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PROGRESS REPORT E.L. 1/77

TEMMA AREA

1981

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W. HERRMANN
J. SUMPTON

JANUARY, 1982.

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GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LIMITED

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ABSTRACT (200 words or less)

Detailed and reconnaissance exploration on intense magnetic anomalies of the Temma Area indicated the anomalies are due to the crosscutting dyke-like bodies containing assemblages of magnetite-carbonate-ferroan amphibole-chlorite-quartz-minor sulphides. They contain considerable iron and manganese and weakly anomalous copper and titanium in bodies ranging upto approx. 5×10^6 tonnes.

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1.0 INTRODUCTION

Exploration Licence 1/77 - Rocky Cape is held by CRA Exploration Pty. Ltd. Exploration for tin, tungsten and base metals is currently being undertaken in Joint Venture with Geopeko.

Previous work by CRAE, (T.M. Porter, 1977) indicated anomalous levels of tin and tungsten in panned concentrates from streams draining magnetically anomalous zones in the Temma-Nelson Bay area.

This report details the results of exploration carried out by Geopeko, in the Temma area, during the winter of 1981.

2.0 SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Detailed investigation involving gridding , geological mapping, soil/rock geochemistry and geophysical surveys, was carried out over the large magnetic anomalies at Nelson River, Possum Creek and the Strickland Mine area.

Reconnaissance magnetic surveys and geological mapping were carried out over ten other magnetic anomalies and mineral occurrences in the area embraced by a 1980 aeromagnetic survey of the Temma district.

The results indicate that the intense magnetic anomalies relate to narrow, crosscutting dyke or vein like bodies composed of varying assemblages of magnetite, carbonate, iron rich amphibole, chlorite and quartz. These contain considerable iron and manganese and are weakly anomalous in copper and titanium. Several occurrences of quartz-sulphide vein mineralization containing significantly anomalous copper, lead, silver and traces of gold were examined. These show a spatial and structural relationship to the magnetite lodes but appear to be of much lesser extent and continuity.

Neither the magnetite bearing lodes nor the associated quartz-sulphide veins nor the superficial (dune) sands of the coastal strip were found to contain significantly anomalous tin or tungsten.

It is recommended that follow up panned concentrate sediment sampling be carried out in streams of the Temma area to verify previously reported anomalous tin-(tungsten) values and to identify the source areas.

It is recommended that anomalous tungsten values and scheelite occurrences reported by A & NZ Exploration Co. in 1972 should be investigated by further panned concentrate stream sediment sampling.

On the basis of the low grade/moderate tonnage and moderate-high grade/very low tonnage indicated for the magnetite lodes and quartz-sulphide veins, respectively, it is recommended that no further work be carried out on these occurrences.

3.0 PREVIOUS WORK

The earliest published work on the geology of the Temma area is that of Ward, (1911) who spent the winter of 1910 in the field and reported on several of the magnetic or quartz-sulphide bearing lodes known at the time.

Ward noted the similarity between the iron rich lodes of the Temma area and other occurrences south of Mt Balfour and in the Norfolk Range. (pp 47-48.) He indicated that the magnetite-hematite-ferriferous dolomite lodes were but variants of the 'normal' quartz-pyrite-chalcopyrite bearing 'copper lodes' of the region and suggested a zonal relationship between the copper lodes and the tin-tungsten lodes, all ultimately related to Devonian granite intrusives.

It seems that the area was fairly well prospected, even upto fairly recent times, but very little ore was produced. (c.f. Appendix 8.5)

In the mid 1960's Pickands Mather & Co. International undertook detailed investigations of the Nelson River and Temma (Strickland) iron lodes, presummably to test for iron ore potential. The work culminated in drilling of three holes; one at Nelson and two at Temma. One of the latter intersected a 20m magnetite zone reported to contain 0.1% tin.

assay failure? not confirmed by reassay see p27-28.

During 1973, the A & N.Z. Exploration Co., under E.L. 8/72 carried out geological reconnaissance and panned concentrate stream sediment surveys which successfully detected anomalous tungsten and specks of scheelite in Sundown Creek (north of the Nelson River) and in a tributary of the Arthur River (3km south of the Salmon River). No follow up work was considered justified.

A regional drainage geochem. survey of E.L. 1/77 by CRAE in 1977, indicated anomalous values of tin (150-1350ppm) in panned concentrate samples from four streams draining areas of aeromagnetic anomalies. Ground reconnaissance established that the magnetic anomalies related to the 'banded magnetite unit(s)' intersected by Pickands Mather.

Limited soil and outcrop geochemical sampling failed to locate anomalous tin values. The mineralized intervals of the two Temma core holes were resampled and it was found that tin was not present at anomalous levels. Tungsten values ranged from 30 to 250ppm and these were considered of possible significance.

The apparent co-incidence of panned concentrate and magnetic anomalies was sufficient to encourage further work in the area based on the stratabound tin mineralization model (Porter, 1977) and to re-examine the magnetite bodies for tungsten potential.

4. REGIONAL RECONNAISSANCE

4.1 Aeromagnetic Survey

An airborne magnetometer survey of the Temma district, between the Nelson Bay River and Ordnance Point and eastwards to longitude 144° 41' 30"E, was flown by Austirex Aerial Surveys Pty Ltd in August, 1980.

The contoured data (plan No's TS 1/77 Tem 2, 3) shows a number of strong anomalies with NW trending axes, roughly aligned with regional geological structure, suggesting a stratabound association.

The Nelson River anomaly was immediately selected for ground follow up on the basis of its magnitude and scale.

Most of the remaining accessible anomalies were the subject of brief ground magnetic/geological reconnaissance and were 'rated' for more detailed work depending upon scale, magnetic, geologic and geochemical characteristics.

4.2 Ground Reconnaissance

The magnetic anomalies were located on the ground with the aid of 1:40 000 scale aerial photographs and initial magnetic reconnaissance conducted by 'compass and pace' traversing at intervals suited to the scale of the anomaly.

The anomaly names, (derived from geographical features) locations and approximate positions of reconnaissance traverse are plotted on TS 1/77 Tem 3.

The Possum Creek and Strickland anomalies were selected for further investigation and the details of these are described in Section 5.

To avoid superflous detail here, the features of the remaining ten anomalies and mineral occurrences are only briefly listed below. More detailed descriptions and magnetic profiles are embodied in Appendix 8.2.

LITTLE EEL: Strong, narrow magnetic anomaly with co-incident VLF-EM response and copper geochem. anomaly. Source not exposed very limited strike extent (< 200m).

REBECCA: Strong, linear magnetic anomaly approx 900m strike length. Attributable to outcropping magnetite-pyrite-quartz lode. Mildly anomalous Cu, Pb, Ag and Au.

GRACE CREEK: Very small but intense magnetic anomaly related to narrow, steeply dipping bodies of magnetite-ferromagnesian cross-cutting chloritized siltstones. Maximum 475ppm copper. Associated quartz-pyrite vein-not anomalous.

COUTA MINE: Sulphide bearing quartz stringers in zone 10m wide, strike, 340° T dip 80° E, cross-cutting folded pyjama siltstones. Upto 0.29% Cu, 9.9 gm/t Ag, anomalous As, Au.

SARAH ANNE: Fairly broad 3000nT magnetic anomaly, strike length less than 300m. No exposure of source but quantitative modelling of magnetic data suggests source could be magnetite type lode 40 metres thick, but with depth to top of about 40m.

COUTA ROCKS: Irregular magnetic anomaly upto 1000nT above background, maximum strike length 200m.

RICHARDSON'S POINT:	Several thin, parallel, discontinous gossanous quartz veins in 5m wide zone, striking for about 200m NNW. Near vertical, cross cutting flat lying siltstones. Upto 840ppm Cu.
UPPER SYMES CREEK:	Very weak broad anomaly 100nT. Response due to geologic formation?
INGRAM BAY:	Erratic magnetic 'spikes' upto 800nT above background in zone 150m wide in 'pyjama' siltstones. Source not observed.
GANNET:	Magnetically noisy zone, 400m wide in 'pyjama' siltstones. Source not observed.

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5. DETAILED PROSPECT EVALUATION

5.1 Nelson River Prospect

The Nelson River magnetic anomaly, situated about 10km NNE of Temma, was selected for detailed investigation mainly on the basis of its very large dimension. The aeromagnetic contour plan shows a large central anomaly of about 1.5km strike length with two subordinate anomalies about 1km to the west and south-east respectively.

Pickands Mather & Co., in 1967, explored the central anomaly and tested it with a single drill hole N401. Magnetite zones intersected in the hole indicated a south westerly dipping magnetic source, containing upto 48.0% iron and slightly anomalous copper and lead.

Field work during June and July 1981, involved re-establishment of the Pickands Mather grid base-line and extension to cover the satellite anomalies. Cross lines were cut at 200m intervals over the magnetic anomalies, and geological mapping, C-horizon geochemical sampling and magnetic surveys, were carried out.

Access to the grid was provided by a rough track which departs the Temma Road from just north of Sardine Creek. The track, in repeated use, soon became very boggy and eventually it became necassary to use a Bombardier to provide daily transport to the grid.

Geology (Refer to Plan No. TD 1/77 Tem11)

Rocks in the Nelson River grid area comprise a layered sequence of finely laminated psammo-pelitic siltstones and medium grained quartzites characteristic of Carey's (1981) Epsilon Group.

The quartzites are generally 'clean' and well sorted, massive or thinly bedded and somewhat subordinate to siltstones, occurring as laterally continous units upto 200m thick.

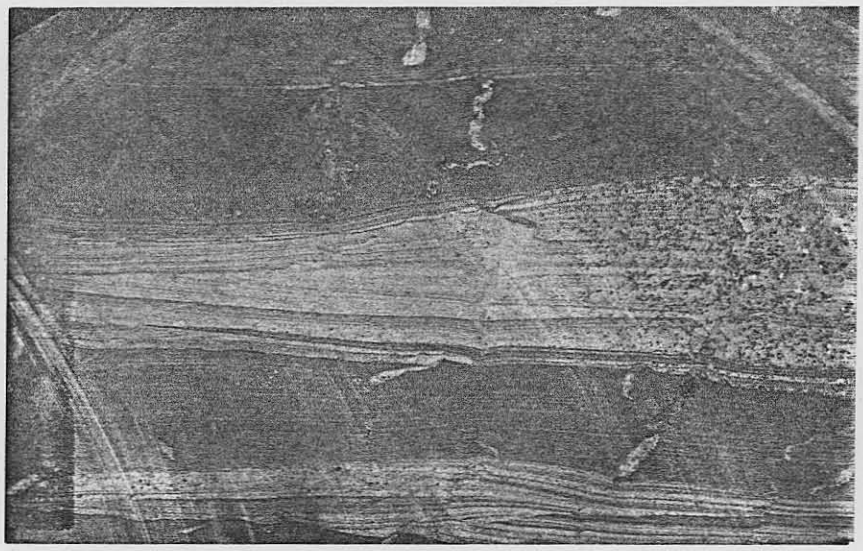
The siltstones show considerable variation from very thinly laminated pelitic types to the dark and light banded psammo-pelitic 'pyjama' siltstones. Various soft sediment structures are locally evident and individual units are probably laterally discontinous (Figure 1).

The rocks strike uniformly NW and dip moderately to the NE. Graded bedding, sand filled dessication (?) cracks in the siltstones and cross bedding and ripple marking in the quartzites indicate the succession is also younging to the NE.

In the western grid extension the rocks are folded about small open, NNW plunging assymetric folds. Smaller folds of megascopic scale and similar orientation have been observed in siltstones near the northern end of the central grid area. The short western limbs are typical of these folds and suggest that they are complementary to a larger anticlinal structure somewhere to the west. Cleavage, apart from some fissility parallel to layering, is not generally developed except in the hinge zones of macro and mega-scopic folds. In these instances the cleavage appears to be axial to the folds, striking NNW and dipping steeply to the west.

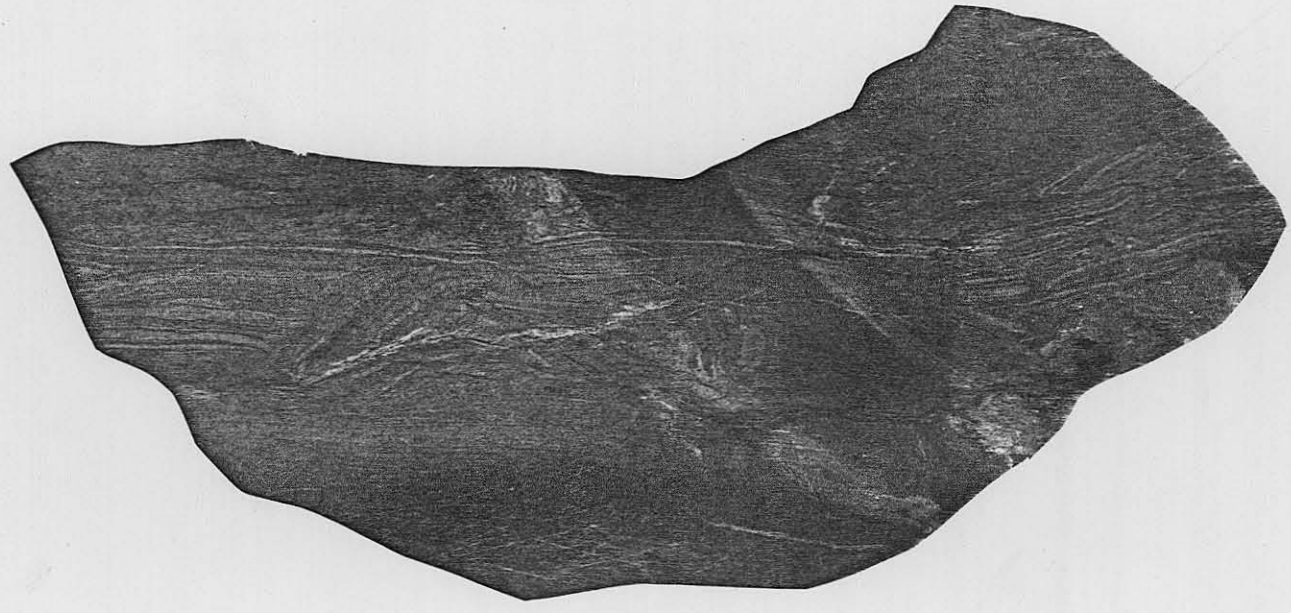
An iron-rich lode outcrops discontinously along the low ridge between 10200N and 9400N with a further small outcrop at 8200N. At surface the lode is generally quite magnetic and consists of a medium granular aggregate of variably oxidized magnetite in an iron stained clayey or siliceous base.

The lode material does not appear to be layered but in places a prominent fracturing or jointing is present. The fracture planes strike about 340° (T) and dip 60-70° to the west, parallel to the trend of the lode outcrop. The strike of the lode cuts across the lithological boundaries of enclosing rocks at a low angle and maintains regular strike south of 10 000N. Between 10 000N and 10 200N the strike swings slightly to the west; this is, in part at least, attributable to topographic effect coupled with the westerly



N.R. 15 (x1) "Pyjama" type banded psammo-pelitic siltstone

Nelson River : 10560N, 10000E



N.R. 12 (x1) Thinly laminated pelitic siltstone with pre-lithification slump structures.

Nelson River : 10200N, 10200E

5 cm

DATE: 8/1/82
GEOL: W. Herr.
DWN: R.Tog
CHKD:

GEOPEKO LIMITED

E.L. 1/77 NELSON RIVER SAMPLES.

FIG. 1

dipping lode. (Fall in elevation from lode outcrop on 10 000N to outcrop on 10 200N is estimated at about 60 metres.)

The detailed structural relationship between magnetite lode and enclosing rocks has not been observed in outcrop.

Carey's (1981) geological interpretation shows the Nelson River lode lying on the 'Lagoon River Fault' which is a major offshoot of the 'Balfour Deep Fault' but this could not be verified by surface mapping.

In the trench near 10 200N, 10 150E, a rock composed of compact fine grained chlorite occurs adjacent to the contact of the (weathered) magnetite lode. The chloritic rock (KR 8042) has similar geoghemical characteristics to the magnetite lode.

Analysis of rock chips taken from various points along the lode outcrop, KR's 8031-8045, (refer to TS 1/77 Tem 11) indicate iron contents in the range 19 to 48% and weakly anomalous copper. Mean and maximum values of metals analysed, are tabulated as follows:

	X	Max
Cu	160	475ppm
Pb	40	105ppm
Zn	60	130ppm
Fe	34%	48%
Mn	1470	7200ppm
Co	35	45ppm
Ni	85	115ppm
As	40	170ppm
Ag	0.1	1.3ppm
Au	X	X
Bi	X	X
Mo	1.5	7ppm
Sn	4	10ppm
W		15ppm

N401

DDH N401 (Pickands Mather, 1967) was collared at 10 005N, 10 099E (1981 grid co-ordinates) and drilled at inclination -45° to grid east. Final depth: 137.66 metres.

The hole progressed more or less down dip in slightly metamorphosed psammo-pelitic siltstones and intersected two principal magnetite bearing zones between 53.2-54.0m and 60.9-72.9m depth. Projection of the latter intersection to the surface outcrop indicates a dyke like body dipping at about 55° to the (grid) west. (See figure 4.)

This drill core was acquired (from the Tasmanian Department of Mines) and re-examined.

The upper magnetite intersection is rather oxidized but the principal zone is quite fresh. Its consists of from 10-80 per cent magnetite as equant euhedra 0.2-2mm dia, in a fibrous-radiating base of pale greenish grey amphibole, probably grunerite. Minor amounts of quartz, carbonate, actinolite and sphene (?) are sometimes associated.

Alteration of the host siltstones adjacent to the magnetite zones, is quite pronounced. The host siltstones are generally strongly chloritized for upto several metres distance from the magnetite contacts. Close to the contacts, garnet sometimes occurs in a dense granular aggregate with minor interstitial chlorite. Garnet content generally decreases away from the magnetite zones but appears to be present as a minor constituent (< 1%) in the siltstones throughout N401.

Even in strongly altered rocks primary layering and sedimentary structures are sometimes well preserved and it is evident that chloritization and garnet development has been more intense in the pelitic layers. Alteration is not restricted to the margins of the magnetite zones but also occurs, probably related to fractures, in several places further up and down the hole.

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One instance, at 78.0 metres, clearly illustrates the cross cutting relationship of alteration with respect to sedimentary layering.

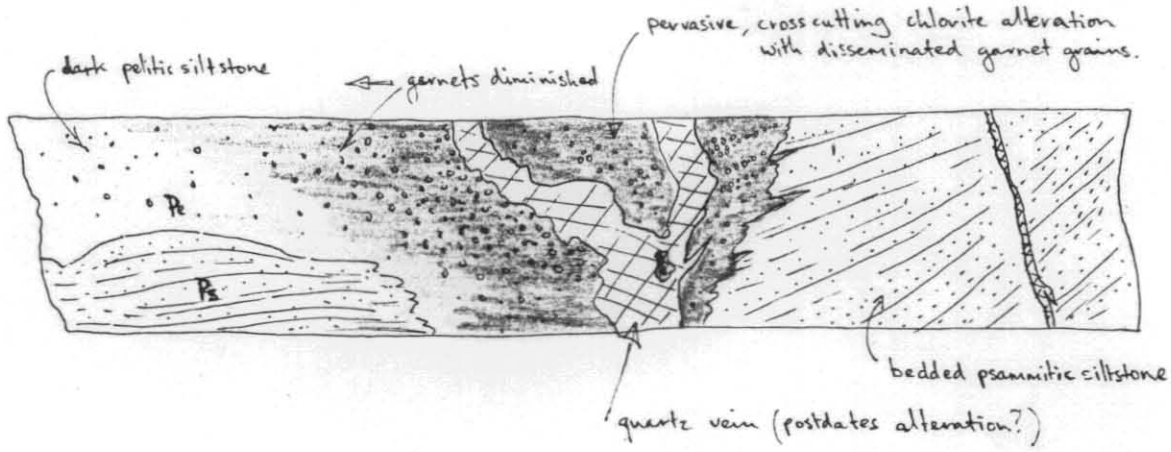
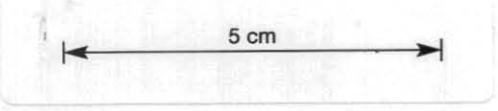


FIGURE 2. Sketch of Core: N401, 78.0m. Natural Scale.



Core Analysis

One foot sections of core, at five foot intervals through the main magnetite zone and a short distance into the footwall, were split and analysed for Cu, Pb, Zn, Ag, Fe, Mn, As, Au, Sn and W. The results are tabulated in Table 1. Maximum copper, lead, iron and manganese values were 350ppm, 260ppm, 29.0% and 5.8% respectively. (Note sharp decrease in iron in the footwall.) Tin, tungsten, zinc, gold and silver are not present in significant quantity.

ANALYSES OF PICKANDS MATHER CORE

Hole : DDH N401
Prospect : Nelson River
Date : August, 1981.

Sample Number	Depth m.	Depth Ft.	Sn	W	Cu	Pb	Zn	Ag	As	Fe	Mn
KR 8065	52.31 - 53.83	171'6" - 176'6"	x	x	30	15	105	x	30	26.5	1.4
8066	61.0 - 61.31	200'0" - 201'	4	x	20	x	50	x	10	12.5	1.6
8067	62.53 - 62.83	205' - 206'	5	x	10	5	35	x	4	27.0	0.42
8068	64.05 - 64.36	210' - 211'	x	x	60	x	40	x	150	24.0	0.29
8069	65.58 - 65.88	215' - 216'	x	x	170	x	25	0.1	8	24.0	0.16
8070	67.10 - 67.41	220' - 221'	x	x	65	5	25	x	2	18.0	0.80
8071	68.63 - 68.93	225' - 226'	3	x	105	10	25	x	8	29.0	0.44
8072	70.15 - 70.46	230' - 231'	5	x	30	x	15	x	2	11.5	0.13
8073	71.68 - 71.98	235' - 236'	x	10	175	20	45	x	3	29.0	3.4
8074	73.20 - 73.51	240' - 241'	7	x	350	50	30	0.1	5	9.0	5.8
8075	74.73 - 75.03	245' - 246'	7	x	85	20	60	x	2	6.3	0.27
8076	77.78 - 78.08	255' - 256'	8	x	25	260	35	0.6	5	3.0	0.13
8077	80.83 - 81.13	265' - 266'	7	10	15	185	50	x	9	3.9	0.08
		Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		Detection	3	10	5	5	5	0.1	1	.0005	.000
	(Analabs)	Method	XRF	XRF	A1/1	A1/1	A1/1	A1/2	A1/3	A1/1	A1/1

** Gold values all below detection (0.008, LG 40)

Geochemistry

C-horizon soil samples were collected at 25 metre intervals along all cross lines of the grid. Additional samples, at 12.5 metre intervals, were collected over the zone of lode outcrop in the central part of the grid. Sample localities and numbers are illustrated on Plan No. TS 1/77 Tem 14.

In accessible areas, close to the base line and on the western extension, samples were obtained with a Bombardier mounted 'Jacro' power auger. In the more thickly vegetated areas and on steep slopes of the Nelson River valley, samples were collected with a 'Mate' portable motor driven auger. (Figure 3.)



Figure 3: C-horizon sampling with 'MATE' auger.

The -80 mesh fraction of dried samples were analysed by Analabs for the following elements:

Cu, Pb, Zn, Fe, Mn, Ag	Atomic Absorption Spectrophotometry
Sn, W	X-ray Flourescence

The analytical results are listed in Appendix 8.4 and copper, lead and iron values are shown in contoured Plans TS 1/77 Tem 15, 16, 17.

The C-horizon analyses indicate weak copper and lead anomalies (peaking at 350 and 725ppm respectively) coincident with a strong iron anomaly. The anomalies, especially iron, are closely coincident with the mapped outcrop of magnetite lode and the axis of the magnetic anomaly.

Background values, away from the lode, are uniformly low and despite the low magnitude of copper and lead values the anomalies are quite distinct. Zinc, silver, tin and tungsten values show no anomalous character and have not been plotted. Manganese values are surprisingly low and somewhat erratic but generally correlate with iron.

A spot high of 570ppm Cu coincident with a weak iron anomaly occurs at 11200N, 9325E, displaced from the western magnetic anomaly. This geochem anomaly possibly relates to minor occurrence of quartz veins in that vicinity.

TABLE 2 Nelson River Rock Chip Samples

(Analyses in Appendix 8.3)

KR 8030	7800N,	9860E	Gossanous vein quartz float.
KR 8031	8185N,	9885E	Sugary magnetite-quartz.
KR 8032	8190N,	9885E	Banded gossan after sulphide and magnetite, some relict pyrite.
KR 8033	9180N,	9885E	Quartz vein float, 2% disseminated oxide pyrite.
KR 8034	9190N,	9890E	Weath. magnetite rock assoc. with weath. chlorite rock
KR 8035	9485N,	10000E	Non magnetic gossanous ironstone.
KR 8036	9605N,	10053E	Oxidized magnetite in siliceous base.
KR 8037	9600N,	10048E	Compact hematite, minor quartz slightly magnetic.
KR 8038	9800N,	10125E	Massive cse. grained magnetite.
KR 8039	9745N,	10122E	Massive-granular magnetite in brown limonitic? base.
KR 8040	10000N,		" " " " " " "
KR 8041	10000N,		Granular mt-hem in limonite quartz base.
KR 8042	10200N,	trench	Massive chloritized siltstone.
KR 8043	10200N,	trench	Slightly altered semi pelitic siltstone.
KR 8044	10200N,	trench	Oxidized, leached mt-qtz ironstone.
KR 8045	10200N,	10145E	" " " " "

5.2 POSSUM CREEK PROSPECT

The Possum Creek anomaly is situated just north of the Balfour track, about 5km south-east of Temma.

Magnetic reconnaissance indicated a narrow linear anomaly of upto 8000nT, with a strike length of about 1200 metres. Lode material, exposed in some old shafts at the southern end, and consisting of an assemblage of magnetite-siderite-quartz-pyrite-chalcopyrite was found to contain anomalous copper (upto 1.2%).

A surveyed grid, with lines at 200m intervals, was established over the main anomaly with extensions to cover a possibly related subsidiary anomaly some 800m to the north-east.

Geology

The geological environment of the magnetic lode is largely obscured by superficial dune sands which cover much of the western part of the grid. The sands are unlithified, clean and fine grained and may be upto 12 metres thick. Marine shells and rounded pebbles found at the base of the sand (8.6m) in an auger hole at 11100N/10000E, suggest deposition onto receding shoreline.

At the southern end of the grid rocks immediately east of the magnetic anomaly are finely laminated grey to greenish grey pelitic siltstones. Bedding trends are generally to the north with moderate easterly dips with local variations around small south plunging folds. In these pelitic rocks, a strong cleavage is usually developed and this maintains a fairly consistent orientation striking around 345°T and dipping steeply to the west. The cleavage orientation appears to be axial to the folds and exactly parallel to the trend of the magnetic anomaly in this area. Immediately west of the magnetic feature on line 10400N outcrops are of laminated 'pyjama' type siltstones and minor quartzite.

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They dip and face to the east but are folded about small (megascopic) folds which plunge at low angle to the north. Similar outcrops exist further west along the Balfour track and to the south (out of the plan area). The abrupt change in lithology and variations in fold orientation on either side of the magnetic lode suggests that it may occupy a fault plane.

However, on eastward facing pyjama siltstone-quartzite unit occurs on the 11200N tie line at about 10600E and it is equally likely that psammo-pelitic and pelitic units form a rythmically layered succession.

The geology of the north eastern extension is equally imperfectly understood since it is entirely within forest and outcrop is poor. This area is partly covered by Tertiary basalt which outcrops in a couple of places along the 10900N baseline. C-horizon iron values suggest fairly widespread basalt cover though boundaries cannot be confidently drawn.

The magnetic lode itself is exposed for a length of about 40m in the vicinity of several abandoned shafts and trenches on 10200N. Outcrop is incomplete but is seems that the lode is between 5 and 10 metres thick. In outcrop, the lode material consists of oxidized magnetite (hematite, limonite) almost massive or as disseminated granules in an apparently siliceous base. Fresher samples from the mullock dumps contain various assemblages of magnetite carbonate, ferromagnesian (amphibole?) chlorite, quartz, pyrite and chalcopyrite. Magnetite content varies considerably from about 10% (as small equant granules disseminated in a fine matrix of stellate amphibole) to upwards of 70% (near massive with interstitial carbonate etc. The carbonate is dark grey with brownish oxidation along cleavages and is probably a form of ankerite. (The carbonate rich samples, KR 8008, 8049 contain 5.0 and 6.4% Mn.)

In the carbonate rich samples sulphides (mainly pyrite lesser chalcopyrite) constitute upto about 15% of the bulk. The sulphides and magnetite occur in interstitial patches and chains between large (1cm) grains of carbonate and also as fine disseminated grains along cleavage planes in the carbonate. Samples collected from this area contained anomalous copper (220ppm - 1.2%), upto 10.5g/t silver and a trace of gold. (See Table 3 and Appendix 8.3)

As at Nelson River strong alteration of the enclosing siltstones occurs adjacent to the lode. Actual width of alteration zone was not observed but samples from the dumps (e.g. KR 8002) consist of massive fine grained chlorite with small garnet grains disseminated or in trains suggesting selective replacement of sedimentary layers. Similar chloritic material (and a single chip of weathered magnetite-quartz?) is present in chips from the C-horizon sample at 10800N, 10287.5E.

No surface expression of the north eastern magnetite anomaly was observed. A small patch of surface float, consisting of fine chlorite-granular garnet rock, occurs near 1100N, 11060E, slightly displaced from the peak of the magnetite profile.

Geochemistry

Jacro auger C-horizon sampling over the main magnetic zone indicated closely coincident copper, lead, zinc, and iron geochemical anomalies obviously related to the magnetite source. (See Plans TS 1/77 Tem 27-30.)

The anomalies are very distinct against low background values and there is practically no lateral dispersion. Base metal values peak at 2.65%Cu, 5000ppm Pb, and 550ppm Zn (at 10800N, 10287.5E) but the area enclosed by the 200ppm contour in each case is relatively small. The anomalies do not extend north of 11000N and there is no geochemical feature over the northern part of the magnetic anomaly (11200-11400N).

It is concluded that this part of the anomaly has a similar magnetic source buried at some depth.

The geochemical picture on the north eastern extension (Mate sampled) is somewhat confused by the presence of basalt cover but there is some correlation between copper-lead and the magnetic anomaly. The garnet-chlorite float on 11000N is associated with a copper-iron geochem feature.

In order to test the possibility that the source of the panned concentrate Sn/W anomaly in Possum Creek (Porter, 1977) was in the superficial dune sands, five auger holes were drilled at 300m intervals along the 10000E base line. (Refer to Table 6.)

Samples were collected over 2m intervals and the -80 mesh fractions analysed as usual and the +80 mesh fractions also analysed for Sn, W. (Results tabulated in Appendix 8.4.)

The results indicated a maximum of 10ppm Sn, 0.5ppm W in the -80 fraction and 1ppm Sn, 0.5ppm W in the +80 fraction.

These results, though few, suggest that the stream sediment anomalies are not attributable to reconcentration of Sn/W derived from the dune sands.

TABLE 3 POSSUM CREEK ROCK CHIP SAMPLES

(Analyses listed in Appendix 8.3)

KR 8003	10200N, 10190E	Chlorite-garnet metasomatized siltstone.
KR 8004	10200N, 10190E	Magnetite-amphibole lode material, disseminated chalcopyrite, pyrite.
KR 8005	10200N, 10190E	Magnetite-quartz-garnet?-amphibole lode material
KR 8007	10215N, 10190E	Masive compact magnetite, minor quartz and carbonate.
KR 8008	10215N, 10190E	Dominantly carbonate with 10% py-cpy patches of fine magnetite.
KR 8009	10215N, 10190E	Leached magnetite-carbonate gossan cut by thin quartz veinlets.
KR 8049	10200N, 10190E	Similar to KR 8008.
KR 8101	10205N, 10260E	Quartz vein material from 10cm wide stringer zone.
KR 8125	11000N, 11060E	Fine grained chlorite rock with disseminated garnets. (1mm)
KR 8126	11000N, 11060E	Oxidized medium grained sugary granular garnet-chlorite rock.
KR 8127	10730 10900	Quartz veinlets in laminated siltstone.

TABLE 6 POSSUM CREEK

Superficial Sand Sample Locations

SAMPLE NO.	CO- ORDINATES	DEPTH
TS 12801	10000E / 10200N	0 - 2 metres
12802	" "	2 - 4
12803	" "	4 - 5
12809	10000E / 10500N	0 - 2
12810	" "	2 - 2.6
12811	(Duplicate of 12810)	
12812	10000E / 10800N	0 - 2
12813	" "	2 - 4
12814	" "	4 - 6
12815	" "	6 - 8
12816	" "	8 - 10.3
12817	10000E / 11100N	0 - 2
12818	" "	2 - 4
12819	" "	4 - 6
12820	" "	6 - 8
12821	" "	8 - 8.6
12822	10000E / 11400N	0 - 2
12823	" "	2 - 4
12824	" "	4 - 6
12825	" "	6 - 8
12826	" "	8 - 10
12827	" "	10 - 12

5.3 STRICKLAND PROSPECT

The Strickland Prospect is the name applied to a group of old mine workings in the vicinity of a large aeromagnetic anomaly 3.5km east of Temma.

Numerous small shafts and trenches were sunk along a magnetite bearing lode and on small lead-silver veins slightly to the west. (Many of these are attributed to the labour of Barney Williams, c.f. Appendix 8.5). Despite the intensive prospecting it is doubtful whether significant production was attained.

Pickands Mather & Co. International explored the area (referring to it as Temma Prospect) during the mid 1960's and drilled two diamond core holes under the peaks of the magnetic anomaly. One of these, T301, intersected a 20m magnetite zone reported to contain 0.08-0.10% tin.

Porter (1977) described reconnaissance work carried out at the prospect (termed Temma No. 1) and mentioned the occurrence of 'massive fine grained banded galena and fine magnetite-quartzite'. Porter (1980) discovered that the intersection in T301 was not anomalous in tin but did contain upto 250ppm W.

Objectives of the work carried out here in 1981 were threefold:

1. To define the extent of the evidently rich Pb-Ag mineralization.

2. To cover part of the main magnetic anomaly with C-horizon geochemical sampling to check Cu, Ag, Sn, W, potential.

3. To extend surveys over the chain of weaker magnetic anomalies extending some 2km northwards to test for lateral zoning based on the stratiform Sn mineralization model. (Porter, 1977.)

Accordingly, the northern half of the Pickands Mather grid was re-established with extensions to cover the northern magnetic anomalies.

Geology (Refer to Plan No. TS 1/77 Tem 35)

Much of the area is overlain by thin cover of superficial sand and, to the east, by Tertiary basalt. The underlying rocks are finely laminated pale grey pelitic siltstones with minor psammitic components. They trend regularly north-west and dip steeply, 55-75°, to the north-east.

The principal magnetic anomaly trends about 335°T and relates to a partly ourcropping magnetic lode upto about 15m in width. At surface this generally consists of variably oxidized magnetite (hematite, limonite) with quartz and clayey minerals. At depth (intersected in T301) it is seen to consist of fractured granules of magnetite (0.2-2mm) in a matrix of quartz, carbonate and white mica. The strong wallrock alteration (so characteristic of Nelson River and Possum lodes) does not occur and the enclosing siltstones are composed mainly of fine quartz, white mica (and carbonaceous particules) with minor chlorite, usually in distinct bands parallel to layering. At the northern end of the main anomaly some pyrite occurs within (or in quartz veins associated with) the magnetite lode. Surface rock chip and re-analysis of core indicates that the main lode contains slightly anomalous copper, lead, zinc and iron upto 32.5%. (Refer Table 4 & 5 and Appendix 8.3.)

The cluster of shafts near 10150N, 10020E are related to a smaller, less intense, magnetic anomaly en echelon to the principal anomaly. The workings are overgrown and inaccessible but much mullock material indicates the mineralization consisted of two types:

1. Magnetite-quartz-carbonate-mica? assemblage similar to the main lode as intersected in T301, perhaps with a little pyrite.

2. Vienlet associated quartz-chalcopyrite, pyrite, galena mineralization occurring in wallrock siltstones and in fine fractures and veinlets within type (1) above.

It appears that fairly intense, but localized, chloritization of the siltstone host rocks accompanied both types of mineralization.

Selected samples of galena bearing vein material (KR 8012, 8020) contained upto 40.9% Pb and 535 gm/t Ag. Samples of galena bearing magnetite material returned upto 13.9% Pb and 150gm/t Ag. (KR 8013, 8018.) A sample of quartz-chalcopyrite veins in chloritized siltstone (KR 8015) contained 3.3% Cu and 74 gm/t Ag. The sulphide vein association appears to be a very restricted occurrence superimposed on the magnetite lode but not co-extensive with it. This is borne out by the C-horizon geochem data which suggests that the potential tonnage is small.

Geological exposure on the north-eastern grid is very poor, the most part being covered by basalt. Apart from a small outcrop of quartz-magnetite lode near 10061N,10528E and some similar floaters 150m to the north west, there is no exposure of the magnetic source in this area. The exposures mentioned consist of magnetite-quartz quite similar in appearance to that of the principal lode some 400m to the west. Analyses of rock chips (KR 8128-8133) indicate absence of anomalous metals apart from iron (upto 42.0% Fe).

Soil Geochemistry

C-horizon geochemical sampling (on the basis of experience at Nelson River and Possum Creek) was restricted to the axes of the magnetic anomalies. (Plan No. TS 1/77 Tem 40.) Samples were collected with Jacro or Mate auger and -80 mesh fractions analysed for Cu, Pb, Zn, Ag, Mn, Fe, Sn, W.

The geochem plans (Tem 41-43) show distinct copper-iron and weak lead anomalies coincident with the main (southern) magnetite lode. Less coherent anomalies (with strong lead upto 2.6% probably due to contamination from mullock) occur over part of the small magnetic anomaly centred on 10213.5N, 10050E.

Mate auger sampling over the north eastern anomaly was not successful due to the basalt cover and the inability to penetrate beneath B-horizon clays developed on it. Geochemical values determined reflect higher background in basalt rather than any relationship to the underlying magnetic anomaly (note very uniform iron values close to 10% Fe).

Drill Holes T301, T302

The Pickands Mather drill holes under the magnetic peaks on 9817N and 10061N indicated the bodies were near vertical or steeply dipping to the west. (Refer to Fig. 5.)

Quantitative modelling of the magnetic profiles supports this interpretation and confirms that the magnetite bearing main lode is cross cutting with respect to dip although the strike is parallel to that of the enclosing rocks.

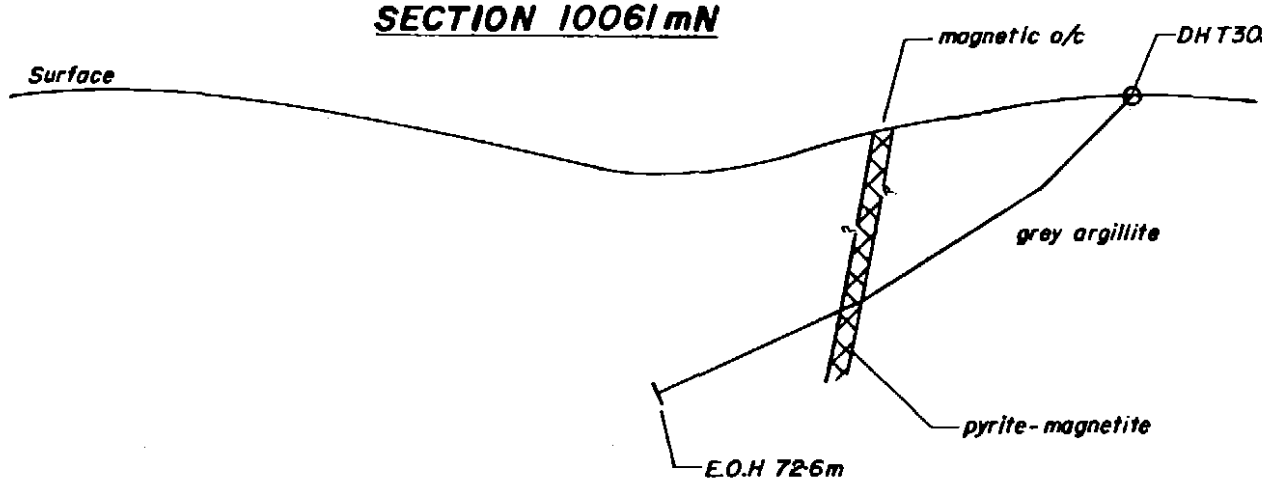
The orientation of the lode, in fact, conforms very closely to that of cleavage observed in the host siltstone near 9915N/10020E and 10366N, 10050E.

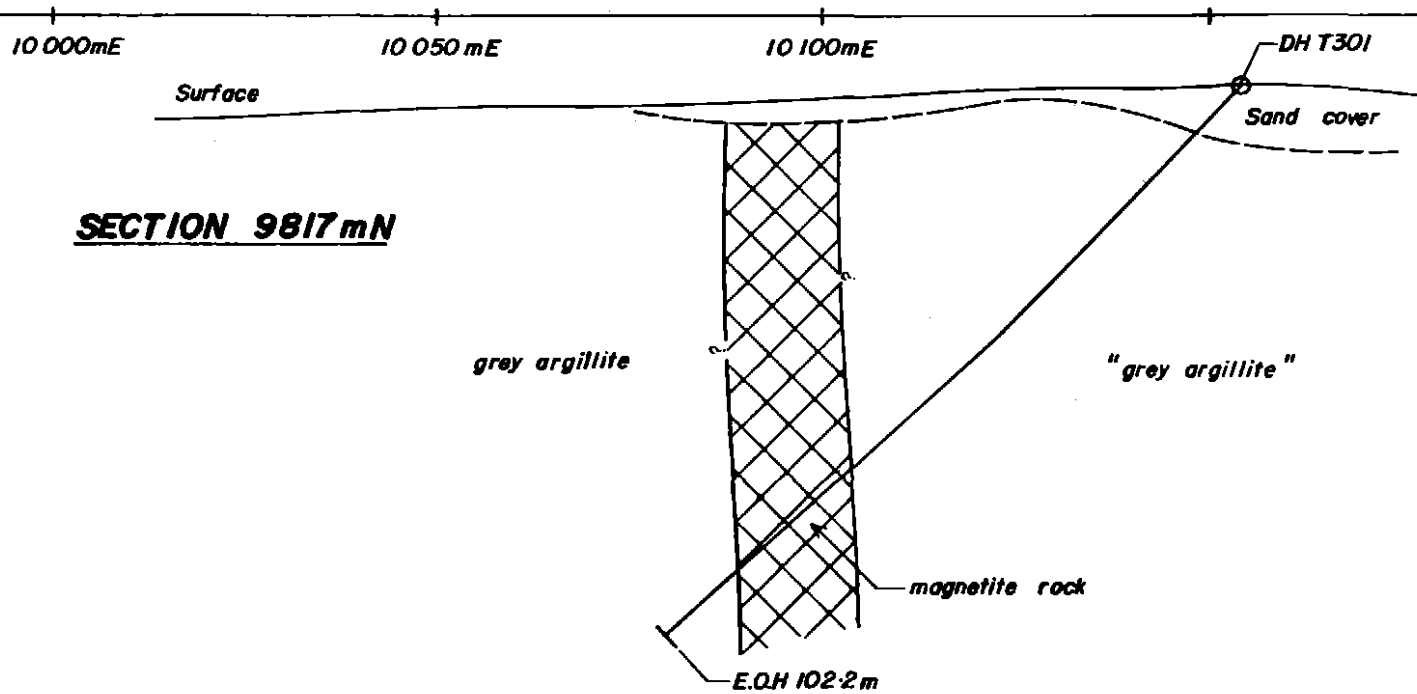
As mentioned previously, the mineralized intersections in T301 and T302 have at various times been reported to contain anomalous tin and tungsten values. This core was obtained on loan from the Department of Mines (Tasmania) and sections of the mineralized intervals resampled, in July 1981. Quarter sawn core samples were analysed for Sn, W, Cu, Pb, Ag, As, Fe and Mn and the results are presented in Table 4.

034

811035

SECTION 10061mN





SECTION 9817mN

STRICKLAND E.L. 1/77

Cross Sections 9817, 10061mN

DRAWN: R.Tog DATE: 7/1/82

GEOL: W.Herrmann CHKD: W.H.

SCALE: 1:1000

FIGURE 5

5 cm

The maximum Sn, W values are 10 and 15ppm respectively. These values are not considered significantly anomalous and do not compare with previously reported results. It is suggested that the latter are erroneous and probably due to analytical sample contamination.

ANALYSES OF PICKANDS MATHER CORE

Hole : DDH T301
Prospect : Strickland (formerly Temma)
Date : August, 1981.

Sample Number	Depth m.	Depth Ft.	Sn	W	Cu	Pb	Zn	Ag	As	Fe	Mn
KR 8051	72.2 - 72.6	236.72' - 238.03'	10	15	115	30	80	x	150	32.5	1.0
8052	72.6 - 73.6	238.03' - 241.31'	4	10	230	50	75	0.3	3200	30.0	2.0
8053	73.6 - 74.6	241.31' - 244.59'	5	x	155	20	35	x	200	26.0	1.6
8054	74.6 - 75.6	244.59' - 247.87'	7	x	155	30	35	x	16	25.0	1.7
8055	80.85- 81.65	265.08' - 267.70'	x	x	800	25	280	0.6	11	31.0	1.5
8056	81.65- 82.65	267.70' - 270.98'	7	x	310	5	65	x	10	25.0	1.5
8057	82.65- 83.65	270.98' - 274.26'	x	x	230	5	55	x	6	32.0	2.5
8058	86.65- 87.65	284.10' - 287.38'	6	x	295	10	55	x	6	26.0	2.0
8059	87.65- 88.65	287.38' - 290.66'	4	x	195	10	65	x	22	23.0	2.6
8060	88.65- 89.65	290.66' - 293.93'	3	x	360	5	40	0.3	11	24.0	0.67

Hole : DDH T302
Prospect : Strickland (Temma)
Date : August, 1981.

Sample Number	Depth m.	Depth Ft.	Sn	W	Cu	Pb	Zn	Ag	As	Fe	Mn
KR 8061	35.91 - 36.91	117'9" - 121'0"	x	x	75	x	70	x	96	5.6	540
8062	36.91 - 37.90	121'0" - 124'3"	10	10	90	15	95	x	120	5.0	465
8063	37.9 - 38.89	124'3" - 127'6"	x	x	380	15	70	x	26	4.7	500
8064	Pyritic fragments bt. (38.89-45.06)	127'6" - 147'9"	x	x	2250	320	190	1.7	1100	19.0	590
		Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		Detection	3	10	5	5	5	0.1	1	.0005	.0005
	(Analabs)	Method	XRF	XRF	A1/1	A1/1	A1/1	A1/2	A1/3	A1/1	A1/1

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TABLE 5

Strickland Rock Chip Samples
(Analyses in Appendix

KR 7445	10061N 10135E	lam-qtz-clay (oxidized Mt lode)
7446	" "	Qtz-fe stained clay.
7447	10183N 10150E	Sugary qtz-pyrite vein material (mullock)
7448	Lode near Little Eel Creek.	Leached magnetite-quartz rock.
7449	" "	" " " "
7450	" "	Mt-qtz lode cut by quartz vein
KR 8001	Trench on (PM) 1600's	Gossanous quartz (pyrite) vein
8002	" "	Leached, oxidized qtz-magnetite lode material.
8010	10110N, 10015E	Gossanous, iron stained qtz (pyrite?)
8012	10152.5N 10025E Mullock	Leached qtz-magnetite with galena
8013	" " "	Mt-qtz-carbonate-mica lode material with rich galena vein.
8014	" " "	Chloritized siltstone transected by qtz veinlets
8015	" " "	Chl. slst. cut by qtz-cpy veins
8016	" " "	Mt-qtz-carb-mica with dissem. cubes pyrite
8017	" " "	Mt-qtz-chlorite-pyrite with cpy in fine fractures
8018	" " "	as above with some galena
8019	" " "	Mt-qtz-carb-chl-with cpy, py in fractures
8020	" " "	5 cm qtz vein with galena, cpy
8021	" " "	Psammitic siltstone, slight chl alteration
8022	" " "	" " strong chl. alt. marginal to qtz vein.
8023	" " "	Chloritized slst with qtz-cpy veins.
8024	10115N 10015E (Trench)	Chloritized ps-pe slst qtz veins (micro faults)
8025	1015.2N 10025E (Mullock)	As for 8024
8026	" " "	Mt-qtz-carb-mica with py-gal-cpy
8027	" " "	Mt-qtz-carb-mica py, cpy
KR 8118	10183N 10150E	Similar to 7447

KR 8119	10105N	10040E	Brecciated graphitic silstone, qtz veins
8120	10061N	10135E	Similar to 7445
8121	10090N	10015E	Leached Mt-qtz-carb? lode material
8122	10000N	10025E	Hematite (after Mt)-qtz lode material
KR 8128	10061N	10525E	Mt-qtz lode material
8129	"	"	Leached quartz vein material
8130	"	"	Composite of above two types
8131	10175N	10550E	Mt-qtz lode with qtz veins
8132	"	"	Compact mt-qtz lode material
8133	"	"	" " " "

6. DISCUSSION

The accumulated evidence indicates that the magnetic anomalies of the Temma area are attributable to magnetite bearing lodes or veins of dyke like form, upto 15m in width and one kilometre in strike length.

The lodes strike NNW-NW, parallel to the regional trend, but dip steeply to the west and are thus clearly crosscutting with respect to the north easterly dipping host sediments. The orientation of the lodes is generally co-incident with (locally developed) cleavage and on a larger scale parallels NW trending faults and the 'Deep Faults' postulated by Carey (1981).

All of the anomalies and mineral occurrences mentioned in this report are hosted by rythmically bedded and laminated pelitic to psammo-pelitic siltstones and minor quartzite of the (Adelaidean) Epsilon Group. (Carey, 1981.) These virtually unmetamorphosed sediments generally dip moderately to steeply to the north-east with minor shallow plunging assymetric 'drag' folds suggesting vergence to a major aniclinal axis to the west.

The magnetic lodes show considerable variation in composition, within and between occurrences. No systematic variation appears to be evident on either the small or regional scales.

The common mineral species is magnetite, from a few percent upto seventy percent, usually occurring with ?Ca Cu-Fe-Mn carbonate, Fe amphiboles, chlorite and quartz in various proportions. Minor disseminated pyrite may be present. Alteration of the wallrocks within a few metres of the lodes is a common feature, usually involving recrystallization of quartz and replacement of pelitic component by chlorite or in extreme cases chlorite-garnet.

These magnetite bearing lodes, and associated alteration envelopes, contain upto 50% iron, 6% manganese and minor copper and titanium (to 0.2% and 0.5% respectively). They do not appear to be significantly anomalous in Pb, Zn, Ag, Au, Bi, Mo, Sn, W, Co, Ni, Ba or As.

At the Possum and Strickland prospects quartz and sulphides, notably pyrite-chalcopyrite-galena, occur in small veinlets and fracture fillings within the magnetite bearing lode and the adjacent alteration zones. Selected samples have yielded upto 3.3% copper, 40% lead, 500gm/t silver and traces of gold (0.06gm/t). This style of mineralization is patchy and not co-extensive with the magnetic lodes.

At several localities (Grace Creek, Couta Mine, Little Eel anomaly, Richardson's Point and Sarah Anne Rocks) vein stringer zones or massive quartz veins, upto 2m thick, occur in similar structural settings and orientations to the large magnetic lodes; sometimes in close spatial association (Grace Creek, Little Eel). These veins commonly have narrow chloritic alteration 'envelopes' upto a few tens of centimetres thick adjacent to the vein margins and may contain disseminated sulphides upto about 5% of the bulk. Pyrite and chalcopyrite are the dominant sulphides. Analyses incidate that these veins are significantly anomalous in copper and silver with minor traces of gold. They contain 10-15ppm of molybdenum; significantly higher than the 0-5ppm Mo typical of the magnetite bearing lodes.

The planar form and sharp contacts of the magnetite lodes suggest that they were emplaced in open fractures. It is implied that the sulphide rich veinlet mineralization was locally superimposed upon the former during subsequent slight rejuvenations of movement along the major fractures. The related quartz (sulphide) stringer zones and massive veins may represent an earlier or later phase of mineralization or possibly indicate a

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mineral zonation due to thermal or chemical gradients in the vicinity of the magnetic lodes. Ward (1911) actually infers a transecting relationship between the quartz and magnetite lodes of the Grace Creek Prospect (then referred to as ML 4279 M) but this could not be verified during this writer's visit.

However, the close structural parallelism of the magnetite and quartz lodes on a regional basis indicates similar tectonic control , which Carey refers to as the direction of dextral shear failure.

The Nelson River magnetite lode in fact lies upon the 'Lagoon River Fault' which is a major branch of the 'Balfour Deep Fault' (Carey).

The various magnetite lodes of the Temma area bear some similarities to the Savage River magnetite deposits as described by Urquhart (1966). More recent studies by Coleman (1975) indicate that the Savage River ore lenses are concordant within a sequence of (metamorphosed) mafic extrusives, andesitic tuffs, magnesites, silicified dolomites and cherts which have all undergone deformation during the Late Proterozoic Penguin Orogeny.

The Temma lodes have certainly not undergone any major deformation and thus are probably younger than the Tabberabberan Orogeny.

It is considered that the magnetic lodes and quartz-sulphide veins of the Temma area are of hydrothermal origin probably associated (along with other vein deposits of the Balfour field) with Late Devonian granitic intrusives of the west coast.

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Examination of the Temma magnetite lodes and associated quartz-sulphide veins has indicated an absolute lack of anomalous tin or tungsten levels in C-horizon soils, outcrop samples or drill core and they must therefore be eliminated as a possible source of the panned concentrate stream sediment anomalies reported by Porter (1977).

The largest occurrences (Nelson River, Possum Creek) are likely to contain less than 5×10^6 tonnes each at depths to about 200m and are therefore unlikely to represent significant resources of iron, manganese, titanium or copper at the low average grades encountered to date.

The few occurrences with high copper-lead-silver values (notably Strickland, Possum Creek) appear to be very restricted in extent, probably related to late stage sulphide veinlet mineralization superimposed upon but not co-extensive with the large magnetic bodies. This type of occurrence, though perhaps locally rich, probably has very small size potential and erratic grade distribution not well suited to moderate-large scale mining. The apparent failure of fairly intensive small scale prospecting is also regarded as a negative factor.

The comments in the preceding paragraph are based on fairly scanty mapping, examination of mullock samples and C-horizon soil geochemistry and a few short drill holes could do much to confirm the suspected mode and extent of these occurrences. (In the case of Possum Creek prospect, currently available geochem and magnetic data can provide a very firm drill target.) Such drilling, however, cannot be recommended on the basis of the present indications.

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Previous work by A.C.I. (Davies, 1969) on coastal dune sands between Temma and the Arthur River indicate 'a virtual absence of cassiterite'. This is supported by evidence from limited sampling of the superficial sands on the western edge of the Possum Creek grid which indicated a maximum of 10ppm Sn in the -80 mesh fraction and < 1ppm Sn in the +80 mesh fraction.

The ultimate source of the panned concentrate stream sediment tin anomalies in the Temma area is still unknown. It is recommended that further sampling at regular intervals (say 400m) be carried out along the anomalous streams in an effort to
(a) confirm the reported tin values
(b) narrow down the possible source area.

The regional geological reconnaissance and stream sediment sampling carried out by the A & NZ Exploration Co. appears to have successfully identified two tungsten anomalies (with observed specks of scheelite in panned concentrates) despite very wide spaced sample locations (about 1 mile). The 20ppm W and 150ppm W anomalies, from Sundown Creek and a small tributary of the Arthur south of the Salmon River respectively, appear quite distinct against a background of 2 to 5ppm W. These anomalies were not followed up as it was assumed they were attributable to small vein type mineral occurrences similar to those at Couta Rocks and Salmon River. Our work in the Temma area and examination of the Couta Rocks mine suggest that the scheelite could not be derived from the small vein type deposits.

It is recommended that the ANZECO tungsten anomalies be verified and followed up by further panned concentrate stream sediment sampling.

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APPENDIX 8.1

REPORT ON GEOPHYSICS, TEMMA AREA, E.L. 1/77

John Sumpton

October, 1981

APPENDIX 8.1

REPORT ON GEOPHYSICS, TEMMA AREA, ROCKY CAPE E.L. 1/77 by JOHN SUMPTON

INTRODUCTION

Subsequent to the aeromagnetic survey of the Temma area in August 1980, a number of discrete magnetic anomalies were chosen for ground follow up. This ground magnetic and geological reconnaissance lead to the establishment of four grids which were the subject of more detailed geological, geochemical and geophysical investigations. The geophysical work conducted over these grids, the Nelson River, the Possum Creek, the Strickland, and the Little Eel is the subject of this report.

1. NELSON RIVER

The Nelson River grid was covered by a ground magnetometer survey using a Chemtron G6 magnetometer measuring total field. Approximately 13 line km were surveyed with a nominal station spacing of 12.5m. The line spacing of 200m, though larger than optimum, was considered adequate in view of the length of feature and the expected simplicity of the geometry of the causative body. The amplitude of the anomaly is very large, having a measured range in excess of 23000nT, however, the readings obtained are considered repeatable and reliable, the magnetometer handling quite well the rather awesome magnetic gradients involved. The profiles and contour plans show that the anomaly has the form of a relatively narrow dyke-like body striking on a bearing of about 330°true. The profiles show changes in character most likely caused by relatively minor changes to the depth to the top of the magnetic body, but in general they confirm this interpretation. The anomaly appears, on this data, to be divided into three distinct peaks. Two in line and the third parallel but to the west. Profiles from two

047

of these were chosen for quantitative modelling, line 10000N, on which drill hole N401 was collared, and 8400N. In both cases the body parameters were constrained to describe a dyke like body and fitted to the observed field profile by inversion.

The profile from 10000N was best fitted by a dyke like body centred under 10180E, with a depth to top of approximately 20m, a width of 10m and a dip of 54° to the west. Such a body is consistent with the magnetic intersection in drill hole N401. That magnetic material can be seen at the surface most likely reflects a weathering feature whereby the material at the surface, whilst still magnetic, nevertheless has a considerably diminished susceptibility compared with that at depth.

Also the measured susceptibility from the drill core does not match that of the body interpreted from the magnetic profile, the latter being about six times the former. The most likely explanation here is that a strong remnant component exists which is parallel to the current direction of the earth's magnetic field. The susceptibility meter is unaffected by remnant magnetism, hence the low susceptibility of the core, however, the remnant component is likely to be parallel to the earth's field as the model solution is in good agreement with the geological evidence.

The profile from line 8400N was confidently matched by a dyke like body under 9895E, about 5m wide with a depth to top of 15m and a dip of 77° to the west.

A profile chosen from the north-western anomaly was modelled by forward modelling techniques. This profile (from line 11000N) was well matched by a body somewhat wider and slightly deeper than the other two. Here the body was interpreted with a depth to top of approximately 25m, a width of 40m, and a dip of 60° to the west. The centre of the body lies beneath 9200E.

048

Summary

The magnetic anomalies on the Nelson River grid reflect in general fairly simple dyke-like bodies containing considerable magnetite. Should the bodies require testing by drilling, the profiles can be confidently modelled to provide accurate targets.

2. POSSUM CREEK

Magnetics

The Possum Creek grid was covered by a ground magnetometer survey, comprising 8 line km. The grid covers two distinct but parallel trending magnetic features, which on the ground resolved into a magnetic pattern indicative of two dyke-like bodies similar to those to which the Nelson River anomalies have been attributed. In this area they appear to be striking on a bearing of 338° true.

Forward modelling techniques have been used, one profile being selected from each part of the grid. Once again the model of the dyke-like body was used.

The profile on line 10800N was fitted by the curve generated by a dyke with top centred under 10285E, with a width of 16m a depth to the top of 12m, and a dip of 70° to the west.

The profile on line 11200N was well matched by a dyke centred under 11140E, with a depth to the top of 35m, and a dip of 60° to the west. Less confidence can be placed in this interpretation than the previous one, as the field profile does not completely close the anomaly and the profile is also more noisy.

EM

The Possum Creek grid was also covered by two Electromagnetic methods to examine the possibility of conductive mineralization associated with the magnetite rich bodies.

Moving Source Turam-EM

A number of weak responses were detected on the grid.

Line 11600N, 10050E. A negative anomaly at the 945H_z and 2835H_z frequencies both in Normalised Ratio and Phase difference. This is a broad response (on set at about 10125E and extending to the western end of the line), and is also, by its larger deflection of the higher frequencies and significant phase differences response likely to be a moderately poor conductor. This response is possibly due to a rock type change or a change in surface cover or conductivity.

Line 11200N, 10050E. Similar in nature to that on 11600N, possibly a similar cause.

Line 11000N, 10250E. There is a negative response in the normalised ratio at all frequencies. It is not large and is well within the noise envelope, however, it does overlie the likely top of the magnetic body and may be a response due to magnetite.

Line 10800N, 10275E. A very weak response seen mainly on the phase difference at 945H_z and 2835 H_z. This feature does overlie the interpreted position of the magnetic body on this line, and may be associated with some conductive material within the magnetic body. The negative NR response, though weak, may be a response to magnetite.

Two weak responses on line 10600N at 10075E and 10300E.

The eastern grid shows much activity on the EM channels, due to increased surface conductivity, and no clear anomalies emerge.

050

VLF-EM

Five of the southern lines and the eastern grid were covered by this technique. A limitation of this method is that it often responds well to large poor conductors and changes in background conductivity better than it does to bedrock conductors. Hence it is often difficult to distinguish 'true' conductors. Nevertheless two quite distinct anomalies were detected, one on line 11000N at 10225E, and the other on line 10800N at 10275E. Both of these correlate well with the MST responses on those lines, and I believe may be attributable to a similar source. The eastern grid, as with the MST data, is very 'active' and individual responses cannot be resolved with confidence.

Summary

The magnetic anomalies at Possum Creek can be attributed to westerly dipping dyke-like magnetic bodies similar to those at Nelson River. The bodies are clearly defined and can be modelled.

The Electromagnetic surveys revealed only minor evidence of conductive bodies, though it must be noted that both techniques used were of somewhat questionable depth penetration and resolving power.

3. STRICKLAND

Previous geophysical work by Pickands Mather included the measurement of Vertical Magnetic intensity and a two frequency broadside EM Survey. The magnetic contours show a pattern consistent with a long relatively narrow, dyke body similar to those elsewhere in the Temma area. The EM survey detected well defined conductors on lines 800'S and 400'S (10000N and 10122N).

The magnetic survey was repeated measuring total intensity; VLF and Moving Source Turam Surveys were also conducted.

Magnetics

The Total Field survey comprised about 6.5 line km (at 12.5m centres).

The Total Field data also shows that the source of this anomaly is likely to be a steeply dipping dyke like body striking 338° true. A similar pattern exists on the north-eastern extensions to the grid, however here the source appears, to be more diffuse, perhaps broader.

Pickands Mather drilled two diamond drill holes DH T302 and DH T301 on section 10061N and 9817N respectively. The magnetic profiles from these two sections were modelled with two dimensional dyke like bodies.

The profile from 10061N is well fitted by a dyke with a depth to top of 35m and a dip of 70° to the west, centred under 10130E. The profile from line 9817N is fitted by a body with a depth to top of 15m and a dip of 75° to the west, centred under 10100E. Both these interpretations are in good agreement with the drill hole sections and outcrop.

Moving Source Turam

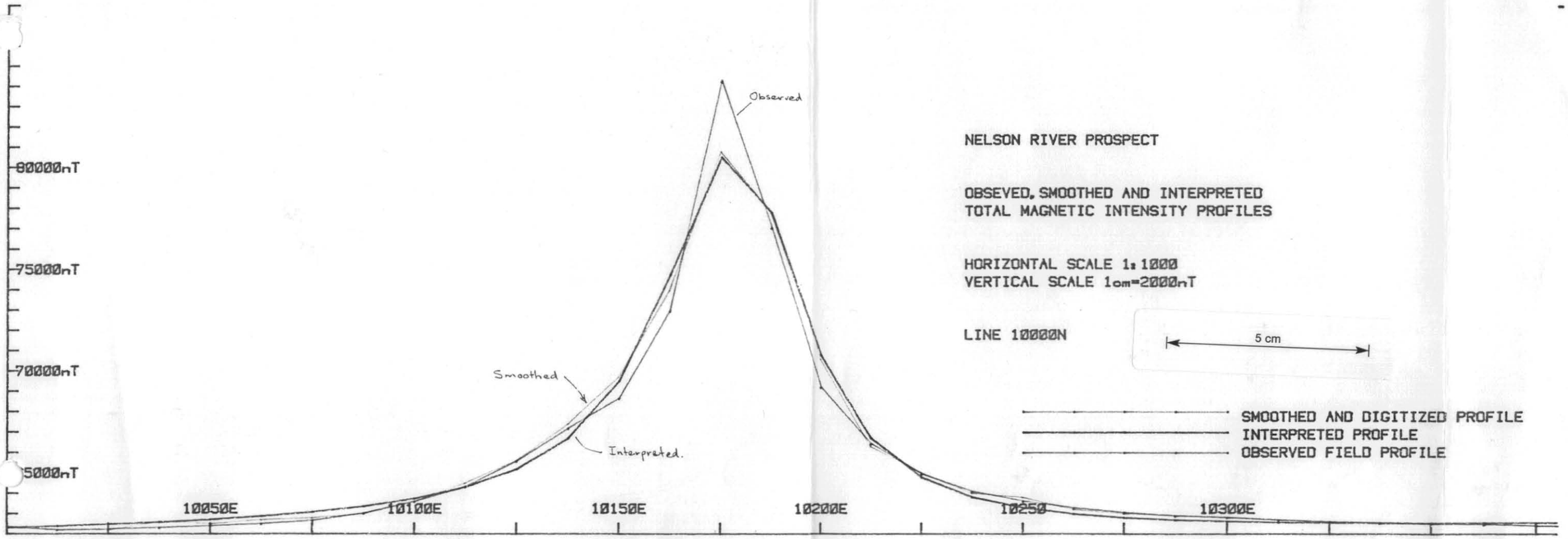
Although the EM response was generally rather noisy, several well defined anomalies were encountered.

Line 10610N

Centred at 10225E. Response confined mainly to one station, however, it affects all frequencies both in NR and phase difference. The strong NR response, even at the lowest frequency, implies this is a good conductor.

052

811053



NELSON RIVER PROSPECT

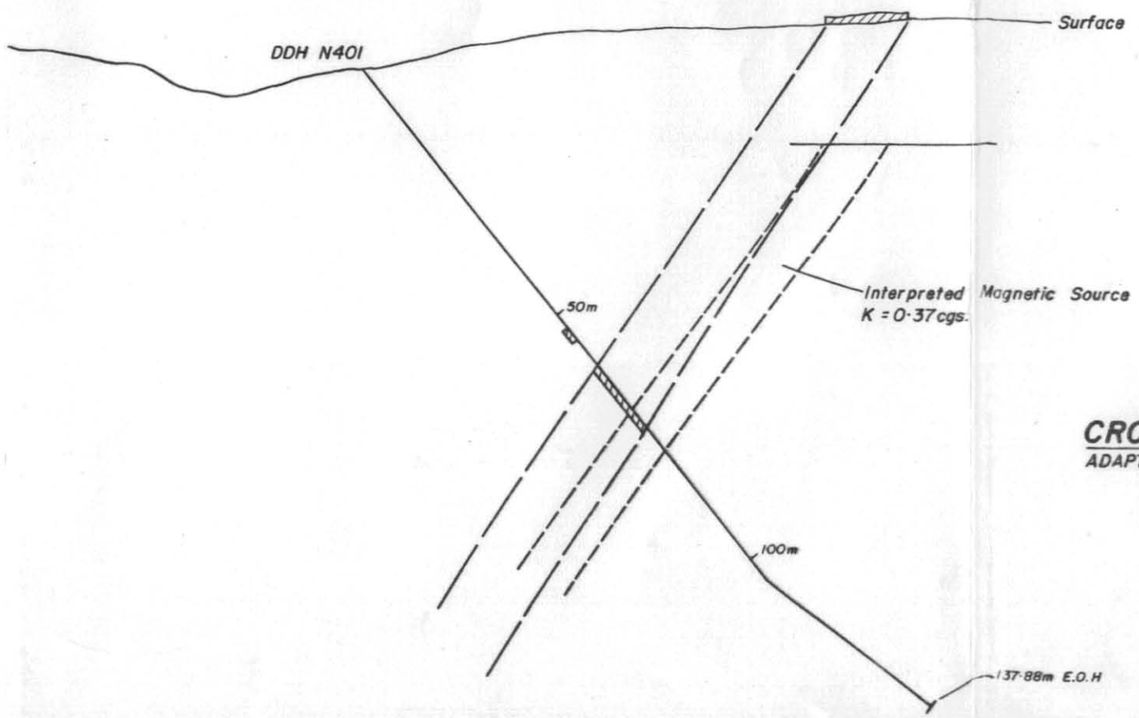
OBSEVED, SMOOTHED AND INTERPRETED
TOTAL MAGNETIC INTENSITY PROFILES

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1cm=2000nT

LINE 10000N

5 cm

SMOOTHED AND DIGITIZED PROFILE
INTERPRETED PROFILE
OBSERVED FIELD PROFILE



CROSS SECTION 10000mN
ADAPTED FROM PICKANDS MATHER + CO. PLAN.

FIGURE 4

Fig. 4

053

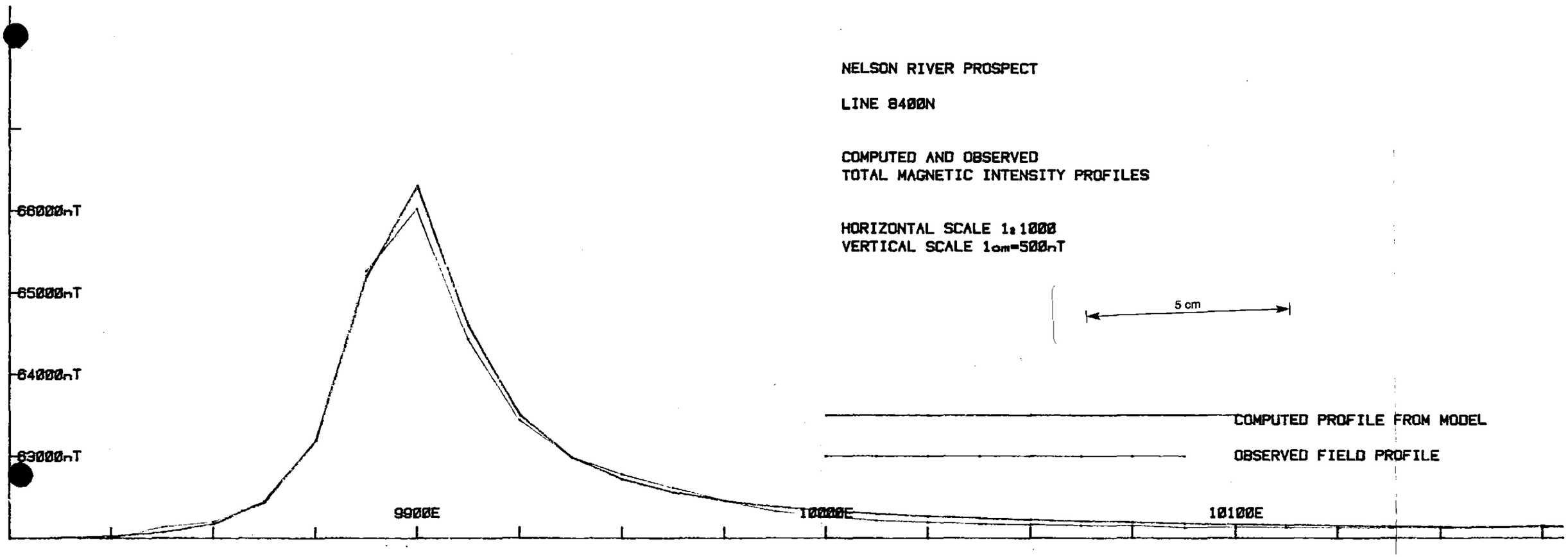
FIGURE 19

NELSON RIVER PROSPECT

LINE 8400N

COMPUTED AND OBSERVED
TOTAL MAGNETIC INTENSITY PROFILES

HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1cm=500nT



054

FIGURE 20

NELSON RIVER
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

5 cm

CURVE 4

AZIMUTH= 40.0 degrees
DTT= 25.0 metres
DIP= 120.0 degrees
WIDTH= 40.0 metres
K=.0157
RANGE=2200.0

LINE 11000mN

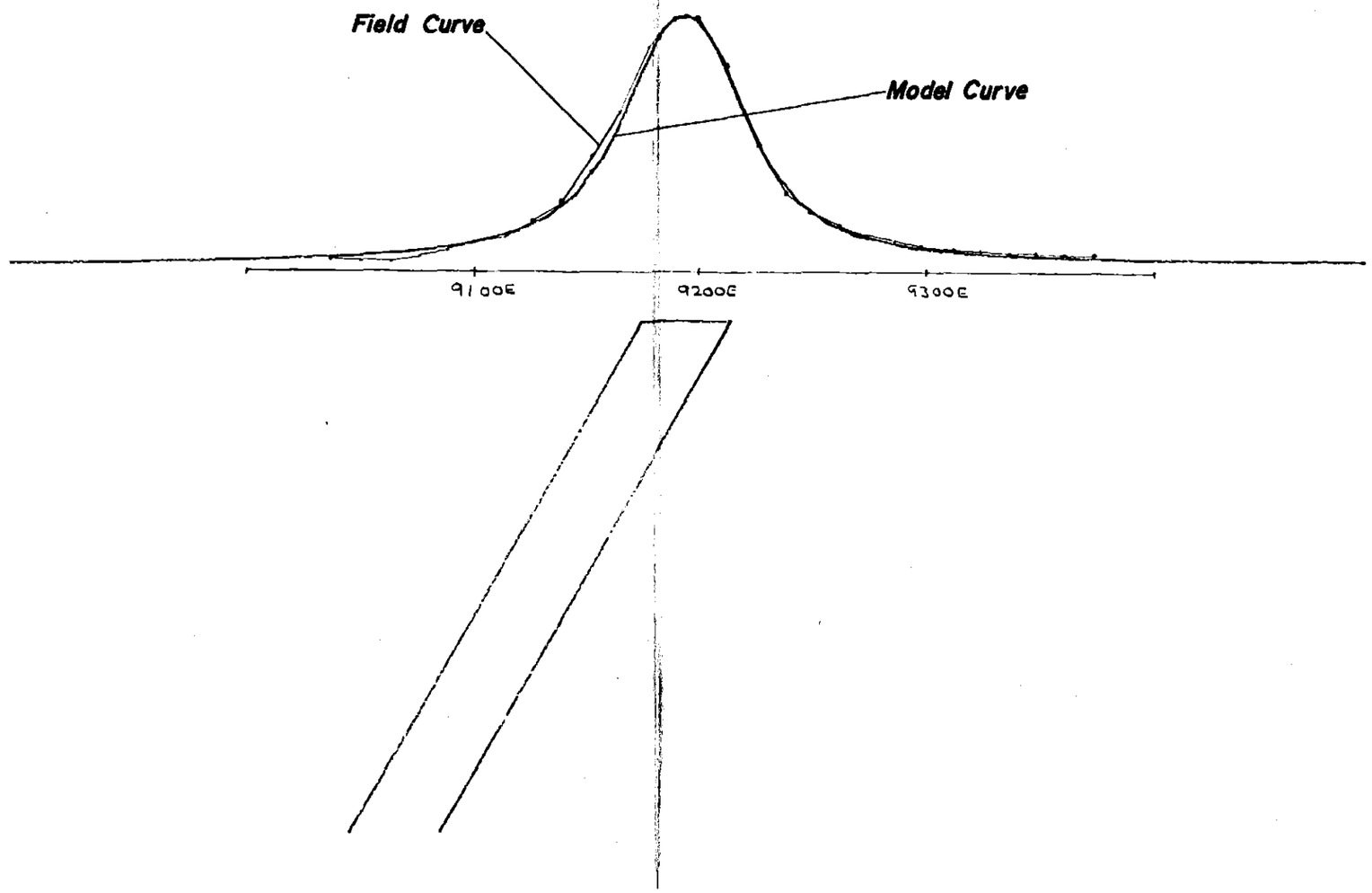


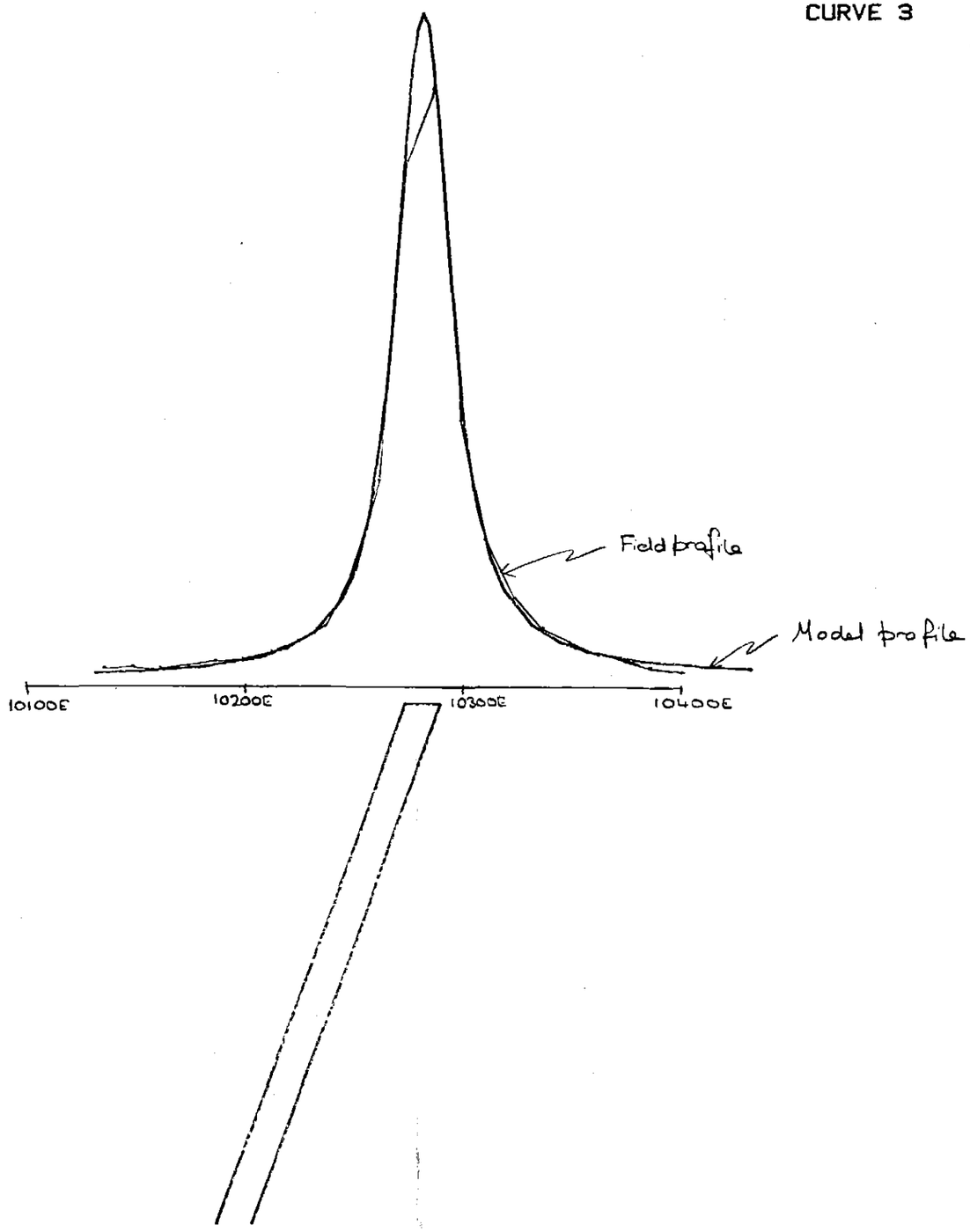
FIGURE 21

053

POSSUM CREEK
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

5 cm



CURVE 3

AZIMUTH= 55.0 degrees
DIP= 110.0 degrees
DTT= 12.5 metres
WIDTH= 16.3 metres
K=.0474
RANGE=6000.0

LINE 10 800mN

056

811057

FIGURE 22

POSSUM CREEK
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

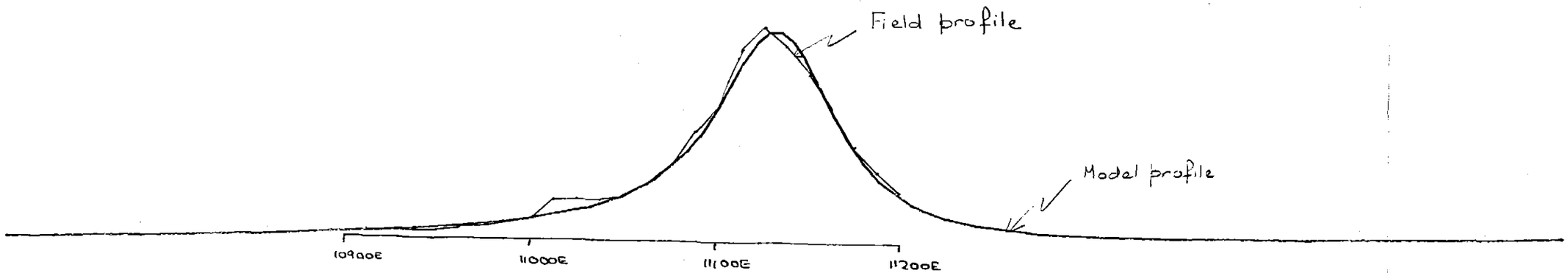
SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

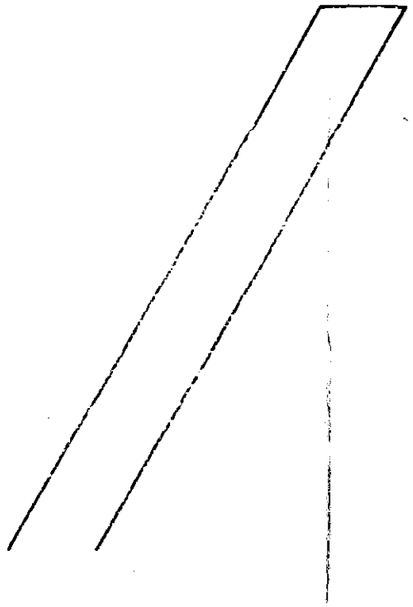
5 cm

CURVE 1

AZIMUTH= 55.0 degrees
DTT= 35.0 metres
DIP= 120.0 degrees
WIDTH= 35.0 metres
K=.0240
RANGE=2250.0

LINE 11200mN





811058

FIGURE 27-1

057

GEOPEKO	Instrument: -Modified SE-77	Datum: - NR=1/PD=0	Hor. Scale: - 1:2500	AREA: ROCKY CAPE TASMANIA
Geophysical Surveys	Observer: - JS	Base Peg: -	Vert. Scale: -	PROSPECT: POSSUM CREEK
Plan No.	Scale Fact: -	Date: - July 1981	Cont. Int.: -	PLAN SHOWS: PROFILES OF NR & PHASE DIFF. (MST)

5 cm

VERTICAL SCALES: NR 1cm=0.1

PD 1cm=2.5%

NOTE: NORMALISED RATIO AT FREQUENCY
IS FIELD STRENGTH RATIO AT FREQUENCY
DIVIDED BY FIELD STRENGTH RATIO AT 105Hz

PHASE DIFFERENCE AT 2835Hz

NORMALISED RATIO AT 2835Hz

PHASE DIFFERENCE AT 945Hz

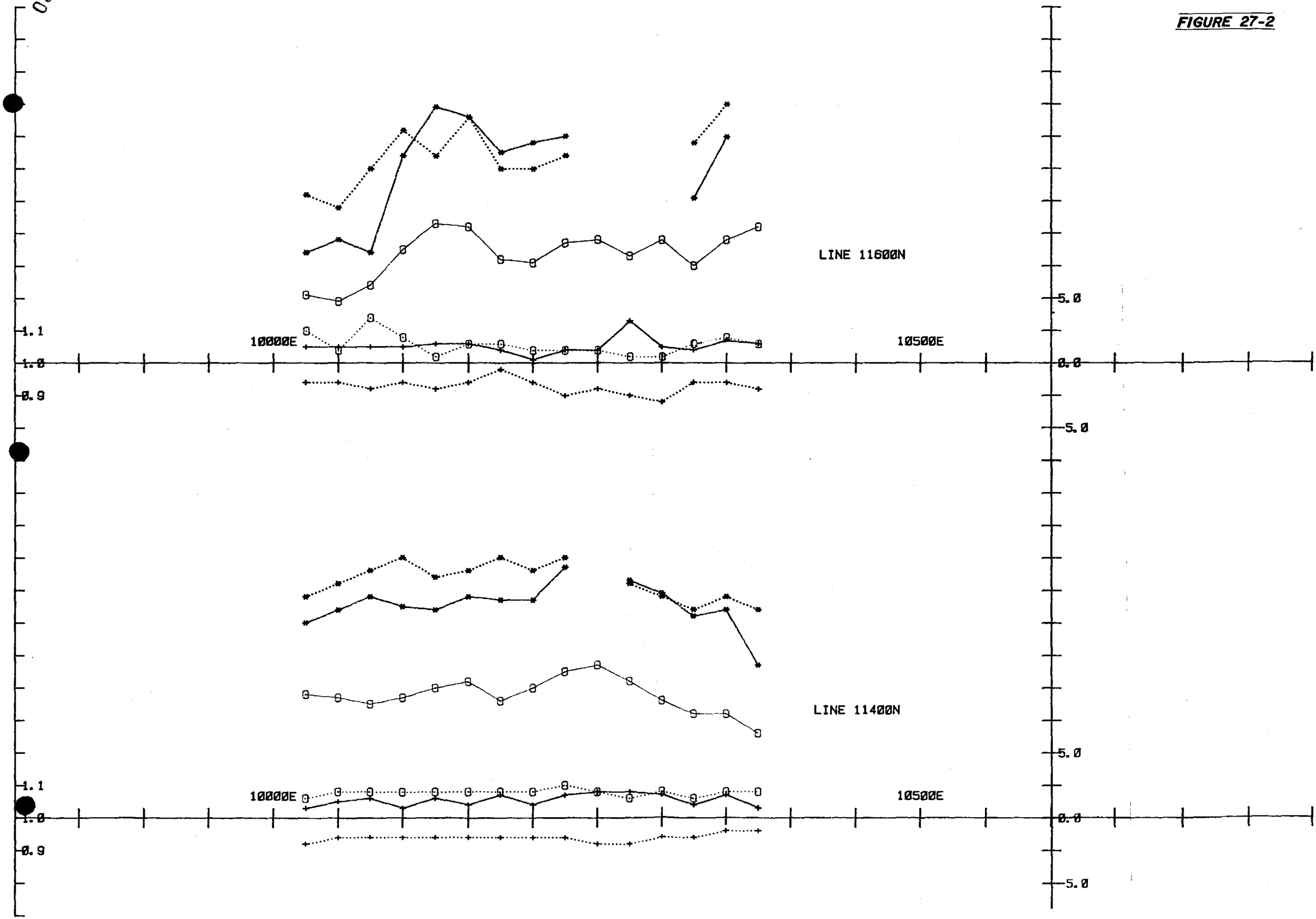
NORMALISED RATIO AT 945Hz

PHASE DIFFERENCE AT 315Hz

NORMALISED RATIO AT 315Hz

811059

FIGURE 27-2



811060

FIGURE 27-3

059

LINE 11200N

10000E

10500E

1.1

1.0

0.9

5.0

0.0

5.0

LINE 11000N

10000E

10500E

1.1

0.9

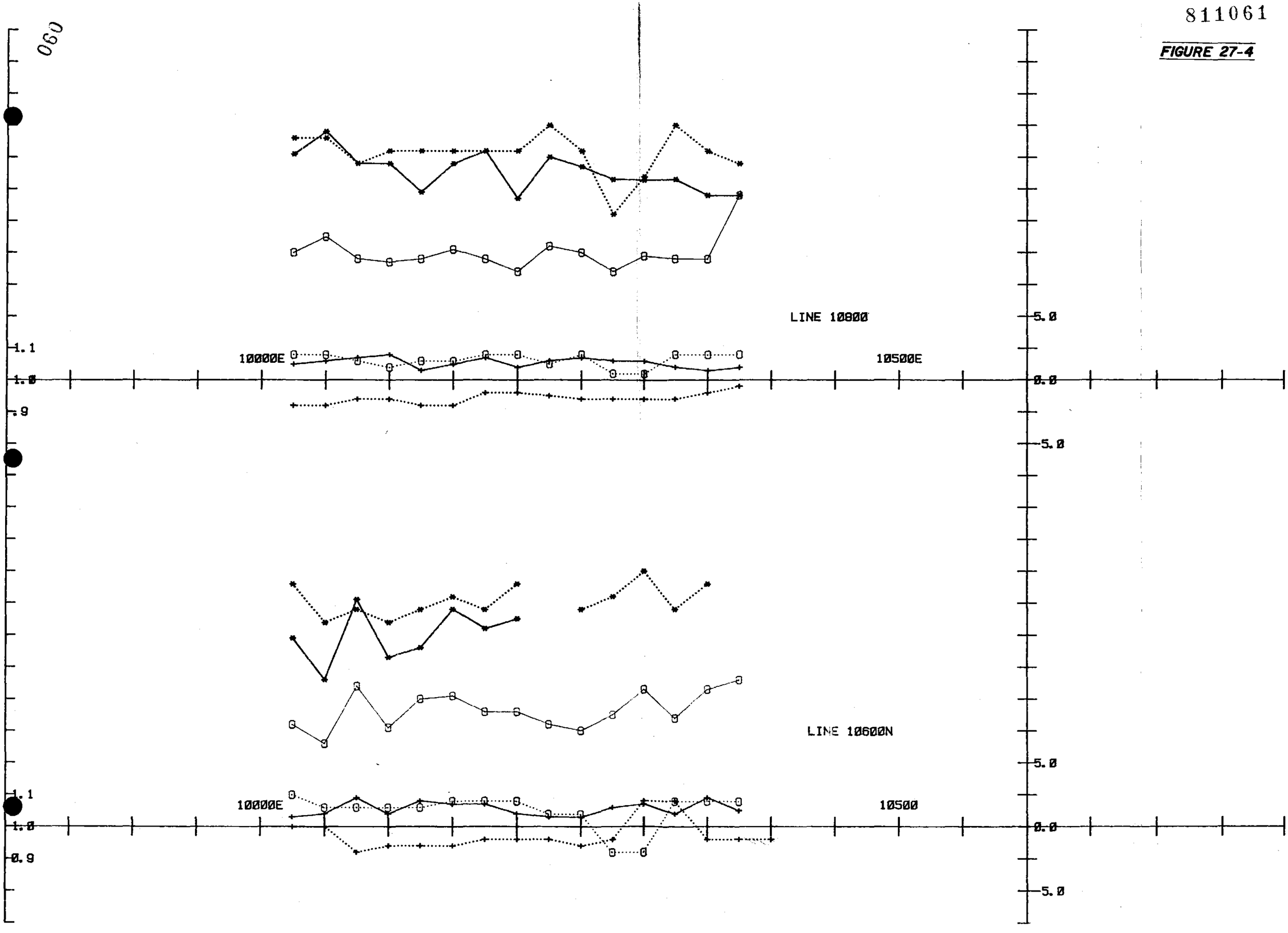
5.0

0.0

5.0

811061

FIGURE 27-4



811062

FIGURE 27-5

190

LINE 10200N

10000E

10500E

1.1

1.0

0.9

5.0

0.0

-5.0

LINE 10000N

10000E

10500E

1.1

1.0

0.9

5.0

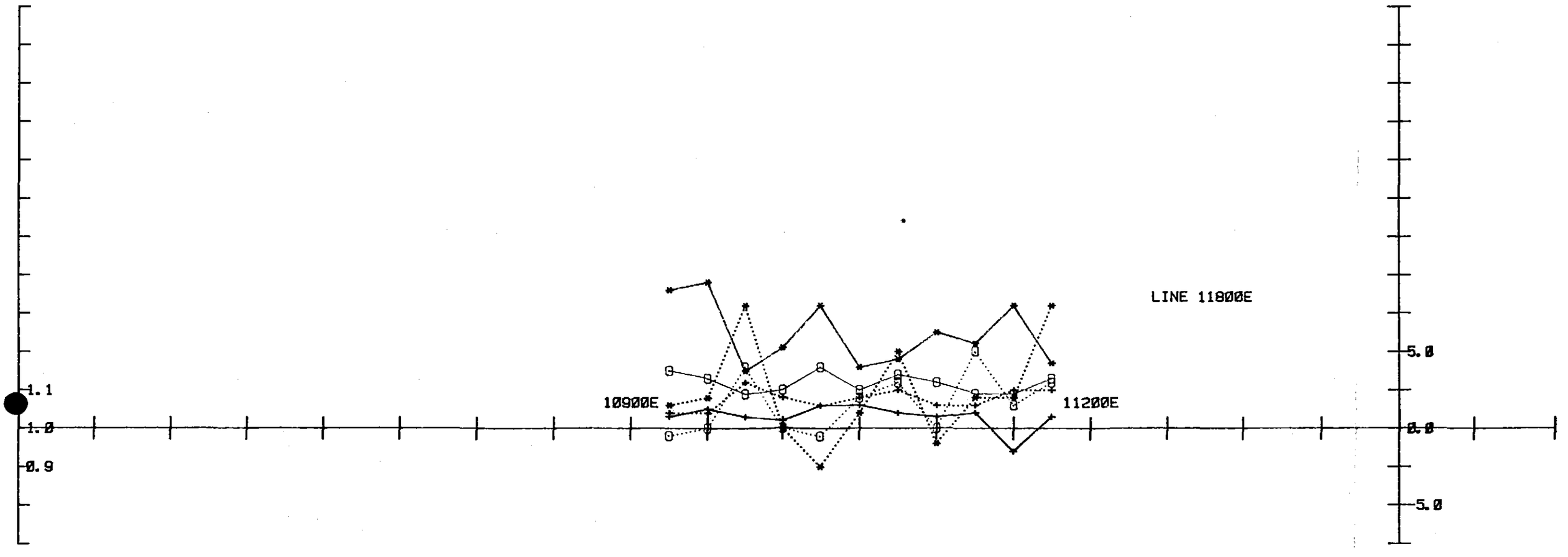
0.0

-5.0

811063

062

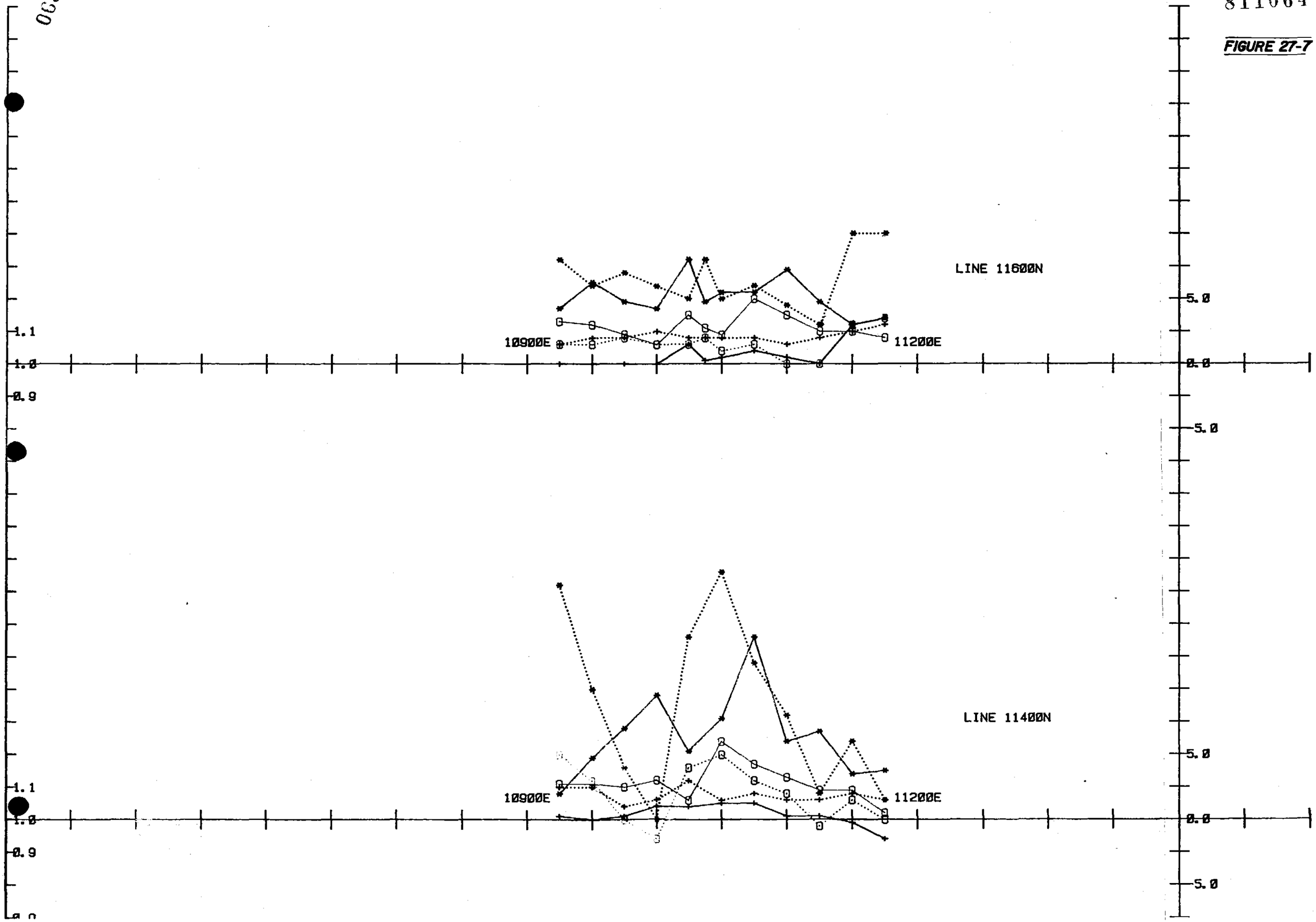
FIGURE 27-6



063

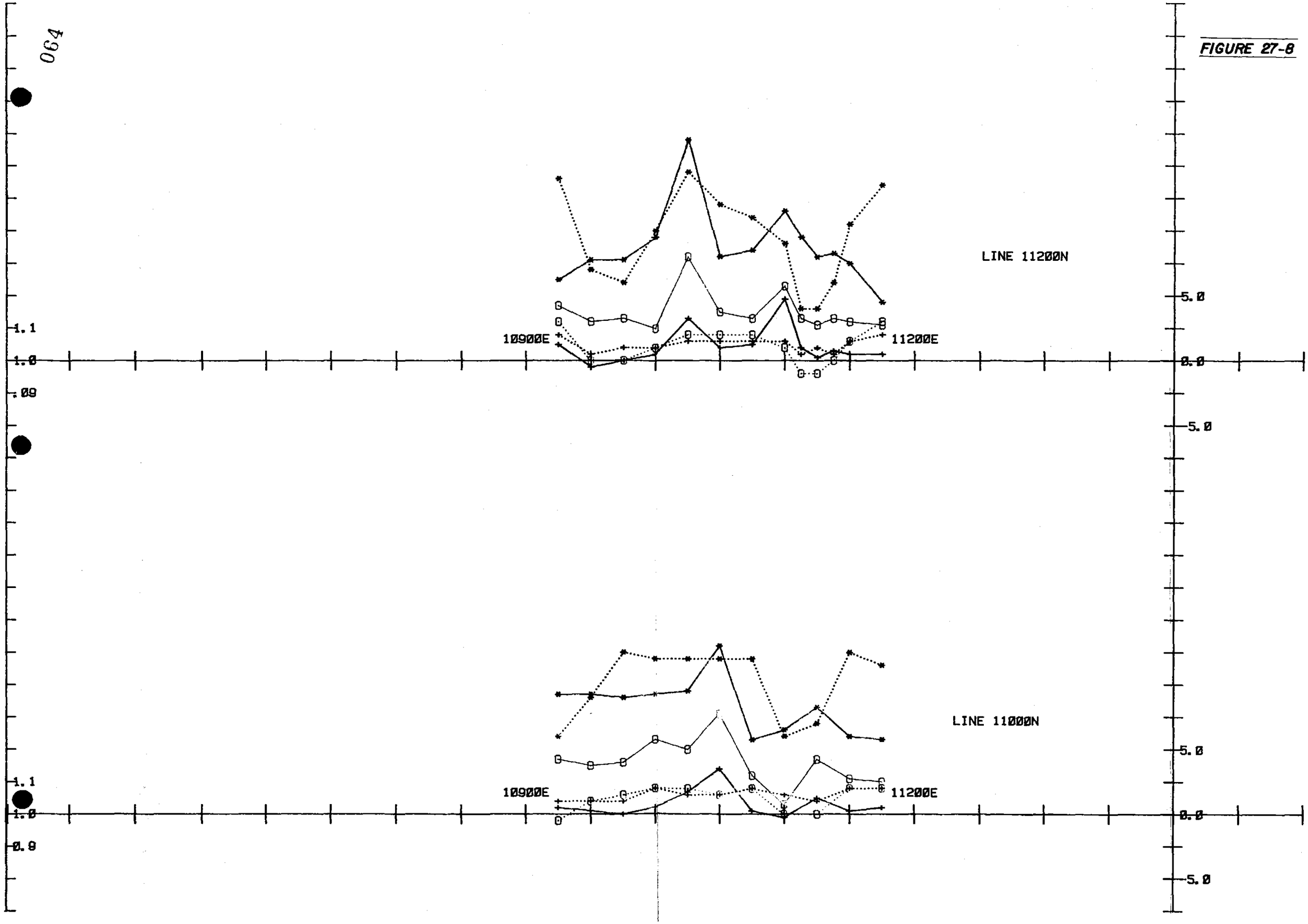
811064

FIGURE 27-7



064

FIGURE 27-8



065

811066

FIGURE 23

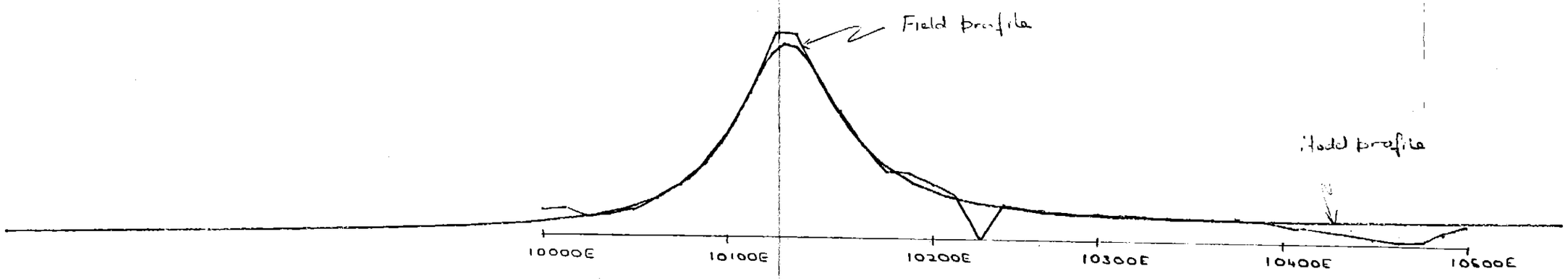
STRICKLAND
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

5 cm

CURVE 74
AZIMUTH= 46.5 degrees
DTT= 35.0 metres
DIP= 110.0 degrees
WIDTH= 10.0 metres
K=.0633
RANGE=2000.0

LINE 10061mN



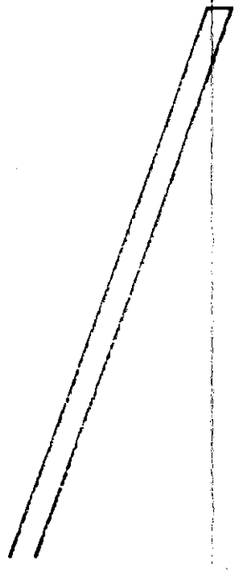


FIGURE 24

990

STRICKLAND
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

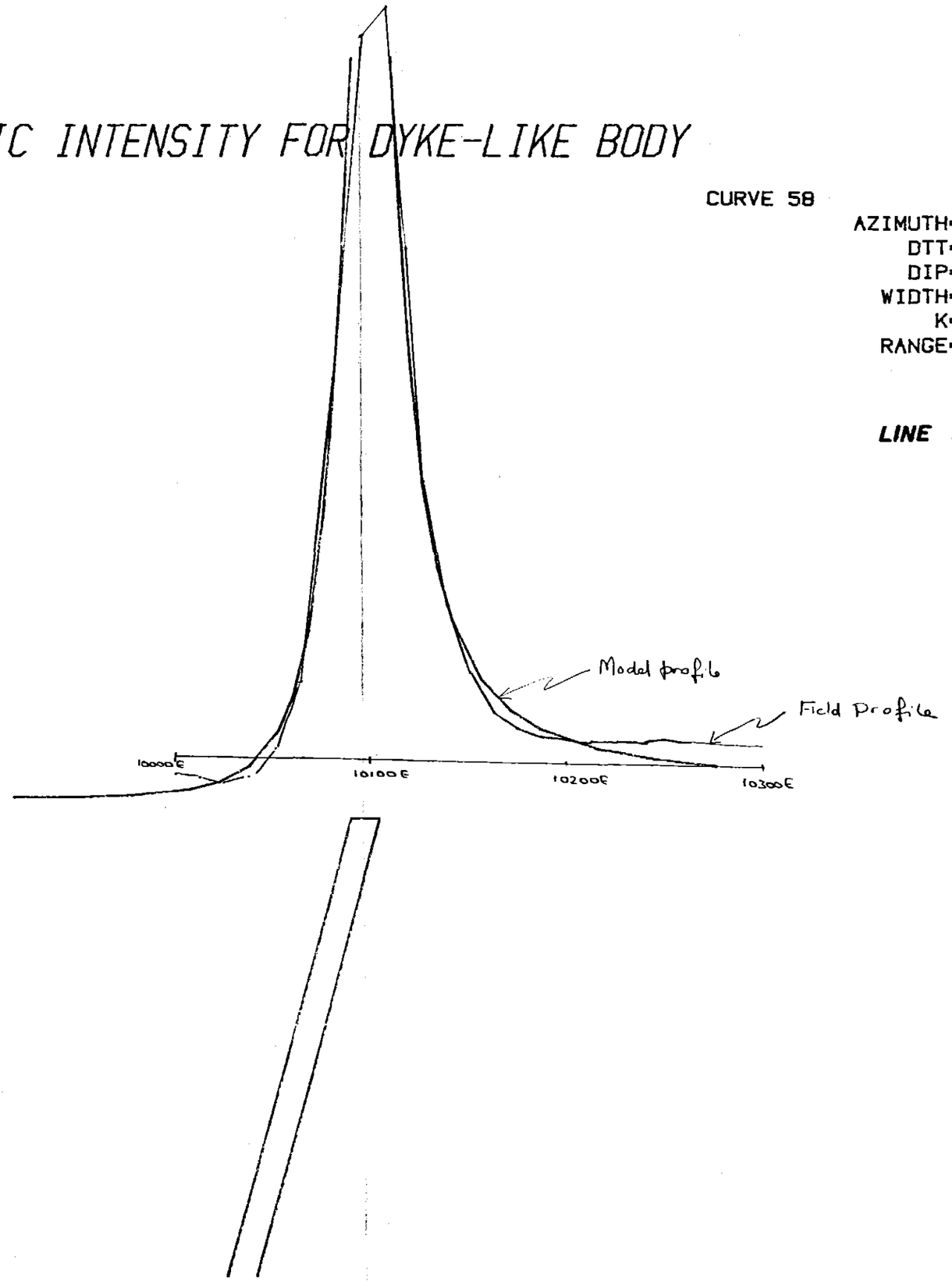
SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

5 cm

CURVE 58

AZIMUTH= 46.5 degrees
DTT= 15.0 metres
DIP= 105.0 degrees
WIDTH= 15.0 metres
K=.0941
RANGE=9999.0

LINE 9817mN



067

Line 10061N

Centred under 10125E. A large amplitude anomaly detected at all frequencies on NR and Phase difference, implies a good conductor. This response correlates with the magnetic peak.

Line 10122N

Centred under 10150E. Another large amplitude anomaly, which is present on all channels except the NR at $315H_z$. This correlates with the magnetic anomaly.

Line 9817 and 9878N

Centred at 10175E on both lines. This anomaly, is similar on both lines, it affects all Phase difference channels but only the NR at $2835H_z$, which implies a poorer conductor.

Line 10366N

Centred at 10775E. A broad response seen mainly on the Phase difference and NR channels at $945H_z$ and $2835H_z$.

The remainder of the North-East extensions (North of 10366N) were not covered.

Summary

The Strickland prospect appears to contain, at least on the southern portion of the grid, a dyke like magnetite body dipping steeply to the west not dissimilar from the Nelson River, Possum and other anomalies in the Temma Area. There are a number of EM conductive responses both directly associated with this body or adjacent to it.

811069

068

GEOPEKO
Geophysical Surveys
Plan No.

Instrument:- MODIFIED SE-77
Observer:- B.S.
Scale Factor:-
Datum:- NR=1/PD=0%
Base Peg:-
Dates:- Oct. 1981
Hor. Scale:- 1:2500
Vert. Scale:-
Cont. Int.:-

AREA: ROCKY CAPE. TASMANIA
PROSPECT: STRICKLAND
PLAN SHOWS: PROFILES OF NR & PHASE DIFF. (MST-EM)

5 cm

VERTICAL SCALES: NR 1cm=0.1
PD 1cm=2.5%

NOTE: NORMALISED RATIO AT FREQUENCY IS FIELD STRENGTH RATIO AT FREQUENCY DIVIDED BY FIELD STRENGTH RATIO AT 105Hz

······* PHASE DIFFERENCE AT 2835Hz
——* NORMALISED RATIO AT 2835Hz

O···O···O PHASE DIFFERENCE AT 945Hz
O—O—O NORMALISED RATIO AT 945Hz

+···+···+ PHASE DIFFERENCE AT 315Hz
+—+—+ NORMALISED RATIO AT 315Hz

FIG 28-1

5.0%
2.5%
0.0%
-2.5%

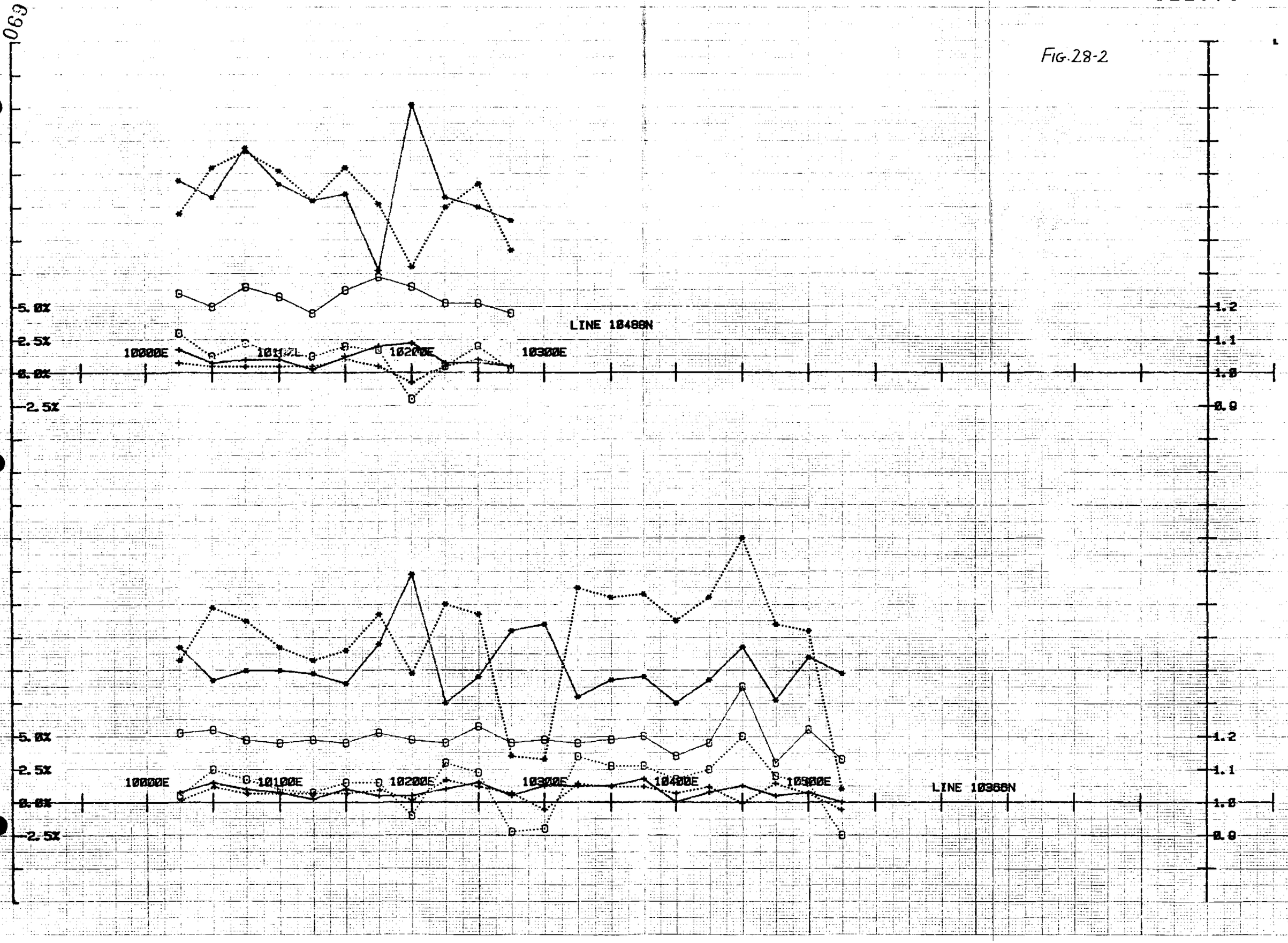
10000E
10100E
10200E
10300E

LINE 10610N

1.2
1.1
1.0
0.9

811070

FIG. 28-2



811071

FIG·28·3

LINE 10244N

10000E 10100E 10200E 10300E

5.0%
2.5%
0.0%
2.5%

1.2
1.1
1.0
0.9

LINE 10183N

10000E 10100E 10200E 10300E

5.0%
2.5%
0.0%
2.5%

1.2
1.1
1.0
0.9

811072

071

FIG 28-4

LINE 10122N

5.0%
2.5%
0.0%
-2.5%

10000E 10100E 10200E 10300E

1.2
1.1
1.0
0.9

LINE 10061N

5.0%
2.5%
0.0%
-2.5%

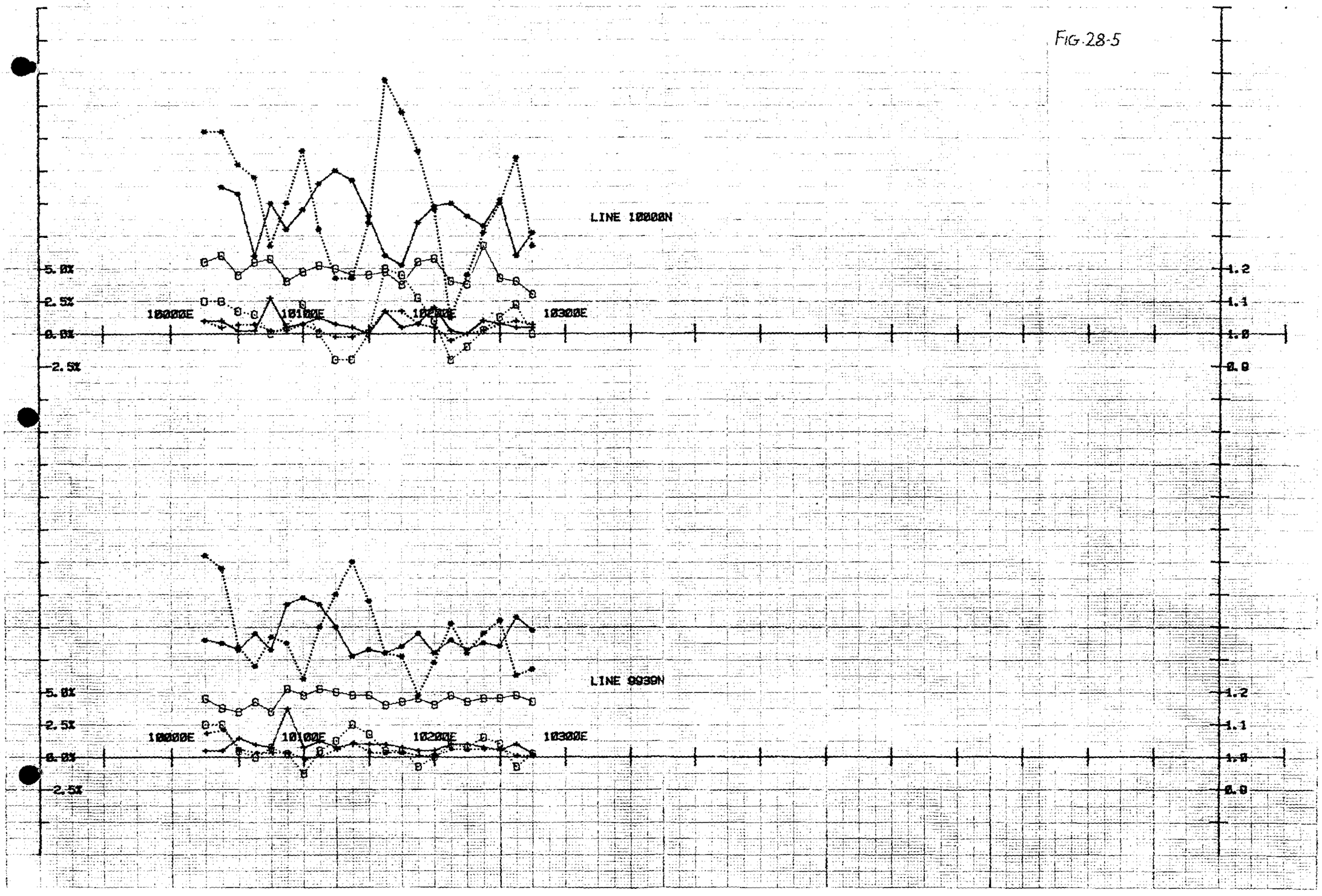
10000E 10100E 10200E 10300E 10400E 10500E

1.2
1.1
1.0
0.9

072

811073

FIG. 28-5



811074

073

FIG·28-6

LINE 9878N

5.0%
2.5%
0.0%
2.5%

10000E 10100E 10200E 10300E

1.2
1.1
1.0
0.9

LINE 9817N

5%
2.5%
0.0%
2.5%

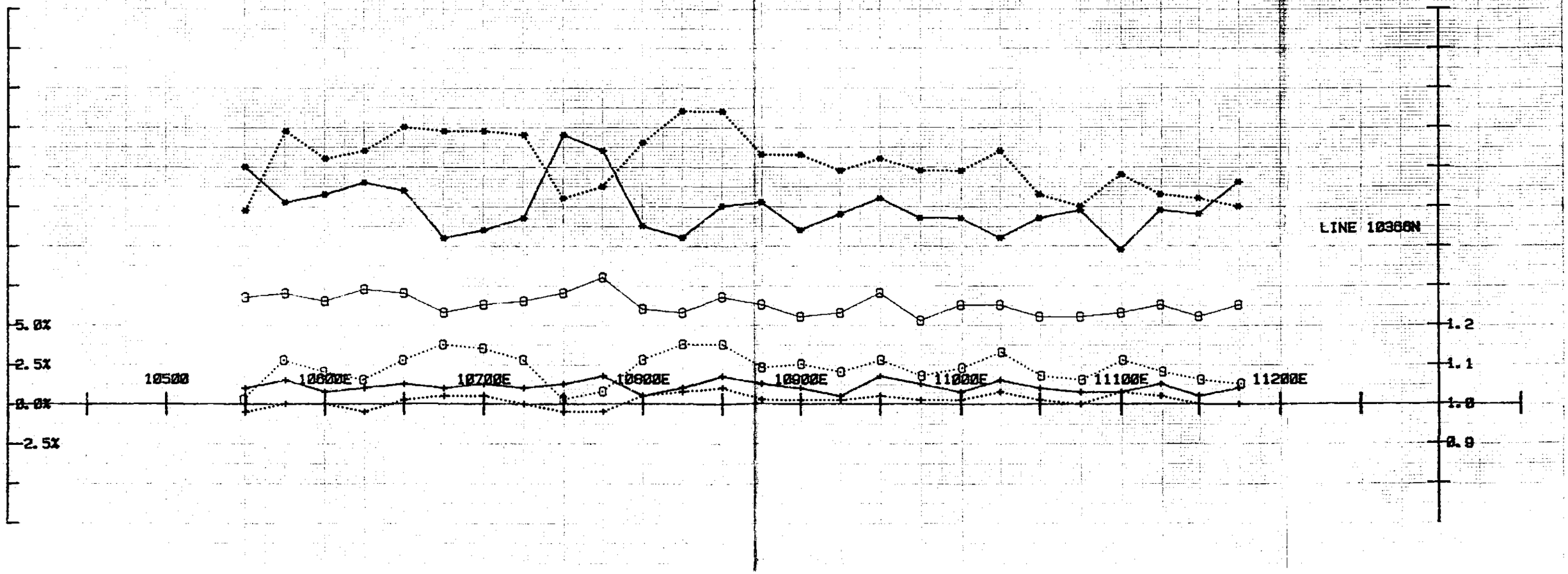
10000E 10100E 10200E 10300E

1.2
1.1
1.0
0.9

811075

074

FIG 28-7



4. LITTLE EEL

Magnetics

The small grid over the Little Eel prospect was covered by a magnetometer survey of about 1 line km. Once again a station spacing of 12.5m was used.

From the airborne data and the ground follow up this anomaly has more of a 'bullseye' shape when compared to the other prospects. Though the model shape of a dyke like still seems appropriate, and was used for the quantitative interpretation, this feature seems of much shorter strike extent.

The profiles are more 'noisy' than we have come to expect from the Temma magnetic bodies. Though a two dimensional dyke like model was used, the geometry of the causative body is possibly not that simple. Also, particularly in the case of line 100N, and to some extent on line 00N, (the two line profiles which were chosen for interpretation) there appears to be another magnetic source to the east, distorting the profile. Given these limitations the profile from 100N was fitted reasonably well to a dyke centred under 40E, with a depth to top 15m, a dip 85° to the East and width of 45m. The profile from 00N was fitted by a dyke centred under 80E with a depth to top of 35m, a dip of 80° to the east and a width of 40m. Both these widths are almost certainly too large as the profiles appear to be oblique to the strike of the magnetic body (about 318° true).

EM

Lines 00N and 100N were also surveyed with Moving Source Turam-EM and VLF-EM. Both methods detected anomalies on line 00N at 75E (MST) and 82E (VLF) the difference being due mainly to the station spacing, and on line 100N at 25E on the MST and approximately the same easting on the VLF, although the cross over is not as well defined.

811077

076

FIGURE 25

LITTLE EEL
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

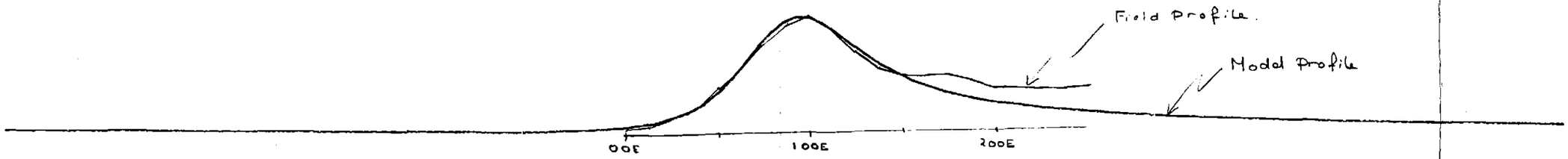
SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

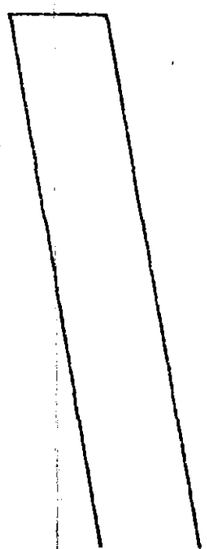
5 cm

CURVE 9

AZIMUTH= 65.0 degrees
DTT= 35.0 metres
DIP= 80.0 degrees
WIDTH= 40.0 metres
K=.0106
RANGE=1250.0

LINE 00mN





077

FIGURE 26

LITTLE EEL
PROFILE OF TOTAL MAGNETIC INTENSITY FOR DYKE-LIKE BODY

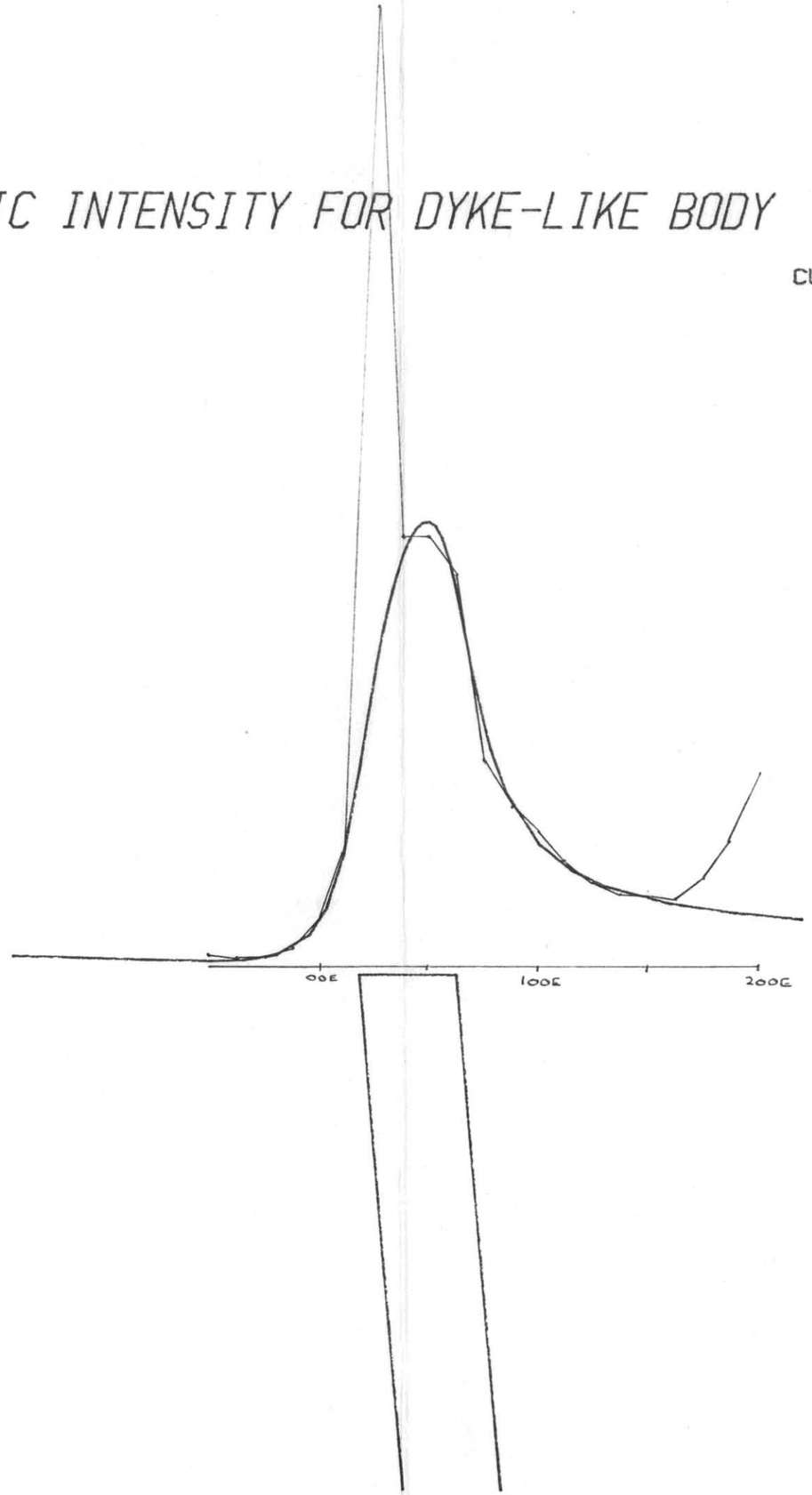
SCALES
HOR 25 metres/cm
VERT 500 n.t./cm

5 cm

CURVE 2

AZIMUTH= 65.0 degrees
DTT= 15.0 metres
DIP= 85.0 degrees
WIDTH= 45.0 metres
K=.0172
RANGE=4000.0

LINE 100mN



078

The MST anomalies are most likely from fairly poor conductors as they have a large phase difference component and are better developed on the higher frequencies. However, they are well defined, though broad, anomalies.

The conductor positions correlate quite closely with the interpretated position of the magnetic body on these lines.

Summary

The extent of the magnetic body at the Little Eel prospect appears much more limited than those at other prospects in the Temma area. It also appears to be dipping (steeply) to the east rather than the west which also is unusual. There appears from the EM data to be conductive material associated with the magnetic body.

5. SUMMARY

All of the airborne magnetic anomalies investigated in detail can be attributed to fairly shallow and narrow magnetite bearing dyke-like bodies, all except Little Eel dipping steeply to the west.

Two of the three prospects on which Electromagnetic surveys were carried out appear to have conductors either directly associated with, or adjacent to the magnetic bodies.

APPENDIX 8.2

RECONNAISSANCE MAGNETICS - NOTES AND PROFILES

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8.2.6	Couta Mine	60
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ROCKY CAPE E.L. 1/77 - TEMMA

LITTLE EEL ANOMALY

AMG 307 000E, 5 432 200N
Photo F395, R4, 126

The Little Eel Anomaly is located about 1km SE of the Temma village. A very small grid, for reconnaissance purposes, was established with the origin at the intersection of the Sandy Cape track and the turn off to Darty's Corner. Base line bearing 315° Magnetic.

Magnetics over the grid indicated a narrow anomaly, peaking at nearly 9000 nT above background (See figures 7 , 8). The anomaly strikes east-west and appears to have a maximum length of about 150m. A subordinate anomaly, to the east on line 100N was not sufficiently covered.

Trial VLF-EM survey on lines 00N and 100N showed strong VLF response coincident with the magnetic peaks. (Figure 9).

Fairly cursory geological mapping of the area (see figure 6) showed that the anomaly is hosted by a layered and laminated series of "pyjama" siltstone, psammitic siltstone and quartzite, quite typical of the "Epsilon Group" in the Temma area.

These face and dip, generally at moderate angles, to the east and are folded about small, northerly plunging assymetrical "drag" folds. A locally developed, near vertical NNE cleavage is probably axial to these structures.

The source of the magnetic anomaly is not exposed since it underlies a dense tea-tree swamp. The magnetic trend appears to cut across the geological structure but there is a slim possibility that the magnetic source is stratiform and folded with the rocks. Further detailed magnetic survey between lines 00N and 100N would clarify this. (On the basis of cross cutting relationships observed elesewhere in the Temma area, it is considered unlikely that the magnetic source is conformable here.)

C-Horizon soil samples were collected (per Mate and Jacro auger) on 12.5m spacings on line 100N. Rock chips from holes at 25E and 50E consist of dark, strongly chloritized siltstone. One chip, from 50E, contains about 10% pyrite as small disseminated cubes. C-Horizon geochemistry indicates quite strong copper - iron and subtle silver anomaly coincident with magnetic - VLF anomaly on line 100N. (Figure 9).

Several pits, trenches and a shaft are developed on a zone or zones of narrow quartz veins which have a fairly uniform orientation of 330 - 350° strike, 80°W - vertical dip.

Mineralogy of the veins is simple consisting of quartz with pyrite, a little chalcopyrite (upto 3% sulphides/volume) and chlorite.

At the pit, near line 00N, strong but local chloritization and disseminated pyrite occurs in the siltstone adjacent to the quartz veins. This was not observed further north.

At the shaft near 130m N the system of quartz veins is about 0.6m wide consisting of several irregular stringers varying from 0.5 - 30cm in individual thickness. They clearly cross cut the layering in the enclosing psammitic siltstone. Rock chip samples indicate the the veins contain anomalous copper, silver and gold. (Upto 1.6% Cu, 24.0gm/t Ag, 0.088gm/t Au). (Refer to Appendix 8.3.)

The magnetic character and geochemical expression of this anomaly suggest that it is related to a magnetite bearing lode similar to others in the field, especially to Possum Creek. The relationship between magnetic source and the sulphide bearing quartz veins is obscure. The very short extent indicates a body of relatively small tonnage and therefore it has a low rating against other occurrences in the area. However, the anomaly is quite accessible and further geochemical sampling etc. would not entail great expense.

082

ROCK CHIP SAMPLES (Locations shown on Fig 6)

KR's 7427, 30, 31 are of quartz vein material
KR's 7429, 32 are of unaltered siltstone host rock
KR's 7428 is of chloritized siltstone with a few small quartz veinlets.

C-HORIZON GEOCHEM SAMPLES

Line 100N

MATE AUGER		JACRO AUGER	
TS 12401	50W	TS 12828	25E
12402	37.5W	12829	37.5E
12403	25W	12830	50E
12404	12.5W	12831	50E (Duplicate)
12405	00E		
12406	12.5E		
12407	50E		
12408	62.5E		
12409	75E		
TS 12410	87.5E		
12411	100E		

811084

083

5 cm

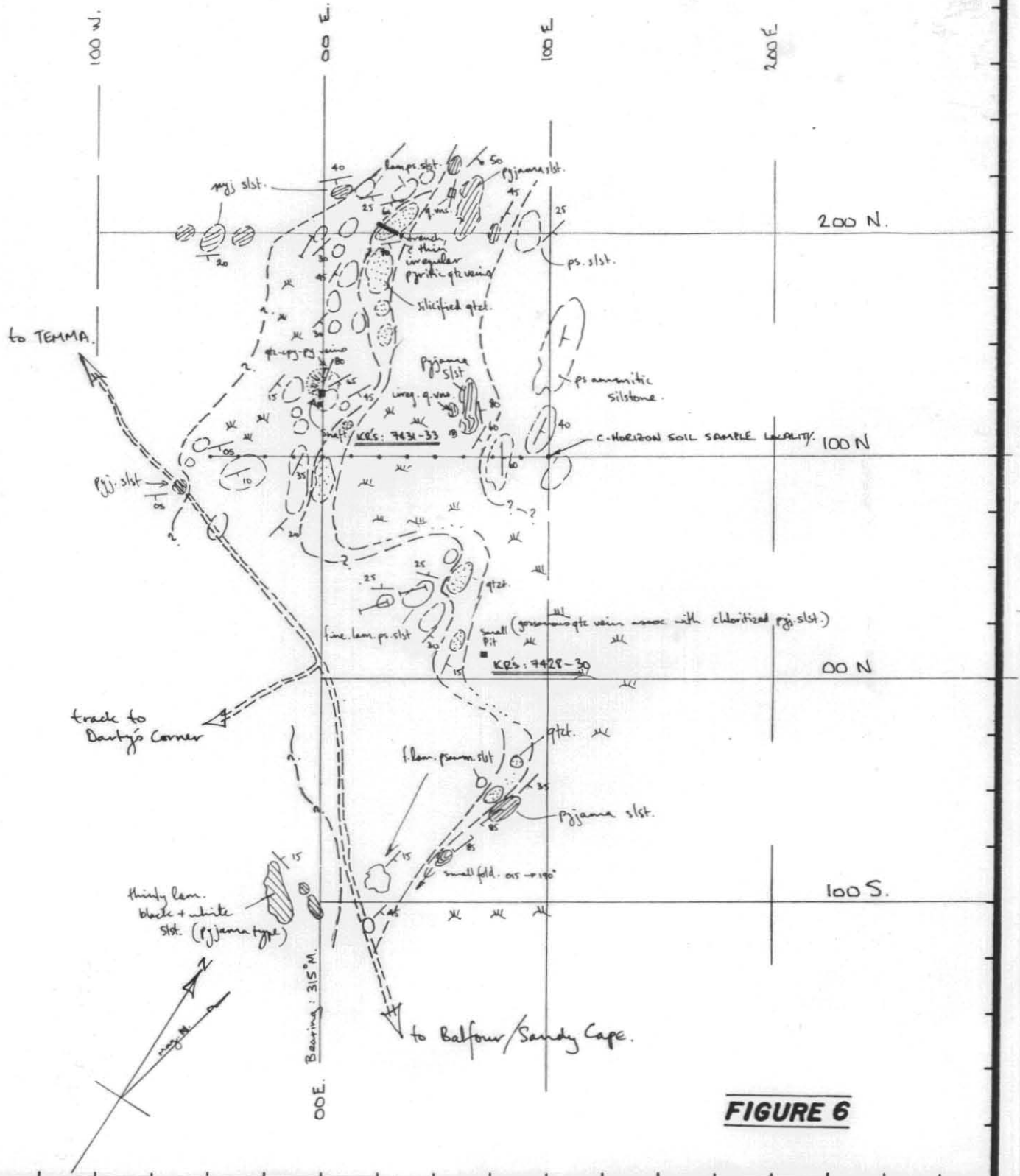


FIGURE 6

LEGEND:

- laminated black + white psammo-politic siltstone (pgjamma type).
- laminated psammitic siltstone.
- quartzite, in parts silicified.

GEOPEKO LIMITED
~~KING ISLAND~~

Scale: 1:2500 | NO K

ROCKY CAPE EL. 1/77 — TEMMA AREA

DATE: 27/8/81
GEOL: N.J.
DWN: N.J.
CHKD:

LITTLE EEL PROSPECT
GEOLOGY

811085

084

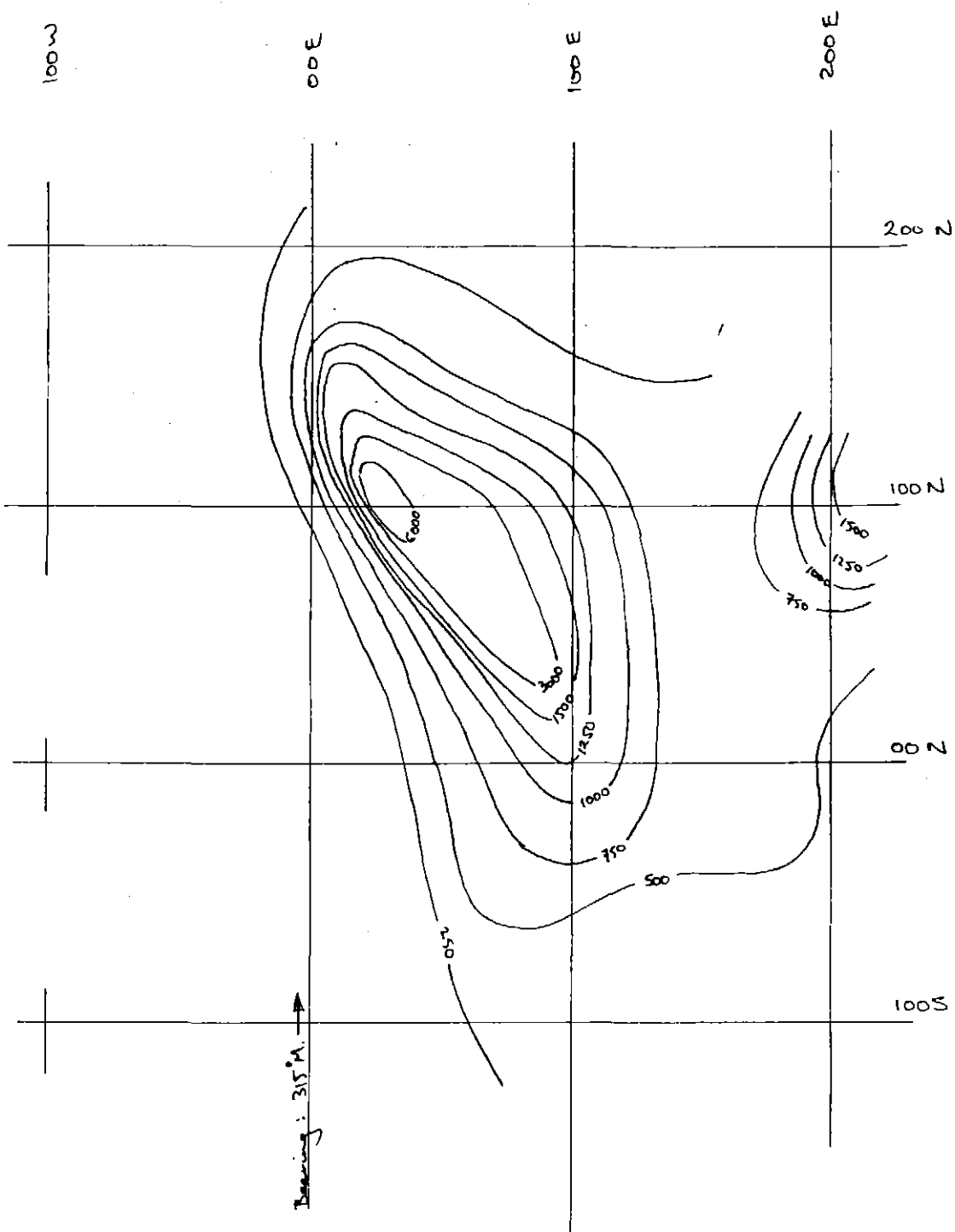


FIGURE 7

LEGEND:

5 cm

GEOPEKO LIMITED

Scale: 1:2500

DATE: 28/9/11

GEOL:

DWN: WJL

CHKD:

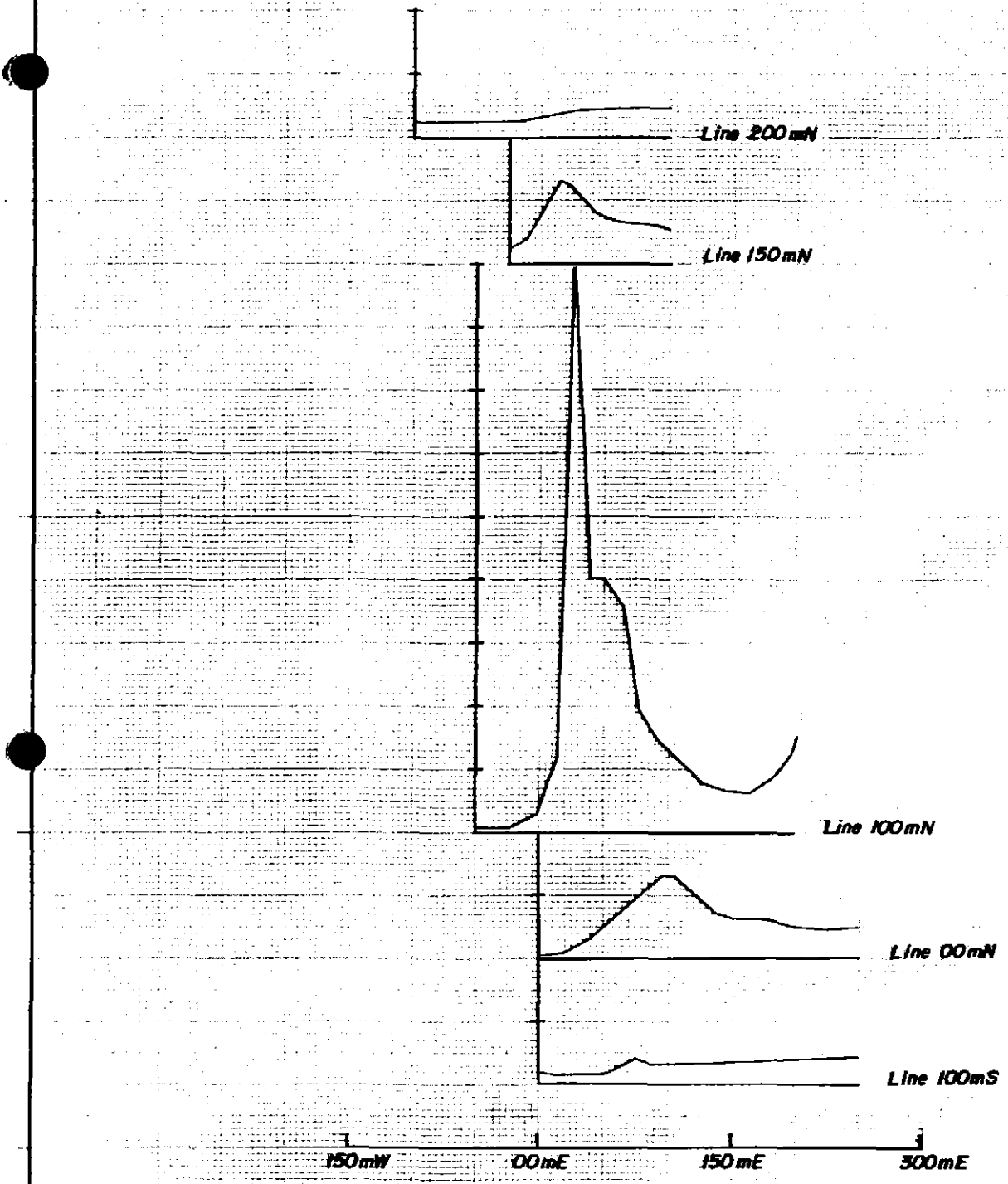
LITTLE EEL PROSPECT.

CONTOURS : TOTAL MAGNETIC INTENSITY

DATUM : 62000 nT.

085

811086



LITTLE EEL E.L. 1/77

Magnetic Profiles

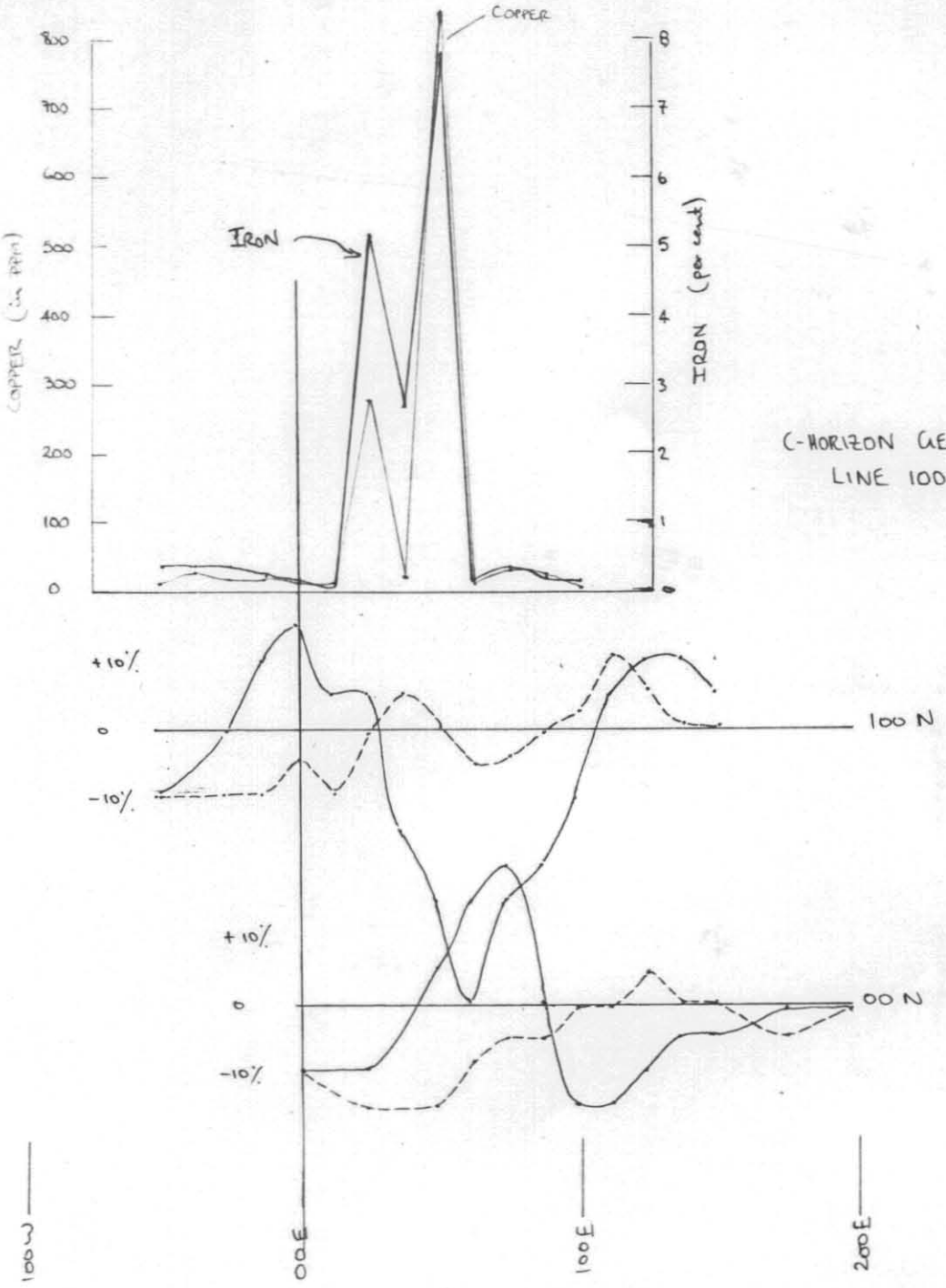
DRAWN: R.Tog. DATE: 7/1/82
OBS: B.Sted. CHKD: WA
INST: Chemtron. DATUM: 62000nT
Hor. SCALE: 1:5000 Vert. SCALE: 1cm = 1000nT

5 cm

FIGURE 8

086

811087



C-HORIZON GEOCHEM PROFILE.
LINE 100 NORTH.

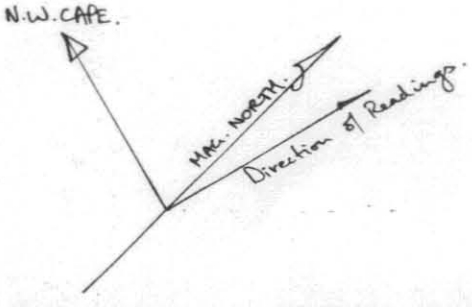


FIGURE 9

5 cm

LEGEND:

In Phase

Quadrature.

(Geonics EM-16)

GEOPEKO LIMITED

Scale: 1:2500

DATE: 30/9/81

GEOL: WH.

DWN: "

CHKD:

LITTLE EEL PROSPECT

PROFILES: VLF; COPPER, IRON

Vertical Scale: 1cm = 10%

811088

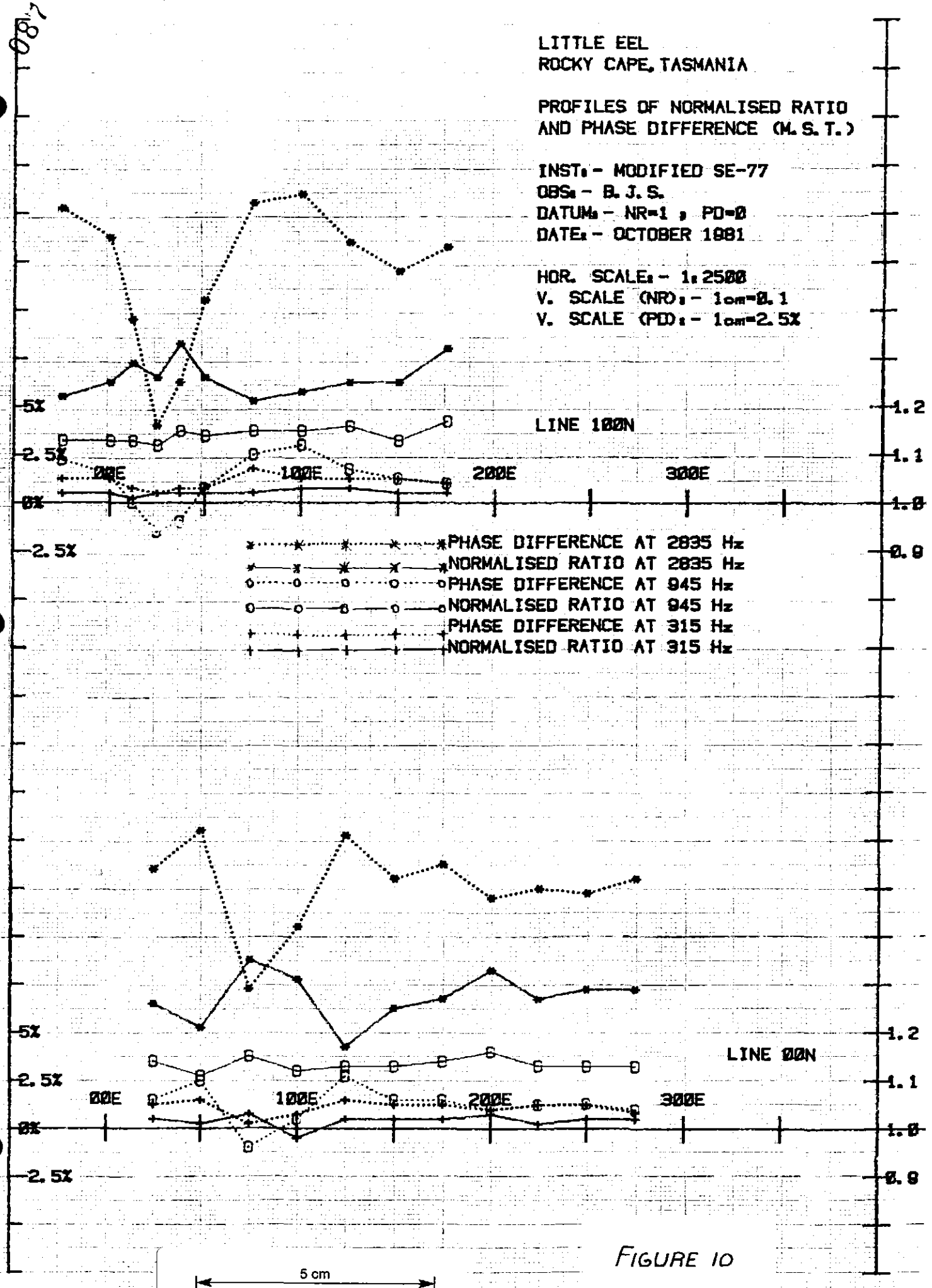


FIGURE 10

REBECCA ANOMALY

AMG : 307 800E, 5 437 500N
Photo: F395, R4, 126

This anomaly is situated on Rebecca Creek about 5km NNE of Temma.

Reconnaissance magnetics indicated a narrow, north-west striking anomaly about 1km long. (Figure 11) The strongest response, around 6000nT in the central part of the anomaly corresponds to an outcropping magnetite-quartz-pyrite lode not more than 2-3m in thickness. Analysis of magnetic profile on line 600 South indicates the lode has a near vertical dip.

Much of the area is covered by superficial sands and geological exposure is fairly poor. However, rocks immediately adjacent the lode outcrop consist of pelitic siltstones striking roughly parallel to the lode and dipping at 85° to the north-east. About 15m north east of the lode fine grained laminated quartzite dips at 55° to the north.

Two shallow shafts are developed on the lode outcrop near 600S. Material on the dumps consists of variably oxidized assemblage of magnetite-pyrite-quartz and probable ferromagnesian amphibole mineral. Pyrite in some cases is well disseminated as fine blebs within magnetie-ferromag but elsewhere occurs as massive pyrite/gossan in association with thick (5-10cm) vughy quartz veins probably superimposed upon the magnetite lode. Strong chloritization of the wall rocks adjacent to the lode is evident in the southern shaft and from loose material on the dumps. Rock chip samples KR 7433 to 7441 are all from this area, mostly from the mullock dumps. These samples contain upto 31.0% iron and are weakly anomalous in copper, lead, manganese, silver and gold. (Respective maxima: 735ppm Cu, 260ppm Pb, 4.1% Mn, 6.8 gm/t Ag and 0.06 gm/t Au) (Refer to Appendix 5.3.)

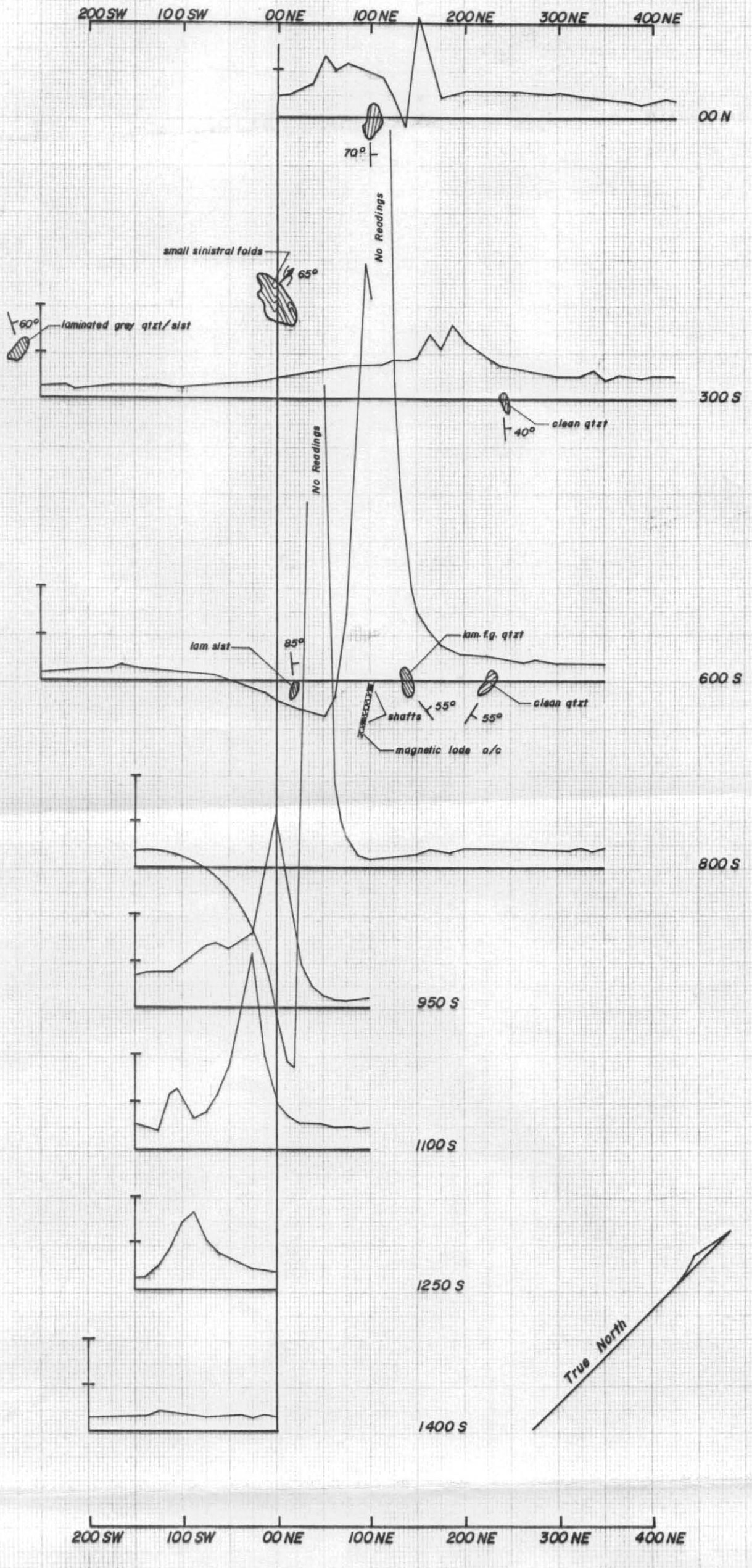


FIGURE 11

5 cm

REBECCA ANOMALY E.L.1/77

Magnetic Reconnaissance

DRAWN: R.Tog.	DATE: 10/1/82
OBS: W. Herrman	CHKD:
INST: Chemtron	DATUM: 62000nT
Hor. SCALE: 1:5000	Vert. SCALE: 1cm = 500nT

811090

At present is cannot be said that the magnetic lode is definitely cross cutting with respect to layering of the enclosing siltstones. The magnetic character, mineralogy and wall rock chloritization is similar to other lodes in the field such as Nelson River and Possum Creek. The Rebecca Anomaly has moderate size potential but metal values from the rock chip samples are not particulary inspiring.

Description of rock chip samples (Analyses in Appendix 8.3).

KR 7433 Oxidized Mt. with minor bladed ferromagnesian 5% disseminated Pyrite.

KR 7434 Similar to 7433

KR 7435 Gossanous, pyrite vughy quartz vein.

KR 7436 Spongy gossan after pyrite?

KR 7437 Chloritized psammo-pelitic siltstone, minor disseminated oxidised pyrite

KR 7438 Massive geothite after magnetite? minor relict pyrite.

KR 7439 Massive and veiny magnetite in flinty quartz.

KR 7440 Chloritized pelitic siltstone.

KR 7441 Magnetite, minor pyrite with bladed altered ferromagnesian and quartz.

GRACE CREEK ANOMALY

AMG : 311500E, 5427500N
Photo: F395, R5, 159

The Grace Creek anomaly lies near the junction of Grace and Dawson creeks just eastward of a small, cleared patch of basalt cover.

Most of the area is under thick scrub but compass and pace magnetic reconnaissance was carried out over a small grid pattern. Reconnaissance profiles are shown in Fig. 13. The anomaly is a very narrow linear feature striking 340° T for some 300m and peaking at about 6000 nT.

The anomaly is obviously related to a narrow magnetite lode which outcrops along the small ridge between the creeks and in a few places north of Grace Creek. In the vicinity of a shallow pit on the southern bank of Grace Creek the magnetite lode occurs as several veins or "lenses" from 10cm to 1m thick within a 3m wide zone. The magnetite veins strike at 330-340°T and are steeply dipping (10° either side of vertical.) There is some irregular thickening and thinning of the lodes which typically contain upto 50% fine granular magnetite in an oxidized, partly silicified ferromagnesian matrix. The enclosing siltstones are very strongly chloritized; close to the magnetite lode, garnet and magnetite (upto 2mm dia.) occur as disseminated granules or "trains" selectively crystallized along bedding planes. The chlorite alteration zone at this point extends in to the wall rocks about 4-5m either side of the lodes. Layering in the wall rocks trends 335-340° T and dips 35-50° ENE. The clearly cross cutting nature of the magnetite lode can be observed on small scale in the wall of the pit. A massive quartz vein, 1-2m thick, outcrops about 3m east of the magnetite lode. The quartz vein contains disseminated pyrite (0.5 -5%) is steeply dipping and parallel in strike to the magnetite lode. It persists southward at least as far as Dawson Creek associated with strong chloritization of the wall rocks particularly on the west.

The magnetite lode is observable adjacent to the west contact of the quartz vein to about 100S but appears to disappear south of that.

Country rocks in the area consist of typical thinly layered pelitic and semi pelitic siltstones dipping at moderate angles to the north east.

Rock chip samples of the (pyritic) quartz vein contain no anomalous metal values though they are noticably higher in molybdenum content (upto 13ppm). Samples of the magnetite lodes and adjacent altered rocks indicated weakly anomalous copper (to 45ppm) manganese (to 5600ppm) and iron upto 38%.

List of Rock Samples (Analyses in Appendix 8.3)

KR 8102 Pyritic quartz vein, north of Grace Creek.

KR 8103 Pyritic quartz vein, north of Grace Creek.

KR 8104 Chloritized siltstone with disseminated garnet.

KR 8105 Weathered magnetite-ferromag. cut by quartz vein.

KR 8106 Branching chains magnetite granules in ferromag. matrix.

KR 8107 Oxidized magnetite, hematite in quartz

KR 8108 Chloritized siltstone, gossanous (py) quartz veins.

KR 8109 20% Magnetite in weathered ferromag. matrix

KR 8110 Chlortized siltstone; garnet, magnetite dissemination.

KR 8111 Slightly chloritized siltstone; disseminated garnet, magnetite.

KR 8112 Mt-ferromag. cut by 2cm quartz vein.

093

KR 8113 Mt-ferromag vein in altered siltstone.

KR 8114 Mt-Hematite in quartz.

KR 8115 Pyritic vein quartz (2% Py).

KR 8116 Mt in oxidized ferromag matrix.

KR 8117 Pyritic vein quartz (Py ox. 5%).

094

811095

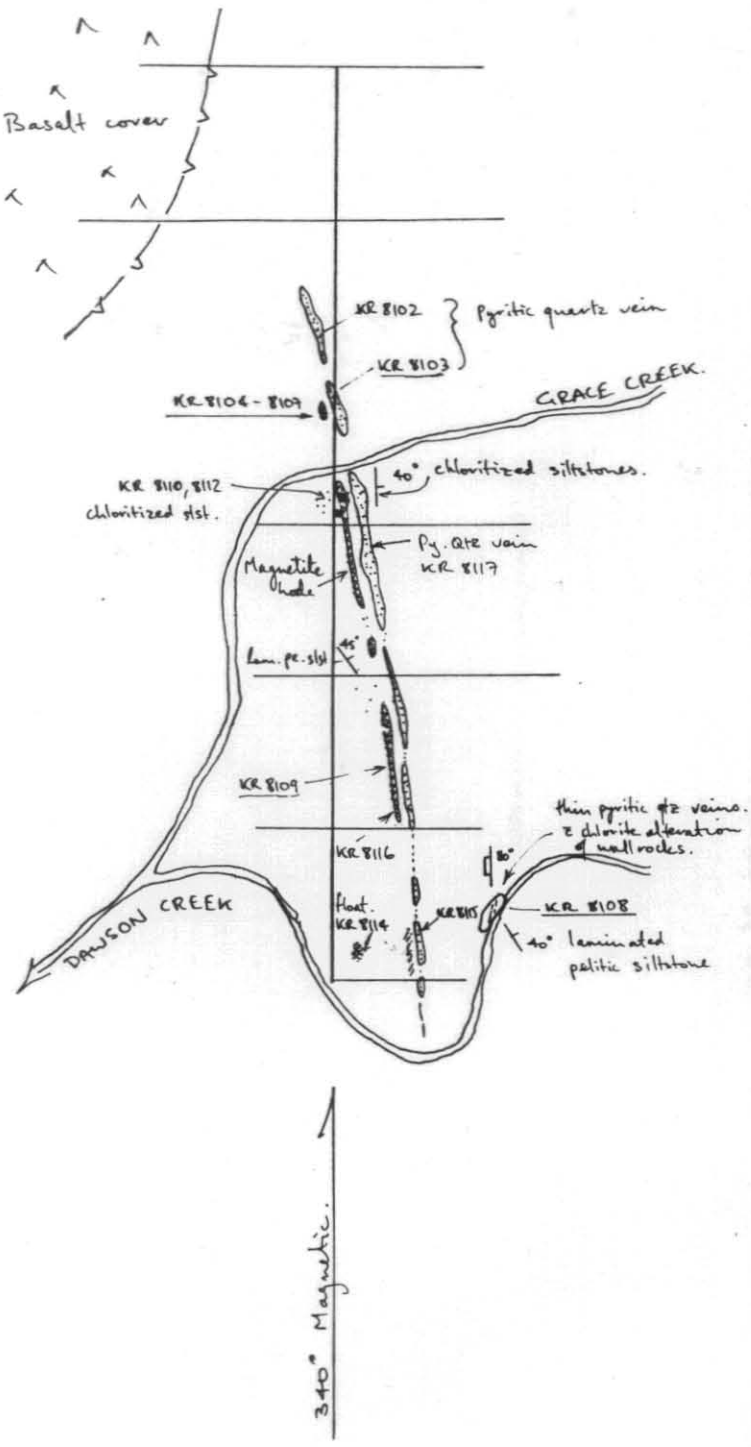


FIGURE 12

LEGEND:

5 cm

DATE: Oct. '81
GEOL:
DWN:
CHKD:

GEOPEKO LIMITED

Scale: 1:2500.

GRACE CK. ANOMALY.
GEOLOGICAL SKETCH.

095

811096

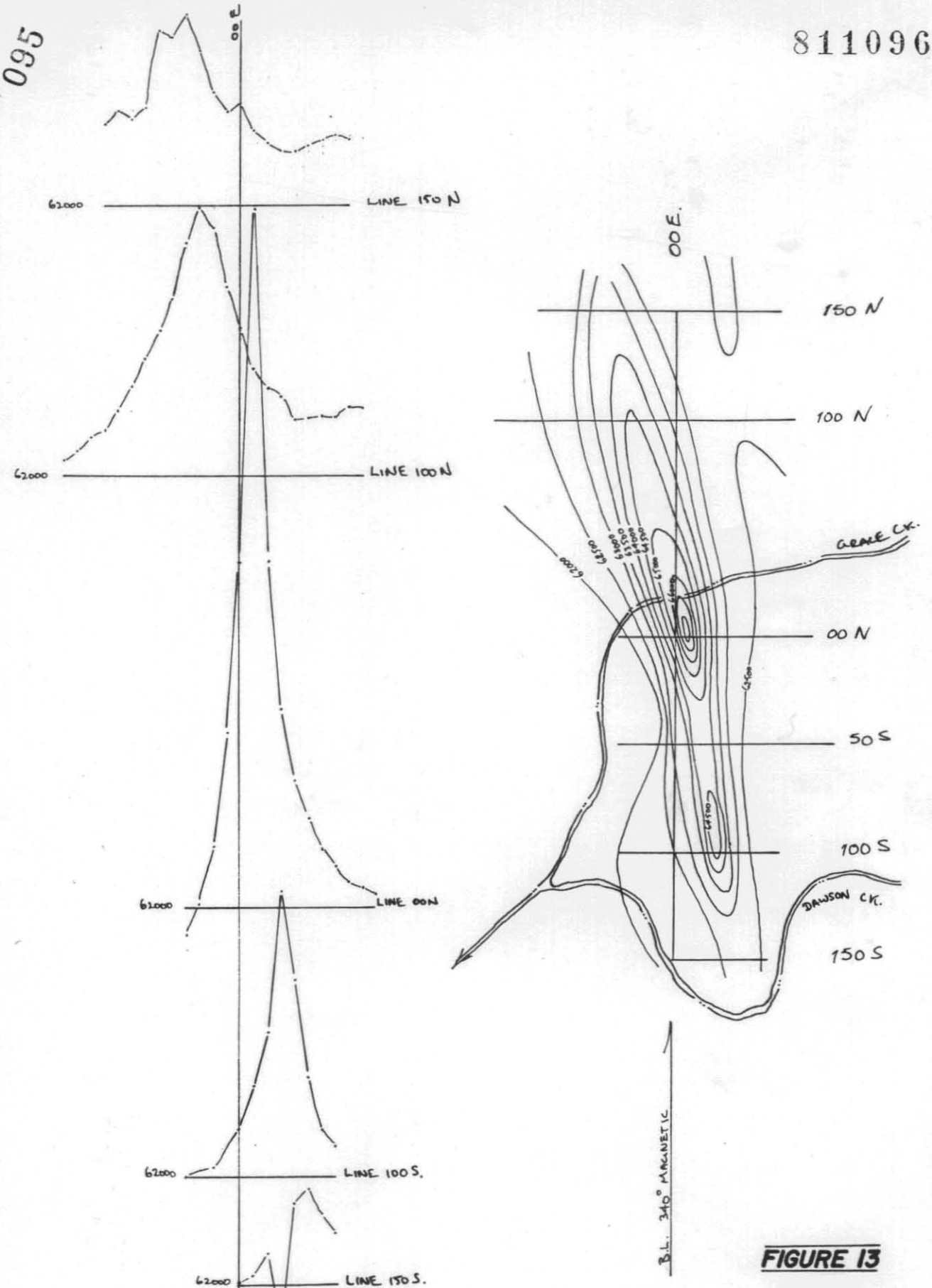


FIGURE 13

LEGEND:

PROFILES: Vert. Scale : 1 cm = 500 nT.

5 cm

DATE: 02.'81
GEOL:
DWN:
CHKD:

GEOPEKO LIMITED

Scale: 1:2500

ROCKY CAPE 1/77 – TEMMA
GRACE CREEK ANOMALY
RECONN. MAGNETIC PROFILES, CONTOURS

ROCKY CAPE - TEMMA

SARAH ANNE ANOMALY

AMG 305 000E, 5 441 000N
Photo F395, R3, 49

MAGNETICS : Datum point for four reconnaissance traverses was the eastern corner of the fence surrounding the first shack on the southern side of the cove.

Principal anomaly is on line 00NW (refer to Figure 14); a single peak of about 3000 nT, about 350m wide at base. A weaker (500 nT) narrow anomaly occurs 250m to the south on line 200 SE. Unfortunately, the presence of a small fresh water lagoon between 00NW and 200 SE precluded reading of a profile along 100 SE. A weak, (300 nT) broad anomaly exists on the vehicle track running north east to meet the main Temma road.

GEOLOGY : Source of the magnetic anomaly not observed since the main peaks occur in areas of no outcrop.
Rocks exposed in the area and round the cove are finely laminated, semi-argillaceous pale - dark grey (sometimes greenish) siltstones with very subordinate silty quartzite interbeds. (Usually less than 10cm thick).
Local strike trends vary between 300-320° (T) and dip 65-85° to the east. Cross lamination in quartzites indicates facing to the east.

Structural trends are fairly regular though there are some small folds at the southwestern side of the cove. Folds are mostly small, (upto several metres amplitude) sinistral drag folds suggesting vergence to an anticlinal axis to the west.

A fine penetrative cleavage trends about 340/80 - 85° W, generally difficult to see except in dragfolds to which the cleavage appears to be axial.

Several gossanous/pyrite quartz veins occur in the coastal outcrop about 100m west of the southern end of the beach. Veins are somewhat irregular and poddy, anastomosing and rarely rectangular but generally sub parallel the cleavage direction.

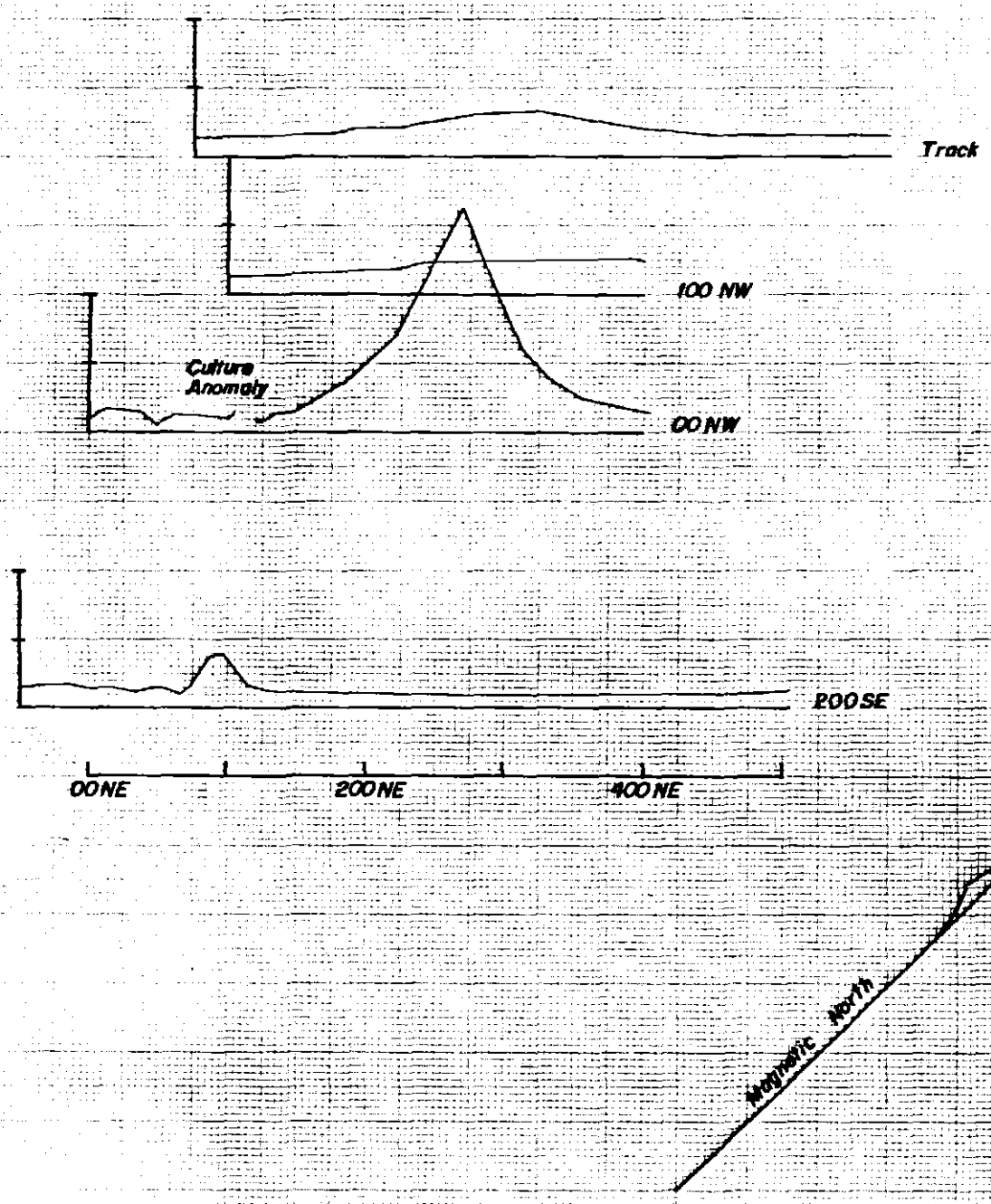
Rock chip sample KR 8046 is a sample of qtz - pyrite veining occurring in a stringer zone 0.5 - 1.0m wide parallel to cleavage. Length of zone appears to be only a few metres. KR 8047 is sample of strongly chloritized siltstone which forms an alteration envelope, about 10cm wide, adjacent to the quartz/pyrite veining.
(Note weakly anomalous Cu, Ni, As in 8046, high iron manganese in 8047).

POSTSCRIPT

Quantitative modelling of magnetic profile on line 00NW indicates the source could be a dyke like body upto 40 metres wide, dipping at 60° to the west and buried at about 40 metres depth.

098

811099



SARAH-ANNE ANOMALY E.L. 1/77

Magnetic Recon. Profiles

DRAWN: R.Tog. DATE: 7/1/82
OBS: W. Herrmann CHKD:
Hor. SCALE: 1:5000 Vert. SCALE: 1cm = 1000nT
DATUM: 62000nT

5 cm

FIGURE 14

COUTA ROCKS ANOMALY

AMG: 305 000E, 5 440 000N
Photo: F395, R3, 49

This small aeromagnetic anomaly is located on the coast a few hundred metres north of Couta Rocks settlement.

Rapid ground magnetic reconnaissance adjacent to the rocky shoreline. (Refer to figure 15) indicated a rather erratic magnetic picture but with definite broad anomaly of about 1000 nT on line 100NW. A smaller spiky anomaly occurs on line 00NW.

Rocks in the vicinity consist of finely laminated pelitic and psammo - pelitic siltstones trending around 345° T dipping steeply 75° to the East. Source of the magnetic anomaly was not observed.

Rock chip samples KR 8028, 8029 are of slightly chloritic siltstone with minor disseminated pyrite from about 50SE, 15NE on the magnetic reconnaissance grid.

This anomaly possibly relates to a small, non outcropping magnetic lode; it has very small size potential.

100

811101

COUTA ROCKS E.L. 1/77

Magnetic Recon. Profiles

DRAWN: R. Tog. DATE: 7/1/82

OBS: W. Herrmann DATUM: 62000 nT

Hor. SCALE: 1:2 500 Vert. SCALE: 1cm = 500nT

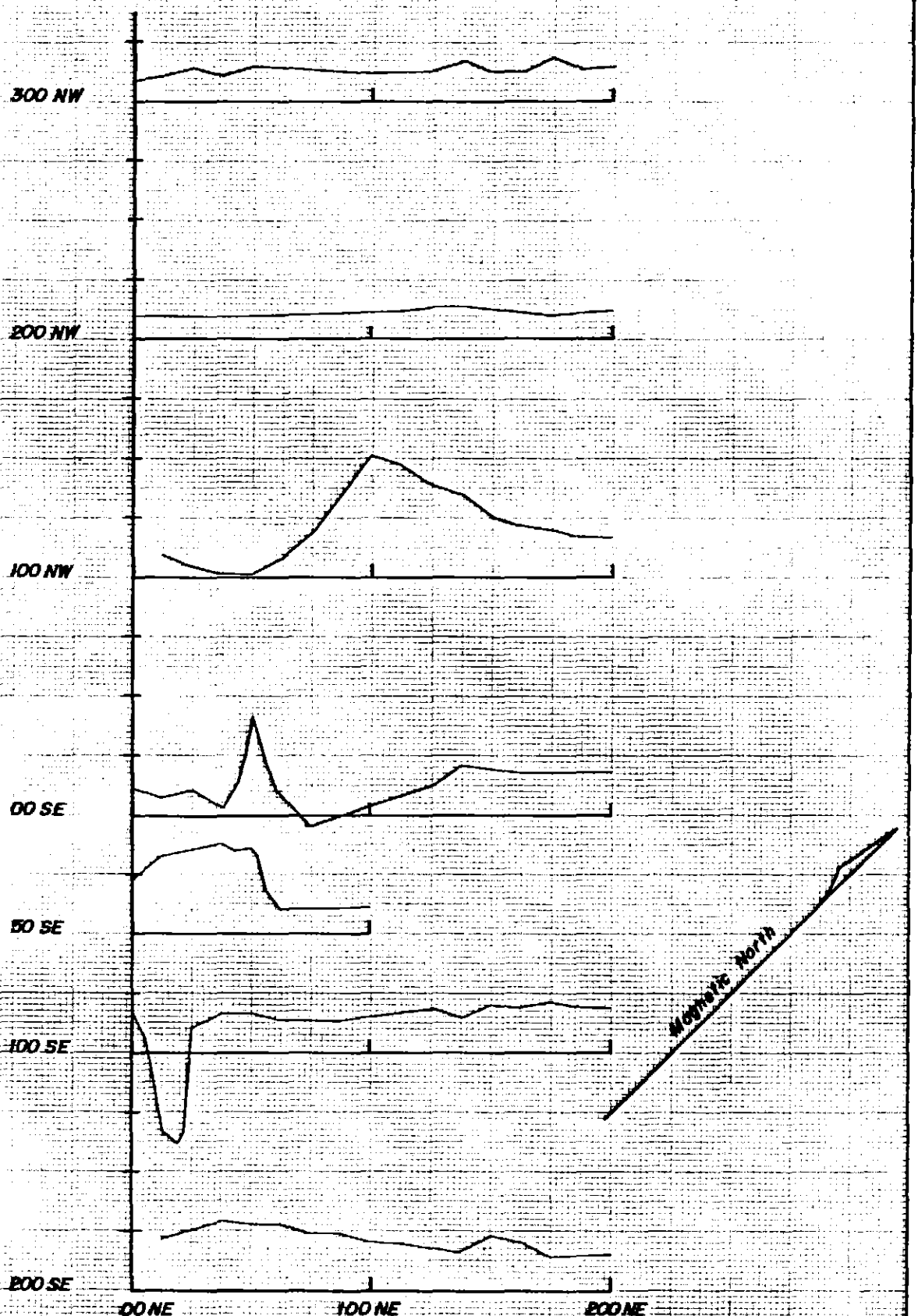


FIGURE 15

COUTA MINE

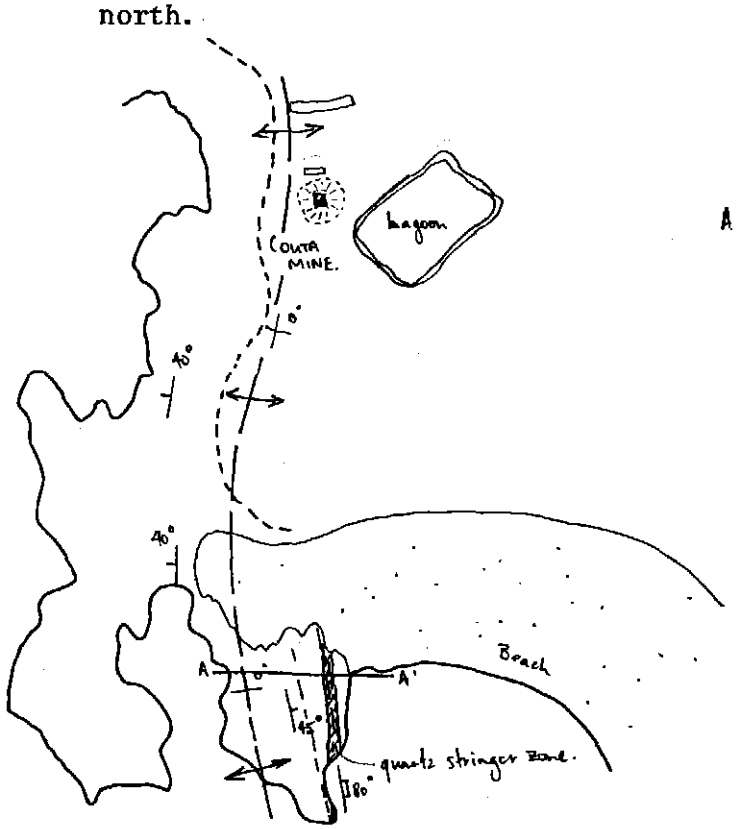
AMG : 305 500E, 5 438 400N.

One shaft and several small pits and trenches, known as the Couta Mine, are located just north of Rebecca Point. The workings are water and rubbish filled. Material on the dumps consist of siltstones with a little malachite stained vein quartz.

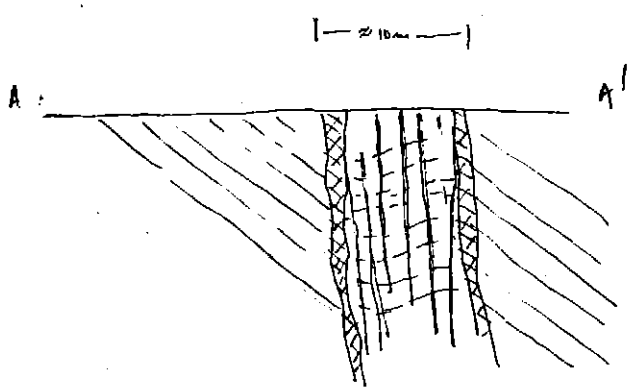
A far better exposure of the same vein system exists on the shoreline at Rebecca Point. The rocks here are cut by a 10m wide stringer zone of anastomosing quartz veinlets. The zone includes two more massive and continous veins upto 40cm wide near each outer edge of the stringer zone. General trend of veining is 340°T/80°E.

The veining is clearly cross cutting to the host "pyjama type" siltstones which trend 345°T/45°E.

There is some disruption of siltstone layering within the veined zone but it is apparent that the stringer zone is related to a small drag fold on the eastern limb of a broad, horizontal plunging, northerly trending anticline. The major anticlinal axis is about 50m west of the stringer zone on the shoreline but immediately west of the shaft to the north.



REBECCA POINT.



GEOLOGICAL SKETCH.
COUTA MINE + REBECCA PT. AREA.
Scale : Approx : 1:4000.

5 cm

102

The vein material consists mainly of quartz with local heavy iron staining and gossanous patches and minor malachite staining. In a few places partly oxidized pyrite, chalcopyrite and a hard silvery mineral resembling arsenopyrite occur in small disseminated blebs, upto 5% per volume.

Two rock chip samples of the vein material KR 7425, 7426 contained anomalous copper, silver, and minor gold. (Respectively 0.29%, 9.9gm/t, 0.024gm/t)

UPPER SYMES CREEK ANOMALY

AMG: 311500E, 5428500N

Photo: F395, R5, 159

This anomaly is located in open heathland just south of the Balfour track about 7km S.E. of Temma.

Magnetic reconnaissance over five short lines spaced 100m apart indicated only a very broad low amplitude magnetic feature. Maximum intensity is about 200 nT above background over about 200-300m width. (See profiles: Figure 16.)

This anomaly is not regarded as very significant; it is probably related to a geological formation rather than a discrete body of mineralization.

811105

FIGURE 16(a)

5 cm

UPPER SYMES CREEK ANOMALY
RECCON. T.M.I. PROFILES
HEADING 225deg MAGNETIC
HORIZONTAL SCALE 1:2500
VERTICAL SCALE 1cm=500nT

6500nT

LINE 00NW

100SW 200SW 300SW 400SW

62000

65000nT

LINE 100 SE

811106

FIGURE 16(b)

105

65000nT

100SW 200SW 300SW 400SW

62000nT

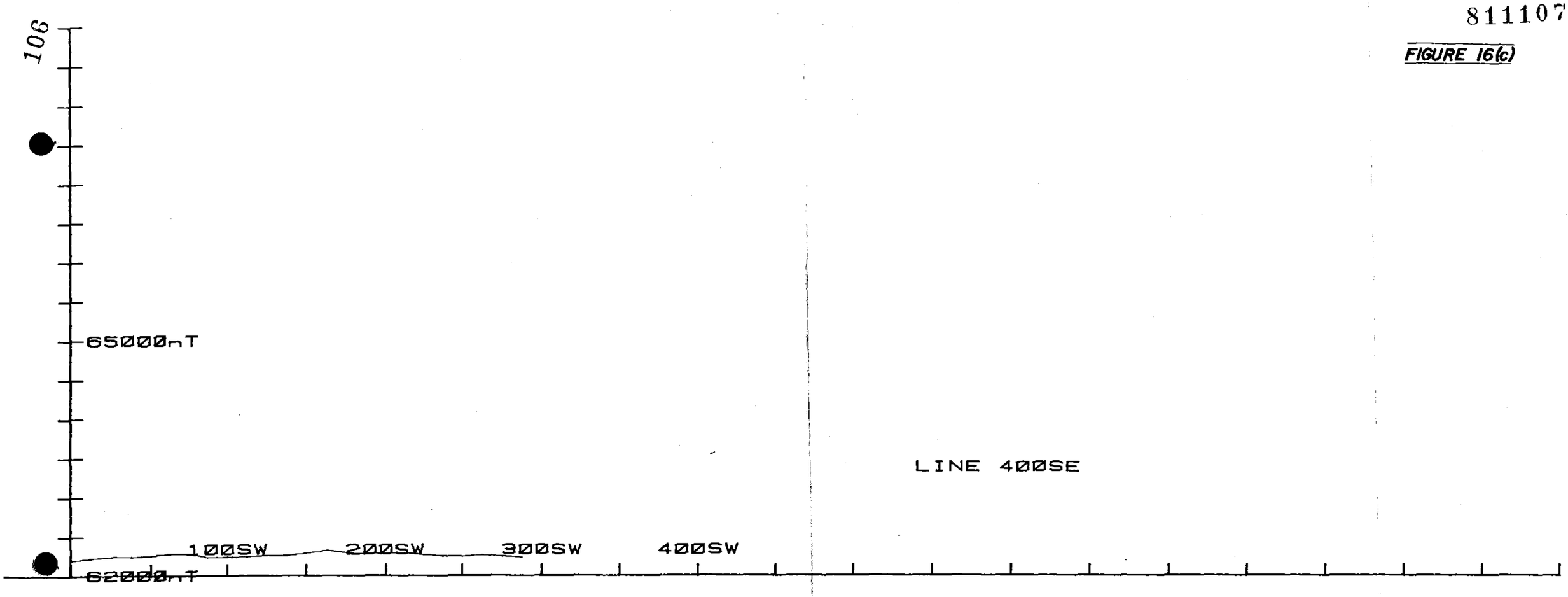
LINE 200SE

65000nT

LINE 300SE

811107

FIGURE 16(c)



107

ROCKY CAPE - TEMMA

INGRAM BAY ANOMALY

AMG 308 800E 5428 300N
Photo F395, R5 - 159

MAGNETICS : Parts of the area covered with thick, burnt out, tea tree scrubs which made it impossible to keep to regular reconnaissance traverse.
A bit of "irregular" traversing and random magnetometer readings indicated a zone of about 100 - 150m wide, apparently running roughly N-S, in which magnetic intensity is higher than background. Readings were erratic or noisy with several peaks across the "zone"; maximum intensity about 800 nT above background.

GEOLOGY : A few small outcrops of typical "pyjama" siltstone occur in the anomalous area; there is a suggestion that the anomalies correlate to outcrops or may lie close to pyjama siltstone outcrops.
Magnetics rather too irregular to be sure about this.

General situation seems rather similar to the Gannet Anomaly. Recconnaissance magnetics would necessitate line clearing; with J5 Bombardier would be adequate; priority rating fairly low.

ROCKY CAPE - TEMMA

GANNET ANOMALY

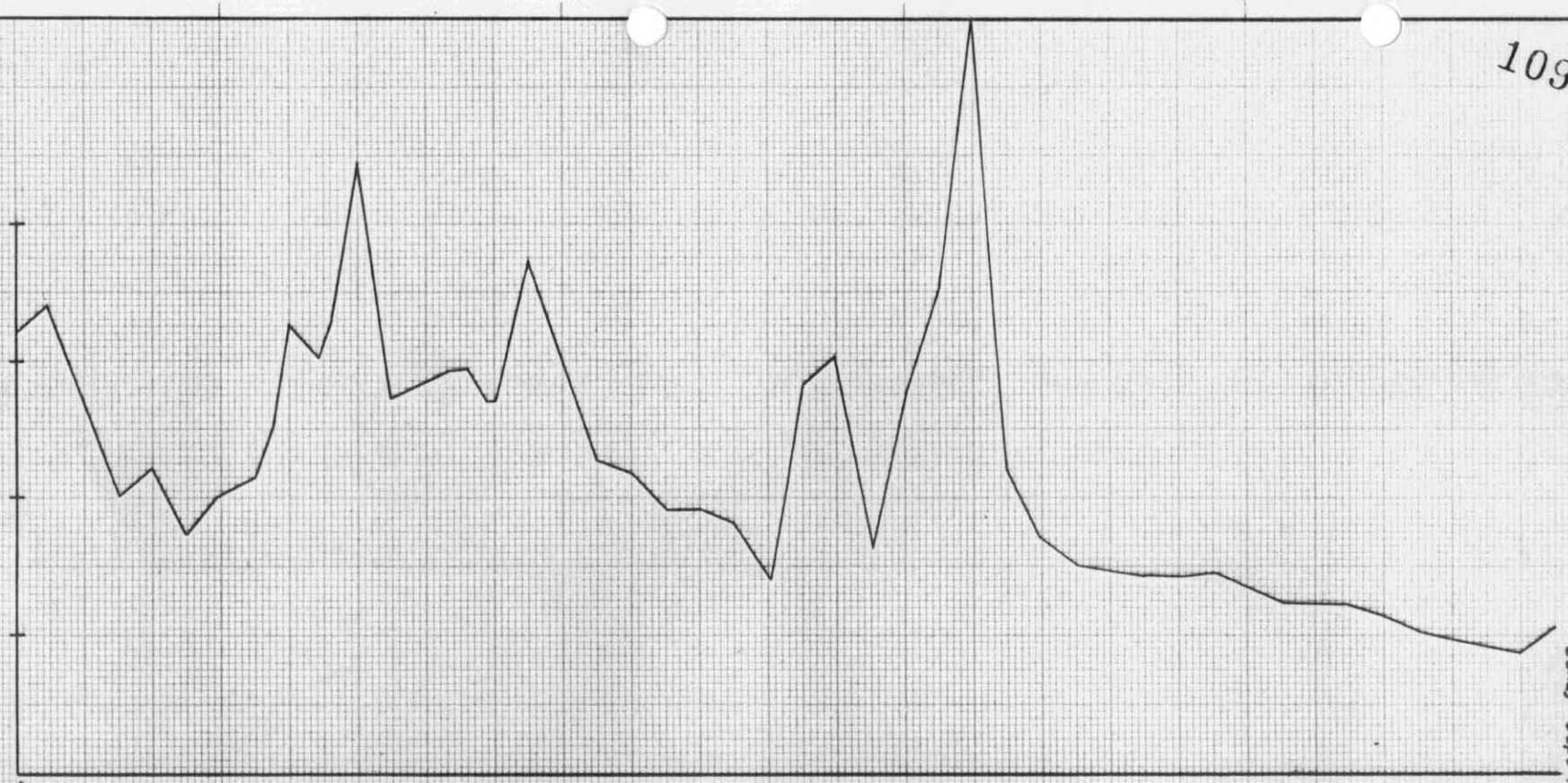
AMG 309 300E 5 426 000N
Photo F395, R6 - 199.

MAGNETICS : Two magnetic reconnaissance traverses were made. Traverse 1 was read along the vehicle track running off the Sandy Cape track to the shacks near Gannet Point. Traverse 2 commenced at a point on the Sandy Cape track about 250m south of traverse 1 and ran for 675m on a bearing of 225° Magnetic.

The profiles are rather "noisy"; in general they suggest a N-S striking zone of about 400m wide in which magnetic intensity averages about 400 nT above background. The zone is magnetically spiky with maximum upto about 1000 nT above background. (Figure 17.)

GEOLOGY : Exposure in the area is fairly good, insufficient time was available for detailed mapping.
Outcrops in the anomalous zone consist of typical pyjama siltstones; finely to medium laminated, black and white psammo - pelitic siltstones.
Fine to medium grained, bedded quartzites occur on the track and in the small quarry between traverse 1 and traverse 2. A strong photo linear, probably a fault runs SE - NW across the southern end of the aeromagetic anomaly, outlining the coast just east of Gannet Point. Pyjama siltstones south of the supposed fault, near the western end of Traverse 2, strike 280°T, dip 35° to the north and are gently folded about small open folds plunging to the north.

No indication of the magnetic source is visible in the outcrops; no samples taken. The magnetic data suggests a "formation type" response. If considered interesting further magnetic reconnaissance to south and geological mapping may be carried out.



GANNET ANOMALY: TRAVERSE 1, E.L. 1/77

Magnetic Recon. Profiles

DRAWN: R.Tog
OBS: W. Herrman
INST: Chemtron.
Hor. SCALE: 1:2500

DATE: 7/1/82
CHKD: W.A.
DATUM: 62000nT
Vert. SCALE: 1cm = 100nT

FIGURE 17

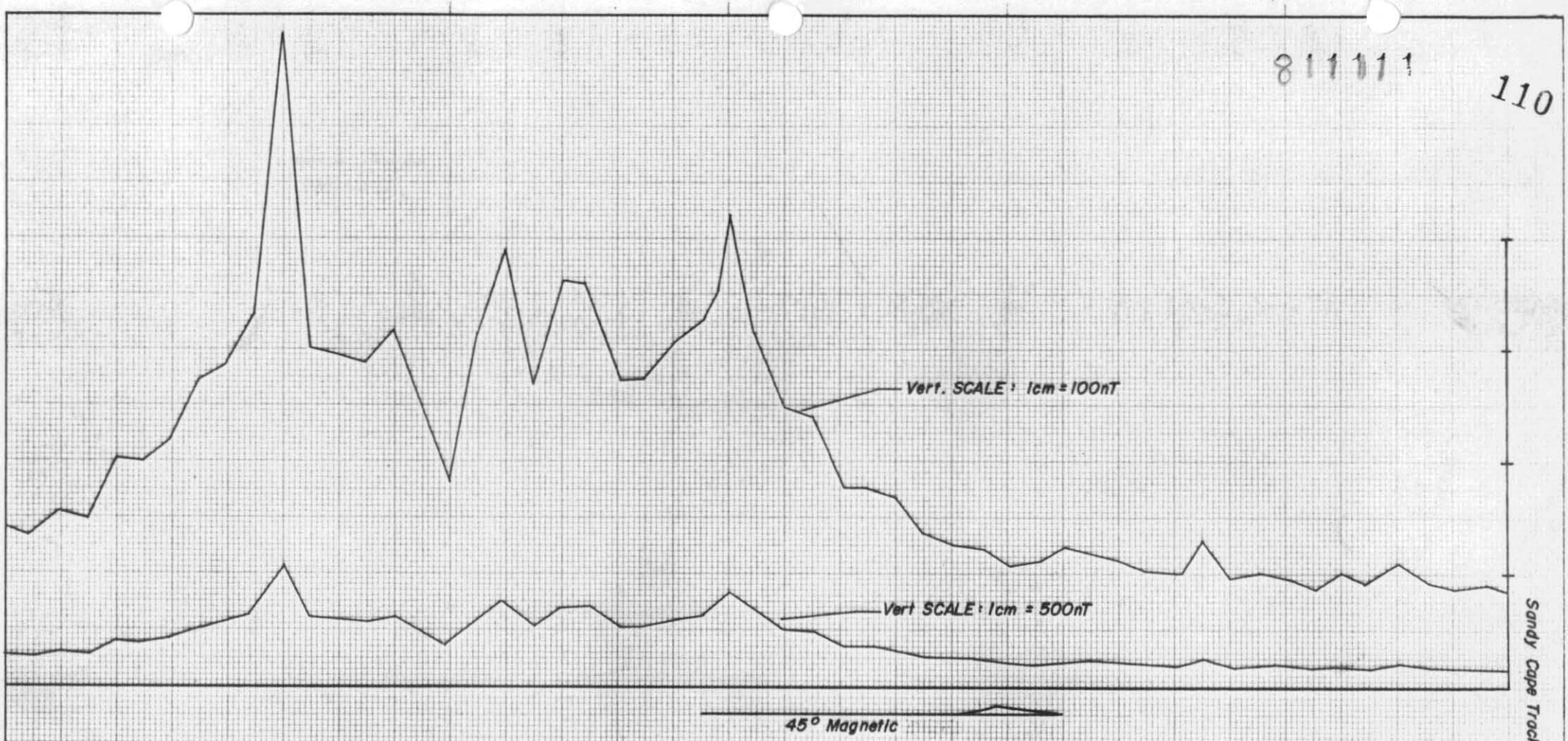
5 cm

811110

FORMACRAPH PAPERS CHRISTCHURCH N.Z. C101Y 19 cm x 23 cm (A4)

811111

110



GANNET ANOMALY: TRAVERSE 2, E.L. 1/77

Recon. Magnetic Profiles

DRAWN: R. Tog.
OBS: W. Herrmann
INST: Chemtron
Hor. SCALE: 1:2500

DATE: 8/1/82
CHKD: WH.
DATUM: 62000nT

FIGURE 17(a)

5 cm

CORMACK GRAPH PAPERS CHRISTCHURCH N.Z. C101Y 19 cm x 28 cm in mm

111

RICHARDSON'S POINT

The seaward projection of land on the southern side of Whale's Head Harbour, at Temma, is known as Richardson's Point.

The rocks here and along the coastline southward to Darty's corner consist of layered psammo-pelitic (pyjama) siltstones and minor quartzites. They trend between 320-345° and dip gently (15-40°) to the east. Just south of Richardson's Point the rocks are cut by several thin quartz veins, striking 330° and dipping 85° E. The individual veins vary from about 2mm-20cm thickness,are somewhat discontinous but parallel within a zone about 5-10m wide and extending for several hundred metres along strike. The veins are parallel to locally developed crude fracture cleavage in the rocks; there is no evidence of displacement of layering (in siltstones) on either side of the vein systems.

The veins are dominantly quartz with irregular patches of gossan and minor relict pyrite. Chloritization of the wall rocks (only a few cm wide) is very restricted. Rock chip samples KR 8123, 8124 of the quartz vein material are weakly anomalous in Cu, Pb and Fe (840ppm, 105ppm and 6.0% respectively.

This occurrence is similar to quartz veins observed at Little Eel anomaly and The Couta Mine and occurs adjacent and parallel to a rather strong aeromagnetic anomaly lying 300m off shore.

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APPENDIX 8.3

ANALYSES - ROCK CHIPS AND DRILL CORE

*NB: Sawn type specimens of all rock chip samples are stored in the Rock File at Geopeko's Devonport Office.

113

Willy Herrmann Temma [redacted]

52 Murray Road, Welshpool, W.A. 6106 Phone (09) 458 7999
44 Lane Street, Kalgoorlie, W.A. 6430 Phone (090) 21 1416

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83 1 08 285

Client: Geopeko Ltd
(1) Devonport

Order No. KR 2652 Date Received 19/6/81
Reference K 502 Results Required
Delivered by Total No. of Samples 17

(2) SAMPLE NUMBERS	STATE OF SAMPLES		PRETREATMENT							ANALYSIS			
KR 7425 - 41				1		2(c)				Cu Pb Zn Fe Mn	A1/1	AAS	
					3	4				Mo B Ag Co Ni	A1/2	11	
										Au	LL40		
										As	A1/3		
										Br	A1/4		
										Sn W	XRF		

(3) Number of pages of results 6
Date Reported 25/6/81
Results to: (1) As Above (2)

Per Telex, Mail
Number of Copies 3

(4) Remarks

(5) STATE OF SAMPLES		ANALYSIS PREPARATION				ANALYSIS METHOD	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Authorised Officer [signature]

RESPONSIBLE OFFICER [signature] 18/6/81

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

ANALABS
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Phone (09) 458 7999
Phone 316137

Code No. 83 1 08 285
Rack No. R - 55 / 23
Page No. 1
Order No. KP 2652

RESULT SHEET

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe(%)	Mn	Ag	B	Co	Ni
1 KR	7425	2900	95	20	3.25	105	4.2	x	54	305
2	26	1800	25	10	5.5	65	9.9	x	19	171
3	27	385	20	40	7.8	470	1.4	x	20	152
4	28	615	15	60	6.1	285	2.4	x	17	98
5	29	640	30	75	5.6	365	3.0	x	17	71
6	30	5500	15	125	1.20	130	11.4	1	13	180
7	31	1.60%	15	110	2.85	110	24.0	x	45	188
8	32	100	5	15	0.77	180	1.1	x	8	56
9	33	170	40	30	25.5	2.60%	0.7	x	25	36
10	34	375	140	35	21.0	1.45%	1.0	x	26	34
11	35	735	260	25	16.0	1600	6.8	x	24	92
12	36	460	95	15	19.5	515	3.2	x	19	81
13	37	55	25	40	7.2	1250	0.8	x	16	54
14	38	185	65	35	31.0	4.1%	0.6	x	24	35
15	39	65	45	15	16.5	630	0.7	x	19	145
16	40	400	250	170	14.5	2400	0.7	x	19	55
17 KR	7441	560	80	30	11.5	1.30%	1.0	x	22	114
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Duration		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Standard		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Report		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Report		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Method		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

811114

67

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Phone (09) 468 7999
Phone 311837

Division Conte, Tasmania

Code No 83 1 08 285
Rack No
Page No. 2
Order No. KP 2152

RESULT SHEET

TUBE No	SAMPLE No		Mo	Au	As	Ba	Sn	W		
1	KR	7425	11.0	0.024	3600	10	25	x		
2		26	9.5	0.020	30	x	25	x		
3		27	7.0	x	10	300	7	x		
4		28	4.5	0.008	24	100	8	x		
5		29	2.5	x	8	100	10	x		
6		30	8.5	0.012	12	40	4	x		
7		31	10.5	0.028	16	x	3	x		
8		32	2.0	0.008	2	260	x	x		
9		33	0.5	0.024	26	x	x	x		
10		34	1.0	x	13	x	3	x		
11		35	3.0	0.012	100	x	x	x		
12		36	4.5	0.060	370	x	4	x		
13		37	3.0	0.012	41	120	x	x		
14		38	0.5	x	12	x	x	10		
15		39	6.0	x	3	x	4	10		
16		40	2.0	x	14	80	x	x		
17	KR	7441	3.5	x	31	x	x	x		
18										
19										
20										
21										
22										
23										
24										
25										
26										
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31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Detection			0.5	0.008						
Standard										
Repeat										
Repeat										
Section			A/6	4.40						

RESPONSIBLE OFFICER

Results on pages unless otherwise specified
X = element present, but concentration too low to measure
X = element concentration is below detection limit
X = element not determined

811115

68.

115

Walls Tramway Rock Chips

K503

[redacted]

52 Murray Road, Welshpool, W.A. 6106 Phone (09) 458 7999
44 Lane Street, Kalgoorlie, W.A. 6430 Phone (090) 21 1416

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83 1 08 338

Client: Geopeko Ltd
(1) Devonport
Order No. KF 2657 Date Received 2/7/81
Reference K503 Results Required
Delivered by Total No of Samples 32

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for terminology)	Average Weight	PRETREATMENT: Dry	Crush	Split	Pulverize	Screen	Sieve Size	Leach	Digest	Roast	ANALYSIS (Refer to section (5) for terminology)	Preparation	Method	Comments (see section (7))
KR 7445 - 50	sc			1		200						Cu Pb Zn Fe Mn Co Ni	A1/1		
8001 - 05					3	A						Ag Bi	A1/2		
8007 - 27												Mo	A1/4		
												As	A1/3		
												Sn W	A1/4		
												XRF			
												Au	LL40		

(3) Number of pages of results 6
Date Reported 9/7/81
Results to (1) As Above (2)

Pr Telex, mail
Number of Copies 3

(4) Remarks

(5) STATE OF SAMPLES		ANALYSIS: PREPARATION			ANALYSIS: METHOD	

Authorised Officer

REPORTABLE OFFICER

Results in ppm unless otherwise noted
P = element present but not determined to meeting
K = element not determined

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Division Copper, Tasmania Phone 316837

Code No. 83 1 08 338
Rack No. R. - 24
Page No. 1
Order No. KF 2657

RESULT SHEET

TUBE No	SAMPLE No		Cu	Pb	Zn	Ag	Fe	Fe(%)	Mn	Co	Ni
1	KR	7445	335	210	65	0.5	27.0		120	35	65
2		46	300	135	50	0.5	14.5		100	25	160
3		47	220	55	10	<	12.5		20	300	90
4		48	105	25	15	<	17.5		185	30	85
5		49	30	30	20	<	17.0		130	20	95
6		50	55	30	30	<	29.5		1600	35	65
7	KR	8001	150	30	15	<	7.6		250	20	170
8		02	70	60	150	<	28.5		225	30	100
9		03	220	490	110	2.0	22.5		7250	30	40
10		04	1.2%	130	55	10.5	29.0		2.65%	45	65
11		05	1250	40	60	1.0	29.5		2.2%	35	50
12		07	2000	55	30	2.5	38.5		3.25%	30	45
13		08	4.00	80	25	8.5	30.5		5.0%	40	75
14		09	1500	150	30	2.0	32.5		1.5%	25	45
15		10	230	140	30	4.0	13.0		350	15	105
16		11	SAMPLE	NOT	SUBMITTED						
17		12	2100	30.0%	5	345	38		50	5	20
18		13	1750	13.0%	55	150	26.5		1.6%	45	85
19		14	235	1300	120	4.0	14.5		2100	30	30
20		15	3.3%	370	120	75.0	14.0		2200	45	140
21		16	1350	1300	70	7.0	21.0		1.6%	35	65
22		17	9900	2350	95	24.5	26.5		2.0%	35	120
23		18	1500	11.5%	25	113	25.5		8700	30	150
24		19	3200	1550	45	10.5	20.5		1.7%	35	130
25		20	760	31.5%	5	450	0.34		60	<	5
26		21	80	430	60	3.0	1.1		1550	20	45
27		22	655	340	40	9.5	1.1		1150	15	50
28		23	1050	425	105	8.0	0.8		2200	20	20
29		24	185	255	120	1.0	12.5		2250	30	55
30		25	275	480	155	1.5	14.0		2700	25	45
31		26	3050	4.1%	35	51.0	24.0		9150	35	85
32	KR	8027	1.5%	2350	70	49.5	23.5		1.75%	40	95
33											
34											
35			NOTE	Ni/s CHECKS, FOR PB, AS TO FAILED SAMPLES							
36			IE. E026, 8012, 8015, 8017, 8026, 8028								
37			E041, E027.								
38											
39											
40											
Detection			5	5	5	0.5			5	5	5
Standard	AV.5		45c	340	105	0.5	27.5		735	40	40
Number	KR	7445	340	230	60	<	26.0		125	31	60
Number	KR	8015	2.2%	330	115	72.0	13.0		2300	50	130
Method			A1/1								

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8111116

Willy Tenma K502

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Code No. 93 1 08 338
Rack No. R-27
Page No. 2
Order No. KP2657

RESULT SHEET

TUBE No.	SAMPLE No.		Bi	Mo	Au	As	Bi	Sn	W
1	KR	7495	x	5.5	0.032	350	x	x	15
2		46	x	9.0	0.008	370	x	x	x
3		47	x	1.0	0.008	59	x	x	x
4		48	x	2.5	0.008	8	x	3	x
5		49	x	1.5	0.024	15	x	6	x
6		50	x	1.0	0.008	30	130	x	x
7	KR	8001	x	5.0	x	210	x	x	x
8		02	2	8.5	x	47	x	x	10
9		03	x	0.5	x	6	x	4	x
10		04	5	x	0.052	40	x	x	10
11		05	1	x	0.008	18	x	9	x
12		07	2	x	0.008	760	x	x	x
13		08	2	x	0.016	17	x	x	x
14		09	x	x	0.008	430	x	5	15
15		10	7	4.0	x	90	x	x	x
16		11	SAMPLE NOT SUBMITTED						
17		12	35	x	0.040	31	x	x	x
18		13	19	0.5	0.040	21	x	4	x
19		14	4	x	0.008	19	x	x	x
20		15	2	4.0	x	70	x	8	x
21		16	5	x	0.008	43	x	4	x
22		17	5	1.0	0.020	19	80	4	x
23		18	13	1.5	0.048	25	x	x	x
24		19	x	3.0	0.020	27	320	7	10
25		20	20	x	0.032	17	x	x	x
26		21	3	0.5	x	x	240	9	x
27		22	2	x	x	4	190	8	x
28		23	2	0.5	0.008	1	110	6	x
29		24	3	x	x	6	x	4	x
30		25	x	x	x	4	x	8	x
31		26	8	0.5	0.008	1	20	5	10
32	KR	8027	1	x	0.032	3	10	5	10
33									
34									
35									
36									
37									
38									
39									
40									
Direction			1	0.5	0.008				
Standard	Mo		111	70.0					
Result	KR	7495	2	4.5					
Result	KR	8015	2	3.5					
Method			AA2	AA2	KCAO				

Results in ppm unless otherwise stated
T = element present, but concentration too low to measure
K = element not present in sample
— = element not determined

RESIDENT GEOLOGIST 15 7 81

RESPONSIBLE OFFICER 15 7 81

ANALABS

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Code No. 93 1 08 338
Rack No.
Page No. 3
Order No. KP2657

RESULT SHEET

TUBE No.	SAMPLE No.		Pb(%)	Ag
1	KR	8012	40.3	340
2		13	13.9	150
3		15	——	74
4		17	——	33
5		18	11.8	102
6		20	40.9	535
7		26	6.58	55
8	KR	8027	——	49
9				
10				
11				
12				
13				
14				
15				
16				
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18				
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28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
Direction			25	
Standard				
Result				
Result				
Method			AA2	

Results in ppm unless otherwise stated
T = element present, but concentration too low to measure
K = element not present in sample
— = element not determined

RESPONSIBLE OFFICER 15 7 81

81111

70

NELSON RIVER ROCKS.

117

[redacted]

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44 Lane Street, Kalgoorlie, W.A 6430 Phone (090) 21 1416

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No 831 08 375

Client: Cesapeko Ltd

(1) Devonport Order No. KP 2675 Date Received 14/7/81

Reference K 505 Results Required

Delivered by Total No. of Samples 23

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for terminology)	Average Weight	PRETREATMENT: Dry	Crush	Split	Pulverise	Sieve	Ignite (Specify)	Other (Specify)	Digest	ANALYSIS (Refer to section (5) for terminology)	Procedure No.	Elements	Comments (see section (7))
KR 8028-50	Ro		1	2K	7K	7					Cu Pb Zn Fe Mn Co Ni	A/1		
					4	5					Ag B	A/2		
											Mo	A/4		
											As	A/3		
											Bi	A/4		
											Au	Lit 40		
											Sn W	XRF		

(3) Number of pages of results 4

Date Reported 23/7/81

Results to (1) As Above (2)

Per Telex, mail

Number of Copies 3

(4) Remarks

Authorised Officer 6 Dunn

RESPONSIBLE OFFICER 23/7/81

Results are given unless otherwise stated
E = element present, but concentration too low to be measured
N = element not detected
Q = element not determined

811118

ANALABS

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Division Cooee, Tasmania Phone 316837

Code No 831 08 375
Rack No F-37
Page No 1
Order No KP 2675

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe(%)	Mn	Co	Ni	As
1	KR	8028	80	30	15	7.5	515	20	45	61
2		29	85	20	15	8.0	510	15	85	15
3		30	20	35	25	13.0	75	20	115	61
4		31	5	20	20	19.5	390	25	100	<
5		32	15	25	45	24.5	150	35	110	100
6		33	10	10	10	0.98	65	10	175	3
7		34	5	25	70	30.5	710	40	70	14
8		35	10	40	115	37.5	185	40	85	20
9		36	35	25	70	38.5	170	40	110	170
10		37	55	15	50	39.5	155	40	100	61
11		38	230	35	50	40.0	1950	30	100	4
12		39	385	25	55	32.5	190	35	105	33
13		40	245	38	100	48.0	7200	45	50	20
14		41	475	45	50	36.0	3050	30	55	<
15		42	335	40	130	24.5	4300	35	55	6
16		43	170	70	40	7.6	845	15	115	<
17		44	120	55	20	25.0	265	30	95	2
18		45	200	105	45	37.0	340	35	70	36
19		46	160	<	5	4.35	160	25	230	83
20	KA	8047	50	20	115	17.0	3300	25	40	9
21		48	25	95	130	19.5	170	20	130	5
22		49	6050	160	25	26.5	4%	45	75	4
23	KR	8050	50	60	70	6.8	1200	15	35	7
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Detection			5	5	5		5	5	5	1
Standard	Aus. S		435	330	105	29.0	225	40	55	60
Blank	KR	8028	80	35	15	7.4	515	15	40	41
Blank	KR	8047	50	20	120	11.5	3900	30	40	<
Method			A/1							A/3

71.

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ANALABS

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Phone (09) 458 7999

Division: Cooee, Tasmania

Phone: 316237

Code No: 83 1 08 375
Rack No: R - 36
Page No: 2
Order No: KP 2175

RESULT SHEET

TUBE No.	SAMPLE No.		Ag	Bi	Mo	Au	Ba	Sn	W
1	KR	8028	0.1	2	1.0	x	90	6	15
2		29	0.2	x	2.0	x	20	x	x
3		30	0.2	x	1.5	x	x	4	10
4		31	0.1	x	1.5	x	x	3	10
5		32	x	x	2.0	x	x	x	x
6		33	0.2	1	7.0	x	x	4	x
7		34	x	x	x	x	x	5	15
8		35	x	x	0.5	x	x	5	x
9		36	0.1	x	1.5	x	x	3	x
10		37	x	x	0.5	x	x	4	x
11		38	0.1	x	3.0	x	x	5	15
12		39	1.3	x	3.0	x	x	x	x
13		40	x	x	x	x	x	3	10
14		41	x	x	x	x	10	7	x
15		42	x	x	0.5	x	x	4	10
16		43	x	x	2.0	x	240	10	15
17		44	x	x	1.5	x	x	7	x
18		45	x	x	x	x	x	x	x
19		46	x	1	8.0	0.020	x	4	x
20	KR	8047	x	x	x	x	x	5	10
21		48	x	x	3.0	x	40	x	x
22		49	7.7	x	x	0.056	x	7	10
23	KR	8050	0.1	x	x	0.008	160	4	x
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
Detection			0.1	1	0.5	0.005		3	10
Standard	ASS 5		0.5	x	3.5				
Nodes	KR	8028	x	x	1.0				
Nodes	KR	8047	x	x	x				
Method			A1/2		A1/6	LC40		XRF	XRF

RESPONSIBLE OFFICER: B [signature] 23 7 81

Results in ppm (plates otherwise indicated)
T = element present but concentration too low to measure
X = element concentration shown (detection limit)
< = element not determined

72.

811119

ANALABS

A DIVISION OF MACDONALD HAMILTON & CO. PTY. LTD.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999

W. Herrmann
Temma
Drill Core

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83.1 01 19936

Client: Geopeko
(1) P.O Box 598
DEVONPORT TAS 7310

Order No. 507
Date Received 3-8-81
Reference
Results Required
Delivered by
Total No. of Samples 27

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for technology)	Average Weight	PRETREATMENT	ANALYSIS (Refer to section (6) for technology)	Procedure	Method	Contingent Method
KRB051-B077				Fe,Mn,Cu,Pb,Zn	A1/1	AAS	
				As	A1/3	AAS	
				Ag	A1/2	AAS	
				Au		LGAD	
				W	A12		
				Sn	A14		
				Ti		XRF	

(3) Number of pages of results
Date Reported
Results to (1) as above (2)
Per
Number of Copies 3

(4) Remarks

(5) STATE OF SAMPLES		ANALYSIS PREPARATION				ANALYSIS METHOD	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Authorised Officer

ATTENTION: [illegible] the disposal of your samples
DISCARD IMMEDIATELY
DISCARD AFTER 2 MONTHS
(PLEASE TICK APPROPRIATE BOX)

JOB No. 83.1 01 19936

FEET UNTIL ADDED 2 DAYS STORAGE CHARGE WILL BE MADE
RETURN TO

RESPONSIBLE OFFICER

Results in conjunction otherwise specified
[illegible]

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (09) 458 7999
Phone
Division

Code No. 83.1 01 19936
Rack No. 66 / Ag.5 52a
Page No. 1
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Fe	Mn	Cu	Zn	Pb	As	Ag	Au
1	KR	8051	32.5	1.0%	115	80	30	150	x	x
2		52	30.0	2.0%	230	75	50	380	0.3	0.064
3		53	26.0	1.6%	155	35	20	200	x	0.040
4		54	25.0	1.7%	155	35	30	16	x	x
5		55	31.0	1.5%	800	280	20	11	0.6	x
6		56	25.0	1.5%	310	65	5	10	x	x
7		57	32.0	2.5%	230	55	5	6	x	x
8		58	26.0	2.0%	295	55	10	6	x	x
9		59	23.0	2.6%	195	65	10	22	x	x
10	KR	8060	24.0	6700	360	40	5	11	0.3	x
11		61	5.6	590	75	70	x	96	x	x
12		62	5.0	465	90	95	15	[illegible]	x	x
13		63	4.7	500	380	70	15	[illegible]	x	x
14		64	19.0	590	2250	190	320	110	1.7	x
15		65	26.5	1.4%	30	105	15	[illegible]	x	x
16		66	12.5	1.6%	20	50	x	[illegible]	x	x
17		67	27.0	4200	10	35	5	[illegible]	x	x
18		68	24.0	2900	60	40	x	[illegible]	x	x
19		69	24.0	1600	170	25	x	[illegible]	0.1	x
20	KR	8070	18.0	8000	65	25	5	[illegible]	x	x
21		71	29.0	4400	105	25	10	[illegible]	x	x
22		72	11.5	1300	30	15	x	[illegible]	x	x
23		73	29.0	3.4%	175	45	20	[illegible]	x	x
24		74	9.0	5.8%	350	30	50	[illegible]	0.1	x
25		75	6.3	2700	85	60	20	[illegible]	x	x
Detection										0.008
Standard										1.71
Dilution										
Method										XF-45

811120

73

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 458 7999

Division

Phone

Code No 83.101/19936

Rack No

Page No 2

Order No

RESULT SHEET

TUBE No.	SAMPLE No.		Fe	Mn	Cu	Zn	Pb	As	Ag	Au
1	KR	8076	3.0	1300	25	35	260	2	0.6	X
2	KR	8077	3.9	800	15	50	185	2	X	X
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24 Repeat	KR	8051	33.0	[illegible]	135	95	25	4	X	
25 Repeat	KR	8076	2.9	1300	25	35	265	4	0.6	
Detection			5	5	5	5	5		0.1	0.008
Standard	FS	4	9.0	650	340	800	105	2.1	0.5	
Digestion			A					A	A	
Method			A/I					A/I	A/I	4.40

RESPONSIBLE OFFICER

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
N = element concentration is below detection limit
- = element not determined

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 458 7999

Division

Phone

Code No 83.101/19936

Rack No

Page No 1

Order No

RESULT SHEET

TUBE No.	SAMPLE No.	Sn	W	Ti
1	KR 8054	10	15	450
2	52	4	10	50
3	53	5	X	X
4	54	7	X	50
5	55	X	X	750
6	56	7	X	300
7	57	X	X	130
8	58	6	X	200
9	59	4	X	350
10	60	3	X	530
11	61	X	X	2050
12	62	10	10	3200
13	63	X	X	1500
14	64	X	X	1900
15	65	X	X	170
16	66	4	X	90
17	67	5	X	50
18	68	X	X	310
19	69	X	X	50
20	70	X	X	X
21	71	3	X	X
22	72	5	X	80
23	73	X	10	T.S.
24	74	7	X	4300
25	75	7	X	T.S
Detection		3	10	50
Standard				
Digestion				
Method				XRF

RESPONSIBLE OFFICER

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
N = element concentration is below detection limit
- = element not determined

811121

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 468 7809

Division _____ Phone _____

Code No. 83-10119936
Rack No _____
Page No 2
Order No _____

RESULT SHEET

TUBE No.	SAMPLE No.	Sn	W	Ti						
1	KB076	8	X	3300						
2	77	7	10	3900						
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
Detection		3	10	50						
Standard										
Detection										
Method				XRF						

RESPONSIBLE OFFICER [signature] 4.8.8

Results in case unless otherwise specified
T = element present, but concentration too low to measure
K = element concentration is below detection limit
— = element not determined

75.

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (091) 458 7988

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83 1 08 543

Client: Crapeka Ltd
(1) Devonport
Order No. KP 2724 Date Received 2/3/83
Reference Results Required
Delivered by Total No. of Samples 24

(2) SAMPLE NUMBERS	STATE OF SAMPLES	PRETREATMENT	ANALYSIS		
KR- 3101-24	Ro	1 200	Cu Pb Zn Fe Mn	Au/L	
		3A	Ag	Au/L	
			Mo	Au/L	
			As	W40	
			Sn	Au/L	
			W	Au/L	

(13) Number of pages of results: 3
Date Reported 3/3/83
Results to: (1) AS Plews (2)
Per Telex, Mail
Number of Copies: 3

(14) Remarks

STATE OF SAMPLES		ANALYSIS – PREPARATION				ANALYSIS – METHOD	
Whole rock	WR	Insoluble solid	A1	Solid solid	C1	Atomic absorption	AAS
Pulp	PU	Hydrochloric acid	A2	Metallic impurities	C2	X-ray fluorescence	XRF
Core	CO	Nitric acid	A3	Other mineral acids	C3	Spectrographic	SPEC
Chips	CH	Mixed acids	A4	Alkaline sample	C4	Colorimetry	COL
Concentrate	CN	Aqua regia/Perchloric	A5	Fusion/Oxidation	C5	Chromatography	CHR
Soil	SO	Hot extraction	A6	Digestion	C6	Titration	TTR
Stream Sediment	SS	HF and/or perchloric	A7	Chemical Separation (ELUTE)	C7	Other chemical means	OTHER
Rock	RO	Fusion	A8	Glass Fusion (FUSE)	C8	Gravimetric	GRAV
						Fluorimetric	FLUOR

Authorized Officer B. Dan

ATTENTION Please advise us regarding the disposal of your samples. JOB No.
☐ DISCARD IMMEDIATELY ☐ KEEP UNTIL ADVISED (A STORAGE CHARGE WILL BE MADE)
☐ DISCARD AFTER 2 MONTHS ☐ RETURN TO:
(PLEASE TICK APPROPRIATE BOX)

8111123

RESPONSIBLE OFFICER

* = all such values reported as specified
< = elements present, but concentration less than lowest measure
- = elements not determined

ANALABS

A division of Macdonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6108 (Reg. Office) Phone (091) 458 7988
Division Cooee, Tasmania Phone 316837
Code No. 83 1 01 543
Rack No. K-143/213
Page No. 1
Order No. KP 2724

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Mo
1	KR	3101	40	20	20	1.5%	700	<	2.5
2		02	25	10	5	2.5%	295	<	10.5
3		03	45	15	5	1.5%	130	0.4	5.0
4		04	215	20	60	21.5%	3600	<	2.5
5		05	55	15	10	3.5%	170	0.2	1.0
6		06	45	15	15	21.0%	80	<	<
7		07	75	15	15	31.0%	105	<	<
8		08	30	30	40	1.5%	1350	<	2.0
9		09	70	20	15	35.0%	105	<	<
10		10	300	20	55	25.5%	1950	<	<
11		11	200	15	65	16.0%	4300	<	2.5
12		12	475	20	20	38.5%	660	<	<
13		13	190	15	60	30.0%	1400	<	<
14		14	45	15	15	24.0%	220	0.1	2.5
15		15	40	10	5	1.4%	160	0.2	12.5
16		16	110	15	15	36.5%	170	<	<
17		17	40	5	<	1.4%	155	0.1	13.0
18		18	140	35	<	2350	10	0.5	2.5
19		19	10	20	20	1.7%	215	0.2	1.5
20	KR	3120	160	50	135	29.5%	200	<	3.0
21		21	35	105	40	36.0%	115	<	3.0
22		22	60	50	30	30.5%	115	<	2.5
23		23	340	105	60	6.0%	155	0.4	7.5
24	KR	3124	15	25	25	1.25%	270	0.1	3.0
Detection			5	5	5		5	0.1	0.5
Standard									
Reagent									
Reagent									
Method			AAS				AAS	AAS	AAS

ANALABS

A division of Macdonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6108 (Reg. Office) Phone (091) 458 7988
Division Cooee, Tasmania Phone 316837

RESULT SHEET

TUBE No.	SAMPLE No.		Au	Sn	W
1	KR	3101	-	3	<
2		02	-	<	<
3		03	<	<	10
4		04	-	4	10
5		05	<	3	<
6		06	<	6	<
7		07	<	<	<
8		08	<	<	<
9		09	<	<	<
10		10	<	<	<
11		11	<	<	<
12		12	<	<	<
13		13	<	<	<
14		14	<	<	<
15		15	<	<	<
16		16	<	<	<
17		17	<	<	<
18		18	<	<	<
19		19	<	<	<
20		20	<	<	<
21		21	<	<	<
22		22	<	<	<
23		23	<	<	10
24	KR	3124	<	<	<
Detection			0.05	3	10
Standard					
Reagent					
Reagent					
Method			W40	Au/L	Au/L

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ANALABS

A DIVISION OF MACDONALD HAMILTON & CO PTY LTD
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7199

Temm
Willy
R 512

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83 1 08 579

Client: Geopeko Ltd
(1) Devonport
Order No. KP 2748 Date Received 22/9/81
Reference: Results Required:
Delivered by: Total No. of Samples 9

(2) SAMPLE NUMBERS	STATE OF SAMPLES	PRETREATMENT	ANALYSIS
KR 9125-33	Ro	1 (22CT)	Cu Pb Zn Fe Mn
		34	Ag
			Mo
			Ti
			Sn
			W
			Li

(3) Number of pages of results: 4
Date Reported: 30/9/81
Results to: (1) As Above (2)
Per: Telex, mail
Number of Copies: 3

(4) Remarks:

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
Rock RO	A1 Nitric acid C4	AAS
Soil SO	A2 Hydrochloric acid C5	XRF
Sediment SE	A3 Nitric acid C6	EDTA
Core CO	A4 Other mineral acids C7	COL
Rock Chips RC	A5 Aqueous extract C8	CHN
Drill RD	A6 Organic extract C9	TTN
Pulp PU	A7 Metal digestion C10	CHEM
Soil Sample SA	A8 Ignition C11	MISC
Stream Sediment ST	A9 Fusion C12	FLUOR
Heavy Mineral HM	A10 Other C13	

Authorised Officer: B Dunn

ATTENTION Please advise us regarding the disposal of your samples JOB No

DISCARD IMMEDIATELY
DISCARD AFTER 2 MONTHS
(PLEASE TICK APPROPRIATE BOX)

KEEP UNTIL ADVISED (A STORAGE CHARGE WILL BE MADE)
RETURN TO

8111124

ANALABS

52 Murray Road, Welshpool W.A. 6100 (Mail Office) Phone (09) 458 7899
Client: Cooee, Tasmania Phone 311937

Code No. 83 1 08 579
Rack No. R-519 / 11
Page No. 1
Order No. KP 2748

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe%	Mn	Ag	Mo	As
1	KR	9125	1000	50	140	24.0	4400	0.2	x	x
2		26	310	20	40	10.5	4.2%	x	x	x
3		27	5	25	35	2.50	410	0.1	0.5	x
4		28	15	30	10	34.0	145	0.1	1.0	x
5		29	20	30	5	4.75	210	0.2	7.0	x
6		30	5	25	5	25.0	130	0.2	1.5	x
7		31	10	40	15	37.5	190	0.4	1.5	x
8		32	10	70	15	42.0	130	0.4	1.5	x
9	KR	8133	10	30	15	39.0	115	0.1	1.0	x
10										
11										
12										
13										
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16										
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35										
36										
37										
38										
39										
40										
Detection			5	5	5			0.1	0.5	0.005
Standard	AS65		425	340	100	34.0	235	0.8	4.5	
Rock	KR	9125	1000	50	140	25.0	4400	0.2	x	
Repeat										
Method			Al					Al	Al	Ag

RESPONSIBLE OFFICER B Dunn 30 / 9 / 81

Results in ppm unless otherwise stated. 1 = Insufficient sample for analysis. x = Not analysed. Detection limit given for guidance only.

77.

811125

124

KS12.
Tennant Creek

ANALABS

A division of Mac Robertson Investments & Co. Pty. Ltd.
57 Murray Road Welshpool W.A. 6106 (Reg. Office)
Division: Cook, Tasmania
Phone (09) 458 7999
Phone 318457

Code No 83.108.579
Rock No
Page No 3
Order No KP 2748

RESULT SHEET

Tube No	Batch No		Sn	W	Ti						
1	KR	8125	X	10	5720						
2		26	15	X	4030						
3		27	L	X	1950						
4		28	5	15	140						
5		29	X	15	110						
6		30	X	X	260						
7		31	X	X	310						
8		32	4	X	110						
9	KR	8133	4	15	150						
10											
11											
12											
13											
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38											
39											
40											
Duplicate				10							
Standard											
Blanks											
Blanks											
Number			KRE								

RESPONSIBLE OFFICER

B.D. 7.10.81

78.

APPENDIX 8.4

ANALYSES - C-HORIZON SOILS

811126

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811127

[redacted]

NELSON RANGE
JACKS CREEK.

52 Murray Road, Welshpool, W.A. 6108 Phone (091) 458 7999
44 Lane Street, Kalgoorlie, W.A. 6430 Phone (090) 21 1418

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 93 1 08 366

Client: Geopeko Ltd
(1) Devonport — Order No. KP 2673 — Date Received: 15/1/81
Reference: K Sut — Results Required:
Delivered by: — Total No. of Samples: 139

(2) SAMPLE NUMBERS	STATE OF SAMPLES	PRETREATMENT	ANALYSIS
TS 11379 - 12016	So	32	Cu Pb Zn Fe Mn — A1/1 Ag — A1/2 Sn W — XRF

(3) Number of pages of results: 6
Date Reported: 22/1/81
Results to: (1) As Above. (2)
Per: Telex, mail
Number of Copies: 3

(4) Remarks:

RESPONSIBLE OFFICER: B Dan 22.1.81

Results on ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element not determined (above detection limit)
- = element not determined

(5) STATE OF SAMPLES		ANALYSIS – PREPARATION				ANALYSIS – METHOD	
other ores	BE	aqua regia	A1	cold acid	CA	atomic absorption	AAS
cyanide	BC	hydrochloric acid	A2	cyanide amenable	CB	X-ray fluorescence	XRF
tailings	CU	nitric acid	A3	other mineral acids	HA	spectrophotometry	SPEC
rocks	RK	other organic	A4	chelating extract	AX	gravimetry	GRA
soil	SO	nitric-perchloric	A5	cyanidation	AD	chromatography	CHR
stream	FW	HF digested	A6	fusion	AS	titration	TTR
sediment	SED	HF under pressure	A7	mineral separation (HEAVY)	HP	other chemical means	CHEM
mineral	MI	Sodium	A8	stream fraction (HEAVY)	SF	miscellaneous	MISC

Authorized Officer: B Dan

ANALABS
A division of Australasian Laboratories & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6108 (Reg. Office)
Phone (091) 458 7999
Division: Tasmania — Phone 31 4757

Code No. 93.1 08 366
Rack No. A - 9/12
Page No. 1
Order No. KP 2673

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	11378	5	30	5	3500	15	1.3	6	15
2		79	10	175	30	1.6%	5	2.4	X	X
3		80	5	15	0	4000	35	2.2	6	X
4		81	5	10	10	3000	45	2.3	X	15
5		82	20	5	5	7000	45	2.5	X	X
6		83	5	<	20	1.35%	55	2.1	X	X
7		84	5	25	45	2.1%	255	2.4	X	X
8		85	5	25	10	6500	100	<	4	X
9		86	<	15	5	1300	10	2.3	5	10
10		87	5	20	5	7150	50	2.1	6	X
11		88	<	15	15	6750	70	0.7	7	X
12		89	5	15	20	1050	10	0.6	3	20
13		90	5	25	15	2550	20	2.3	4	X
14		91	5	40	20	2950	25	2.3	4	15
15		92	40	45	25	2.55%	95	0.1	3	10
16		93	65	50	30	6.7%	250	<	9	15
17		94	5	10	10	1.45%	5	<	3	X
18		95	5	25	35	5300	125	0.1	3	15
19		96	50	5	30	6.1%	35	<	10	X
20	TS	11397	5	10	20	7300	275	<	X	X
21		98	<	60	5	2350	50	2.2	X	X
22		99	110	40	75	6.2%	95	<	X	X
23	TS	11900	5	65	10	1.15%	195	<	3	X
24		01	5	40	20	1.2%	135	<	X	X
25		02	10	15	25	3050	35	0.1	X	X
26		03	65	40	75	6.6%	930	<	X	15
27		04	20	15	15	1.9%	295	0.3	7	X
28		05	15	20	10	1.6%	180	<	X	X
29		06	5	20	5	3200	35	0.1	8	X
30		07	<	20	25	4350	100	0.2	7	X
31		08	10	<	10	6250	125	0.9	9	35
32		09	<	10	15	5000	45	0.1	X	10
33		10	<	15	5	4250	155	<	8	X
34		11	5	10	10	4550	160	0.1	X	X
35		12	5	10	5	3500	130	<	X	X
36		13	5	15	5	3750	90	0.1	3	X
37		14	<	15	15	3800	50	<	X	X
38		15	10	15	30	1.25%	1050	0.2	X	X
39		16	<	5	5	2200	20	<	X	X
40	TS	11917	<	5	5	1750	20	<	3	X
Detection			5	5	5	5	5	0.1	3	10
Standard	AS55		475	315	115	28.0%	275	0.5		
Repeat	TS	11878	5	80	15	3550	80	1.5		
Repeat	TS	11897	5	20	15	9500	275	<		
Method			A1/1					A1/2	XRF	

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ANALABS

A division of MacKenzie Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (091) 458 7999
Division Coore, Tasmania
Phone 314337

Code No. 93 103 346
Rack No. R-19 1/2 50
Page No. 2
Order No. SP 2673

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	SN	W
1	TS	11918	5	5	15	4150	35	0.3	6	X
2		19	5	5	10	3600	20	0.3	7	X
3		20	10	20	30	1.5%	315	0.2	5	X
4		21	10	25	30	1.55%	520	0.2	6	X
5		22	5	10	35	9650	220	0.3	3	X
6		23	30	25	25	1.2%	320	0.2	3	X
7		24	25	25	30	4.7%	55	0.2	3	X
8		25	5	<	10	2950	60	0.3	5	X
9		26	5	30	15	9300	315	0.3	X	X
10		27	5	10	20	2150	40	0.2	3	X
11		28	<	10	15	2650	105	0.3	4	X
12		29	10	15	45	1.0%	110	0.2	X	X
13		30	10	<	25	2.7%	110	0.2	X	X
14		31	10	10	15	2.95%	105	0.1	9	X
15		32	<	10	10	1.2%	15	0.2	6	X
16		33	10	<	10	2.0%	65	0.2	X	X
17		34	5	5	10	7300	165	0.1	6	X
18		35	5	5	20	1.2%	240	0.2	X	X
19		36	<	<	5	6850	45	0.1	5	X
20	TS	11937	<	5	5	4400	30	0.3	X	X
21		38	<	10	5	5000	170	0.2	5	X
22		39	<	5	5	6750	80	0.2	7	X
23		40	10	5	10	1.4%	120	0.3	9	X
24		41	5	5	15	1.2%	105	0.3	X	X
25		42	5	15	25	9900	110	0.3	X	X
26		43	5	5	15	9600	100	0.2	4	X
27		44	40	5	45	2.65%	190	0.1	8	X
28		45	5	40	20	1.5%	240	0.1	6	X
29		46	5	15	10	5900	150	0.3	X	X
30		47	25	15	40	2.7%	200	0.1	9	X
31		48	<	45	10	4500	20	0.3	5	X
32		49	5	15	25	1.1%	120	0.1	X	X
33		50	5	10	25	1.05%	135	0.1	X	X
34		51	5	<	25	1.1%	140	0.1	X	X
35		52	5	5	35	1.6%	190	0.1	X	X
36		53	5	25	25	1.7%	175	0.3	9	X
37		54	5	5	20	1.65%	255	0.3	X	X
38		55	5	5	10	4900	145	0.3	X	X
39		56	10	5	20	1.5%	280	0.1	7	X
40	TS	11957	<	10	90	1750	50	0.3	6	X
Detection			5	5	5	5	5	0.1	3	10
Standard	ASS		430	320	110	2.65%	295	0.7		
Repeat	TS	11918	<	5	15	3150	30	0.2		
Repeat	TS	11937	5	<	5	4300	30	0.2		
Method			AI/1					AI/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element present, but concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER ... 24.7.81

ANALABS

A division of MacKenzie Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (091) 458 7999
Division Coore, Tasmania
Phone 314337

Code No. 93 103 346
Rack No. R-19A 1/2
Page No. 3
Order No. SP 2673

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	SN	W
1	TS	11953	5	0	35	3400	170	0.3	3	X
2		57	0	0	25	1.05%	270	0.3	X	X
3		60	<	<	0	1700	75	0.2	3	X
4		61	<	10	15	2200	75	0.1	3	X
5		62	<	5	15	3700	75	0.1	X	X
6		63	<	<	10	3700	20	0.1	4	X
7		64	<	5	15	7450	90	0.2	4	X
8		65	5	<	10	3350	30	0.1	3	X
9		66	5	<	20	1.1%	120	0.5	4	X
10		67	5	30	15	3800	55	0.5	7	X
11		68	5	<	15	5700	130	0.1	3	X
12		69	15	<	15	7350	145	0.2	X	X
13		70	5	10	15	7300	35	0.1	X	X
14		71	5	0	35	9400	90	0.1	4	X
15		72	5	5	20	3300	155	0.2	X	X
16		73	<	15	25	1.1%	195	0.2	6	X
17		74	<	10	50	3200	40	0.2	4	X
18		75	45	15	135	1.75%	210	0.2	X	X
19		76	5	10	30	5300	95	0.1	8	X
20	TS	11977	5	10	20	9700	95	0.2	X	X
21		78	<	15	20	1.15%	180	<	5	X
22		79	<	15	20	2.2%	60	0.1	X	X
23		80	<	5	10	6600	35	<	X	X
24		81	<	10	10	5200	25	<	X	X
25		82	5	15	30	1.7%	245	0.1	5	X
26		83	5	30	15	9750	50	0.1	7	X
27		84	<	5	20	2950	100	<	7	X
28		85	<	<	10	3000	45	0.3	3	X
29		86	5	15	60	3.65%	755	0.2	5	X
30		87	<	5	15	6300	30	0.2	6	X
31		88	5	<	30	4300	30	0.1	30	X
32		89	<	<	5	3350	25	0.2	X	X
33		90	20	15	50	6.7%	1250	0.1	4	X
34		91	20	15	45	6.6%	1200	<	X	X
35		92	10	<	15	8700	105	<	7	X
36		93	5	<	40	4650	45	<	4	X
37		94	10	<	30	5650	80	0.2	5	X
38		95	<	105	10	8700	165	<	X	X
39		96	5	25	30	1.55%	365	0.1	7	X
40	TS	11997	5	10	35	1.15%	500	<	4	X
Detection			5	5	5	5	5	0.1	3	10
Standard	ASS		435	345	115	2.60%	285	0.8		
Repeat	TS	11958	5	5	30	8600	170	0.1		
Repeat	TS	11977	5	5	20	9700	90	0.2		
Method			AI/1					AI/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element present, but concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER ... 24.7.81

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 458 7999
Phone 316837

Division Cooke, Tasmania

Code No. 33-1 WB 366
Rack No. A - 24A / 12
Page No. 1
Order No. KP 2673

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	11998	x	x	25	5600	175	0.1	3	X
2		99	x	5	20	6200	155	x	7	X
3	TS	11200	30	15	40	9000	105	0.4	3	X
4		01	30	20	30	1500	110	0.3	5	X
5		02	10	10	40	1.0%	185	x	4	10
6		03	5	10	30	4500	100	0.1	X	X
7		04	x	45	5	4400	120	0.1	7	X
8		05	x	x	5	4700	35	x	X	X
9		06	x	x	20	7700	185	x	5	X
10		07	10	5	5	4900	130	x	3	X
11		08	x	x	30	1.3%	480	x	5	X
12		09	5	x	30	2.2%	555	x	X	X
13		10	45	x	20	3000	75	x	9	X
14		11	35	x	45	2900	95	x	X	X
15		12	20	x	15	1.15%	1500	0.1	6	X
16		13	370	30	55	4.55%	330	0.8	X	X
17		14	10	x	25	4200	190	x	4	X
18		15	x	105	5	3600	170	x	5	X
19	TS	12016	10	x	20	2.3%	340	x	4	X
20										
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35										
36										
37										
38										
39										
40										
Detection			5	5	5	5	5	0.1		
Standard	ASS5		410	310	95	25.5%	230	0.5		
Repeat–	TS	11998	x	x	20	5400	165	x		
Repeat–										
Method			A1/1					A1/2		

RESPONSIBLE OFFICER [signature] 25.7.81

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure.
X = element concentration is below detection limit
– = element not determined

82.

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811130

[redacted] Smith Mtn Area Nelson River (Terminal)

52 Murray Road, Welshpool, W.A. 6106 Phone (09) 458 7999
44 Lane Street, Kalgoorlie, W.A. 6430 Phone (090) 21 1416

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83.1 09 408

Client: Geopeko Ltd
(1) Devonport Order No. KP 2685 Date Received 27/7/81
Reference: K 506 Results Required
Delivered by Total No. of Samples 246

(2) SAMPLE NUMBERS	STATE OF SAMPLES	PRETREATMENT	ANALYSIS		
TS 12017 - 262	So	1 32	Cu Pb Zn Fe Mn	Al/1	
			Ag	Al/2	
			Sn W	XRF	

(3) Number of pages of results: 14
Date Reported: 6/8/81
Results to: (1) As Above (2)
Per: Telex, Mail
Number of Copies: 3

(4) Remarks:

(5) STATE OF SAMPLES		ANALYSIS – PREPARATION				ANALYSIS – METHOD	
	RK		AS		CA		AAS
	SC		AS		SI		XRF
	CU		AS		TA		SPEC
	PB		AS		AA		COL
	SO		AS		YO		CHR
	PU		AS		IG		TTR
	SUS		AS		PP		CHEM
	TS		AS		GP		MISC

Authorized Officer

Results in ppm unless otherwise specified
T = elemental present, but concentration too low to measure
X = elemental concentration is below detection limits
– = element not determined

RESPONSIBLE OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office) Phone (091 458 7999

Division Coode, Tasmania Phone 314837

Code No. 83.1 09 408
Rack No. 8 - 44 / A 52
Page No. 1
Order No. KP 2685

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12017	<	110	20	2550	25	1.1	<	15
2		8	<	540	45	2400	40	2.5	4	X
3		19	<	725	130	5750	60	2.6	<	X
4		20	30	280	55	3.6%	90	2.2	10	X
5		21	30	130	35	2.0%	70	0.1	14	X
6		22	95	35	45	9.1%	490	<	9	X
7		23	30	75	20	2.3%	65	0.3	11	X
8		24	70	55	15	4.4%	40	0.3	5	X
9		25	300	70	25	18.5%	1450	0.1	<	X
10		26	30	75	20	4.8%	110	0.1	11	X
11		27	10	40	10	3.1%	155	0.4	3	X
12		28	5	25	10	1.65%	105	0.1	3	X
13		29	<	15	15	1.35%	50	0.2	9	X
14		30	10	95	20	3.5%	135	0.3	13	X
15		31	5	55	15	2.75%	125	0.3	12	X
16		32	5	15	10	2.6%	125	0.2	7	X
17		33	<	20	20	2.1%	170	0.2	7	X
18		34	<	25	10	3.55%	75	0.3	10	X
19		35	20	35	15	2.15%	130	0.1	3	X
20	TS	12036	<	35	15	2.1%	130	0.2	3	X
21		37	75	145	90	9.0%	970	0.1	7	X
22		38	200	35	50	35.5%	2200	<	<	14
23		39	170	25	20	3.6%	290	0.2	<	X
24		40	30	15	10	1.25%	85	0.3	6	X
25		41	30	15	10	1.35%	90	0.4	6	X
26		42	25	15	15	2.0%	160	0.4	<	X
27		43	30	35	10	3.15%	80	0.2	<	X
28		44	5	20	5	1.6%	125	0.3	5	X
29		45	SAMPLE		NOT	SUBMITTED				
30		46	<	15	10	1.35%	140	0.3	6	X
31		47	<	80	30	9800	85	0.3	8	X
32		48	<	20	65	2.15%	205	0.3	13	X
33		49	5	25	70	2.5%	200	0.2	4	X
34		50	5	25	115	1.55%	155	0.4	4	X
35		51	5	15	35	1.5%	150	0.4	7	X
36		52	<	15	95	2.0%	180	0.3	7	X
37		53	10	20	125	3.25%	160	0.2	10	X
38		54	20	20	30	2.6%	205	0.3	8	X
39		55	5	20	120	1.55%	125	0.5	4	X
40	TS	12054	10	15	25	2.65%	90	0.3	6	X
Detection			5	5	5	5	5	0.1	4	4
Standard	ASS5		450	315	110	25.0%	270	0.6		
Repeat	TS	12017	<	95	20	2500	25	1.1		
Repeat	TS	12036	<	25	15	2.05%	140	0.3		
Method			Al/1					Al/2	XRF	

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office) Phone (091) 458 7999

Division Cooee, Tasmania Phone 314937

Code No. 83.1 08 403
Rack No. A - 44 / 14 / 22
Page No. 2
Order No. KP 2685

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12057	5	25	35	2.7%	195	0.3	4	X
2		58	15	35	30	4.0%	60	0.2	15	X
3		59	9	35	40	4.4%	60	0.1	5	X
4		60	5	35	35	3.15%	145	0.2	7	X
5		61	5	20	45	3.2%	140	0.2	6	X
6		62	50	30	15	2.5%	125	<	5	X
7		63	10	35	30	3.5%	200	0.1	<	X
8		64	5	35	20	1.3%	170	0.1	6	X
9		65	5	40	30	1.7%	620	0.2	<	X
10		66	25	25	30	2.0%	145	0.6	7	X
11		67	20	35	70	3.15%	135	0.2	4	X
12		68	5	35	45	2.95%	30	0.4	4	X
13		69	10	35	45	6.0%	90	0.5	<	X
14		70	10	35	15	2.2%	175	0.1	8	X
15		71	10	25	20	2.35%	180	<	8	X
16		72	<	35	15	5350	140	<	<	X
17		73	<	115	25	7000	135	0.1	<	X
18		74	<	20	5	4200	35	0.1	8	X
19		75	5	50	5	5400	180	<	9	X
20	TS	12076	<	15	5	3000	60	0.1	4	X
21		77	105	45	125	6.3%	350	<	<	X
22		78	15	40	65	2.5%	140	0.1	<	X
23		79	20	50	20	3.35%	125	<	4	X
24		80	5	20	20	4150	60	0.1	<	X
25		81	5	20	20	2950	65	0.1	<	X
26		82	<	30	20	3650	50	0.2	<	X
27		83	<	45	50	8000	25	0.1	<	X
28		84	5	65	25	3.75%	25	<	<	X
29		85	<	15	10	3750	110	0.1	5	X
30		86	<	5	15	8500	15	0.2	<	X
31		87	5	10	15	9500	100	0.1	<	X
32		88	5	5	5	8700	85	0.1	<	X
33		89	5	15	20	1.50%	65	0.1	7	X
34		90	10	15	35	3.15%	70	0.3	6	X
35		91	10	20	25	3.15%	65	<	6	X
36		92	10	35	20	2.6%	75	0.1	6	X
37		93	5	10	35	6250	25	1.3	5	5
38		94	5	15	20	2.4%	70	1.0	<	6
39		95	<	15	10	5600	165	0.2	7	X
40	TS	12096	<	10	5	3150	430	0.1	4	X
Detection			5	5	5	5	5	0.1	4	4
Standard	AS55		445	325	105	25.5%	275	0.8		
Repeat -	TS	12057	5	20	35	2.75%	190	0.4		
Repeat -	TS	12076	<	20	5	3100	50	0.1		
Method			A/1					A/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element considered not to be present
— = element not determined

RESPONSIBLE OFFICER 6.8.81

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12097	SAMPLE	NOT	SUBMITTED					
2		98	<	15	5	1450	60	0.2	<	<
3		99	70	15	135	5.65%	190	<	<	X
4	TS	12100	20	30	30	1.7%	35	0.1	<	X
5		01	15	20	25	1.65%	75	0.1	<	X
6		02	10	25	10	1.3%	50	0.2	6	X
7		03	5	60	15	7000	70	0.1	7	X
8		04	5	25	20	1.4%	30	<	10	X
9		05	5	20	20	2.15%	50	0.1	9	X
10		06	5	20	30	7500	45	0.1	6	X
11		07	10	20	15	1.15%	25	0.1	5	X
12		08	10	15	15	2.05%	35	0.1	9	X
13		09	5	20	10	6700	460	0.2	5	X
14		10	<	5	5	1350	20	0.1	5	X
15		11	<	5	10	2050	25	0.1	5	X
16		12	5	10	20	2150	60	0.3	5	X
17		13	5	10	10	4450	155	0.2	<	X
18		14	60	15	35	2.65%	235	0.3	7	X
19		15	5	5	20	2450	30	0.1	<	X
20	TS	12116	5	20	10	3600	160	0.2	33	X
21		17	5	15	5	2500	120	0.2	5	X
22		18	5	40	25	4400	125	0.3	10	4
23		19	5	25	70	8750	155	0.3	6	X
24		20	30	35	95	3.0%	75	0.2	5	X
25		21	35	35	70	3.05%	80	0.2	4	X
26		22	10	55	30	2.0%	55	0.2	16	X
27		23	5	200	15	5250	100	0.2	7	X
28		24	5	35	10	2800	105	0.1	5	X
29		25	<	28	25	2300	100	0.2	4	X
30		26	<	15	25	1850	105	0.1	<	X
31		27	<	5	15	1750	45	0.1	<	X
32		28	5	15	20	2650	90	0.2	5	X
33		29	5	10	15	6350	20	0.1	<	X
34		30	<	25	5	2200	55	0.2	6	X
35		31	<	30	30	2100	30	0.1	8	X
36		32	<	10	<	2950	105	0.1	<	X
37		33	<	5	25	2450	80	0.1	4	X
38		34	<	10	5	2750	75	0.2	<	X
39		35	<	5	25	1600	15	0.1	<	X
40	TS	12136	5	20	25	1.35%	55	0.1	8	X
Detection			5	5	5	5	5	0.1	4	4
Standard	AS55		440	315	110	25.0%	270	0.5		
Repeat	TS	12097	SAMPLE	NOT	SUBMITTED					
Repeat -	TS	12116	5	10	5	3500	150	0.1		
Method			A/1					A/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element considered not to be present
— = element not determined

RESPONSIBLE OFFICER 6.8.81

84.

K506 Tennant Creek

131

811132

ANALABS

A division of MacDonald Hopkinson & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (09) 458 7999
Phone 316837

Division Cooee, Tasmania

Code No. 33108 408
Rack No. R-38/50
Page No. 4
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12137	5	35	46	1·30%	70	0·2	T	X
2		38	5	35	20	1·20%	105	0·2	1	X
3		39	10	30	30	2·50%	70	0·2	5	X
4		40	10	5	15	9185	70	0·2	5	X
5		41	5	15	10	5985	70	0·2	3	X
6		42	X	75	75	3055	50	0·4	INSUFFICIENT	
7		43	X	10	18	8795	115	0·2	3	X
8		44	75	35	25	8·5%	35	0·1	X	X
9		45	5	40	10	1·40%	95	0·2	5	X
10		46	5	15	10	1·45%	70	0·2	3	X
11		47	10	25	10	2·75%	65	0·2	7	X
12		48	5	20	10	1·60%	75	0·2	X	X
13		49	X	10	35	3235	40	0·4	X	X
14		50	X	25	X	6240	155	0·4	7	X
15		51	X	25	X	6525	160	0·2	4	X
16		52	X	25	X	2590	130	0·2	6	X
17		53	X	20	15	6965	70	0·2	5	X
18		54	10	30	20	1·35%	95	0·1	11	X
19		55	X	20	25	9360	90	0·1	10	X
20	TS	12156	X	20	15	5630	30	0·2	8	X
21		57	X	10	20	1·05%	55	0·2	6	X
22		58	X	20	25	2525	60	0·3	X	7
23		59	X	10	5	1955	30	0·1	X	X
24		60	X	10	10	3960	100	0·1	5	X
25		61	X	10	5	3850	105	0·2	5	X
26		62	X	15	5	6700	70	0·1	4	X
27		63	X	15	X	4350	35	0·3	7	X
28		64	30	40	50	9·0%	150	X	X	X
29		65	5	15	20	1·20%	85	0·3	8	X
30		66	5	20	15	1950	60	0·1	10	X
31		67	X	25	15	0·95%	15	0·5	5	X
32		68	X	10	30	3135	60	0·2	4	X
33		69	X	20	10	0·90%	105	0·2	7	X
34		70	5	25	35	1·00%	20	0·2	11	X
35		71	5	5	20	0·95	15	0·2	5	X
36		72	5	15	40	1·80%	50	0·2	9	X
37		73	20	25	15	3·20%	50	0·1	5	X
38		74	20	20	120	5·00%	30	X	6	X
39		75	X	15	5	0·95	135	0·3	X	X
40	TS	12176	X	5	25	1·50	90	0·2	6	X
Detection			5	5	5	5	5	0·1	4	4
Standard	ASS 5I		425	315	110	29·0%	265	0·6		
Repeat–	TS	12137	5	20	50	2·10%	90	0·2		
Repeat–	TS	12156	X	15	15	6750	30	0·2		
Method			AI/1					AI/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER B Q 7.8.81

ANALABS

A division of MacDonald Hopkinson & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (09) 458 7999
Phone 316837

Division Cooee, Tasmania

Code No. 331 08 408
Rack No.
Page No. 5
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12177	10	280	30	1·95%	190	0·2	3	X
2		78	350	505	145	4·20%	595	0·4	1	X
3		79	255	165	90	7·5%	1900	0·2	X	X
4		80	195	95	180	5·5%	550	0·3	1	X
5		81	180	75	55	5·6%	740	0·2	6	X
6		82	205	105	95	5·0%	505	0·4	X	X
7		83	120	85	35	4·25%	370	0·2	7	X
8		84	25	225	50	0·95%	170	0·3	X	X
9		85	5	185	40	3·95%	100	0·2	7	X
10		86	5	40	45	1·50%	140	0·2	2	X
11		87	5	25	30	2·70%	125	0·2	10	X
12		88	5	50	25	2·05%	25	0·2	8	X
13		89	5	30	45	1·75%	95	0·2	4	X
14		90	5	30	45	2·70%	2350	0·2	4	X
15		91	5	30	40	2·90%	260	0·2	X	X
16		92	15	30	45	1·75%	95	7·0	X	10
17		93	10	40	30	1·85%	130	5·5	X	X
18		94	10	75	50	2·25%	60	2·3	X	X
19		95	10	45	55	1·55%	180	0·3	X	X
20	TS	12196	5	115	30	1·60%	80	1·8	7	X
21		97	20	45	40	3·85%	185	2·0	3	X
22		98	30	150	30	3·90%	150	4·0	7	X
23		99	10	135	40	3·30%	285	3·4	6	X
24	TS	12200	X	40	35	3·15%	400	1·4	9	X
25		01	X	50	35	3·25%	480	1·2	6	X
26		02	5	60	35	3·00%	265	0·8	9	X
27		03	15	30	35	4·15%	180	0·8	6	X
28		04	15	25	20	3·00%	180	0·4	7	X
29		05	5	10	20	1·65%	175	0·6	10	X
30		06	10	20	35	2·55%	205	0·6	6	X
31		07	5	30	15	1·30%	90	0·1	4	X
32		08	X	20	15	4950	20	1·5	X	X
33		09	15	45	25	1·45%	30	0·8	X	X
34		10	X	30	50	2·25%	90	0·2	6	X
35		11	15	25	35	1·30%	100	0·3	X	X
36		12	5	90	35	1·90%	55	0·4	6	X
37		13	5	80	25	2·15%	105	0·7	7	X
38		14	X	55	15	1·20%	85	0·4	3	X
39		15	X	45	35	2·60%	145	0·3	3	X
40	TS	12216	10	55	15	2·30%	30	0·3	9	X
Detection			5	5	5	5	5	0·1	4	4
Standard	ASS 5		450	315	105	29·5%	260	0·5		
Repeat–	TS	12177	10	275	40	1·85%	185	0·2		
Repeat–	TS	12196	5	115	30	1·60%	80	1·6		
Method			AI/1					AI/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER B Q 7.8.81

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6108 (Reg. Office)
Phone (09) 458 7999
Division Cooee, Tasmania
Phone 316237

Code No. 931 08 405
Rack No. R-36/33
Page No. 6
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12217	15	35	25	3.60%	25	6.1	3	x
2		18	10	5	50	2.80%	255	x	5	x
3		19	5	10	60	4.75%	235	x	9	x
4		20	15	20	60	4.30%	190	x	x	x
5		21	15	15	55	4.45%	200	x	7	x
6		22	5	5	60	4.30%	215	x	7	x
7		23	5	55	75	5.00%	220	0.1	7	x
8		24	5	15	25	3.40%	15	x	11	x
9		25	x	25	30	3050	55	2.0	4	x
10		26	x	x	10	2300	25	1.0	10	x
11		27	5	5	25	2.55%	20	0.4	6	x
12		28	x	25	25	2.30%	80	0.7	7	x
13		29	x	x	20	2.55%	115	2.0	4	x
14		30	x	x	25	1.85%	140	0.4	9	x
15		31	x	x	25	1.45%	160	0.8	11	x
16		32	x	30	35	2.25%	135	0.5	8	x
17		33	x	5	20	4225	30	1.4	5	x
18		34	x	20	25	2.15%	230	0.5	9	x
19		35	x	20	45	2.60%	425	0.6	11	x
20	TS	12236	x	15	15	5650	120	0.5	6	x
21		37	10	20	35	1.80%	340	0.6	9	x
22		38	x	x	30	1.75%	270	0.4	8	x
23		39	x	5	30	1.75%	330	0.6	7	x
24		40	x	5	10	4900	85	1.5	5	x
25		41	x	10	10	4550	85	1.8	7	x
26		42	x	15	15	5750	155	1.0	9	x
27		43	x	5	20	2.15%	110	0.5	10	x
28		44	x	15	5	3650	80	0.7	8	x
29		45	x	10	5	1950	20	0.8	9	x
30		46	x	10	5	2350	25	1.0	9	x
31		47	x	x	20	1550	35	1.5	x	x
32		48	5	20	15	7550	50	0.4	11	x
33		49	x	x	10	8950	75	1.2	8	x
34		50	10	30	20	2.35%	275	1.0	8	x
35		51	5	25	10	2.30%	240	0.9	10	x
36		52	5	30	20	3.05%	75	0.2	9	x
37		53	45	20	15	2350	80	0.2	x	x
38		54	x	45	x	3080	25	0.2	4	x
39		55	5	20	15	0.95%	175	0.8	14	x
40	TS	12256	x	15	5	3950	160	0.8	9	x
Detection			5	5	5	5	5	0.1	4	4
Standard	Ass 5		440	305	160	2.15%	280	0.5		
Repeat	TS	12217	15	40	40	3.40%	30	0.1		
Repeat	TS	12236	x	15	10	5520	120	0.5		
Method			A1/1					N/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER B. Cox 7.8.81

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6108 (Reg. Office)
Phone (09) 458 7999
Division Cooee, Tasmania
Phone 316237

Code No. 931 08 408
Rack No. R-25/40
Page No. 7
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12257	5	15	25	2.00%	245	0.8	0	x
2		58	x	15	10	6860	150	9.6	5	x
3		59	x	10	5	2460	125	0.6	3	x
4		60	x	15	15	2625	60	1.1	19	x
5		61	x	10	10	2120	50	0.9	x	x
6		62	x	15	15	3360	35	1.2	4	x
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37										
38										
39										
40										
Detection			5	5	5	5	8	0.1	4	4
Standard	Ass 5		430	295	110	2.15%	260	0.5		
Repeat	TS	12257	5	20	25	1.95%	235	0.6		
Repeat										
Method		A1/1						A/2	XRF	

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

RESPONSIBLE OFFICER B. Cox 7.8.81

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133

Cover Soil ... Hermann Terrace [redacted] Creek

52 Murray Road, Welshpool, W.A. 6106 Phone (09) 458 7999
44 Lane Street, Kalgoorlie, W.A. 6430 Phone (090) 21 1416

ANALABS (AUST.) PTY. LTD.
ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83 1 08 512

Client Geopeko Ltd

(1) Devonport Order No. KP 2710 Date Received 19/8/81

Reference 508 Results Required

Delivered by Total No of Samples 49

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for terminology)	Average Weight	PRETREATMENT: Dry	Crush	Split	Pulverize	Sieve	Ferromagnetic	Other (SPECIAL)	Roast	ANALYSIS (Refer to section (5) for terminology)	Procedure	Method	Comments (as listed in (5))
TS 12301 - 49	50		1			3	2				Cu Pb Zn Fe Mn	A1/1		
											Ag	A1/2		
											Sn	A11/2		
											W	A4/4		

(3) Number of pages of results 4

Date Reported 25/8/81

Results to: (1) As Above (2)

Per Telex, Mail

Number of Copies 3

(4) Remarks

(5) STATE OF SAMPLES		ANALYSIS – PREPARATION				ANALYSIS – METHOD	

Authorized Officer B Dunn

RESPONSIBLE OFFICER B Dunn 25/8/81

Reports on opposite side may be signed out
T = element present but concentration too low to be measured
X = element not present

ANALABS

A division of MacDonald Hamilton & Co Pty Ltd
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office) Phone (09) 458 7999
Division Cooee, Tasmania Phone 316837

Code No 83 1 08 512
Rack No R-14 1½
Page No 1
Order No KP 2710

RESULT SHEET

TUBE No	SAMPLE No		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12301	25	35	60	2.25%	75	0.2	X	1.5
2		02	25	60	195	1.1%	45	0.1	X	0.5
3		03	60	115	555	3.15%	140	0.3	1	X
4		04	25	20	50	1.05%	75	0.1	X	0.5
5		05	10	10	25	1.15%	135	X	5	X
6		06	10	15	25	2.5%	495	X	6	0.5
7		07	85	10	35	2.5%	310	0.2	7	1.5
8		08	15	5	25	2.1%	160	0.4	5	1.5
9		09	60	X	25	3.35%	425	0.2	5	1.5
10		10	15	X	110	7.35%	255	0.2	5	0.5
11		11	15	20	115	7.5%	250	0.3	12	0.5
12		12	5	15	20	4150	35	0.3	9	X
13		13	15	X	20	1.4%	155	0.2	6	2.0
14		14	280	30	30	7.9%	240	0.4	X	0.5
15		15	45	15	65	21.0%	3700	0.3	X	0.5
16		16	120	15	60	9.6%	1350	0.3	2	X
17		17	1250	320	85	8.0%	470	2.6	6	X
18		18	25	X	10	1.15%	310	0.3	8	4.5
19		19	5	X	10	8650	175	0.1	5	3.0
20	TS	12320	30	10	20	6800	250	0.1	9	8.0
21		21	5	10	10	8750	185	X	5	1.5
22		22	10	50	10	4700	80	X	11	1.5
23		23	5	50	10	7150	115	0.3	6	3.0
24		24	35	5	25	2.4%	245	0.2	X	2.0
25		25	40	15	60	8.1%	80	0.2	X	X
26		26	10	35	30	1.85%	125	0.4	6	X
27		27	25	10	75	5.9%	70	0.3	X	X
28		28	230	385	165	1.35%	95	2.9	10	1.5
29		29	40	40	240	1.4%	55	0.6	7	1.5
30		30	25	75	290	1.1%	130	0.6	16	1.5
31		31	30	55	645	8050	145	0.3	4	0.5
32		32	5	5	145	1.3%	70	0.3	24	3.0
33		33	5	10	70	5.25%	465	0.2	7	2.0
34		34	5	X	65	4.65%	355	0.1	14	2.0
35		35	X	15	25	3300	55	0.6	6	3.0
36		36	35	20	50	3.55%	455	0.3	6	1.5
37		37	5	20	70	4100	70	0.5	17	1.5
38		38	10	20	25	1.15%	230	0.2	7	3.0
39		39	20	30	105	6750	170	0.4	9	3.0
40	TS	12340	2.75%	4800	510	14.5%	1350	29.5	4	1.5
Detection			5	5	5	5	5	0.1	1	0.5
Standard	ASS5		440	325	110	29.0%	275	0.9		
Repeat	TS	12301	30	25	65	2.25%	75	0.3		
Repeat	TS	12320	30	5	15	7000	260	X		
Method			A1/1					A1/2	A11/2	A4/4

87.

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 458 7999

Division Cooee, Tasmania

Phone 316837

Code No. 83.1 08 512
Rack No. R-41/1/2 HA
Page No. 2
Order No. KP 270

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12341	2.45%	4700	490	13.0%	1350	29.0*	X	1.5
2		42	235	40	190	4.6%	770	0.4	X	0.5
3		43	50	10	70	4.6%	300	0.2	X	3.0
4		44	20	10	50	4.45%	470	0.2	X	3.0
5		45	35	x	65	5.05%	530	0.2	X	3.0
6		46	5	10	50	3.6%	475	0.2	X	5.0
7		47	20	5	55	3.9%	455	0.1	4	3.0
8		48	10	5	30	2.75%	330	0.2	13	3.0
9	TS	12349	30	x	60	4.25%	460	0.3	7	1.0
10										
11										
12										
13										
14					* TO BE CONFIRMED BY					
15						Ab/3 METHOD				
16										
17										

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag
1	TS	12340	2.65%	5000	550	28
2		41	2.54%	5150	500	23
3						
Detection			25	25	25	2
Standard						
Repeat						
Repeat						
Method			Ab/3			

29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Detection			5	5	5	5	5	0.1	1	0.5
Standard	ASS5		445	335	100	28.0%	255	0.8		
Repeat	TS	12341	2.45%	4650	500	13.5%	1400	29.5		
Repeat										
Method			A1/1					A1/2	A1/2	A1/2

RESPONSIBLE OFFICER B. Dore 25/8/81

Results in ppm unless otherwise specified
T = element present in concentration too low to measure
X = element concentration is below detection limit
— = element not determined

88

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ANALABS

A DIVISION OF MACDONALD HAMILTON & CO. PTY. LTD.
82 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999

A 509
V. Herrmann
Tenrma.

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No 83 1 08 542

Client Geopeko Ltd
(1) Devonport
Order No. KP 2723 Date Received 2/9/81
Reference Results Required
Delivered by Total No. of Samples 162

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for terminology)	Analysis Weight	PRETREATMENT: Dry	Crush	Split	Pulverize	Sieve	Roast	Other (Specify)	None	ANALYSIS (Refer to section (5) for terminology)			Leach (Y/N)
TS 12350-385	So		1			32					Cu Pb Zn Fe Mn	A1/1		
12401-411											Ag	A1/2		
12414-500											Sn	A1/2		
12751-778											W	A4/4		

(3) Number of pages of results 10
Date Reported 9/9/81
Results to: (1) As Above (2)
Per: Telex, Mail
Number of Copies 3

(4) Remarks:

B Dan
RESPONSIBLE OFFICER
9/9/81

(5) STATE OF SAMPLES		ANALYSIS - PREPARATION				ANALYSIS - METHOD	
whole core	WC	perchloric acid	A1	acid acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific autoflode	SF	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	MA	spectrophotometry	SPEC
rock	RJ	aqua regia	A4	chlorine attack	AA	colorimetry	COL
soil	SC	nitric perchloric	A5	vaporization	VO	chromatography	CHR
dust	DU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	mineralogical	MIN
primary sediment	SE					fluorescence	FLUOR
heavy minerals	HM						

Authorized Officer B Dan

ATTENTION Please advise us regarding the disposal of your samples JOB No 83 1 08 542

- DISCARD IMMEDIATELY
- DISCARD AFTER 2 MONTHS
- KEEP UNTIL ADVISED (A STORAGE CHARGE WILL BE MADE)
- RETURN TO

PLEASE TICK APPROPRIATE BOX

Results in open index offline as reported
T = element present, but concentration too low to measure
X = element concentration above determination limit
- = element not determined

ANALABS

A division of MacDonald Hamilton & Co Pty Ltd.
82 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (09) 458 7999
Phone 316337

Division Coops, Tasmania

Code No. 83 1 08 542
Rack No. R-35 1/M
Page No. 1
Order No. KP 2723

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12350	x	65	45	9400	120	0.3	x	0.5
2		51	x	45	30	9250	85	0.2	x	0.5
3		52	25	20	100	4.25%	60	0.4	x	1.5
4		53	5	20	30	1.7%	180	1.9	5	x
5		54	5	25	30	3.1%	575	0.6	x	1.5
6		55	50	20	30	2.05%	135	0.3	x	3.5
7		56	50	20	55	2.4%	265	0.3	x	3.5
8		57	x	15	30	2.45%	280	0.3	x	0.5
9		58	x	10	25	1.2%	140	0.2	x	0.5
10		59	x	20	50	1.45%	410	0.3	x	1.5
11		60	35	25	145	3.1%	900	0.3	x	1.5
12		61	30	45	120	2.35%	805	0.4	x	x
13		62	10	20	105	4.1%	945	0.4	x	x
14		63	x	10	35	1.05%	95	0.4	x	x
15		64	x	5	25	1.35%	75	0.4	x	0.5
16		65	x	10	20	1.9%	95	0.2	x	x
17		66	x	10	20	1.0%	35	0.3	x	x
18		67	x	10	15	6200	55	0.2	x	0.5
19		68	x	40	35	1.15%	95	0.3	6	0.5
20	TS	12369	x	15	30	9400	95	0.3	4	0.5
21		70	x	25	20	4000	70	0.2	x	x
22		71	x	10	10	7300	95	0.2	x	x
23		72	x	20	45	1.0%	95	0.4	10	1.5
24		73	x	20	75	1.2%	50	0.8	6	x
25		74	x	5	15	2950	25	0.3	x	x
26		75	5	20	150	1.95%	75	0.4	x	x
27		76	x	10	40	7450	45	0.2	x	x
28		77	5	5	5	350	10	0.2	x	1.0
29		78	x	5	30	2500	30	0.2	x	x
30		79	x	10	5	1100	20	0.2	x	x
31		80	x	30	45	1.5%	95	0.2	x	x
32		81	x	40	50	1.2%	55	0.2	x	x
33		82	x	5	20	2750	70	0.1	11	x
34		83	x	5	20	3450	45	0.2	3	x
35		84	x	15	110	1.75%	75	0.2	4	x
36	TS	12385	x	20	110	2.4%	70	0.2	3	x
37	TS	12401	x	10	15	2250	25	0.3	x	x
38		02	x	25	20	3550	70	0.3	x	0.5
39		03	x	15	10	3450	95	0.3	x	x
40	TS	12404	x	15	15	2000	45	4.6	x	2.0
Detection			5	5	5	50	5	0.1	1	0.5
Standard	RSSS		485	320	103	31.5%	260	0.8	21	
Repeat	TS	12350	x	60	35	9400	120	0.3	-	
Repeat	TS	12369	x	15	35	9950	45	0.2	-	
Method			AAS					AAS	AAS	AAS

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ANALABS

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Code No. 83.1 08 542
Rack No. R-39 / IN / 32
Page No. 2
Order No. KP 2723

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12405	10	15	20	1700	40	2·1	x	1·5
2		06	10	20	5	950	10	0·3	x	0·5
3		07	85	15	15	2400	30	0·4	x	x
4		08	10	x	10	1050	30	0·4	x	1·0
5		09	30	x	5	3000	105	0·3	x	1·0
6		10	25	x	20	2300	135	0·2	x	1·0
7		11	5	x	25	1250	60	0·3	x	0·5
8	TS	12414	15	20	75	6·5%	100	0·4	x	0·5
9		15	40	155	140	9·5%	1350	0·4	x	x
10		16	15	10	35	3·2%	145	0·3	x	1·0
11		17	40	10	20	3·25%	200	0·3	x	1·0
12		18	40	25	25	5·5%	150	0·2	x	0·5
13		19	25	5	20	4·4%	250	0·4	x	1·0
14		20	15	5	30	3·4%	200	0·2	x	0·5
15		21	15	x	35	3·35%	195	0·2	x	1·0
16		22	40	15	25	4·75%	215	0·3	x	1·0
17		23	215	20	85	13·5%	630	x	x	x
18		24	20	20	35	6·0%	120	0·3	x	1·0
19		25	10	5	30	4·75%	285	0·3	x	1·0
20	TS	12426	25	85	100	6·0%	70	0·3	x	x
21		27	20	15	75	4·55%	40	0·3	x	1·0
22		28	60	55	50	3·5%	90	0·2	x	1·5
23		29	50	25	45	2·7%	130	0·4	x	1·0
24		30	85	35	60	3·8%	125	x	x	0·5
25		31	90	40	50	4·45%	115	0·1	x	1·0
26		32	75	5	25	2·9%	170	0·1	x	2·5
27		33	15	x	20	2·15%	170	0·1	x	1·0
28		34	15	5	25	2·55%	175	x	x	1·0
29		35	55	x	25	4·3%	245	0·1	x	1·0
30		36	10	5	10	1·75%	200	x	x	1·0
31		37	15	5	25	2·35%	280	x	x	1·5
32		38	55	385	180	6·0%	70	0·3	x	1·0
33		39	65	5	115	10·5%	65	x	x	1·0
34		40	85	25	25	2·2%	230	x	x	1·0
35		41	80	30	25	2·2%	230	x	x	
36		42	40	10	15	2·1%	210	"	"	
37		43	90	35	130	12·5%	110	"	x	0·5
38		44	30	15	50	8·5%	45	0·2	x	1·0
39		45	30	15	80	3·55%	155	0·3	x	1·0
40	TS	12446	40	30	140	5·0%	50	x	x	1·0
Detection			5	5	5	5	5	0·1	2	0·5
Standard	ASS5		450	325	105	28·5%	250	0·7		
Repeat	TS	12405	10	15	25	1700	40	1·9		
Repeat	TS	12426	25	85	100	6·0%	70	0·3		
Method			AA					AAS	Titr.	Titr.

RESPONSIBLE OFFICER ..... 1 / 9 / 81

Results in ppm unless otherwise stated
T = element present but present/ppm too low to measure
X = element present but present/ppm above detection limit
- = element not determined

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Division Cooee, Tasmania
Phone 316337

Code No. 83.1 08 542
Rack No. R-39 / IN / 32
Page No. 3
Order No. KP 2723

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12447	35	15	30	1·75%	170	0·2	x	1·5
2		48	80	20	25	2·65%	190	0·2	x	2·5
3		49	5	15	15	6·0%	190	0·4	x	1·5
4		50	5	20	15	6·5%	200	0·4	x	1·5
5		51	35	15	20	4·75%	205	0·2	x	0·5
6		52	30	x	60	7·0%	65	0·2	x	1·5
7		53	40	10	90	9·0%	80	0·1	x	1·5
8		54	60	15	160	8·0%	235	0·1	x	1·5
9		55	55	80	205	7·0%	70	0·2	x	1·0
10		56	65	10	120	8·5%	145	0·1	x	2·5
11		57	60	15	135	8·3%	110	0·2	x	2·0
12		58	60	15	130	8·8%	95	0·1	x	1·5
13		59	50	70	120	8·3%	105	0·2	x	1·5
14		60	50	5	110	8·3%	100	x	x	0·5
15		61	60	15	130	9·0%	210	0·2	x	1·0
16		62	70	10	155	8·5%	245	0·1	x	x
17		63	45	20	105	7·5%	170	0·1	x	x
18		64	55	10	110	8·5%	100	0·1	x	1·5
19		65	55	40	130	7·5%	330	0·2	x	1·0
20	TS	12466	60	20	110	7·0%	270	0·1	x	1·5
21		67	3	10	10	2750	40	0·2	x	2·0
22		68	5	5	15	8150	75	0·2	x	1·5
23		69	25	35	20	7050	45	0·2	x	x
24		70	5	10	10	3000	45	0·4	x	1·5
25		71	5	20	20	3200	50	0·5	x	1·5
26		72	5	15	10	1850	40	0·3	x	x
27		73	x	10	10	7300	60	0·2	x	0·5
28		74	x	x	5	4000	215	0·2	x	1·5
29		75	5	10	20	4600	170	0·3	x	2·5
30		76	x	10	15	2·7%	220	0·3	x	1·5
31		77	20	5	35	6·0%	195	0·5	x	1·5
32		78	5	10	10	2·55%	125	0·2	x	2·0
33		79	65	15	15	3·65%	150	0·6	x	3·5
34		80	65	10	10	3·65%	90	0·2	x	2·5
35		81	70	20	15	3·9%	90	0·3	x	3·5
36		82	40	25	35	5·05%	90	0·4	x	2·5
37		83	x	10	25	1·45%	160	1·3	x	2·5
38		84	15	10	70	3·1%	230	0·9	x	1·0
39		85	5	10	20	11·15%	90	0·2	x	2·5
40	TS	12481	40	10	20	3·85%	305	0·4	x	1·5
Detection			5	5	5	5	5	0·1	2	0·5
Standard	ASS5		440	325	105	30·0%	250	0·7		
Repeat	TS	12447	32	15	30	1·75%	175	0·2		
Repeat	TS	12466	60	20	110	9·0%	275	0·1		
Method			AA					AAS	Titr.	Titr.

RESPONSIBLE OFFICER ..... 9 / 9 / 81

Results in ppm unless otherwise stated
T = element present but present/ppm too low to measure
X = element present but present/ppm above detection limit
- = element not determined

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ANALABS

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52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)
Phone (09) 458 7999
Division Coder, Tasmania
Phone 316837

Code No. 83.1 08 542
Rack No. R-188 / 117 / 118
Page No. 4
Order No. KP2723

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12487	85	40	20	4.95%	105	0.4	x	1.5
2		88	25	20	25	4.35%	95	0.5	x	1.5
3		89	5	15	15	4.75%	90	0.4	x	0.5
4		90	5	5	25	1.7%	180	0.2	x	3.5
5		91	10	10	25	1.95%	150	0.3	x	3.5
6		92	x	15	20	1.75%	40	0.7	x	x
7		93	x	10	15	2.8%	20	0.4	x	0.5
8		94	2100	2.7%	65	13.0%	1100	56.0	x	1.5
9		95	25	80	5	7500	160	0.6	x	2.0
10		96	15	45	25	1.75%	265	0.8	x	2.0
11		97	35	30	30	1.1%	230	0.5	x	3.0
12		98	15	20	25	1.1%	140	0.3	x	1.0
13		99	5	15	10	5950	40	0.7	x	0.5
14	TS	12500	x	10	15	5600	40	0.8	x	0.5
15	TS	12751	15	30	45	4.1%	35	0.3	x	1.0
16		52	20	20	35	1.3%	125	0.4	x	0.5
17		53	30	20	20	1.0%	155	0.4	x	1.5
18		54	140	85	20	6.5%	110	0.4	x	1.5
19		55	10	30	15	2.8%	35	0.3	x	x
20	TS	12756	10	25	100	1.0%	30	0.3	x	x
21		57	5	30	50	7.0%	30	1.0	x	x
22		58	x	30	60	2.85%	30	1.0	x	0.5
23		59	40	20	10	3.5%	35	0.5	x	1.0
24		60	105	25	20	2.65%	230	0.3	x	1.5
25		61	100	30	15	2.7%	230	0.3	x	x
26		62	220	440	20	6.5%	105	0.8	x	x
27		63	55	90	55	5650	35	0.3	x	0.5
28		64	10	30	30	4.15%	40	0.9	x	x
29		65	5	30	90	1.05%	40	0.3	x	x
30		66	5	20	80	1.7%	45	1.7	x	1.5
31		67	65	50	25	2.6%	70	0.4	x	x
32		68	5	15	35	3600	50	0.2	x	3.0
33		69	5	25	30	1.05%	20	0.4	x	1.5
34		70	15	40	65	1.95%	50	0.9	x	0.5
35		71	5	30	30	9700	25	0.5	x	0.5
36		72	5	20	40	2.9%	175	0.2	x	0.5
37		73	20	30	75	3.45%	75	0.6	x	1.5
38		74	25	20	80	3.4%	65	0.7	x	1.5
39		75	20	35	85	3.2%	55	0.6	x	4.0
40	TS	12776	25	25	55	4.3%	80	0.4	x	1.5
Detection			5	5	5	50	5	0.1	3	0.5
Standard	AS55		430	315	105	23.5%	245	0.8		
Repeat	TS	12487	80	40	20	4.95%	105	0.5		
Repeat	TS	12756	90	20	100	9800	30	0.2		
Method			AA1					AA2	Au1	Au2

RESPONSIBLE OFFICER B Dan 9.1.91

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element not determined

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Phone 316837

Code No. 83.1 08 542
Rack No. R-188 / 117 / 118
Page No. 5
Order No. KP2723

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12777	25	20	45	4.5%	70	0.4	x	x
2		78	15	60	30	2.3%	50	0.7	x	x
3										
4										
5										
6	TS	12494	2300	2.5%	35			60		
7		(Repeat Analysis per method Ag/2)								
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40										
Detection			5	5	5	50	5	0.1	3	0.5
Standard	AS55		430	315	105	23.0%	250	0.8		
Repeat	TS	12776	25	25	45	4.65%	75	0.3		
Repeat										
Method			AA1					AA2	Au1	Au2

RESPONSIBLE OFFICER B Dan 9.1.91

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element not determined

91.

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Temma
W. Herrman
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ANALABS

A DIVISION OF MACDONALD HAMILTON & CO. PTY. LTD
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No. 83.1 08 564

Client: Geopeko Ltd

(1) Devonport — Order No. KP 2741 — Date Received 15/9/81

Reference — Results Required

Delivered by — Total No. of Samples 106

(2) SAMPLE NUMBERS	STATE OF SAMPLES (Refer to section (5) for terminology)	Amount Supplied	PRETREATMENT: Dry	Crush	Split	Pulverise	Sieve	Preconcentrate	Other Treatment	Store	ANALYSIS (Refer to section (5) for terminology)			
TS 12779-834	So		1				2				Cu Pb Zn Fe Mn	A1/1		
TS 12851-900											Ag	A1/2		
											Sn	A11/2		
											W	A44		

(3) Number of pages of results: 6
Date Reported: 21/9/81
Results to: (1) As Above (2)
Per: Telex, Mail
Number of Copies: 3

(4) Remarks:

RESPONSIBLE OFFICER: B Dorman 21/9/81

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
N = element concentration is below detection limit
– = element not determined

(5) STATE OF SAMPLES		ANALYSIS – PREPARATION				ANALYSIS – METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cuttings	CU	nitric acid	A3	other mixed acids	Mx	spectrophotometry	SPEC
rock	RO	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
auto	PU	HF muffle	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SE					fluorescence	FLUOR
heavy minerals	HM						

Authorised Officer: B Dorman

ATTENTION Please advise us regarding the disposal of your samples — JOB No.

☐ DISCARD IMMEDIATELY
☐ DISCARD AFTER 2 MONTHS
PLEASE TICK APPROPRIATE BOX)

☐ KEEP UNTIL ADVISED (A STORAGE CHARGE WILL BE MADE)
☐ RETURN TO

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Division Cooee, Tasmania — Phone 38 6357

Order No. 83.1 08 564
Rock No. R-42/22
Page No. 1
Order No. KP 2741

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12779	10	15	60	1.55%	90	0.2	7	X
2		80	10	X	35	1.4%	100	X	6	X
3		81	X	15	40	1.1%	70	0.1	5	X
4		82	35	20	65	2.0%	225	0.1	X	X
5		83	10	5	25	1.15%	135	X	4	X
6		84	10	X	15	4750	35	0.3	5	X
7		85	20	25	60	5.2%	575	0.1	5	X
8		86	20	10	30	3.6%	300	X	X	X
9		87	440	10	50	7.3%	360	X	10	X
10		88	5	5	25	2.35%	290	X	X	X
11		89	10	15	45	9850	80	0.1	4	X
12		90	20	15	75	2.7%	130	X	7	X
13		91	20	15	70	2.5%	125	X	8	X
14		92	45	25	55	2.85%	65	0.2	8	10
15		93	20	10	25	2.95%	315	0.1	X	X
16		94	430	15	155	9.9%	550	X	X	X
17		95	40	10	30	2.2%	145	X	8	X
18		96	15	10	30	1.65%	140	X	5	X
19		97	25	10	50	6.4%	35	0.3	5	X
20	TS	12798	10	5	25	3.2%	335	X	8	X
21		99	45	10	20	4.4%	200	X	X	X
22	TS	12800	45	10	25	4.2%	210	0.1	5	X
23		01	X	X	10	1250	25	0.1	6	X
24		02	5	5	15	5300	80	0.2	10	X
25		03	45	5	20	1.6%	105	X	9	X
26		04	10	15	15	3900	40	10.5	10	X
27		05	X	55	30	2.66%	350	1.0	8	X
28		06	5	5	15	3200	95	0.9	8	X
29		07	X	5	10	4250	100	3.7	X	X
30		08	X	X	5	1.85%	355	0.3	6	1.0
31		09	X	5	10	1700	40	1.2	6	X
32		10	X	5	25	6800	60	0.2	X	X
33		11	X	X	20	5250	30	0.5	9	X
34		12	X	X	5	500	15	0.1	5	X
35		13	X	X	5	550	15	0.1	7	X
36		14	X	X	5	1050	10	0.1	9	X
37		15	X	X	5	3100	10	0.1	7	X
38		16	X	X	10	2300	20	0.2	3	X
39		17	X	X	5	800	15	0.2	X	X
40	TS	12818	X	X	X	450	15	0.1	X	X
Detection			5	5	5	50	5	0.1	3	0.5
Standard	AS55		430	330	105	31.0%	245	0.8	4	–
Repeat	TS	12779	10	15	60	1.55%	90	0.1	–	–
Repeat	TS	12798	5	5	25	3.2%	335	–	–	–
Method			A1/1					A1/2	A11/2	A44

92.

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139

ANALABS

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Phone (09) 458 7999
Division Cooee, Tasmania
Phone 316337

Code No 83.1 09 SG4
Rack No R-34 / 84
Page No 2
Order No KP 2744

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12819	x	x	10	900	10	0.2	6	x
2		20	x	x	5	1300	10	x	5	x
3		21	10	5	45	2.0%	60	0.1	5	x
4		22	x	x	15	1650	30	0.2	7	0.5
5		23	x	x	10	1550	20	x	3	x
6		24	x	x	10	1250	20	0.1	4	x
7		25	x	x	15	700	15	x	4	0.5
8		26	x	x	15	1550	40	x	7	x
9		27	x	x	20	3700	60	x	9	x
10		28	275	10	175	5.15%	700	1.0	x	0.5
11		29	20	15	35	2.65%	30	0.1	3	x
12		30	835	20	50	7.8%	1650	0.7	3	x
13		31	915	25	45	9.0%	1900	0.7	x	x
14		32	35	15	105	4.6%	1050	0.3	7	x
15		33	45	15	105	10.0%	130	0.2	6	0.5
16		34	50	15	95	10.0%	155	1.2	5	0.5
17	TS	12851	650	165	45	28.0%	50	0.2	9	2.0
18		52	270	15	75	13.0%	250	x	7	1.5
19		53	20	5	35	3.45%	145	0.1	8	1.5
20	TS	12854	60	5	40	4.55%	115	0.1	6	0.5
21		55	70	5	25	3.65%	145	0.1	9	1.0
22		56	370	15	70	7.15%	80	x	x	1.5
23		57	300	15	65	11.5%	185	0.1	7	1.0
24		58	30	15	20	6.4%	155	0.1	x	x
25		59	10	10	35	4.7%	240	0.1	3	x
26		60	25	265	50	1.7%	220	1.0	20	x
27		61	20	15	30	1.5%	190	0.2	10	x
28		62	100	5	25	8800	260	0.4	x	2.5
29		63	1050	75	90	10.5%	370	4.1	10	1.0
30		64	35	10	25	2.2%	135	0.6	5	1.0
31		65	10	5	25	3.05%	210	0.3	9	0.5
32		66	15	x	25	3.35%	100	0.2	4	x
33		67	160	15	25	6.3%	150	0.1	7	x
34		68	110	50	50	6.0%	70	0.4	8	1.0
35		69	140	25	20	4.1%	30	0.6	8	0.5
36		70	25	60	30	3.95%	70	0.2	15	x
37		71	10	15	20	3.7%	95	0.2	7	0.5
38		72	70	10	140	10.0%	265	0.1	7	1.0
39		73	75	85	150	9.6%	700	0.2	9	x
40	TS	12874	70	15	140	10.0%	1850	0.1	5	x
Detection			5	5	5	50	5	0.1	3	0.5
Standard	ASS5		445	330	105	31.5%	260	0.6		
Repeat -	TS	12819	x	x	20	900	10	0.1		
Repeat -	TS	12854	60	5	30	4.55%	115	0.2		
Method			A/1					A/2	A/2	A/2

RESPONSIBLE OFFICER ... 21.9.81

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration in excess of limit of detection
- = element not determined

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Division Cooee, Tasmania
Phone 316337

Code No 83.1 08 SG4
Rack No R-33 / 172
Page No 3
Order No

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Mn	Ag	Sn	W
1	TS	12875	75	15	140	10.0%	430	x	x	0.5
2		76	60	230	105	10.0%	470	0.3	10	x
3		77	65	20	110	11.0%	335	0.1	8	x
4		78	60	20	105	10.5%	900	0.2	7	x
5		79	55	15	110	10.0%	620	0.1	x	x
6		80	60	95	105	10.0%	1800	0.2	15	x
7		81	60	20	100	10.0%	895	0.1	5	x
8		82	40	20	80	10.0%	4150	0.1	8	x
9		83	35	20	65	10.0%	2150	0.2	6	x
10		84	45	125	80	10.5%	1800	0.2	15	x
11		85	35	40	75	10.5%	2850	0.1	9	1.0
12		86	35	145	75	10.0%	2050	0.3	9	1.0
13		87	55	165	165	10.0%	3100	0.3	5	x
14		88	55	50	115	10.0%	550	0.1	6	0.5
15		89	55	140	140	10.0%	700	0.1	6	x
16		90	60	25	150	10.5%	3600	x	6	0.5
17		91	50	15	115	10.0%	350	0.2	5	1.0
18		92	50	10	100	10.0%	390	0.1	7	0.5
19		93	50	60	130	10.0%	3900	0.3	15	0.5
20	TS	12894	50	105	105	10.0%	970	0.2	9	1.0
21		95	50	25	105	10.0%	1050	0.1	9	1.0
22		96	50	20	90	9.5%	1750	x	6	1.5
23		97	50	25	90	10.0%	545	0.2	4	1.0
24		98	50	125	90	10.0%	510	0.2	8	0.5
25		99	25	15	115	7.75%	270	0.2	9	1.5
26	TS	12900	25	120	125	10.0%	280	0.1	x	0.5
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Detection			5	5	5	50	5	0.1	3	0.5
Standard	ASS5		445	335	100	33.5%	260	0.7		
Repeat -	TS	12875	75	15	135	10.0%	430	x		
Repeat -	TS	12894	55	105	105	10.0%	965	0.3		
Method			A/1					A/2	A/2	A/2

RESPONSIBLE OFFICER ... 21.9.81

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration in excess of limit of detection
- = element not determined

811111

ANALABS

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Phone (09) 458 7999

W. Herrmann
Persson Superficial Sand.

ANALYTICAL REPORT

This report must be read in conjunction with the results given for JOB No 83 1 08 598

Client Geopeko Ltd

(1) Devonport Order No KP 2763 Date Received 5/10/81

Reference Results Required

Delivered by Total No of Samples 27

(2) SAMPLE NUMBERS	STATE OF SAMPLES	PREPARATION	ANALYSIS
TS 12801-27	So	1 2 3 4	Sn, W

+80 mesh FRACTION

(3) Number of pages of results 1
Date Reported 15/10/81
Results to: (1) AS Above (2)
Per: Telex, Mail
Number of Copies 3

(4) Remarks

(5) STATE OF SAMPLES		ANALYSIS - PREPARATION				ANALYSIS - METHOD	

Authorized Officer B. Dunn

ATTENTION Please advise us regarding the disposal of your samples JOB No

DISCARD IMMEDIATELY
DISCARD AFTER 2 MONTHS
KEEP UNTIL ADVISED (A STORAGE CHARGE WILL BE MADE)
RETURN TO

(PLEASE TICK APPROPRIATE BOX)

RESPONSIBLE IGR B. Dunn 6, 11, 81

Results in ppm unless otherwise stated. Limit of determination is 1 unless otherwise stated.
P = Present but below limit of determination. Limit of determination may change from time to time.
X = Analysed but not detected. Limit of determination not known.
- = Not analysed.

ANALABS

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Phone (09) 458 7999
Division Coast, Tasmania Phone 31837

Code No. 83:1 08 598
Rack No
Page No. 1
Order No KP 2763

RESULT SHEET

TUBE No	SAMPLE No	Sn	W	+80 mesh FRACTION
1	TS 12801	X	X	
2	02	X	X	
3	03	X	X	
4	04	X	1.0	
5	05	X	2.0	
6	06	X	X	
7	07	X	X	
8	08	X	X	
9	09	X	X	
10	10	X	X	
11	11	X	X	
12	12	X	X	
13	13	X	X	
14	14	X	0.5	
15	15	X	X	
16	16	X	X	
17	17	X	0.5	
18	18	X	0.5	
19	19	X	0.5	
20	TS 12820	X	X	
21	21	X	X	
22	22	X	X	
23	23	X	X	
24	24	X	X	
25	25	X	0.5	
26	26	X	X	
27	TS 12827	X	X	
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
Description		1	0.5	
Symbol				
Number				
Result				
Method		19/11/2	AB/W	

94

141

811142

ANALABS

A division of Mauchline Ingram (Aust.) Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX | REPORT NUMBER | REPORT DATE | CLIENT ORDER No. | PAGE

ITEM No.	SAMPLE No.	Au	wt (g)
1	12810	X	40.0
2	12811	X	30.0
3	12812	X	20.0
4	12813	X	40.0
5	12814	0.024	20.0
6	12815	0.008	40.0
7	12816	X	30.0
8	12817	0.008	40.0
9	12818	X	40.0
10	12819	X	40.0
11	12820	X	40.0
12	12821	X	40.0
13	12822	X	40.0
14	12823	X	40.0
15	12824	X	10.0
16	12838	X	40.0
17	12839	X	15.0
18	12840	0.024	40.0
19	12841	0.048	40.0
20	12842	X	10.0
21	12843	X	40.0
22	12844	X	40.0
23	12845	X	40.0
24	12846	X	30.0
25	12492	X	20.0
1	12493	0.008	20.0
2	12494	0.075	40.0
3	12495	X	40.0
4	12496	X	40.0
5	12497	X	40.0
6	12498	X	40.0
7	12828	0.024	20.0
8	12829	X	40.0
9	12830	X	40.0
10	12831	X	40.0
23	DETECTION	0.005	
24	DIGESTION		
25	METHOD	LG40	

Results in ppm unless otherwise specified
1 = element present, but concentration too low for accurate assay
X = element concentration is below detection limit
- = element not determined

21.10.81

ANALABS

AUTHORISED OFFICER B Dorn

APPENDIX 8.5

HISTORICAL NOTE

'The Advocate' 18/5/1963

143

BARNEY'S COPPER STREAK AT TEMMA

"IT'S NOT ANOTHER NORTH LYELL — but could be close to it"

Little old Barney Williams climbed out of the shaft he had started digging only a couple of weeks earlier and peered at me from under shaggy eyebrows.

"WELL, IF IT AIN'T THE WHALE-HUNTER BACK AGAIN!" HE EXCLAIMED AS WE SHOOK HANDS. "DON'T TELL ME YOU'RE BACK HERE LOOKIN' FOR ANOTHER MONSTER?"

But before I could answer old Barney handed me a lump of yellowish rock he had brought up from the shaft. "Feel the weight of it, boy!" he said. "Heavy, a'n't it?"

It didn't seem terribly heavy to me, but I said yes, it sure was.

"I'm into a lovely bit of stuff here now," enthused Barney. "There ain't nothing like it anywhere else in Tasmania!"

I asked him what it was exactly that he was looking for.

Copper boy, copper ore! And it's here, too, bejove. This is the best looking stuff I've ever had. Lovely stuff."

☆

HE invited me to inspect tiny specks of some shiny stuff where the rock had broken.

"This is the kind of stuff they've spent millions looking for on the West Coast Millional And it's right here. Always knew it was.

"Mind you, I ain't saying it'll be another North Lyell," Barney conceded. "But it could be close to it."

I said it was a wonder they didn't get an indication of Barney's lode during the aerial geophysical survey of the area a few years ago.

"Them!" scoffed Barney. "I seen 'em. Flying around in aeroplanes taking snapshots and down low over me a couple of times. But that's all he was doing. Taking snapshots!

No, there's mineral here all right. One day they'll mine it—in any time, perhaps, a hundred day. And this shaft I'm on now, I'm going to dig proper, bejove, and timber it and after I'm gone it'll pay them the way."

☆

HE was still the same old Barney Williams — the hermit-prospector of Temma, about 16 miles south of the Arthur River, I first met and wrote about six years ago.

Then, as now, he was on the verge of uncovering that elusive copper lode that has kept him digging shafts at Temma these past 16 years.

Barney is 83 now (some say he is older, but Barney strongly denies it) and he still lives alone in his little old paling and tin hut in the bush a mile or so from the Fenton homestead on the Temma grazing property. A cat is his only constant companion.

He has an open invitation to meals and a bed with Ben Fenton and his offsiders, but the old chap still lives alone most of the time. Solitude doesn't worry him.

His gammy leg, injured in an underground cave-in at Balfour years ago, isn't getting any better and he now uses a home-made crutch to help him along.

Prospecting is still his work. And it is prospecting the hard way. No panning a creek or breaking surface rock for Barney. His elusive lode is down deep and Barney is ready, willing and able to go down deep after it, despite his years and lameness.

All around his camp there are shafts, usually about 8 ft by 4 ft, and down to 33 ft And he has dug them all the hard way.

☆

WHEN he strikes solid rock he uses gelignite. But most of his digging is pick and shovel work.

Plenty of water seeps into Barney's shafts and for a couple of hours each morning in the winter he has to bail out before he can go down Drop the bucket, wind it up, empty it, hour after hour.

Then there is the mud and slush left in the bottom. To get this out he has to climb down into the shaft, fill the bucket, climb up, wind up the bucket, empty it. This might go on for another hour or so till he is into solid stuff again.

Then it's the pick and shovel, carefully examining each piece of rock he digs out before it goes into the bucket. Then up the ladder again, wind up the bucket, empty it. This is the routine till late afternoon.

In this slow, back-breaking way 83-year-old Barney Williams has dug more shafts around Temma than he can remember and still he hasn't found pay dirt.



Anyone who takes old Barney cheap in a game of crib or 500 usually regrets it.

By KERRY PINK

"There's a lot reckon I'm cranky," he once told me, "and I ain't in no position to dispute 'em. But if I am cranky, then bejove I've got a lot of mates in this world, ain't I?"

☆

ANYONE meeting Barney for the first time is immediately struck by his appearance.

He'd be stretching to make 5 ft. in height and when he walks with his crutch he seems even smaller. Inside his hut, windowless and dimly lit by a single candle, it pays to walk with your head well down.

He has a big, bushy grey moustache, tinged with tobacco stain, and shaggy brows that almost hide his eyes.

If you're with him long enough you get to notice that he very rarely takes off his hat. Only at meal times and to sleep. This is because, some eight or nine years ago, he caught the 'flu and it gave him quite a fright. It's about the only time in his life that he has ever been sick.

Barney can neither read nor write, because he was put to work when he was about seven years of age.

But take him on at a game of crib or 500 and you'll soon find out you're up against a man with an alert brain and the ability to concentrate that most men of his age have lost.

From time to time people have tried to take a rise out of the old chap, which he takes in good part. Like the time someone excitedly raced into his camp with a piece of rich copper ore they had "found in the bush not far away."

"Bejove yes, it's a lovely piece of ore!" said Barney. "But you'd better take it back to Mt. Lyell, because that's where it come from. Not here."

At times he has stayed down at Temma for a couple of years without crossing the Arthur for a taste of civilisation. But recently he has made quite a few trips out.

Last year Ben Fenton took him to the Somerset Drive-In. First time he'd seen the movies since he took in a show in Sydney in 1926.

"I quite enjoyed it," says Barney, "but it was a cold night and I enjoyed the flask of rum I took along better."

He has seen television once.

"I wasn't greatly impressed. In fact, I couldn't care less if I never saw it again."

He has never married and "was never even close to it." It just didn't appeal to him.

☆

BARNEY, whose real name is Henry, was born in Launceston.

His first job, when he was barely school age, was stripping bark from willow trees for 9/ a week.

When he was about nine he and his brother went to Robbins Island where they got a job milking cows. Barney stuck it out for about seven years, by which time he was sick to death of milking cows.

So he left the island and went back to Launceston. Eventually he found a job milking cows.

About 1902 he went to Balfour, the copper and tin mining town inland from Temma, which was then in its heyday. He was there for about eight years, went away for a year or two, then came back till the field died about 1914. Barney was one of the last to leave.

The 1914-18 war found him with the Australian forces in France.

"The worst damn job I ever took on," says Barney. "Would've" snatched me time smartly, but they wouldn't let me."

☆

AFTER the war Barney had many jobs in many States, working on roads, in the bush, railway navvy, crayfishing in waters around the mouth of the Arthur, farmwork — you name it, Barney did it.

But seldom more than a few years passed without Barney packing his swag and heading back down Balfour-Temma way to scratch around for mineral.

Sixteen years ago he went back for good. No-one lived south of the Arthur then. The Fentons didn't take up the Temma property till three years later.

It is a strange life for an old man, living alone in the bush digging holes in search of a copper lode that might, or might not, exist. But Barney is happier, healthier and more active than many men his age.

For him, life still holds a purpose. And just so long as that copper lode exists, in reality or in his imagination, life will continue to hold a purpose for him.

Perhaps we can smile about old Barney Williams, the hermit-prospector of Temma. Perhaps, if we reach his age, we might also live to envy him.



All around his camp are heaps of rock, dug up by Barney in his search for the elusive copper lode.

LOOK, MUM— NO CREW!

TORONTO — Canada, with one crewless train already in operation, is examining the future possibility of completely automatic, crewless trains.

Some experts believe that the crewless train may be the first step to high-volume, lower-cost transit in urban centres. Some think that the first such train may be introduced by Toronto's East-West subway in 1966.

The present crewless train is operated by the Iron Ore company of Canada in their Quebec - Labrador operations. Four crewless trains haul iron ore on a single track 5.7 miles long. (A.A.P.-Reuter).

Here the masses are the bosses

PEKING — One of Peking's largest cinemas has introduced a new form of "supervision by the masses."

The name of the projector operator is now shown on the screen before each performance and the audience are invited to write praise or criticism of him afterwards in a special "opinion book."

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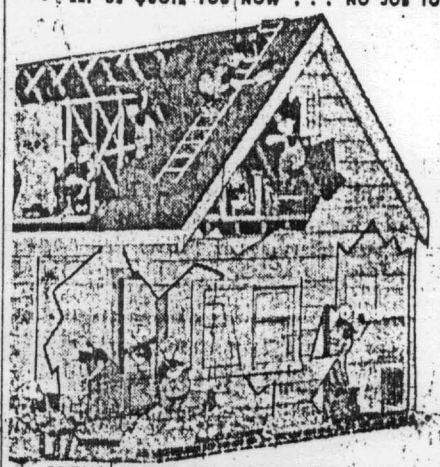

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Rebecca Pt

Landing Ground

TEMMA

Richardson Pt

TEMMA BEACON 846

Hazard Bay

Ordnance Pt

Balfour Deep Fault

Lagoon River Fault

LITTLE FRENCHMAN Δ

5440000mN

5430000mN

811145

5 cm

GEOPEKO - DEVONPORT

E.L.1/77 TEMMA

PHOTOINTERPRETATION OF THE GEOLOGY IN THE TEMMA AREA

AFTER

S.W. CAREY

3995

82-1721

SCALE: 1:40000	DATE: 14/1/82	TS 1/77-TEM-1

BURNIE SK 55/3

SANDY CAPE 7815-II-NW

GEOPEKO

SCALE 1:40 000

AUSTRALIAN MAP GRID

7815 IV-SE	7815 I-SW	7815 I-SE
7815 III-NE	7815 II-NW	7815 II-NE
7815 III-SE	7815 II-SW	7815 II-SE

LOCATION INDEX

TRANSVERSE MERCATOR PROJECTION

TEMMA

AIRBORNE GEOPHYSICAL SURVEY

Total Magnetic Field

SURVEY PARAMETERS

Nominal flight line separation: 250m with 2·5km tielines

Nominal terrain clearance : 120 m

Nominal data spacing along flight lines: 70 m

Navigation and recovery by conventional photography

Aircraft: Austirex Nomad N22B

Contour Interval: 20 nT

International Geomagnetic Reference Field subtracted prior to contouring

Survey Date: August 1980

Survey flying, data acquisition & map preparation by Austirex Aerial Surveys Pty Ltd

Project management by Geopeko geophysical group

5 cm

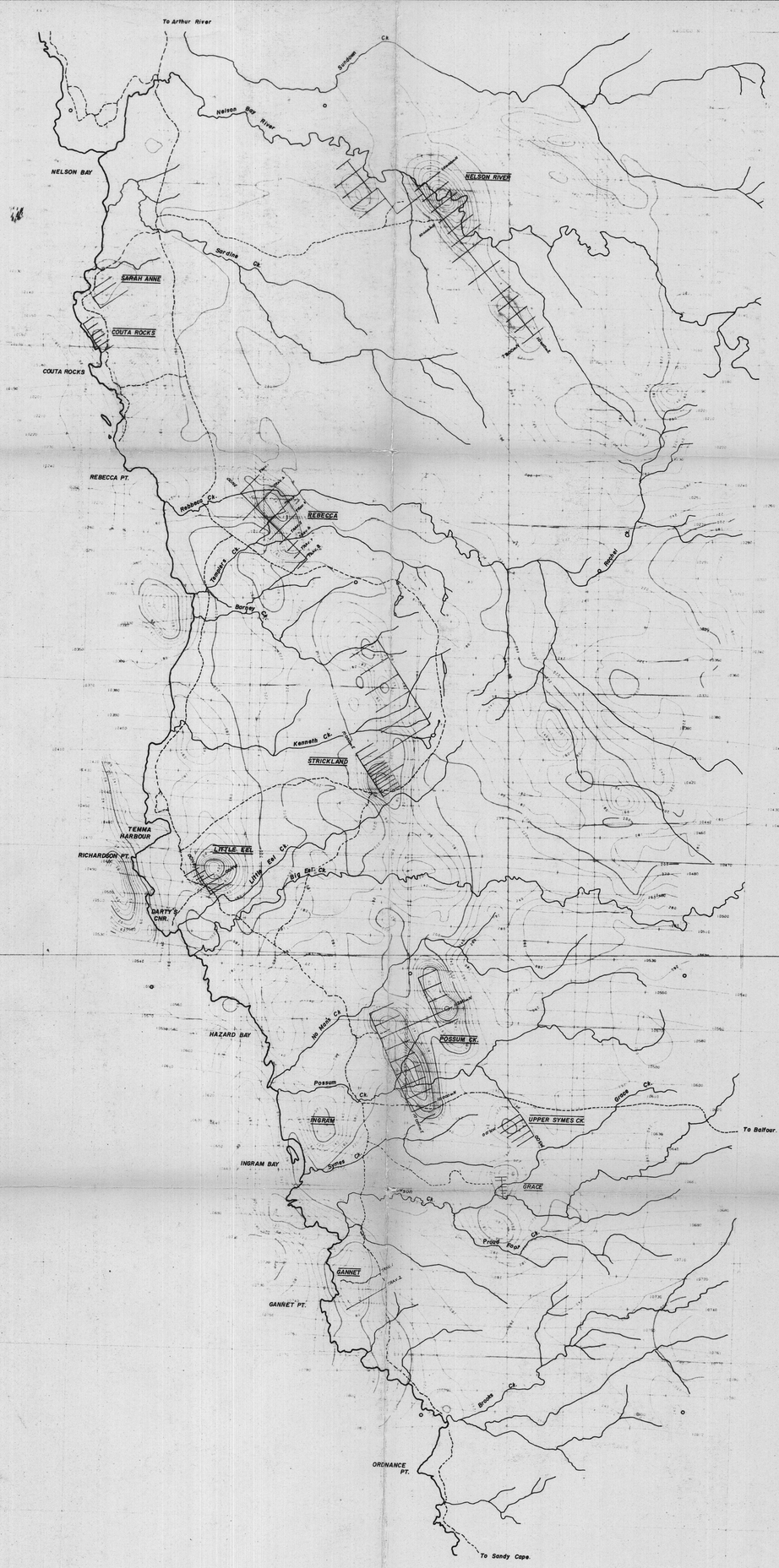
811146

DRAWING NO: TS 1/77-TEM-2

83-1721

3996

PLAN No 5697 S/B



GEOPEKO-DEVONPORT

BURNIE SK 55/3

SANDY CAPE 7815-II-NW

82-1721

1:40 000

AUSTRALIAN MAP GRID

LOCATION INDEX

TRANSVERSE MERCATOR PROJECTION

TEMMA

AIRBORNE GEOPHYSICAL SURVEY

Total Magnetic Field

SURVEY PARAMETERS

Nominal flight line separation: 250m with 2·5km tielines

Nominal terrain clearance : 120 m

Nominal date spacing along flight lines : 70 m

Navigation and recovery by conventional photography

Aircraft: Australex Nomad N22B

Contour Interval : 20 nT

International Geomagnetic Reference Field subtracted prior to contouring

Survey Date : August 1980

5 cm

811147

DRG. NO: TS I/77-TEM-3

PLAN NO:

3997

5 442 500mN AMG

310 000mE AMG

8 400mE 8 600mE 8 800mE 9 000mE 9 200mE 9 400mE 9 600mE 9 800mE 10 000mE 10 200mE 10 400mE 10 600mE 10 800mE 11 000mE 11 200mE

11 600mN 11 400mN 11 200mN 11 000mN 10 800mN 10 600mN 10 400mN 10 200mN 10 000mN 9 800mN 9 600mN 9 400mN 9 200mN 9 000mN 8 800mN 8 600mN 8 400mN 8 200mN 8 000mN 7 800mN 7 600mN

BASE LINE ENDS 11 600mN

chl sist float

m.l pe.sist — NR17A 2 chl lenses

NR19 dark chl sist float — NR18 f.l.pe sist. minor chl. layers — dark f.l. sist. NR20

mg. qtzt — qtz veins to 10cm — pyjama sist — scree — NR21 m. lam. dk. grey (pyj) sist. pe>ps. (flinty hornfelsed ?)

mg.qtzt. — strong cleavage — mg.qtzt

NR22 f. lam. fg. qtzt. (strong cleavage) — qtzt. sub o/c

f-mg. qtzt

f-m lam grey ps sist.

fl. qtzt/sist — fl. fg. qtzt — fl. qtzt. — COSTEAN — bedded f- mg. qtzt/s.

sub o/c+ float

COSTEAN — bedded qtzt f-mg. minor ps sist

TRACK

fracture cleavage — small drag folds plunge 25° -> 330°

m lam. pyj. sist. — f-m.l bt w (pyj) sist — m lam ps > pe sist — m.lam. silic pyj sist

NR17 f.l. sist & py/chl. layer 5mm — NR16 f.l. ps pe sist — NR15 1cm qtz veins 315/65° in o/c in River

fracture cleavage 345/80° W

qtz — mg.qtz — f.lam. ps. sist. — f.g. qtzt — f.l pyj. sist. sub o/c — f.lam bt w ps > pe sist. — f.l dk grey sist. — sist — sist (minor float qtzt)

KR 8045 mixed ironstone/sist./qtzt float — m.l. ps-pe sist — ps sist & chl layers — NR14 — sist float — f.l. ps > pe sist — (pyj) ps > pe sist — cleav. // bedding

f.l. bt w. sist. — NR10 — ps > pe sist — NR11 — qtzt. sub o/c float

trench KR 8042-44 massive chlorite rock adjacent to weathered magnetic lode.

qtzt. sub o/c — qtzt. float — DDH N401 — KR 8041 — KR 8040 — mg. qtzt. — minor ironstone float

qtzt — f.l. dk. pe sist — weath. f.l. bt w sist.

sparred sist. & NR6 — qtzt — weath. fe st. sist. float — KR 8038 — KR 8039 — f.l. sist. float.

qtzt. sub o/c — f.l. bt w sist — f.l. ps-pe sist float — ironstone float

KR 8036 — KR 8037 — NR8 — f.l. bt w sist — NR9 — ripple marked qtzt. — sist. float — minor qtzt. float.

qtzt. float — KR 8035 — NR4 brn. weath. chl. rock — NR5, 6, 7 f.l. sist & greisan pods

f.l. f.g. sist. pe < ps — qtzt. float

NELSON BAY RIVER

weath. lam. sist. — mg. qtzt. float

lam. bt w sist./qtzt. float (mixed)

mg. qtzt

qtzt — sub o/c — sub o/c trend. (340° T)

f.l brw ps-ps sist — (trend 340° T) — weath. ironstone — qtzt. — KR 8032 — KR 8034 — m.l. sist. pe < ps. — KR 8033 qtz vein f.l.s — KR 8031 — pyj. sist float (ps < pe) — Structural trend (Airphoto interp.)

mg. qtzt. float — qtzt. float

fe st. weath. lam. ps-pe sist. (chloritized) irregular < 10 mm qtz veins — weath. ps-pe sist — f.l. ps-pe sist. — KR 8030 goss. (py) qtz vein. — mg. qtzt. (float) — NR3 — sub o/c — lam sist. rounded qtzt cobbles up to 20cm (float) — m. lam. pyj. sist (possible tourmaline ? in ps. layers)

Structural Symbols:

- Strike and dip of bedding.
- Strike and dip with younging direction
- Cleavage.
- Jointing.
- Other planar features, veins etc.
- Outcrop boundary.
- Float and sub o/c.
- Lithological boundary.
- Structural Trend.
- KR8035 Geochemical sample.
- NR6 Rock specimen No.
- Ironstone outcrop (purple)

LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line

5 cm

GN TN MN

TN/MN ANGLE - 12°00'
GN/TN ANGLE - 37°00'

DATE JULY 1981
GEOLOGIST W.H
DRAWN: R.Tog.
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

50 0 100 200 300 400 500m
SCALE: 1 5 000

No. TS 1/77-TEM-11

E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
GEOLOGY

811148

3998

82-1721.

5 442 500mN AMG

8 400mE 8 600mE 8 800mE 9 000mE 9 200mE 9 400mE 9 600mE 9 800mE 10 000mE 10 200mE 10 400mE 10 600mE 10 800mE 11 000mE 11 200mE

310 000mE AMG

BASE LINE ENDS 11 600mN

11 600mN
11 400mN
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
8 200mN
8 000mN
7 800mN
7 600mN

62500
63000
63500
64000
64200

62500
63000
63500
64000
64200
65000
65200
65400
65600
65800
66000
66200
66400
66600
66800
67000
67200
67400
67600
67800
68000
68200
68400
68600
68800
69000
69200
69400
69600
69800
70000

63000
62500
61000

5 442 500mN AMG

LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line

CONTOUR INTERVAL - 500nT

5 cm

GN
TN
MN
TN/MN ANGLE - 12°00'
GN/TN ANGLE - 37°00'

DATE: JULY 1981
GEOLOGIST: W.H
DRAWN: R.Tog.
CHECKED:

GEOPEKO
DEVONPORT BASE, TASMANIA

811149

50 0 100 200 300 400 500m
SCALE: 1:5000

No.TS 1/77-TEM-12

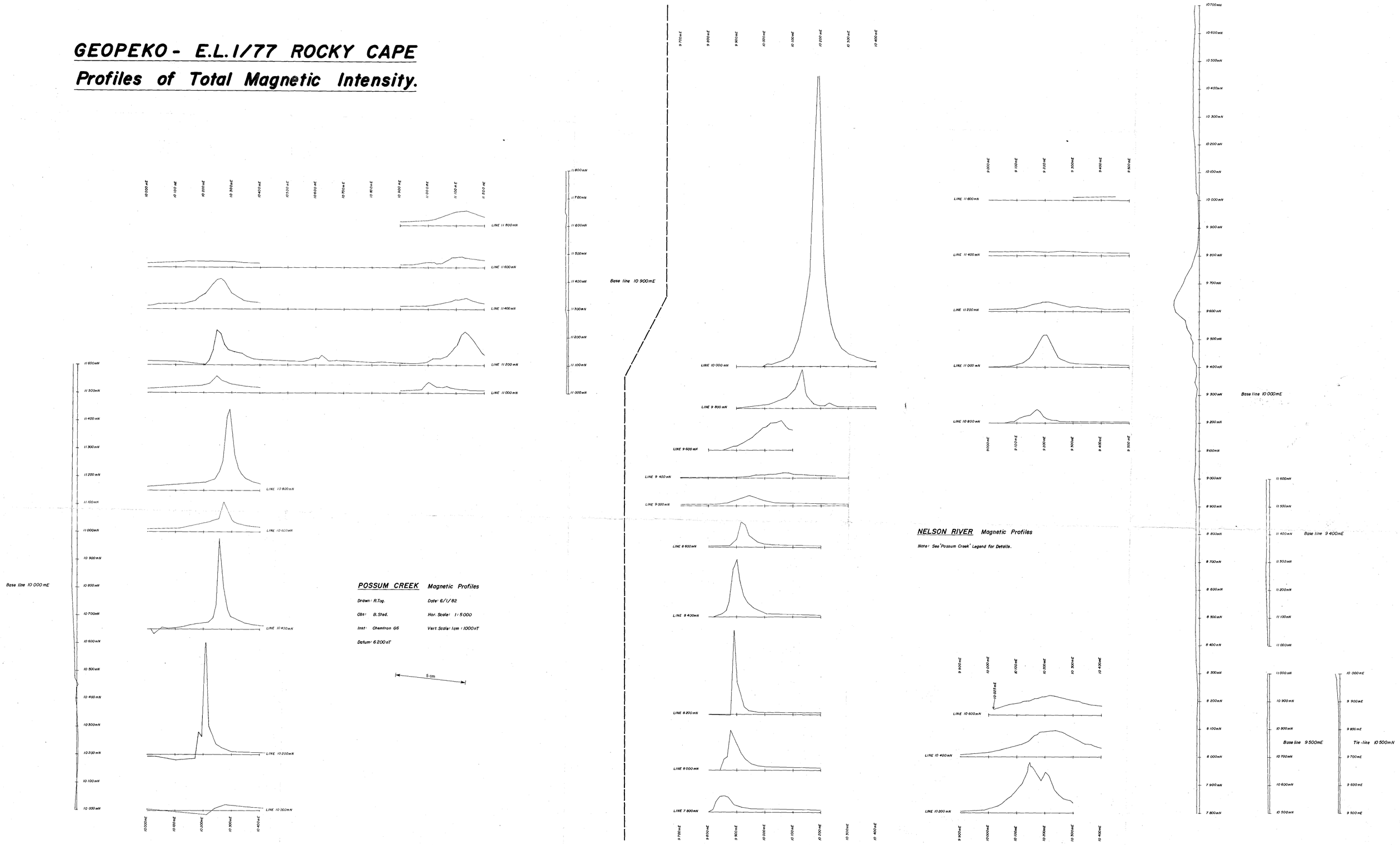
E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
CONTOURS OF TOTAL MAGNETIC INTENSITY

82-1721

3999

GEOPEKO - E.L.1/77 ROCKY CAPE

Profiles of Total Magnetic Intensity.



POSSUM CREEK Magnetic Profiles

Drawn: R.Tog. Date: 6/1/82

Obs: B.Sted. Hor. Scale: 1:5000

Inst: Chemtron G6 Vert. Scale: 1cm : 1000nT

Datum: 6200nT

5 cm

NELSON RIVER Magnetic Profiles

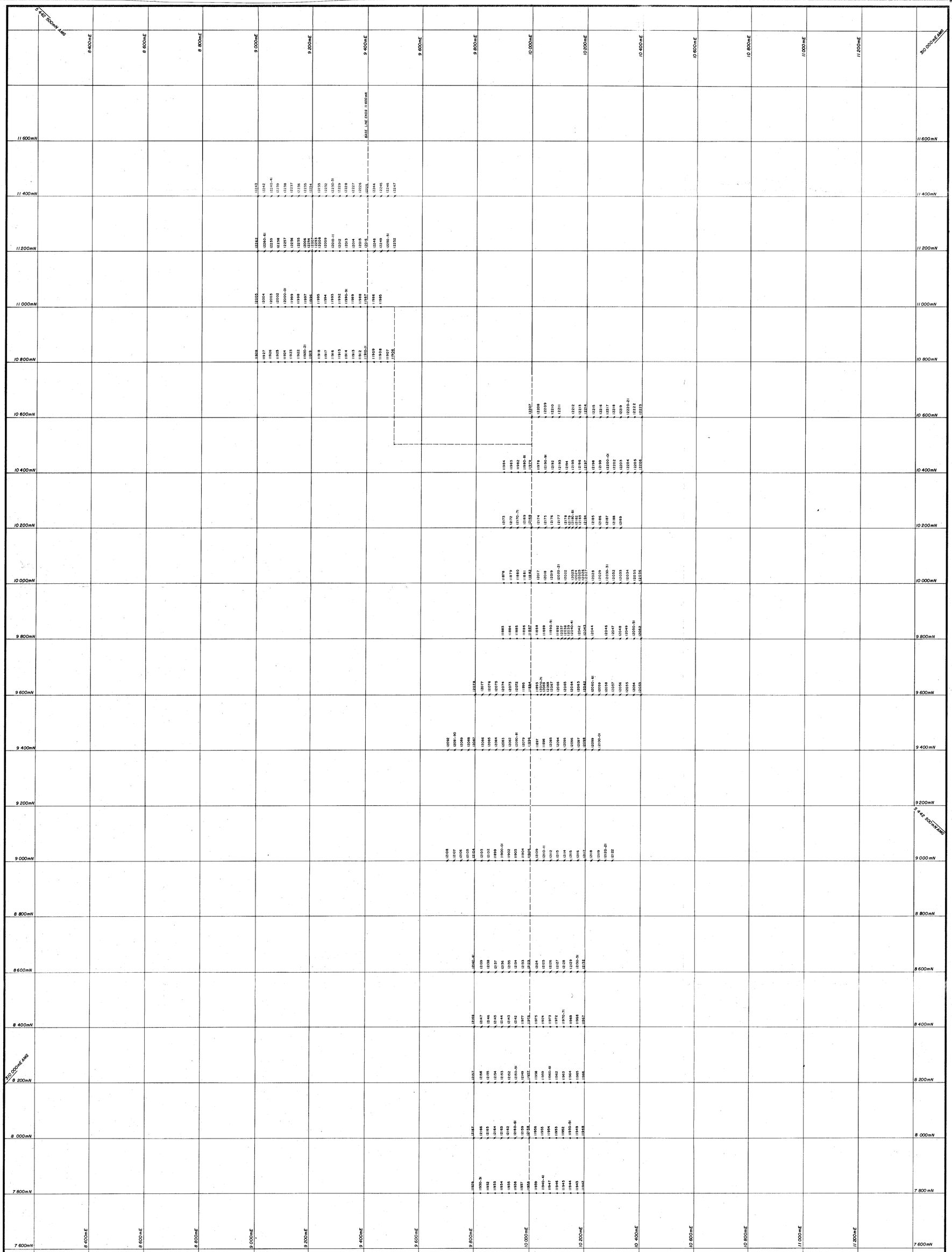
Note: See 'Possum Creek' Legend for Details.

811150

PLAN NO: TS 1/77-TEM-13

4000

82-1721



LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line

Sample Number Prefix : TS

5 cm

GN
TN
MN
TN/MN ANGLE-12°00'
GN/TN ANGLE-39°00'

DATE: JULY 1981
GEOLOGIST: W.H
DRAWN: R.Tog.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

50 0 100 200 300 400 500m
SCALE: 1:5000

No. TS 1/77-TEM-14

E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
SOIL SAMPLE LOCATIONS

811151

82-1231

4001

5 442 500mN AMG

8 400mE 8 600mE 8 800mE 9 000mE 9 200mE 9 400mE 9 600mE 9 800mE 10 000mE 10 200mE 10 400mE 10 600mE 10 800mE 11 000mE 11 200mE

310 000mE AMG

BASE LINE ENDS 11 600mN

11 600mN
11 400mN
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
8 200mN
8 000mN
7 800mN
7 600mN

5 442 500mN AMG

310 000mE AMG

8 400mE 8 600mE 8 800mE 9 000mE 9 200mE 9 400mE 9 600mE 9 800mE 10 000mE 10 200mE 10 400mE 10 600mE 10 800mE 11 000mE 11 200mE

LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line

5 — DUPLICATE SAMPLE
10 — SAMPLE
— SAMPLE POSITION

NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

19-6	25-49 ppm
Pencil Nos. 19-15	50-99 ppm
19-22	100 ppm+

5 cm

GN
TN
MN
TN/MN ANGLE-12°00'
GN/TN ANGLE-37°00'

DATE: JULY 1981
GEOLOGIST: W.H
DRAWN: R.Tog.
CHECKED: W.H.

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

50 0 100 200 300 400 500m
SCALE: 1:5 000

No.TS 1/77-TEM-15

E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
811152
C-HORIZON GEOCHEMICAL RESULTS
Cu Contours

82-1731

4002

4002

5 442 500mN AMG

8 400mE 8 600mE 8 800mE 9 000mE 9 200mE 9 400mE 9 600mE 9 800mE 10 000mE 10 200mE 10 400mE 10 600mE 10 800mE 11 000mE 11 200mE

310 000mE AMG

BASE LINE ENDS 11 600mN

11 600mN
11 400mN
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
8 200mN
8 000mN
7 800mN
7 600mN

5 442 500mN AMG

310 000mE AMG

LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line

5/10 — DUPLICATE SAMPLE
5/10 — SAMPLE
— SAMPLE POSITION

NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos.

19-6	50-99 ppm
19-10	100-199 ppm
19-15	200-399 ppm
19-28	400 ppm+

5 cm

GN
TN
MN
TN/MN ANGLE-18°00'
GN/TN ANGLE-31°00'

DATE: JULY 1981
GEOLOGIST: W.H
DRAWN: R.Tog.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

811153

50 0 100 200 300 400 500m
SCALE: 1:5000

No.TS 1/77-TEM-16

E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
C-HORIZON GEOCHEMICAL RESULTS
Pb Contours

82-1721

4003

5 442 500mN AMG

8 400mE | 8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 310 000mE AMG

BASE LINE ENDS 11 600mN

11 600mN
11 400mN
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
8 200mN
8 000mN
7 800mN
7 600mN

310 000mE AMG

5 442 500mN AMG

LEGEND:

- Power auger (Jacro)
- Hand, power auger (mate)
- Base line
- 5 / 10 — DUPLICATE SAMPLE — SAMPLE — SAMPLE POSITION
- NS — NO SAMPLE
- X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos.

19-6	2-3·99%
19-10	4-7·99%
19-15	8-15·99%
19-28	16% +

5 cm

GN
TN
MN
TN/MN ANGLE-12°00'
GN/TN ANGLE-37°00'

DATE JULY 1981
GEOLOGIST W.H
DRAWN R.Tog.
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

811154

50 0 100 200 300 400 500m
SCALE 1 5000

No.TS 1/77-TEM-17

E.L. 1/77 ROCKY CAPE, TASMANIA
NELSON RIVER
C-HORIZON GEOCHEMICAL RESULTS
Fe Contours

82-1731

4004

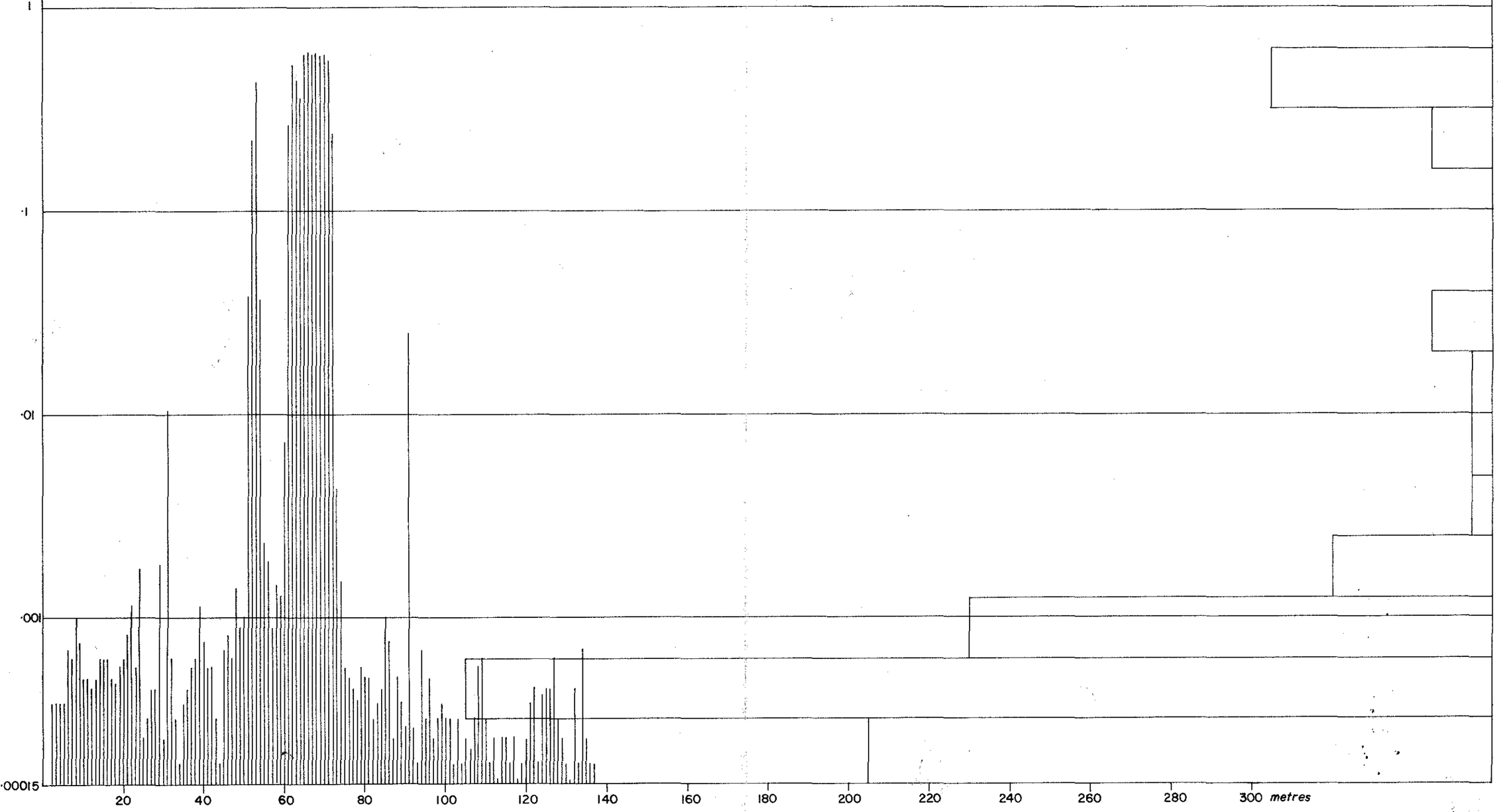
811155

NELSON RIVER DDH N401 SUSCEPTIBILITY IN SI UNITS

E.L. 1/77 ROCKY CAPE, TEMMA AREA. DRAWN: R.Tog. OBS: J.Sumpton
DATE: 5/1/82 PLAN: TS1/77-TEM-18

Note: f=2 per cm

5 cm



82-1721

4006

10 000 mE | 10 100 mE | 10 200 mE | 10 300 mE | 10 400 mE | 10 500 mE | 10 600 mE | 10 700 mE | 310 000 mN A.M.G. | 10 800 E | 10 900 mE | 11 000 mE | 11 100 mE | 11 200 mE

11 800 mN

11 700 mN

11 600 mN

5430000 mN A.M.G.

11 500 mN

11 400 mN

11 300 mN

11 200 mN

11 100 mN

11000 mN

10 900 m N

10 800 mN

10 700 m N

10 600 m N

10 500 m N

10 400 mN

10 300 m N

10 200 m N

10 100 m N

10 000 m N

BASE LINE

(Weak cleavage) 80] 70/50

Grey f. lam. pe sist (minor irregular qtz. veins up to 1cm) KR 8127

Basalt float

Lam. pe. sl st

Pale grey pe. sl st

Lam. pe. slst.

Basalt

Basalt

SUPERFICIAL SAND COVER

80] /50

F.l. pe. sl st.

BASE LINE

45 Pyjama slst.

F. lam. ps. slst.

/35 /50

f. lam. pe slst

/25

f. lam. grey pe. sl st.

pe. slst 75] /35

Ferruginous earthly material.

(Weakly fe stained) f.lam. grey pe. slst.

F. lam. pe. sl st.

F.lam. pe slst.

Fe stained f.lam. pe. slst.

F.g chlorite and granular garnet – chlorite rock. (float). KR 8125 – 8126

5 430 000mN A.M.G.

Superficial Sand Cover

POSSUM CREEK

Cross bedded psammitic pyj. slst/sst.

Pits (unconsol gravel)

70 /60

70 /45

Strong. cleaved small south plunging folds.

70 /35

/40 75 /35

75

70 /40

Grn. grey pe. slst.

Grn. grey ps. slst/shale (Strongly cleaved)

Cleaved pe. slst.

Small fold plunge 10° → 020

Weathered mt rock

Vein qtz float

KR's 8003–8009 from mullock dumps

Fracture clear. 75 /35

f. lam. grey pe. slst. /80

75 /80 /50

75 70 70

20

dk. grn. grey pe slst.

(shear zone)

10cm. wide shear zone & qtz. veinlets + chl. alt. KR 8101.

Sub o/c f. l pe slst.

White vein-qtz float

TO TEMMA

TO BALFOUR

310 000mN A.M.G.

5429 000 mN

811156

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate
- Bedding
- Direction of Facing
- Joint
- Cleavage
- Fold axis
- Weathered ironstone
- Dump from pit
- Out crop
- Float

5 cm

GN TN MN

TN/MN ANGLE – 12°00'

GN/TN ANGLE 38°30'

DATE JULY 1981

GEOLOGIST W.H

DRAWN M.vdS.

CHECKED W.T.

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

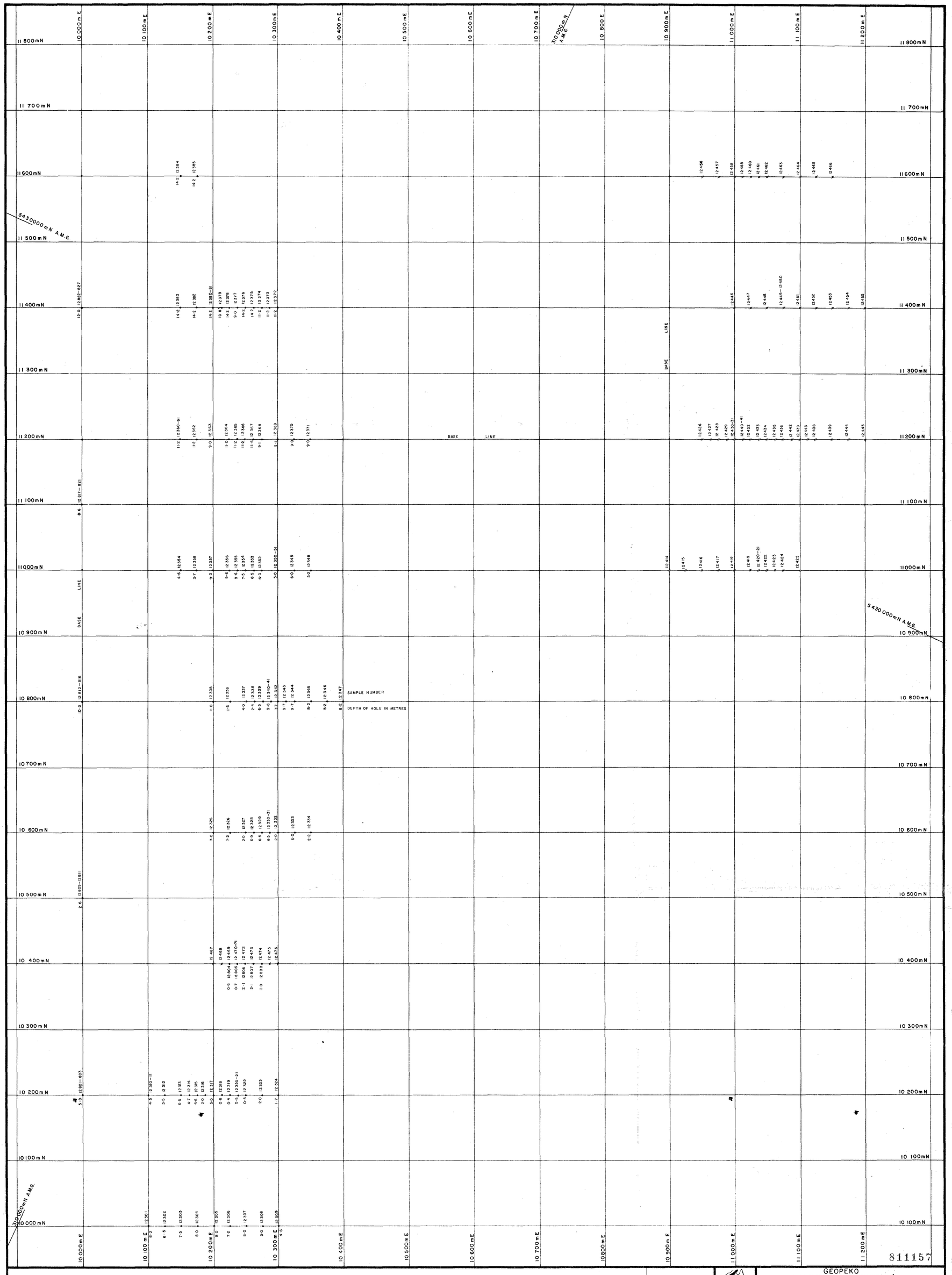
SCALE 1:2500

No. TS 1/77 TEM-20

ROCKY CAPE E.L.1/77 – TEMMA AREA POSSUM CREEK PROSPECT GEOLOGY

82-1721

4005



811157

LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

12470 — Sample No., Prefix TS
4·5 — SAMPLE POSITION
— Depth of Jacro auger hole (m)

5 cm

GN TN MN
TN/MN ANGLE 12°00'
GN/TN ANGLE 38°30'

DATE JULY 1981
GEOLOGIST W.H.
DRAWN N.vdS.
CHECKED W.H.

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE 1:2500

No. TS 1/77-TEM-20a

ROCKY CAPE E.L.1/77-TEMMA AREA
POSSUM CREEK PROSPECT
C HORIZON SOIL SAMPLE LOCATIONS

82-1721

4007

ROCKY CAPE E.L.1/77 – TEMMA AREA
POSSUM CREEK PROSPECT
CONTOURS OF TOTAL MAGNETIC INTENSITY

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

HOR. SCALE 1:2500

No. TS 1/77 TEM-22

DATE JULY 198
OBSERVER B.S
DRAWN A.Tag

GN
TN
MN
TN/MN ANGLE 12°00'
GN/TN ANGLE 38°30'

CONTOUR INTERVAL: 500 nT

5 cm

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

811158

82-1721

4008

10 000 m E | 10 100 m E | 10 200 m E | 10 300 m E | 10 400 m E | 10 500 m E | 10 600 m E | 10 700 m E | 10 800 E | 10 900 m E | 11 000 m E | 11 100 m E | 11 200 m E

3/0 000 m N A M G

11 800 m N | 11 700 m N | 11 600 m N | 11 500 m N | 11 400 m N | 11 300 m N | 11 200 m N | 11 100 m N | 11000 m N | 10 900 m N | 10 800 m N | 10 700 m N | 10 600 m N | 10 500 m N | 10 400 m N | 10 300 m N | 10 200 m N | 10 100 m N | 10 000 m N

5430000 m N A.M.G.

BASE LINE

+ 20 | + 10 | 0% | − 10 | − 20 | − 30

5 cm

LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger / mate

IN PHASE

QUADRATURE

HORZ. SCALE 1:2500

VERT. SCALE 10% = 1cm

NWC 285° M

GRID NORTH 321.5° M

DIRECTION OF READING

GN | TN | MN

TN/MN ANGLE - 12°00'

GN/TN ANGLE 38° 30'

DATE JULY 1981

GEOLOGIST W.H.

DRAWN M.vdS.

CHECKED

GEOPEKO

A DIVISION OF PEKO WALLSEND OPERATIONS LTD.

SCALE 2500

No TS 1/77 TEM-25

ROCKY CAPE E.L.1/77 - TEMMA AREA

POSSUM CREEK PROSPECT

PROFILES VLF-EM.

82-1721

811159

4009

ROCKY CAPE E.L.1/77 – TEMMA AREA
POSSUM CREEK PROSPECT
C-HORIZON GEOCHEMISTRY
COPPER RESULTS

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE 1:2500

No. TS 1/77 TEM-27

DATE JULY 1981
GEOLOGIST WH
DRAWN M vdS
CHECKED

TN/MN ANGLE - 12°00'
GN/TN ANGLE 38°30'

5 cm

811160

82-1721

4010

LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

10 — COPPER ppm
5 — LEAD ppm
10 — ZINC ppm

10/5/10 — DUPLICATE SAMPLES

NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos	ppm
19-6	50-100
19-10	100-200
19-15	200-400
19-28	400-800

(MATE)
(JACRO)

BASE LINE

10 000 mE
10 100 mE
10 200 mE
10 300 mE
10 400 mE
10 500 mE
10 600 mE
10 700 mE
10 800 mE
10 900 mE
11 000 mE
11 100 mE
11 200 mE

11 800 mN
11 700 mN
11 600 mN
11 500 mN
11 400 mN
11 300 mN
11 200 mN
11 100 mN
11 000 mN
10 900 mN
10 800 mN
10 700 mN
10 600 mN
10 500 mN
10 400 mN
10 300 mN
10 200 mN
10 100 mN
10 000 mN

5430000mN AMG
3100000mN AMG
5430000mN A.M.G.
3100000mN AMG

10 000 m E | 10 100 m E | 10 200 m E | 10 300 m E | 10 400 m E | 10 500 m E | 10 600 m E | 10 700 m E | 3/10 000 m N A M G | 10 800 E | 10 900 m E | 11 000 m E | 11 100 m E | 11 200 m E

11 800 m N | 11 700 m N | 11 600 m N | 11 500 m N | 11 400 m N | 11 300 m N | 11 200 m N | 11 100 m N | 11000 m N | 10 900 m N | 10 800 m N | 10 700 m N | 10 600 m N | 10 500 m N | 10 400 m N | 10 300 m N | 10 200 m N | 10 100 m N | 10 000 m N

5430000 m N A.M.G.

BASE LINE

(MATE)

(JACRO)

CONTOUR INTERVAL

Pencil Nos | ppm
19-6 | 50-99
19 10 | 100-199
19-15 | 200-399
19-22 | 400-799
19-28 | 800+

LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

10 — COPPER ppm
5 — LEAD ppm
10 — ZINC ppm
10/5/10 — DUPLICATE SAMPLES
NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

5 cm

GN TN MN
TN/MN ANGLE - 12°00'
GN/TN ANGLE 38° 30'

DATE JULY 1981
GEOLOGIST WH
DRAWN M vdS
CHECKED

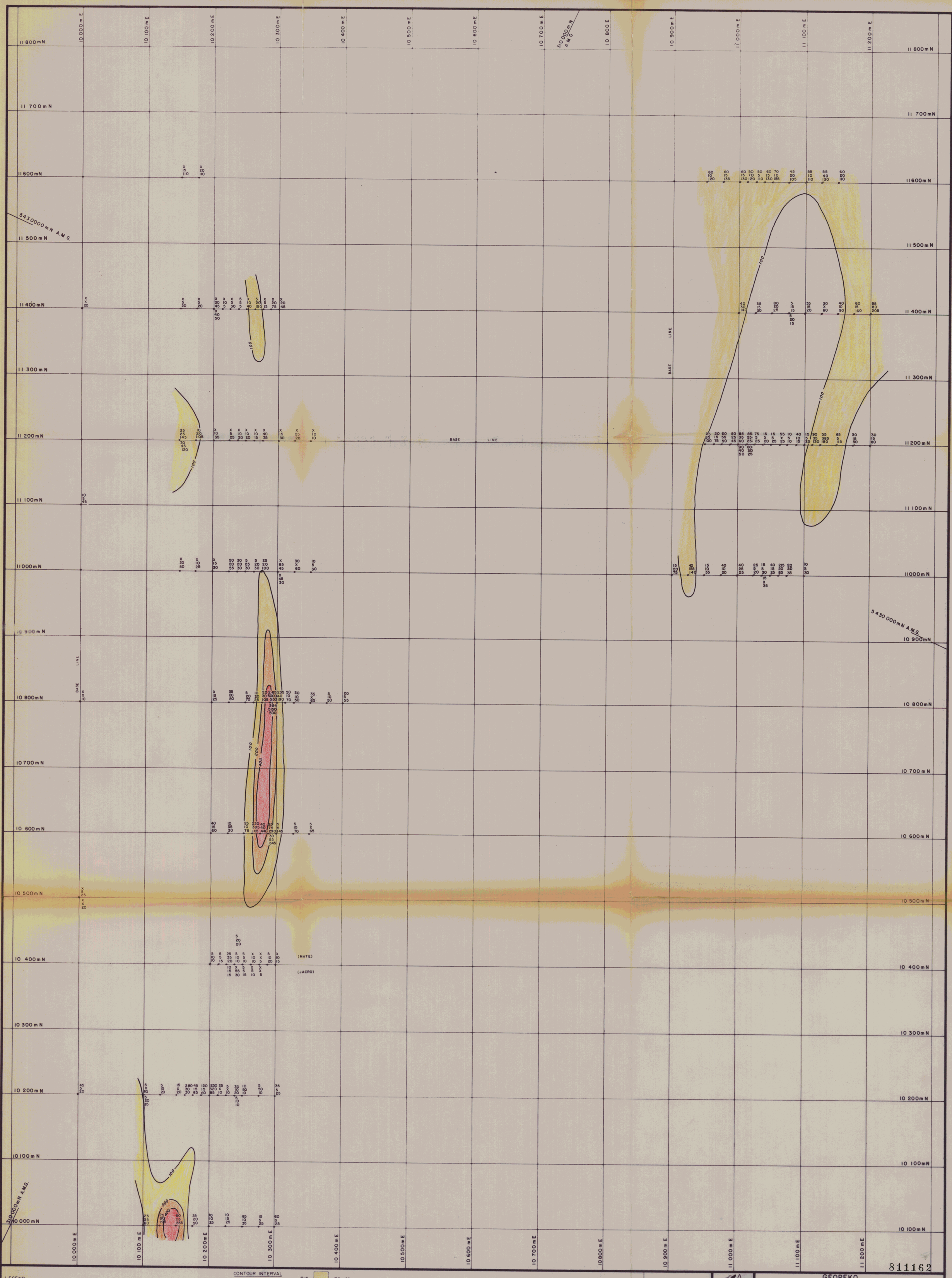
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
SCALE 1:2500
No. TS 1/77 TEM-28

ROCKY CAPE E.L.1/77 - TEMMA AREA
POSSUM CREEK PROSPECT
C HORIZON GEOCHEMISTRY
LEAD CONTOURS

82-1721

4011

E11161



LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

10 — COPPER ppm
5 — LEAD ppm
10 — ZINC ppm

5/10 — DUPLICATE SAMPLES

NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos	ppm
19-6	100-199
19-10	200-399
19-15	400-799
19-28	800 +

5 cm

GN TN MN

TN/MN ANGLE- 12°00'
GN/TN ANGLE 38°30'

DATE JULY 1981
GEOLOGIST W.H
DRAWN M.vdS.
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE 1:2500

No. TS 1/77 TEM-29

ROCKY CAPE E.L.1/77-TEMMA AREA
POSSUM CREEK PROSPECT
C HORIZON GEOCHEMISTRY
ZINC CONTOURS

82-1721

4012

811162

ROCKY CAPE E.L.1/77 – TEMMA AREA
POSSUM CREEK PROSPECT
C HORIZON GEOCHEM.
Fe Contours, and Mn, Ag Values

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE 1:2500

No. TS 1/77 TEM-30

DATE JULY 1981
GEOLOGIST W.H
DRAWN M.vdS.
CHECKED

811163

82-1721

4013

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

1-5 — IRON %.
10 — MANGANESE ppm.
5 — SILVER gm/t.
1·0 / 10 / 5 — DUPLICATE SAMPLES
X — BELOW LEVEL OF DETECTION.
NS — NO SAMPLE

CONTOUR INTERVAL

Pencil Nos.	
19-6	2% +
19-10	4% +
19-15	8% +
19-28	16% +

5 cm

GN TN MN
TN/MN ANGLE – 12°00'
GN/TN ANGLE 38°30'

BASE LINE

(MATE SAMPLING)
(JACRO)

5 430 000mN A.M.G.
5 430 000mN A.M.G.
3 10 000mN A.M.G.

9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 200mE 10 300mE 10 400mE 10 500mE 10 600mE 10 700mE 10 800mE 10 900mE 11 000mE 11 100mE 11 200mE 11 300mE

11 900mN 11 800mN 11 700mN 11 600mN 11 500mN 11 400mN 11 300mN 11 200mN 11 100mN 11 000mN 10 900mN 10 800mN 10 700mN 10 600mN 10 500mN 10 400mN 10 300mN 10 200mN 10 100mN 10 000mN 9 900mN 9 800mN 9 700mN

11 866mN 11 566mN 11 266mN 10 966mN 10 666mN

10 000mN A.M.G.

11 000mN A.M.G.

3 435 000mN A.M.G.

BASE LINE

BASE LINE

10 610mN 10 488mN 10 366mN 10 244mN 10 213·5mN 10 183mN 10 152·5mN 10 122mN 10 091·5mN 10 061mN 9 939mN 9 878mN 9 817mN

(Plt grid 14·00° S)

Fl ps ol/st

Fl ps ol/st (very ps ol/st)

Fl ps ol/st

Ps ol/st

(High) ps ol/st

Basalt

Basalt

Tertiary basalt cover

Ps ol/st

Fl ps ol/st

Ps ol/st

Basalt

(dump) weath mt-qtz ironstone
ps ol/stone

massive granular py
(some) py-mt
ARR/MR/KR247

gossanous qtz.

weath gossan/ironstone
(non magnetic)

grey blebs and stringers

mt-py-cpy (gal)
qtz dumps

shrd & sil'd ol/ph /qtz vns

shrd & sil'd ol/ph vns

ps ol/st

Lincolnite qtz gossan KR8010

(35 KR8011 weath ol/ph rock

Chlorite schist

Pale grey ps ol/st

graph slaty mmst
grn vein/clot nodules

KR 8119
weath ironstone

(DDH T 302 100-108m)
KR8120 (100-108m)

KR8120 weath gtz-mt
KR7449 to 2m width
KR7450 (weak magnetic)

(Frag'l) qtz-hem
(minor) magnetite

KR 8122

KR 8131-8134

Fossi-ferrous limestone (Tertiary)

KR 8129-8130
qtz-mt-hem lode

Fl ps ol/st

Ps ol/st

KR 8123

BARNEY'S HUT
ps ol/st
minor chrtd ol/st

Trenches

gray ps ol/st

To TEMMA (trenching)

Intense cleavage
assoc to small drag folds

(DDH T 301) (200-208m)
(KR 8135-36)

To "TEMMA" FARM

LEGEND:

- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate

GEOPEKO
A DIVISION OF HUNT WALLSEND (AUSTRALIA) LTD

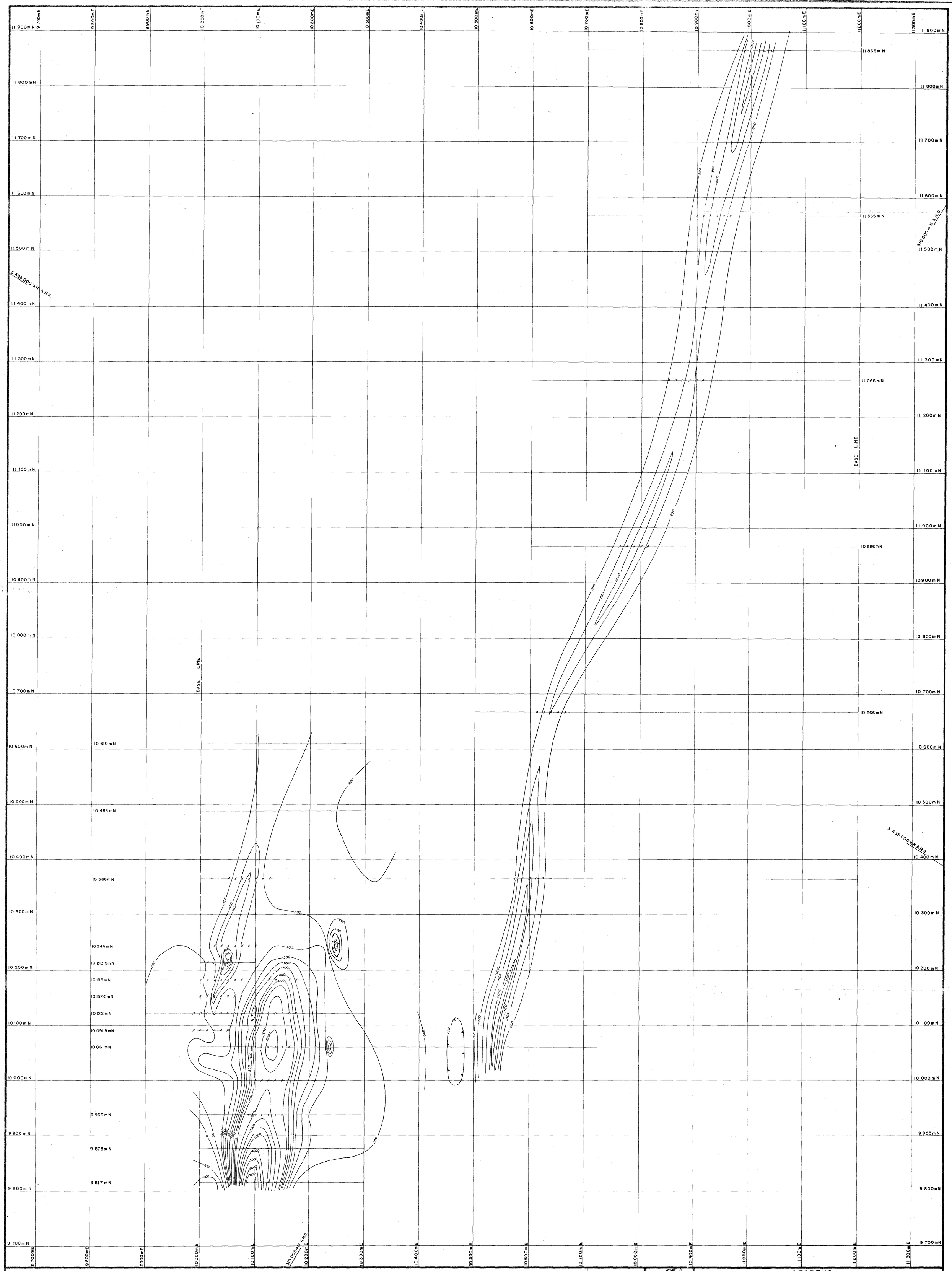
SCALE 1:2500

NOTSI/77-TEM-35

ROCKY CAPE E.L.1/77 – TEMMA AREA
STRICKLAND PROSPECT
GEOLOGY

4014

DATE 12-1-82
GEOLOGIST WH
DRAWN MdS
CHECKED



LEGEND:

- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate

OBS: B. Stedman INST: Chemtron
DATUM: 62000 nT

5 cm

GN TN MN
TN/MN ANGLE - 12°00'
GN/TN ANGLE 30°30'

DATE: 10/1/82
GEOLOGIST W.H.
DRAWN: R.Tog.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

25 0 50 100 200 metres
SCALE: 1:2500

NO.TSI/77-TEM-36

ROCKY CAPE E.L.1/77-TEMMA AREA
STRICKLAND PROSPECT
CONTOURS OF TOTAL MAGNETIC INTENSITY

811165

82-173

9 900mE | 10000mE | 10 100mE | 10 200mE | 10 300mE | 10 400mE | 10 500mE | 10 600mE | 10 700mE | 10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE

LINE 11266mN
LINE 11566mN
LINE 11266mN
LINE 10966mN
LINE 10666mN
LINE 10610mN
LINE 10488mN
LINE 10366mN
LINE 10213·5mN
LINE 10183mN
LINE 10152·5mN
LINE 10122mN
LINE 10091·5mN
LINE 10061mN
LINE 10000mN
LINE 9939mN
LINE 9878mN
LINE 9817mN

9 900mE | 10 000mE | 10 100mE | 10 200mE | 10 300mE | 10 400mE | 10 500mE | 10 600mE | 10 700mE | 10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE

811166

HORIZONTAL SCALE 1:2500
VERTICAL SCALE 1cm / 500nT.
DATUM 62000nT.

5 cm

DATE: 13·1·82
GEOLOGIST: W.H.
DRAWN: M.vdS.
CHECKED: W.H.

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

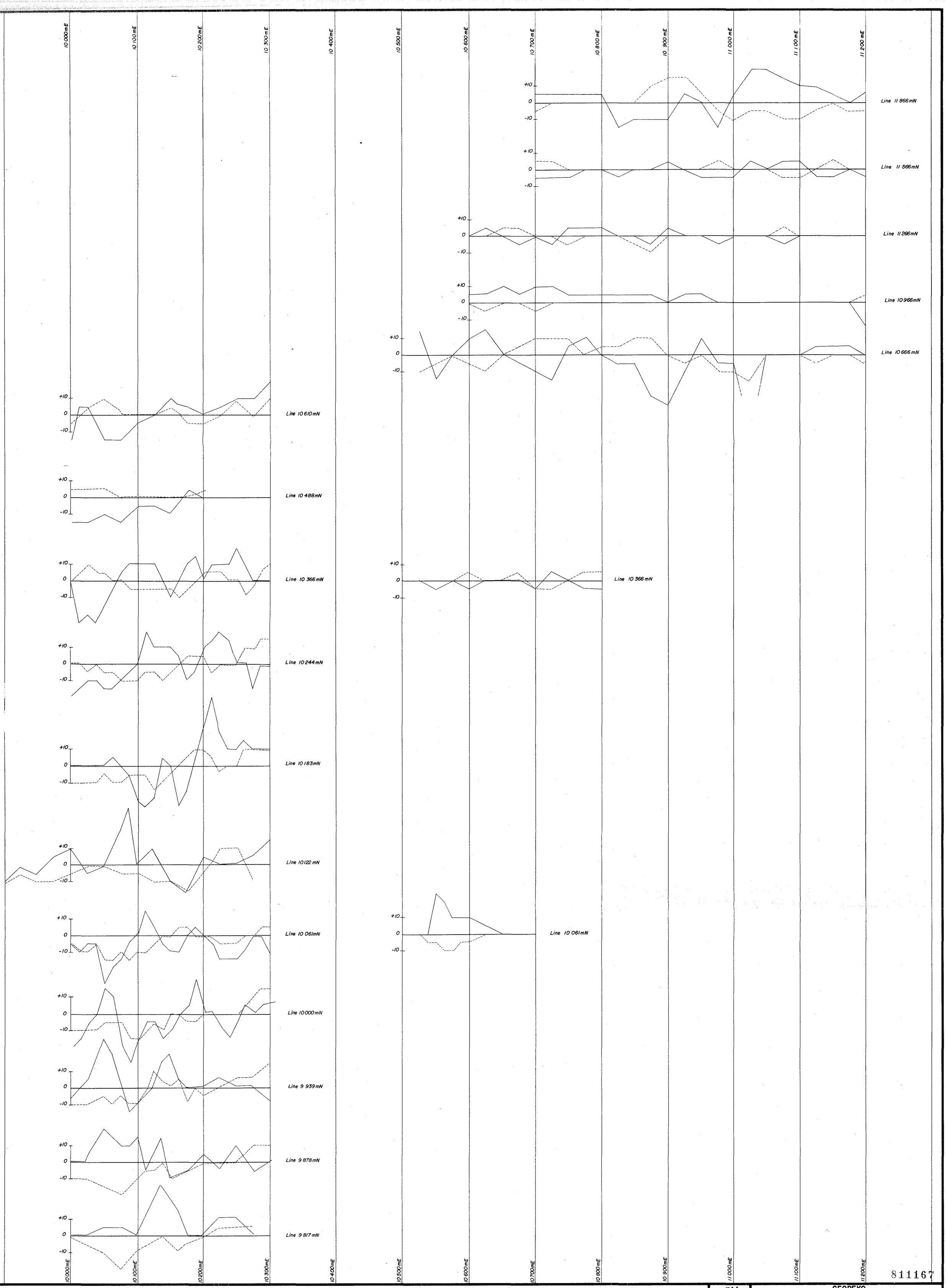
SCALE: 1:2500

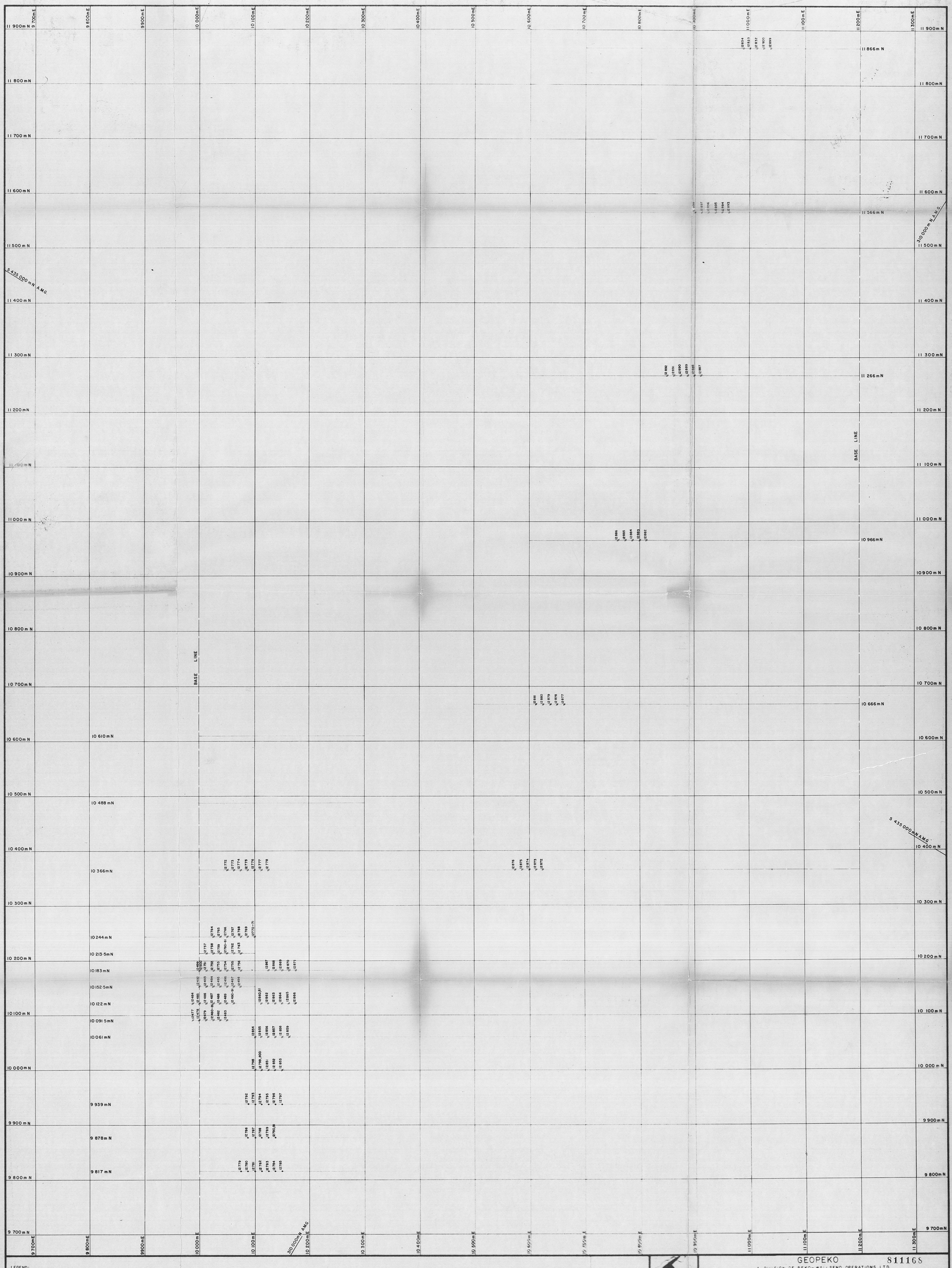
No. TSI/77-TEM-37

ROCKY CAPE E.L.1/77-TEMMA AREA
STRICKLAND PROSPECT
MAGNETIC PROFILES

82-1721

4016


10 000mE
10 100mE
10 200mE
10 300mE
10 400mE
10 500mE
10 600mE
10 700mE
10 800mE
10 900mE
11 000mE
11 100mE
11 200mE
+10
0
-10
Line 11 866mN
Line 11 566mN
Line 11 266mN
Line 10 966mN
Line 10 666mN
Line 10 610mN
Line 10 488mN
Line 10 366mN
Line 10 244mN
Line 10 183mN
Line 10 122mN
Line 10 061mN
Line 10 000mN
Line 9 939mN
Line 9 878mN
Line 9 817mN
In Phase
Quadrature
5 cm
Vertical Scale : 1 cm = 10%
GN
TN
MN
Direction of Reading
TN/MN
ANGLE-12°00'
GN/TN
ANGLE-30°30'
GEOPEKO
A DIVISION OF PEKO-WALLSEND
25 0 50 100 metres
SCALE: 1:2500
No.TS 1/77-TEM-39
ROCKY CAPE E.L.1/77-TEMMA AREA
STRICKLAND PROSPECT
V.L.F-EM
PROFILES
DATE: 13/10/82
GEOL: W.Herrmann
DRAWN: R.Tog.
CHECKED:
82-172.
811167
4017



LEGEND:

- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate
- Sample Number Prefix: TS.....

5 cm

GEOPEKO 811168

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE 1:2500

No. TS1/77-TEM-40

ROCKY CAPE E.L.1/77-TEMMA AREA

STRICKLAND PROSPECT

C HORIZON SAMPLE LOCATION PLAN

82-1721

4018

ROCKY CAPE E.L.1/77 – TEMMA AREA
STRICKLAND PROSPECT
C HORIZON GEOCHEM.
Cu Contours

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

NOTSI/77-TEM-41

SCALE 1 2500 (25 0 50 100 200 metres)

DATE 10/1/82
GEOLOGIST W.H.
DRAWN R.Tog.
CHECKED

811169

4019

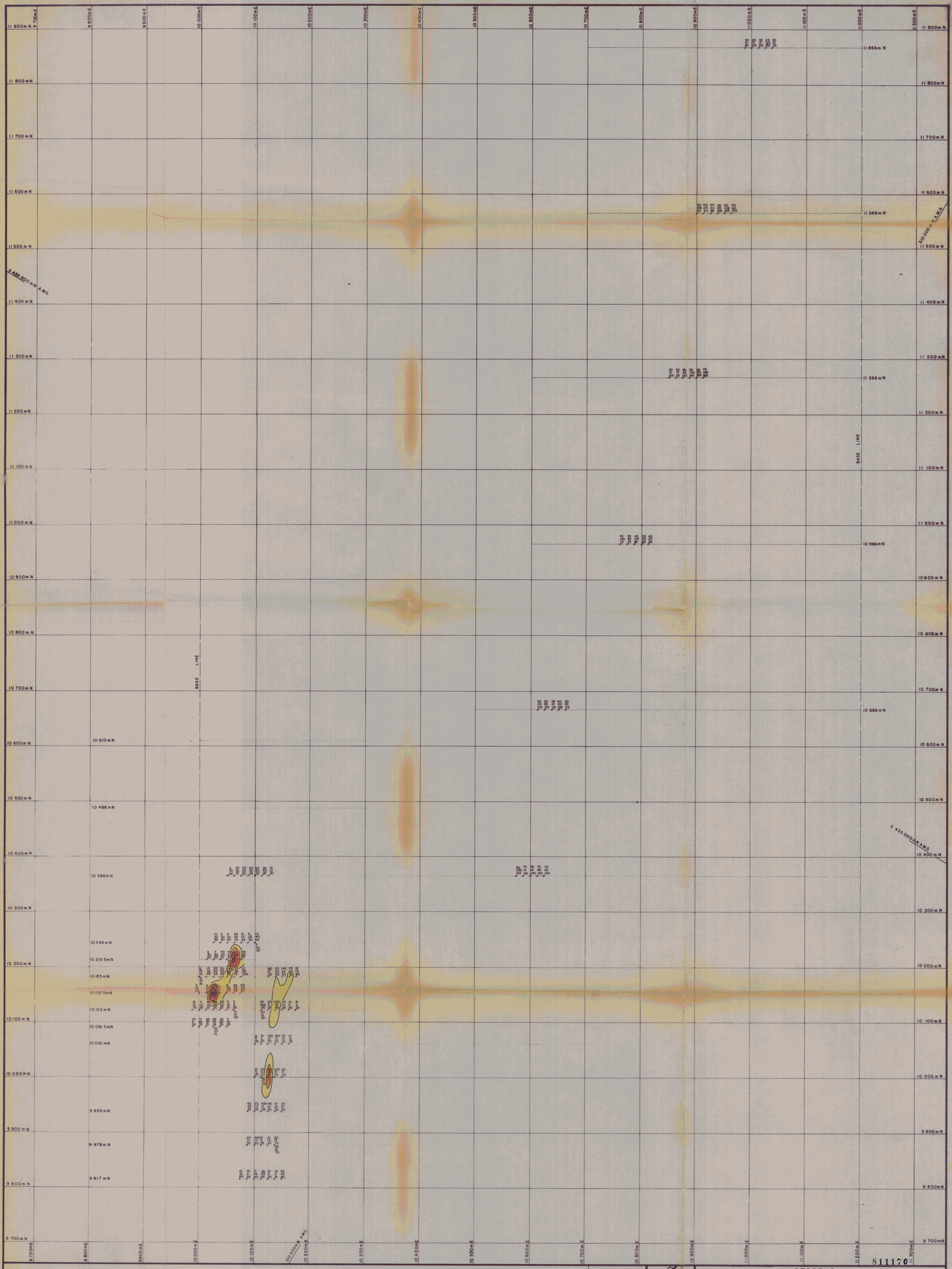
LEGEND:
- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate
- COPPER ppm / LEAD ppm / ZINC ppm
- DUPLICATE SAMPLES
- NS — NO SAMPLE
- X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos	ppm
9-6	50-99
9-10	100-299
9-15	300-399
9-22	400-799
9-28	800+

TN/MN ANGLE - 12°00
GN/TN ANGLE 30°30'

5 cm



LEGEND

- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate

10 COPPER ppm
5 LEAD ppm
10 ZINC ppm
10 / 5 / 10 — DUPLICATE SAMPLES
NS — NO SAMPLE
X — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos	ppm
9-6	50-99
19-10	100-199
19-15	200-399
19-22	400-799
19-28	800+

5 cm

GN TN MN

TN/MN ANGLE - 12° 00'
GN/TN ANGLE 30° 30'

DATE 10/1/82
GEOLOGIST W.H.
DRAWN R.Tog
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

25 0 50 100 200 metres
SCALE 1 2500

NOTSI/77-TEM-42

ROCKY CAPE E.L.1/77 - TEMMA AREA
STRICKLAND PROSPECT
C HORIZON GEOCHEM.
Pb Contours

82-172.

811170

4020

9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE | 10 300mE | 10 400mE | 10 500mE | 10 600mE | 10 700mE | 10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | 11 300mE

11 900m N | 11 800m N | 11 700m N | 11 600m N | 11 500m N | 11 400m N | 11 300m N | 11 200m N | 11 100m N | 11 000m N | 10 900m N | 10 800m N | 10 700m N | 10 600m N | 10 500m N | 10 400m N | 10 300m N | 10 200m N | 10 100m N | 10 000m N | 9 900m N | 9 800m N | 9 700m N

11 866m N | 11 566m N | 11 266m N | 10 966m N | 10 666m N | 10 610m N | 10 488m N | 10 366m N | 10 244m N | 10 213·5m N | 10 183m N | 10 152·5m N | 10 122m N | 10 091·5m N | 10 061m N | 9 939m N | 9 878m N | 9 817m N

5 435 000mN A.M.G.

310 000m E A.M.G.

BASE LINE

LEGEND:

- Grid position
- Power auger
- Hand auger
- Powerhand auger/mate

IRON %
MAGANESE ppm
SILVER gm/t
DUPLICATE SAMPLES
NS — NO SAMPLE
x — BELOW LEVEL OF DETECTION

CONTOUR INTERVAL

Pencil Nos	
19-6	2·0%
19-10	4·0%
19-15	8·0%
19-28	16·0%

5 cm

GN TN MN

TN/MN ANGLE - 12° 00
GN/TN ANGLE 30° 30'

DATE 11-1-82
GEOLOGIST W.H.
DRAWN M.vdS.
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE 1 2500

No. TS1/77-TEM-43

ROCKY CAPE E.L.1/77 – TEMMA AREA
STRICKLAND PROSPECT
C HORIZON GEOCHEM.
Fe Contours

811171

82-1721

4021