRITE
quartz feldspar phyric

LITTLE OWEN GRID

WHIP SPUR SEQUENCE
Andesitic agglomerates, tuffs shales and minor cherts

TUFFACEOUS SEDIMENTS

DACITIC IGNIMBRITE
some agglomeratic

RHYOLITE IGNIMBRITE
quartz feldspar phyric

OWEN CONGLOMERATE

SOUTH OWEN FAULT

RHYOLITE IGNIMBRITE

WHIP SPUR SEQUENCE

HUXLEY GRID

E.L. 9/66 BOUNDARY

RHYOLITE IGNIMBRITE

RHYOLITE LAVAS

BASIC DYKE

DACITIC IGNIMBRITE
some agglomeratic

Section 3713
SUNRISE PITS
(approx. location)

RHYOLITE IGNIMBRITE

DACITIC
crystal lithic tuffs

RHYOLITE IGNIMBRITE

1000N

300E

VOLCANICLASTIC-EPICLASTIC SEQUENCE
INTERLAYERED QUARTZ-PHYRIC VOLCANICS AND TUFFACEOUS SILTSTONES AND BLACK SHALES

WHIP SPUR SEQUENCE

RHYOLITE LAVA

Section 4064
LADY HAVILL (approx. location)
trench/adit in chloritic pyritic schist

OWEN CONGLOMERATE

RHYOLITE LAVAS
MASSIVE SCATTERED FELDSPAR PHENOCRYSTS
LOCALLY FOLIATED - WEAK SERICITIZATION
MINOR FINE TUFFACEOUS SEDIMENT LENSES

BASIC DYKE

TUFFACEOUS SEDIMENTS
Reworked fine-medium grained crystal/lithic tuffs with siltstone chert and bedded hematite

Mt. ELLEN GOLD MINE
open cut and shafts

1600E

MT. ELLEN GRID

RHYOLITE IGNIMBRITE

480GN

SHALE HORIZONS OF TREND

2400E

Section 3956
MOUNTAIN MAID
trench/tunnel, ferruginous felsite band 18.9 gm/ Au

RHYOLITE LAVA

TOFFT GRID

Pyrite hematite BRECCIA

IGNIMBRITE
FELDSPAR-PHYRIC, FOLIATED COMMON CHLORITIC LITHIC AND SHARD FRAGMENTS

VOLCANIC AGGLOMERATE

VOLCANICLASTICS
Hematitic agglomerates, tuffaceous sandstones & conglomerates (Lawn Formation)

OWEN CONGLOMERATE

4100N

5534000mN 380000mE

LEGEND
HUXLEY GRID & MT. ELLEN GRID
slope corrected — non-slope corrected

LEGEND
- Geological boundary
- Interpreted geological boundary
- Fault
- Unconformity

Bedding
- 0–30°
- 30–60°
- >60°

Folds
- Syncline
- Anticline
- Plunge

Alteration
- Pyritic sericite/chlorite
- Hematite sericite
- Gossan

- SEALED ROAD BRIDGE
- VEHICULAR TRACK
- LOGGING TRACK, BULLDOZER SCAR
- WALKING TRACK
- RAILWAY, TRAMWAY ABANDONED
- PROMINENT PEAK
- TRIG STATION
- BENCH MARK
- SPOT ELEVATIONS
- RIVER, CREEK
- LAKE
- SWAMP
- POWER LINE & PYLONS
- BUILDING
- FLYING FOX
- PIT
- COSTEAN, TRENCH
- ADIT
- SHAFT (Depth metres)
- OPEN CUT
- ALLUVIAL WORKINGS
- DUMP

MAP INDEX

AIRPORT	TOWNSHIP	PRINCESS
LYNCHFORD	OWEN	TOFFT
NEWALL	HUXLEY	KING

5 cm

Photography: Lands Department 1974 & SC
South West Project F&ST
Photogrammetry: Associated Aerial Surveys Pty. Ltd. 1980

Grid Lines are 1000 Metre Intervals of the Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum (Tasmania)
Transverse Mercator Projection

GEOLOGICAL SOURCE: Kamyshon 1980
Purvis & Jones 1983
Pollock 1984 - 85

014277

86-2566 sb

6464

GOLD FIELDS EXPLORATION PTY. LIMITED

TYNDALL – E.L. 9/66

HUXLEY AREA

INTERPRETATIVE GEOLOGY

DRAWN BY	R.Pollock
DRAFTSMAN	T.G.D.S.
DATE	April '84
REVISIONS	R.Pollock June '85
	K.Fitzgerald June '86
FILE NO.	
SCALE 1:5000	FIG. 20

100 0 100 200 METRES

6467

DRILLING PROFILE LINE

382900mE 383000mE 383100mE 383200mE 383300mE

SECTION 120° AMG

IP ANOMALY

014278

5 cm

8C-2566 3/3

GOLDFIELDS EXPLORATION PTY LIMITED	
E.L.9/66 – TYNDALL **HUXLEY AREA** **DRILL SECTION HX I**	DRAWN BY F.F. DRAFTSMAN S.F. DATE May, 86 REVISIONS FILE NO
SCALE 1:1000 20 10 0 20 40 Metres	FIG. 21

LITTLE OWEN GRID

HUXLEY GRID

MT. ELLEN GRID

TOFFT GRID

E.L. 9/66

1000N

300E

1600E

2400E

4800N

4100N

3N 2N 1N 00 2S 4S 6S 8S 10S 12S 14S 15 5S 18S

LEGEND

HUXLEY GRID & MT. ELLEN GRID
slope corrected non-slope corrected

- ROCK CHIP SAMPLE
- SOIL SAMPLE
- STREAM SEDIMENT SAMPLE
- PORTABLE PERCUSSION SAMPLE
- PANNED CONCENTRATE

- SEALED ROAD BRIDGE
- VEHICULAR TRACK
- LOGGING TRACK BULLDOZER SCAR
- WALKING TRACK
- RAILWAY TRAMWAY ABANDONED
- PROMINENT PEAK
- TRIG. STATION
- BENCH MARK
- SPOT ELEVATIONS
- RIVER CREEK
- LAKE
- SWAMP
- POWER LINE & PYLONS
- BUILDING
- FLYING FOX
- PIT
- COSTEAN TRENCH
- ADIT
- SHAFT (Depth metres)
- OPEN CUT
- ALLUVIAL WORKINGS
- DUMP

MAP INDEX

AIRPORT	TOWNSHIP	PRINCESS
LYNCHFORD	OWEN	TOFFT
NEWALL	HUXLEY	KING

5 cm

Photography: Lands Department Ref No.
South West Project Part
Photogrammetry: Associated Aerial Surveys Pty. Ltd. 1985

Grid Lines are 1000 Metre intervals of the
Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the
South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum Tasmania
Transverse Mercator Projection

014279

100 0 100 200 300 400 500
Metres

86-2566 3/3 6468

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

TYNDALL – E.L.9/66

HUXLEY AREA
SAMPLE NUMBER
LOCATIONS

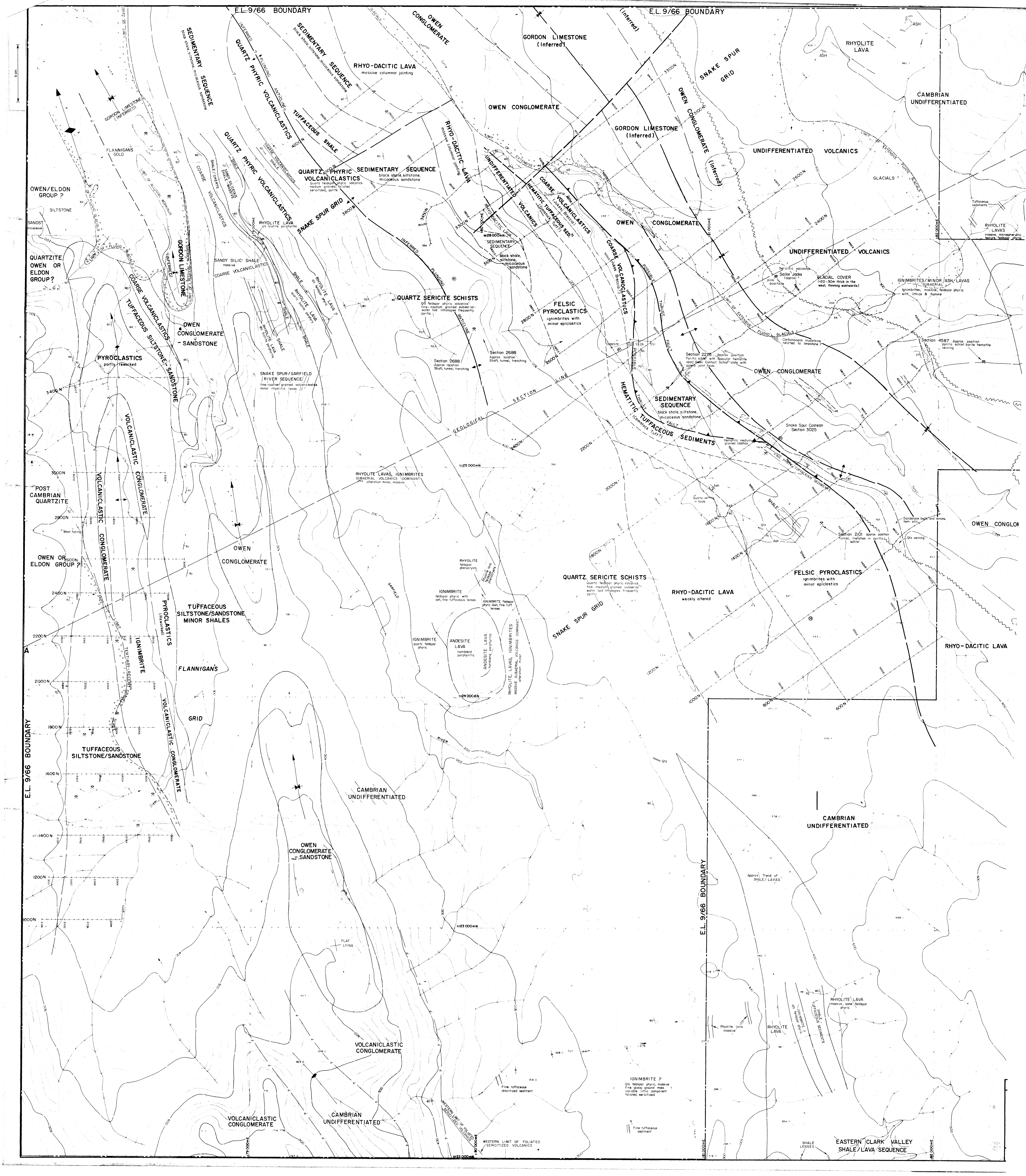
REVISIONS
R. Pollock : June, 86

SCALE 1:5000 DRAWN BY C.P.
DATE July, 1985 DRAWING No. P.D.T/S.S./EV.

FIG. 22

6468


LEGEND
HUXLEY GRID & MT. ELLEN GRID
slope corrected non-slope corrected
ROCK CHIP SAMPLE
SOIL SAMPLE
STREAM SEDIMENT SAMPLE
PORTABLE PERCUSSION SAMPLE
PANNED CONCENTRATE
SEALED ROAD BRIDGE
VEHICULAR TRACK
LOGGING TRACK BULLDOZER SCAR
WALKING TRACK
RAILWAY TRAMWAY ABANDONED
PROMINENT PEAK
TRIG STATION
BENCH MARK
SPOT ELEVATIONS
RIVER CREEK
LAKE
SWAMP
POWER LINE & PYLONS
BUILDING
FLYING FOX
PIT
COSTEAN TRENCH
ADIT
SHAFT (Depth metre)
OPEN CUT
ALLUVIAL WORKINGS
DUMP
MAP INDEX
AIRPORT
TOWNSHIP
PRINCESS
LYNCHFORD
OWEN
TOFFT
NEWALL
HUXLEY
KING
5 cm
LITTLE OWEN GRID
HUXLEY GRID
MT. ELLEN GRID
TOFFT GRID
E.L. 9/66
1000N
1600E
2400E
4600N
4100N
Photography Lands Department 1979-80
South West Project F617
Photogrammetry Associated Aerial Surveys Pty Ltd 1980
Grid Lines are 1000 Metre Intervals of the
Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the
South West Corner of the Map
Horizontal Datum Australian Geodetic Datum 1966
Vertical Datum Australian Height Datum (Tasmania)
Transverse Mercator Projection
014280
Metres
86-2566 3/3
6469
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.
TYNDALL — E.L. 9/66
HUXLEY AREA
GOLD GEOCHEMISTRY
REVISIONS
R Poltock: May 86
SCALE 1 5000
DATE June, 1985
DRAWN BY C.P.
DRAFTSMAN H.D.J./S.F./E.V.
FIG 23



E.L. 9/66 BOUNDARY
5 cm
SEDIMENTARY SEQUENCE
black shale, siltstone, micaceous sandstone
QUARTZ PHYRIC VOLCANICLASTICS
INFERRED PLUNGING ANTICLINE
SEDIMENTARY SEQUENCE
black shale, siltstone, micaceous sandstone
RHYO-DACITIC LAVA
massive columnar jointing
OWEN CONGLOMERATE
GORDON LIMESTONE (Inferred)
(Inferred)
SNAKE SPUR GRID
OWEN CONGLOMERATE (Inferred)
RHYOLITE LAVA
ASH
CAMBRIAN UNDIFFERENTIATED
GORDON LIMESTONE (INFERRED)
FLANNIGANS GOLD
TUFFACEOUS SHALE
OWEN CONGLOMERATE
GORDON LIMESTONE (Inferred)
UNDIFFERENTIATED VOLCANICS
GLACIALS
LIMIT OF EXTENSIVE FLUVIO GLACIALS
QUARTZ PHYRIC VOLCANICLASTICS
COARSE VOLCANICLASTICS
SHALE / CHERTS
SANDY SILICEOUS SHALE - MASSIVE
SHALE
QUARTZ PHYRIC VOLCANICLASTICS
Quartz feldspar phyric volcanics medium grained, foliated sericitized, pyrite
SEDIMENTARY SEQUENCE
black shale, siltstone, micaceous sandstone
RHYO-DACITIC LAVA
massive columnar jointing
UNDIFFERENTIATED VOLCANICS
HEMATITIC TUFFACEOUS SED. (Comstock Tuff?)
COARSE VOLCANICLASTICS (Jukes Breccia)
OWEN CONGLOMERATE
Tuffaceous sediments
RHYOLITE LAVAS
massive, microspherulitic texture, feldspar phyric
OWEN/ELDON GROUP ?
SILTSTONE
SANDST. micaceous
LIMIT OF FLUVIO GLACIALS
LIMIT OF ALLUVIAL WORKINGS
RHYOLITE LAVA
qtz biotite porphyritic
SNAKE SPUR GRID
RHYO-DACITIC LAVA
SEDIMENTARY SEQUENCE
black shale, siltstone, micaceous sandstone
UNDIFFERENTIATED VOLCANICS
QUARTZITE OWEN OR ELDON GROUP?
GORDON LIMESTONE (INFERRED)
SANDY SILIC' SHALE
massive
COARSE VOLCANICLASTICS
SHALE
RHYOLITE LAVA
quartz biotite porphyry
RHYOLITE LAVA ?
qtz feldspar phyric
COARSE VOLCANOCLASTICS (Jukes Breccia?)
Sericitic volcanics
Sailor Jacks (approx)
pink quartzite
GLACIAL COVER
(~20-30m thick in the west; thinning eastwards.)
IGNIMBRITES/ MINOR ASH, LAVAS
SUBAERIAL
Ignimbrites, massive, feldspar phyric with lithics & fiamme
COARSE VOLCANICLASTICS
TUFFACEOUS SILTSTONE - SANDSTONE
OWEN CONGLOMERATE - SANDSTONE
QUARTZ SERICITE SCHISTS
Qtz feldspar phyric volcanics fine-medium grained subaerial-water laid lithologies frequently pyritic
RHYOLITE LAVA
qtz biotite porphyritic
FELSIC PYROCLASTICS
ignimbrites with minor epiclastics
POSSIBLE THRUST FAULT
Carbonaceos mudstone related to limestone ?
Section 4587 Approx. position
pyritic schist barite hematite veining
PYROCLASTICS
partly reworked
Section 2688
Approx. location
Shaft, tunnel, trenching
Section 2688
Approx. location
Shaft, tunnel, trenching
Composite SS2 SS2A SS1
Section 2275 Approx. position
Pyritic schist with specular hematite near Owen Contact. Schist slate with galena joint faces
OWEN CONGLOMERATE
SNAKE SPUR/GARFIELD RIVER SEQUENCE
fine-coarse grained volcaniclastics minor rhyolitic lavas
3400 N
GEOLOGICAL SECTION LINE
SEDIMENTARY SEQUENCE
black shale, siltstone, micaceous sandstone
HEMATITIC TUFFACEOUS SEDIMENTS (Comstock Tuff?)
THRUST FAULT
Snake Spur Costean Section 3025
Hematitic medium grained clastics
FINE PYRITIC TUFFACEOUS SEDIMENTS
VOLCANICLASTIC CONGLOMERATE
5325 000mN
RHYOLITE LAVAS, IGNIMBRITES
SUBAERIAL VOLCANICS DOMINANT
alteration minor, massive
3000N
POST CAMBRIAN QUARTZITE
VOLCANICLASTIC CONGLOMERATE
Quartz veining in lavas
Ash
SHALE
Qtz
Sandstone beds and lenses. hem. silic.
OWEN CONGLOM
Section 2101 approx. position
Tunnel, trenches in pyritic schist.
Qtz veining
2800N
West facing
OWEN CONGLOMERATE
OWEN OR ELDON GROUP ?
2600N
RHYOLITE
feldspar phenocrysts
Rhyolite lava feldspar phenocrysts
QUARTZ SERICITE SCHISTS
Quartz feldspar phyric volcanics fine-medium grained subaerial water laid lithologies frequently pyritic
RHYO-DACITIC LAVA
weakly altered
FELSIC PYROCLASTICS
ignimbrites with minor epiclastics
2400N
IGNIMBRITE
feldspar phyric with ash, fine tuffaceous lenses
IGNIMBRITE Feldspar phyric. Ash, fine tuff lenses
GARFIELD
TUFFACEOUS SILTSTONE/SANDSTONE MINOR SHALES
PYROCLASTICS (Reworked)
2200N
A
LIMIT OF TERTIARY-RECENT GRAVELS & SCREE
IGNIMBRITE
IGNIMBRITE
quartz feldspar phyric
ANDESITE LAVA
hornblend porphyritic
ANDESITE LAVA
hornblend porphyritic
RHYOLITE, LAVAS, IGNIMBRITES
MASSIVE SUBAERIAL VOLCANICS DOMINANT
alteration minor
SNAKE SPUR GRID
RHYO-DACITIC LAVA
FLANNIGAN'S
GRID
2000N
5324 000mN
1800N
E.L. 9/66 BOUNDARY
TUFFACEOUS SILTSTONE/SANDSTONE
VOLCANICLASTIC CONGLOMERATE
RIVER
1600N
Creek
Qtz
CAMBRIAN UNDIFFERENTIATED
CAMBRIAN UNDIFFERENTIATED
1400N
OWEN CONGLOMERATE - SANDSTONE
1200N
Approx. Trend of SHALE/ LAVAS
E.L. 9/66 BOUNDARY
1000N
Flannigans
5323 000mN
FLAT LYING
RHYOLITE LAVA
massive, some feldspar phyric
SHALE TUFFACEOUS SEDIMENTS
IGNIMBRITE ? qtz feldspar phyric
Rhyolite lava massive
RHYOLITE LAVA
VOLCANICLASTIC CONGLOMERATE
CUT TRACK
CAMP SITE
Fine tuffaceous chloritized sediment
IGNIMBRITE ?
Qtz feldspar phyric, massive fine glassy ground mass variable lithic component foliated, sericitized.
VOLCANICLASTIC CONGLOMERATE
CAMBRIAN UNDIFFERENTIATED
WESTERN LIMIT OF FOLIATED SERICITIZED VOLCANICS
Fine tuffaceous sediment
WESTERN LIMIT OF FOLIATED SERICITIZED VOLCANICS
SHALE LENSES
EASTERN CLARK VALLEY SHALE/LAVA SEQUENCE
379 000mE
380 000mE
381 000mE
382 000mE
5322 000mN

014281 6470

GOLD FIELDS EXPLORATION PTY. LIMITED

TYNDALL - E.L.9/66

FLANNIGANS - SNAKE SPUR AREA

INTERPRETATIVE GEOLOGY

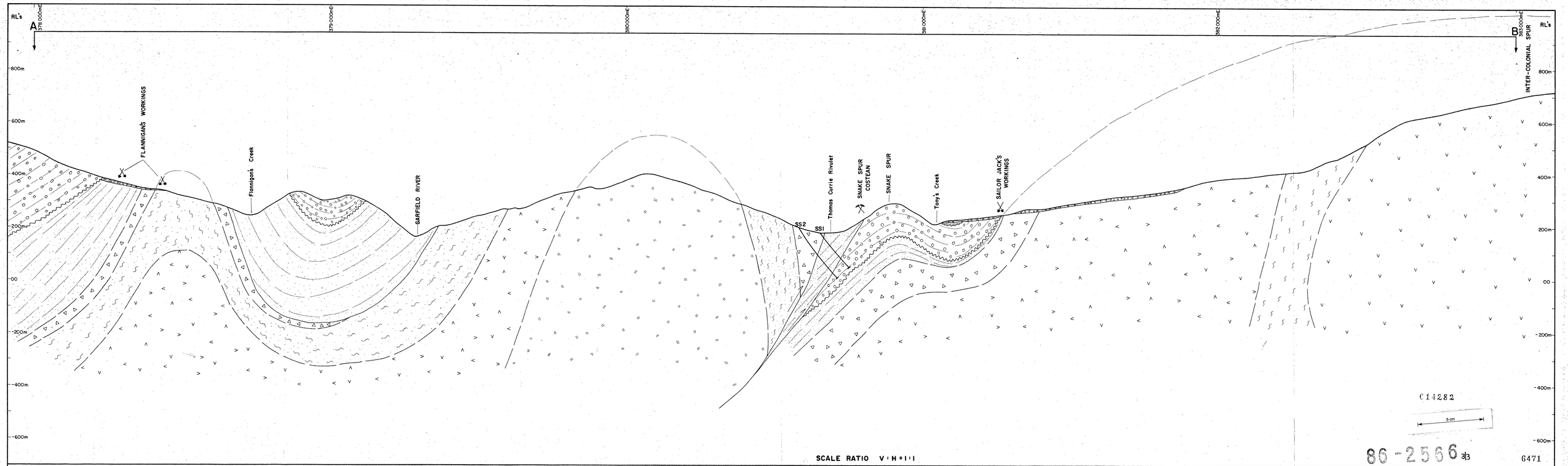
DRAWN BY : RP/AC.
DRAFTSMAN: T.GDS/S.F.
DATE : JULY, 85
REVISIONS : F.F. - May, 86
FILE NO.

SCALE 1:5000 — 100 50 0 100 200 METRES

FIG. 24

6470

80-2566 3/3



SCALE RATIO V : H = 1 : 1

C14282

5 cm

86-2566 3/3

6471

LEGEND

QUARTERNARY
Pleistocene moraine, recent talus

ORDOVICIAN
Gordon Limestone

UPPER CAMBRIAN-LOWER ORDOVICIAN
Owen Conglomerate

CAMBRIAN — MOUNT READ

TYNDALL GROUP
- Fine grained tuffaceous sediments black shales, siltstones, biotite sandstones
- Coarse grained tuffaceous sediments, hematitic tuffs, volcaniclastic breccias

WESTERN SEQUENCE
- Felsic pyroclastics, ignimbrites, partly reworked volcaniclastics
- Quartz-sericite schists ± pyrite, after quartz-phyric volcaniclastics

VOLCANICLASTICS

CENTRAL SEQUENCE
- Felsic pyroclastics, ignimbrites tuffs & agglomerates
- Rhyo dacitic lavas & breccias often dome-like, some sub-volcanic

Undifferentiated volcanics

N.B. - Refer to Geological map for plan position of section line A-B

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 9/66 — TYNDALL

FLANNIGANS – SNAKE SPUR GEOLOGICAL SECTION

DRAWN BY	F.G.F
DRAFTSMAN	S.F.
DATE	JUNE.86
REVISIONS	
FILE NO.	

SCALE 1:5000 (100 50 0 100 200 METRES)

FIG. 25

DRILLING PROFILE LINE

400m

380 500mE | 380 600mE | 380 700mE | 380 800mE | 380 900mE

ANOMALOUS GOLD IN BEDROCK(WACKER) SAMPLING

Maximum value 0·42g/t Au

HEIGHT ABOVE SEA LEVEL

300m

200m

100m

00

SNAKE SPUR

OWEN CONGLOMERATE

MASSIVE SILTSTONE - SANDSTONE

Thomas Currie Rivulet

BLACK SHALE - SILTSTONE

ALLUVIUM

SS2/2A 25mS

SS1 9mN

HEMATITIC TUFFACEOUS SEDIMENT (COMSTOCK TUFF?)

MAJOR FAULT ZONE within Tuffs

SILTSTONE - SANDSTONE MINOR SHALE SEQUENCE

BLACK SHALE - SILTSTONE SEQUENCE

OWEN CONGLOMERATE

CONFORMABLE SEQUENCE WEST FACING

0·03Au

0·03Au

0·03Au

SS2 165·8m 1mS

SS1 153·8m 1mN

206·7m

SS 2A 17mN

HEIGHT ABOVE SEA LEVEL

DOWN HOLE LEGEND

- Hematitic Tuffaceous Sediment (Comstock Tuff Correlate?)
- Tuffaceous Sandstone Conglomerate (Jukes Breccia Correlate?)
- Sandstone - Siltstone Sequence Minor Shales
- Black Shale - Minor Siltstone Sequence
- Owen Conglomerate
- Bedding
- Volcanic Foliation
- Cleavage
- Prominent Fault
- Major Fault Zone

5 cm

014283

6472

3/3

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L. 9/66 — TYNDALL

SNAKE SPUR

DRILL SECTION SS 1, 2 & 2A

AMG SECTION 53 25 550 mN

DRAWN BY : EE

DRAFTSMAN : S.F.

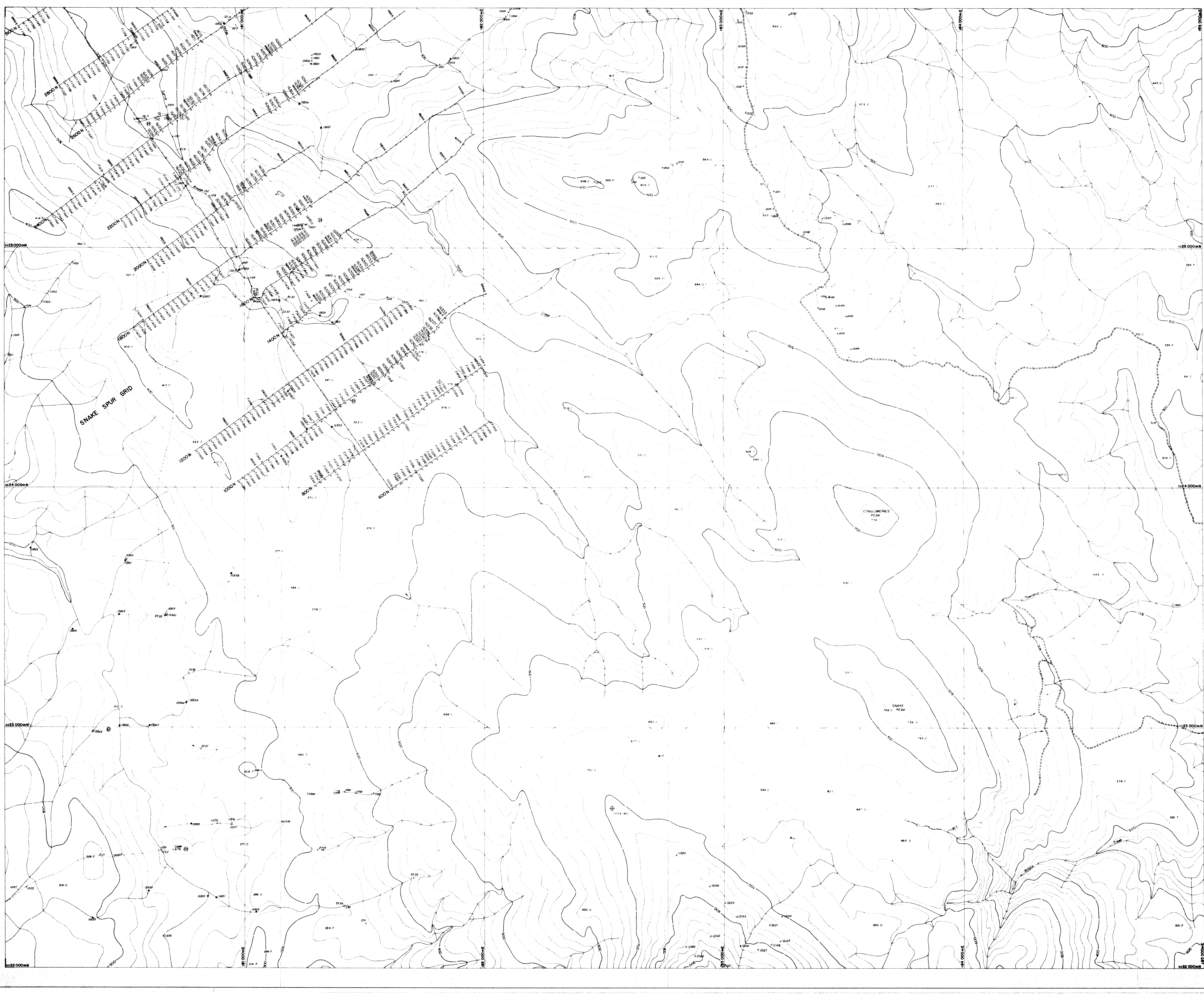
DATE : May, 86

REVISIONS :

FILE NO.

SCALE 1:1000 20 10 0 20 40 Metres

FIG. 26



LEGEND

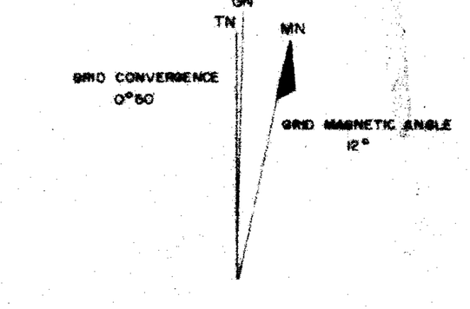
- × Rock Chip
- ∘ "Wacker" Sample
- ╲ Stream Sediment
- ● Panned Concentrate

5 cm

Notes: 1) Samples prefixed SS taken by Hutton in 1977–78.
2) Samples in the range 2700 onwards taken by GFEL/Poltock in 1983–85.
3) Samples prefixed T taken by Poltock in 1985/86

SHEET INDEX

Garfield	Jukes	Crotty
Flannigans	SNAKE	Andrew
Sorell	Darwin	Kelly



The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0·9 miles) Easterly.

014284

86-2566 3|3

6473

GOLD FIELDS EXPLORATION PTY. LIMITED

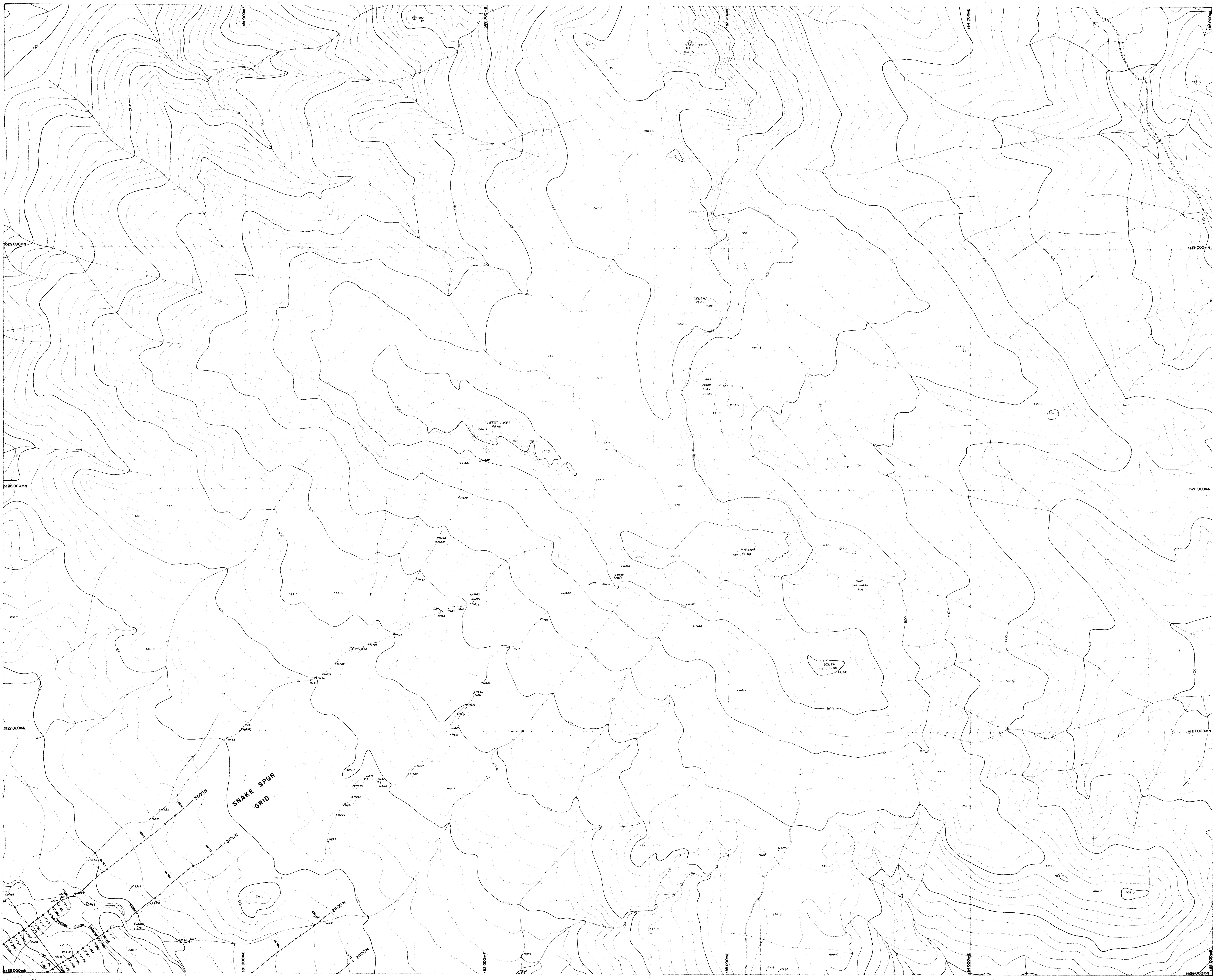
E.L. 9/66 - TYNDALL PROJECT
SNAKE SHEET

SNAKE SPUR GRID
SAMPLE NUMBERS

DRAWN BY	C.P.
DRAFTSMAN	E.V.
DATE	July 1985
REVISIONS	
FILE NO.	

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 27



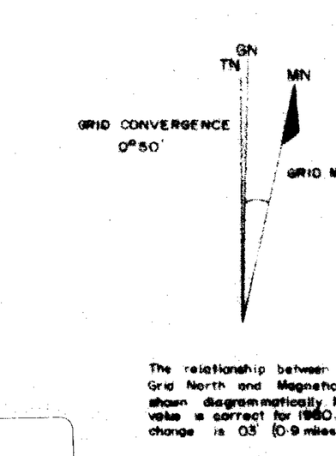
Legend
- ∘ Wocker Sample
- × Rock Chip Sample
- • Panned Concentrate
- ⟍ Stream Sediment Sample

N.B. – Samples prefixed T taken by Poltock in 85/86
– Samples prefixed SS taken by Hutton in 77/78
– Samples in range 11300-11600 taken by Poltock in 83/84
– " " 13800-15900 " " 84/85

014285

SHEET INDEX

Newall	Huxley	King
Garfield	JUKES	Crotty
Flannigans	Snake	Andrew



The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0·9 miles) Easterly

5 cm

86-2566 3|3

6474

GOLD FIELDS EXPLORATION PTY. LIMITED

TYNDALL – E.L.9/66

JUKES

SAMPLE NUMBER LOCATIONS

DRAWN BY : F.G.F.

DRAFTSMAN : S.F.

DATE : Nov., 85

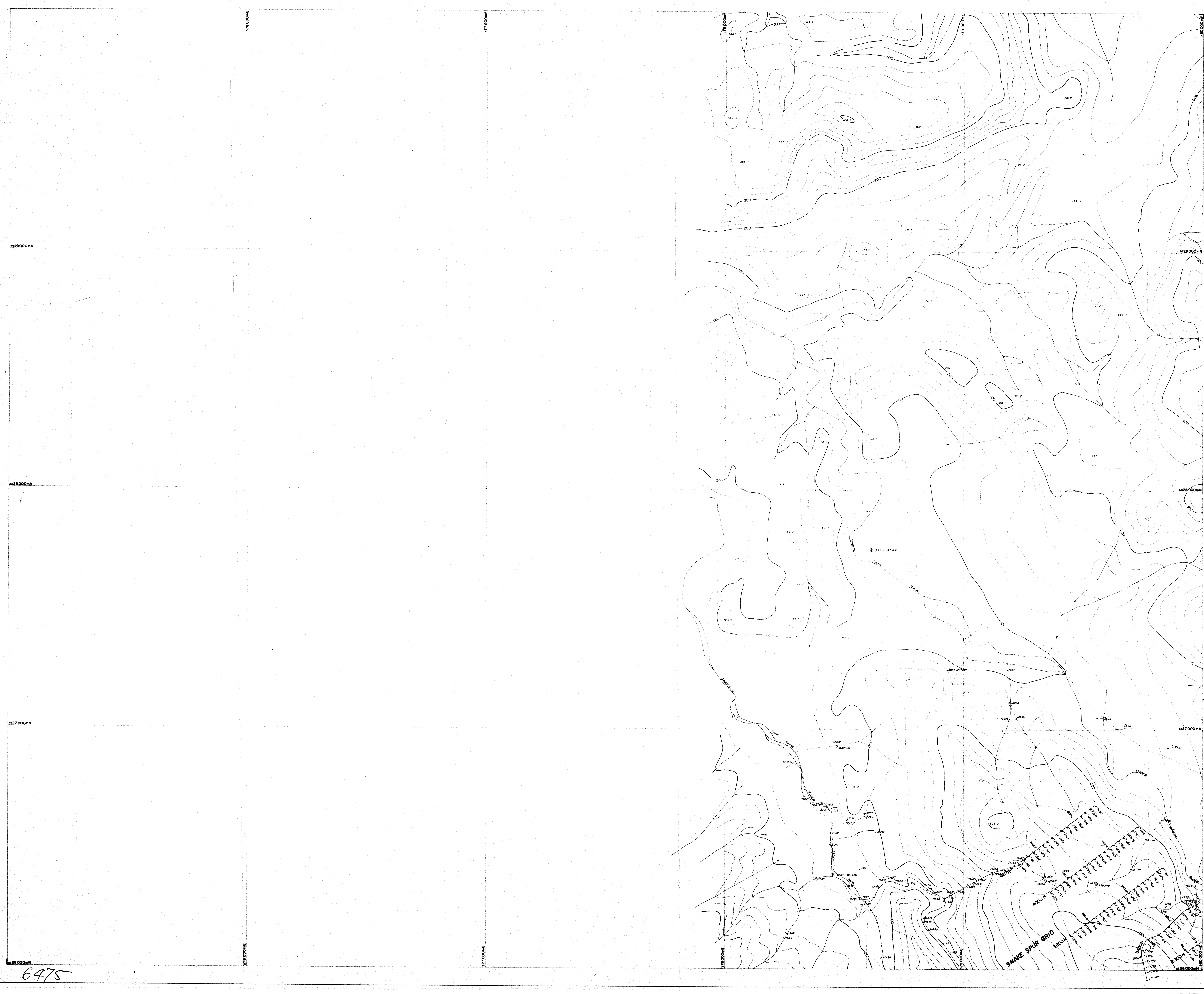
REVISIONS :

FILE NO.

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 28

6474



LEGEND

- • Soil Sample
- ∘ "Wacker" Sample
- × Rock Chip Sample
- ● Panned Concentrate
- / Stream Sediment

NOTES: (1) Samples prefixed SS taken by Hutton in 1977/78
(2) Samples in the range, 11300-11600, taken by Poltock in 1983/84
(3) Samples in the range, 13800-15900 taken by Poltock in 1984/85
(4) Samples prefixed T taken by Poltock in 1985/86

5 cm

SHEET INDEX

	Newall	Huxley
	GARFIELD	Jukes
	Flannigans	Snake

GN TN MN
GRID CONVERGENCE 0°50'
GRID MAGNETIC ANGLE 12°

The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0·9 miles) Easterly.

014286

86-2566 3|3 6475

GOLD FIELDS EXPLORATION PTY. LIMITED

TYNDALL - E.L. 9/66

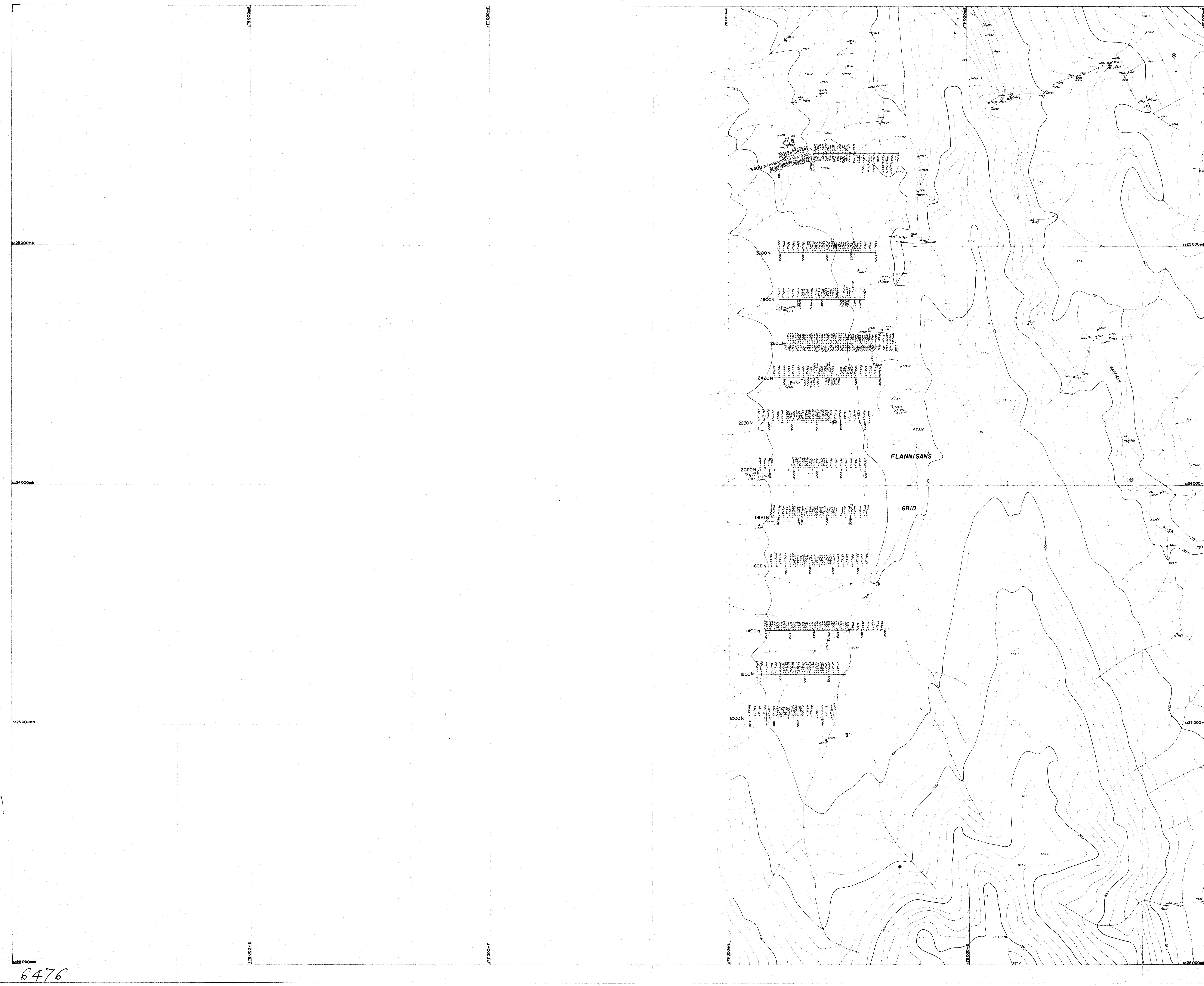
GARFIELD

SAMPLE NUMBER LOCATIONS

DRAWN BY	R.A.P.
DRAFTSMAN	S.F.
DATE	June, 86
REVISIONS	
FILE NO.	

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 29



LEGEND

- ∘ Wacker Sample
- × Rock Chip Sample
- · Soil Sample
- ● Pan Concentrate
- ⁄ Stream Sediment

5 cm

NOTES: (1) Samples prefixed SS taken by Hutton in 1977-78
(2) Samples in the range, 11300 - 11600 taken by Poltock in 1983-84
(3) Samples in range 13800 — 15900 taken by Poltock in 1984-85
(4) Samples prefixed T taken by Poltock in 1985-86

SHEET INDEX

	Garfield	Jukes
	FLANNIGANS	Snake
	Sorell	Darwin

GN TN MN
GRID CONVERGENCE 0°50'
GRID MAGNETIC ANGLE 12°

The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0.9 miles) Easterly.

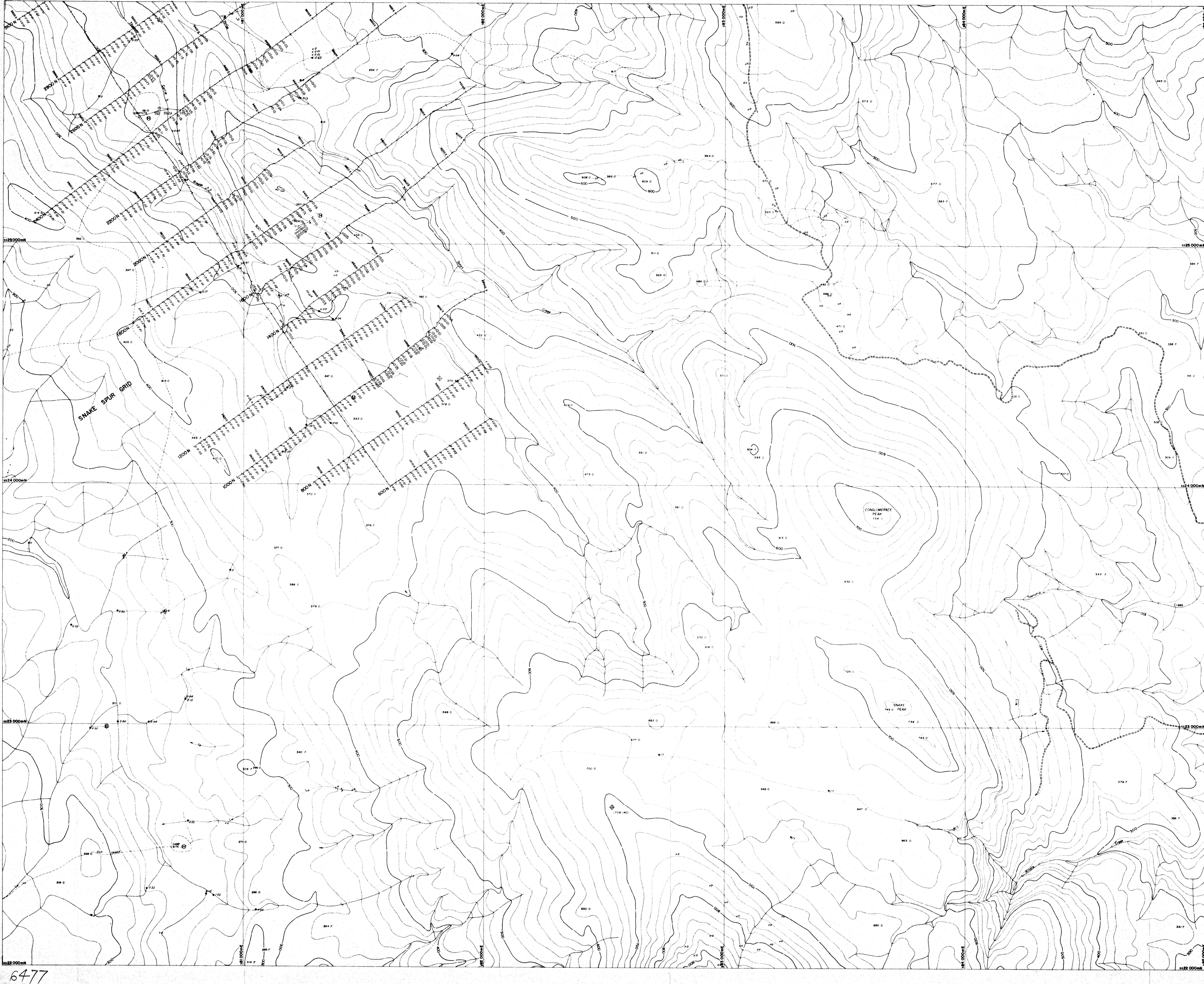
86 - 2566 3|3

6476

014287

GOLD FIELDS EXPLORATION PTY. LIMITED	
E.L. 9/66 – TYNDALL PROJECT FLANNIGANS SHEET SAMPLE NUMBER LOCATIONS	DRAWN BY : R.P. DRAFTSMAN : S.F. DATE : JULY 85 REVISIONS : FILE NO.
SCALE 1:5000 (100 0 100 200 METRES)	FIG. 30

6476



LEGEND
∘ "Wacker" Sample
× Rock Chip Sample
● Panned Concentrate
– Stream Sediment

5 cm

SHEET INDEX

Barfield	Jukes	Crotty
Flannigans	SNAKE	Andrew
Sorell	Darwin	Kelly

GN TN MN
GRID CONVERGENCE 0°50'
GRID MAGNETIC ANGLE 12°

The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0·9 miles) Easterly.

014288

86-2566 3|3

6477

GOLD FIELDS EXPLORATION PTY. LIMITED

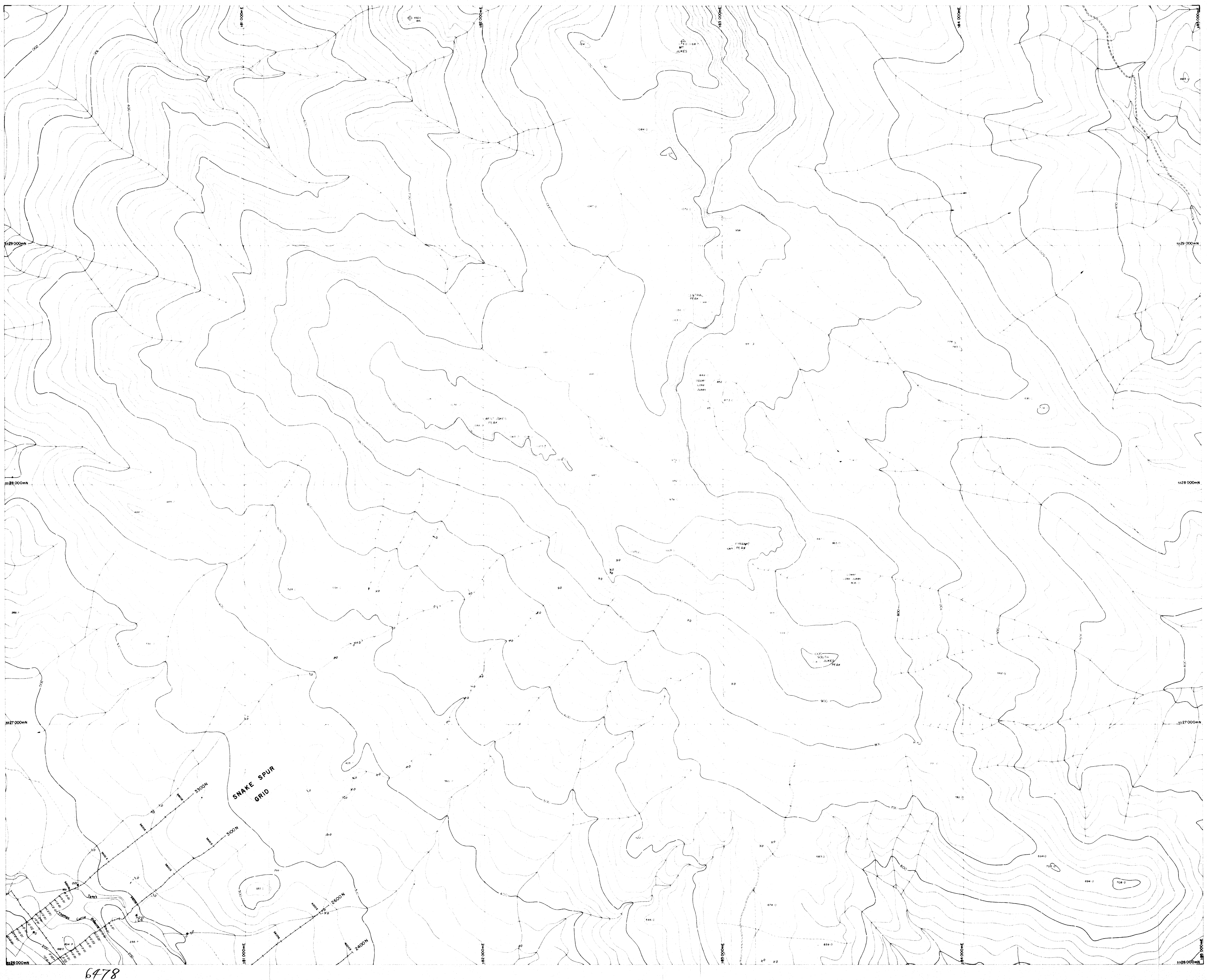
E.L. 9/66 - TYNDALL PROJECT
SNAKE SHEET

SNAKE SPUR GRID
Au GEOCHEMISTRY

DRAWN BY C.P.
DRAFTSMAN E.V.
DATE July 1985
REVISIONS :
FILE NO.

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 31



LEGEND

Rock Chip Sample

"Wacker" Sample

Panned Concentrate

Stream Sediment Samples

014289

SHEET INDEX

Garfield	JUKES	Crotty
Flannigans	Snake	Andrew

GRID MAGNETIC ANGLE 12°

The relationship between True North, Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 0.3' (0.9 miles) Easterly.

86-2566 3/3

6478

GOLD FIELDS EXPLORATION PTY. LIMITED

TYNDALL — E.L. 9/66

JUKES

Au

GEOCHEMISTRY

DRAWN BY : F.G.F.

DRAFTSMAN : S.F.

DATE : June, 86

REVISIONS :

FILE NO.

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 32

6478

014290

5 cm

SHEET INDEX

	Newall	Huxley
	GARFIELD	Jukes
	Flannigans	Snake

TN GN MN
GRID CONVERGENCE 0°60'
GRID MAGNETIC ANGLE 12°

The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 05' (0·0 miles) Easterly.

86-2566 3|3 6479

GOLD FIELDS EXPLORATION PTY. LIMITED

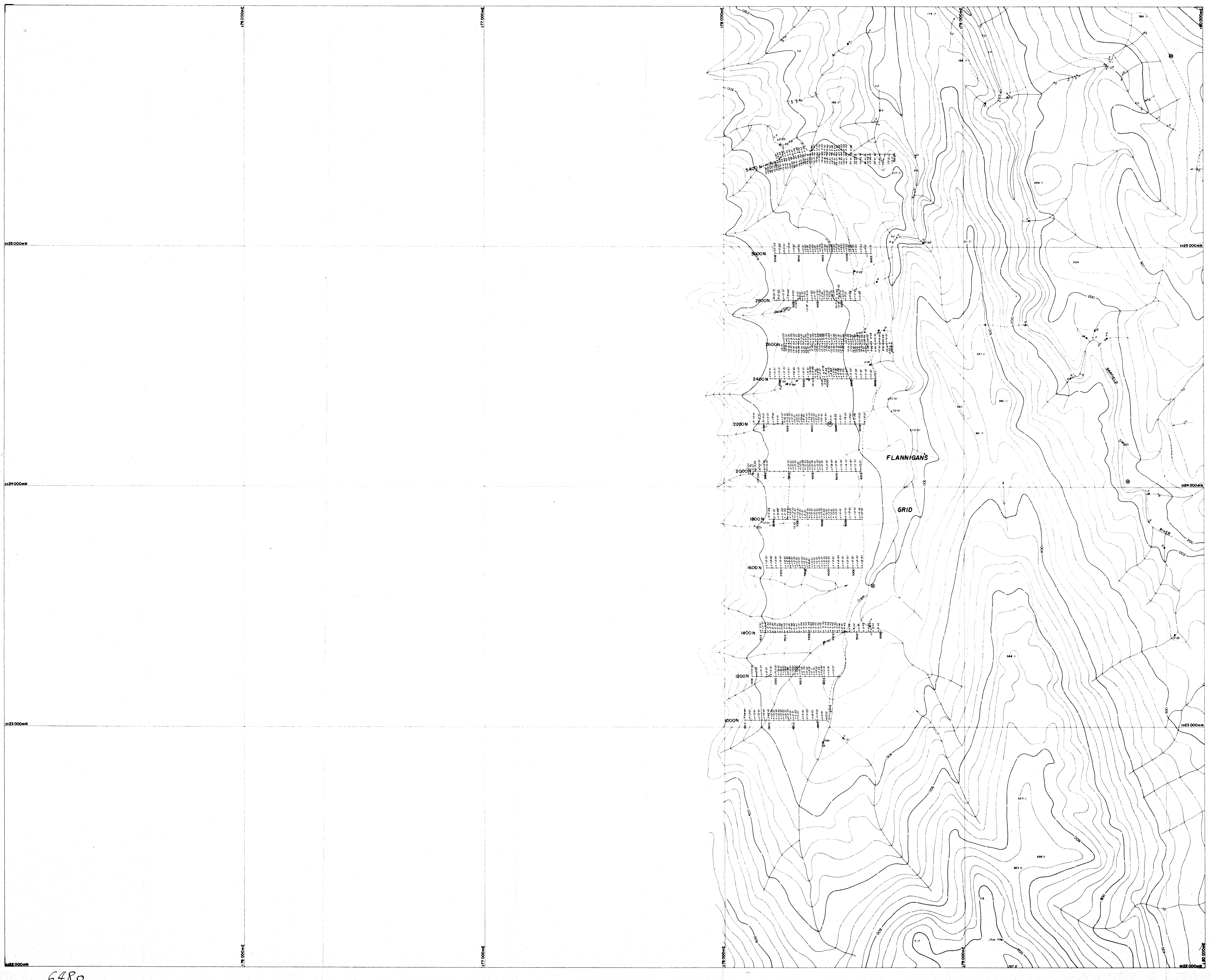
TYNDALL - E.L. 9/66
GARFIELD
Au
GEOCHEMISTRY
(p.p.m.)

DRAWN BY :
DRAFTSMAN :
DATE :
REVISIONS :
FILE NO.

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 33

6479



LEGEND

- o Wacker Sample
- • Soil Sample
- × Rock Chip Sample
- ● Panned Concentrate : Au value corrected for weight of sample
- \ Stream Sediment : -80# fraction

5 cm

SHEET INDEX

	Garfield	Jukes
	FLANNIGANS	Snake
	Sorell	Darwin

GRID CONVERGENCE 0°50'

GRID MAGNETIC ANGLE 12°

The relationship between True North, Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 03' (0·9 miles) Easterly.

014291

86 - 2566 3|3 6480

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 9/66 – TYNDALL PROJECT

FLANNIGANS SHEET

Au

GEOCHEMISTRY

(p.p.m.)

DRAWN BY : R.P.	
DRAFTSMAN : S.F.	
DATE : JULY,85	
REVISIONS :	
FILE NO.	

SCALE 1:5000 — 100 0 100 200 METRES

FIG. 34

6480