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254001  
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**MICROFILMED**

to

Progress Report

QUEEN HILL JOINT VENTURE  
EXPLORATION LICENCE 47/71.

Tasmania

Quarter to June 30, 1978

**OPEN FILE**

Please note this report covers the Abminco quarter (to period 6),  
ending June 6, 1978.

D.C. Simpson,  
Geologist,  
Abminco Exploration  
Division,

June 6, 1978

001

INTRODUCTION

This report is a summary of exploration completed in the quarter ending June 6, 1978, and includes report preparation and drafting through to June 30, 1978.

The exploration programme was primarily directed at follow up of anomalies delineated by the airborne magnetic survey of December 1977.

The programme consisted of:

- . Gridding of two magnetic anomalies.
- . Ground magnetic surveys over the same two anomalies.
- . 1:2500 geological mapping over the two grid areas.
- . Ground magnetic surveys and geological reconnaissance over four other magnetic anomalies.
- . Evaluation of the Severn area orientation geochemistry.

GRIDDING

The Tramway and Manganese Hill anomalies were gridded with lines spaced at 50 metres, and pegged at 25 metre intervals. Base lines were selected to coincide with State Grid North. The base line on Manganese Hill is an extension of the base line at Queen Hill. The base line at Tramway is a State Grid whole number easting.

Base lines were surveyed using theodolite and chain with slope corrections applied where slopes exceeded 5 degrees. Cross lines were turned-off the base line using a compass and were aligned using sighting rods. Slope corrections were made as for the base lines.

GROUND MAGNETIC SURVEYS

Ground magnetic surveys were carried out over the grids at Tramway and Manganese Hill (see Plate QH 86A for extent of grids), using a proton magnetometer with the sensor head on a 3 metre pole. Because of differences in readings when the sensor was held in a back-pack, this method was discarded. See Plates QH 96 and QH 102 showing base line tie using the two methods.

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Results for these two surveys are shown on

- 1) contour plans and profiles for the Tramway anomaly (Plates QH92, QH94 and QH 95) and,
- 2) on profiles for the Manganese Hill anomaly (Plate 103).

A contour plan was not produced for the Manganese Hill survey as the results are too "noisy" to be of use in an interpretation.

Interpretation of the Tramway magnetic results suggested several sources which fitted the available data. Computer modelling suggested several broad (i.e. ~100m) sources at shallow depths (<30m) with moderately steep dips to the south. The source was interpreted to extend from 59600E to 59825E centred at approximately 60500N. Susceptibilities assessed for these calculations were of the order of  $0.7 \times 10^{-3}$  cgs. As the computer interpretations may be unrealistic in the geological environment, the half-width method was also applied to magnetic results. This gave a source of approximately 100 metres depth-to-top with a steep southerly dip. A drill hole is proposed to test both interpretations. Collar of the hole selected is 60400N 59700E declined  $57^0$  towards grid north with a projected depth of 200m.

At Manganese Hill, results were not interpreted as they were too "noisy". Other exploration methods, for instance, percussion drilling, are being considered.

Other Areas

Four other areas were followed up during the reporting period. Each is commented on below:-

(Refer to previous quarterly report (Plate QH 91) for identification of anomalies.)

Big One: This is a very large order anomaly (1400 $\times$ ) in the vicinity of the Comstock workings held under lease by Electrolytic Zinc Co. Ltd. A ground magnetic traverse was carried out over a roughly oriented north-south line. (Plate QH 97). Interpretation of results, (Plate QH 98) gives a depth-to-top of the source in excess of 400 metres. The intensity of the anomaly and the depth suggest the source is an ultrabasic, and of no further interest.

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Junction: Geological reconnaissance in this area reveals only thinly bedded Oonah Quartzite and Slate with predominantly east west strike and steep dips. No outcrop was found which would explain the magnetic anomaly. An E-W ground magnetic traverse was carried out over the anomaly (Plate QH100); however over the 2 km long traverse no "trough" points were reached on the profile, indicating that the depth-to-top of the source is in excess of 300m (using the half-width method) and therefore is of little interest.

Silver Stream: Rocks in this area, situated about 2 km north-west of the Bigh One and 1 km north of the Tenth Legion prospect, consist of quartzites and minor slates of the Pre-Cambrian Oonah Quartzite and Slate. Dips are steep, towards 020-040° magnetic. Outcrop is good on the ridges; elsewhere exposure is limited to creeks.

In the vicinity of the anomaly, outcrop is predominantly quartzite which is fine grained, saccharoidal and white to buff in colour, often with a 5-10% micaceous content. Rocks are often stained orange-brown and this appears to be due to the presence of siderite. (Finely divided material effervesces slowly with cold HCl.)

A ground magnetic survey using a back-packed proton magnetometer was conducted over this anomaly on a N-S traverse approximately 1 km long, and centred on the anomaly. Results of the traverse, shown on Plate QH99, appear to indicate the contact of two rock types of differing magnetic susceptibility. Surface rock samples, however, gave a zero response using a portable susceptibility meter. (This may be due to lack of sensitivity in the instrument which is designed to read to a minimum of  $0.1 \times 10^{-3}$  cgs.)

Further investigation is being considered, as

- 1) the anomaly amplitude, i.e. ~200 $\gamma$  could be due to an effect other than change in rock type,
- 2) the anomaly is close to the Tenth Legion magnetite prospect,
- 3) there is sub-outcrop of tourmaline rich sediments half a kilometre to the east of the anomaly centre indicating the proximity of granite intrusion.

North-West: A brief reconnaissance traverse was made over this area which is situated in rugged terrain in the former Heemskirk licence area (EL 22/73). Mapping by the Mines Department, (Zeehan 1 mile sheet) was confirmed. Sediments close to the granite contact are tourmalinised but otherwise no alteration effects were observed. No surface evidence could be found to suggest a source for the anomaly.

Further ground magnetic traverses are planned to locate more accurately the position of the anomaly.

#### GRID GEOLOGICAL MAPPING

In the previous quarterly report, it was stated that the planned mapping scale was to be 1:1000, however, due to the general lack of outcrop the scale was reduced to 1:25000. Outcrop geological maps for the Tramway and Manganese Hill grids are shown on Plates QH 93 and QH 101. Grid mapping confirmed 1:10000 scale regional mapping with the minor exception that the Crimson Creek-Oonah Quartzite contact was observed to be about 100 metres further to the south.

Mapping by Waller (1904) identified a serpentinite dyke in the vicinity of the Summit Cutting on the Comstock Tramway but the present mapping failed to find any serpentinite. Ground magnetics also showed no evidence for near-surface magnetic rocks.

#### GEOCHEMISTRY

Assays for all bedrock samples taken in the Severn area were received and collated during the period. Plans showing contoured values of copper, lead, zinc and tin were drafted (Plates QH 89A and QH 89B). Copper, lead and zinc were determined by AAS with tin being determined by XRF.

At the 100 and 200 ppm levels lead values form a zone approximately 300 metres long by 100 metres wide and located vertically above the Severn mineralisation. It is believed this represents a halo effect over the mineralisation and may be due to numerous small veinlets or disseminations.

The pattern is in contrast to that developed in the vicinity of known lead-zinc lodes where

- 1) high values are obtained if the samples <sup>are</sup> ~~is~~ located very close to the lode, or
- 2) very low values are obtained in most cases, indicating that the lodes themselves do not possess a halo at the sample spacing used (25 metres).

Galena and sphalerite veins are absent from the sulphide-cassiterite mineralisation at Severn and are only rarely seen elsewhere in the drill core. A sphalerite vein occurs at 6m in DD G39 (c.f. Zn value of 1200 ppm at 1650N, 1175E). A sphalerite-galena vein occurring deeper at 24.3 metres in DD G41 gives no obvious bedrock geochemical anomaly. (See drill logs and cross sections in report for 6 months ending June 30, 1977.)

Anomalous tin values on the eastern flank of Queen Hill indicate a genuine bedrock anomaly centred at approximately 1600N 825E with no evidence of alluvial channels. There is little outcrop in the area and rock type knowledge comes mainly from geochemical sampling. Bedrock is shale and siltstone often in a very weathered slate. Mineralisation is not known in the vicinity. There is no IP data available as the zone lies within a gap between the 1975 and 1977 surveys. No magnetic anomalies exist in the area of the anomalous tin values.

Copper values in a very broad sense correlate with the position of the lead anomaly but are at a low level and not simple to contour. The relationship between the copper values in bedrock and the Severn mineralisation is not known as drill core samples were not assayed for copper.

The results of the geochemical programme demonstrate that further information is required to determine whether the values obtained from bedrock sampling do actually represent a primary dispersion halo over the Severn mineralisation.

MISCELLANEOUS

During the period DDH G14 at Queen Hill was cleared out and re-surveyed preparatory to re-interpretation of the Queen Hill mineralisation. The hole is shown on current plans as deviating considerably to the south, however, this was shown to be incorrect as deviation in azimuth is very small. This information will be used in the re-interpretation of Queen Hill mineralisation.

WORK PLANNED

- . Re-appraisal of the geology of the Queen Hill and Severn mineralisation.
- . Diamond drill testing of Tramway magnetic anomaly.
- . Follow-up ground magnetics over the North-West anomaly and rock chip sampling in the Silver Stream area.

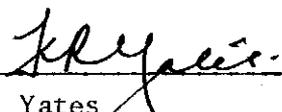
REFERENCES

- Simpson, D.C. (1977) Progress report on Queen Hill area. Consolidated Lease 43M/73 and surrounding EL 47/71, Tasmania for six months ending 30/6/77.
- Simpson, D.C. (1978) Progress report Queen Hill Joint Venture, EL 47/71 Tasmania for quarter to March 31, 1978.
- Waller, G. (1904) Report on the Zeehan Silver-Lead Mining Field.

Submitted: \_\_\_\_\_

D.C. Simpson  
Geologist

Endorsed: \_\_\_\_\_

  
K.R. Yates  
Chief Geologist

007

Allowable Joint Venture expenditure for the quarter ending June 6, 1978  
is as follows:

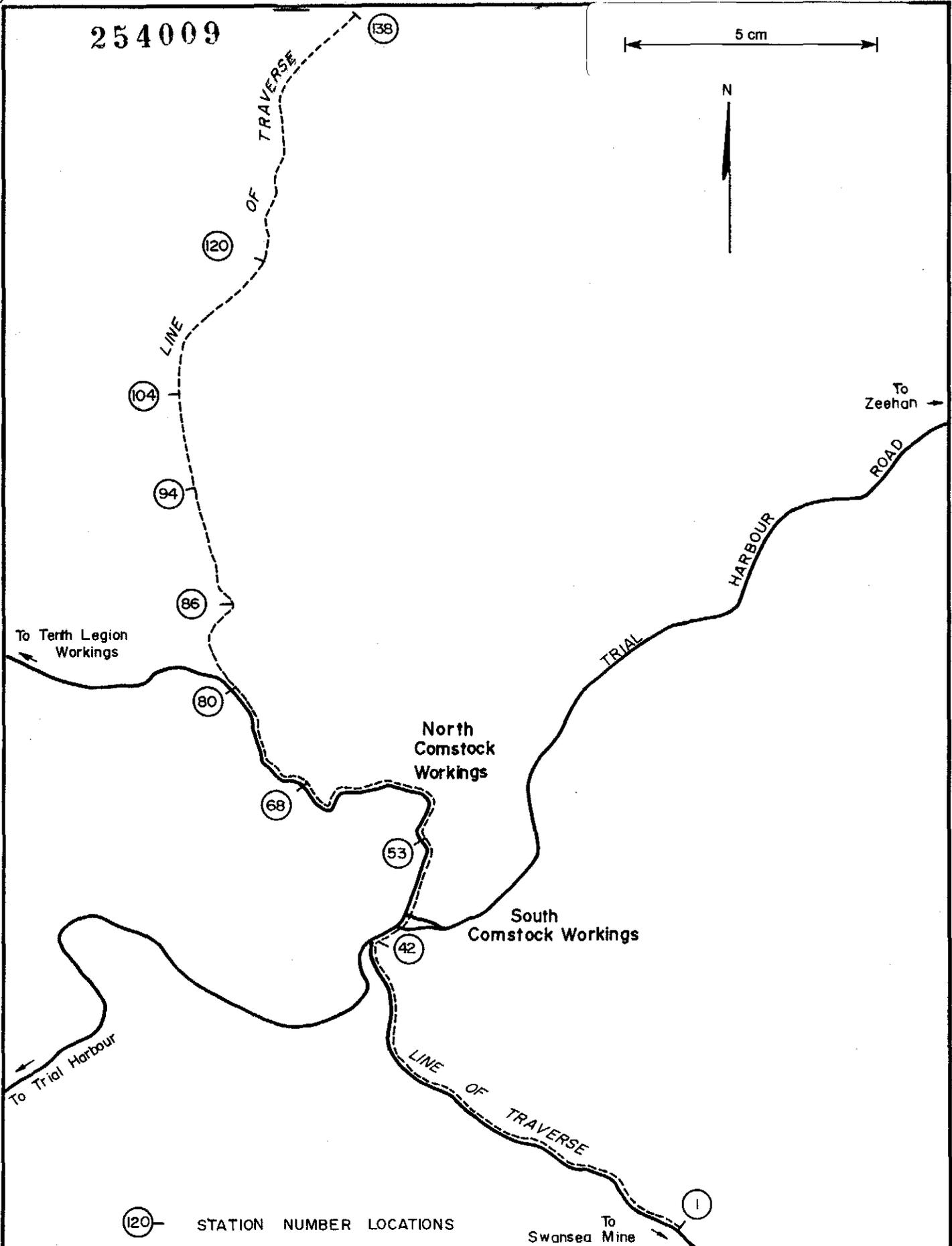
Geology	\$ 5,397
Survey	6,075
Geophysics	1,741
Geochemistry	690
Diamond drilling	684
Tenure	454
Sundries	477
Overhead @ 15%	<u>2,328</u>
	<u>\$17,846</u>

003

254009

5 cm

N



120 STATION NUMBER LOCATIONS

# Abminco Exploration

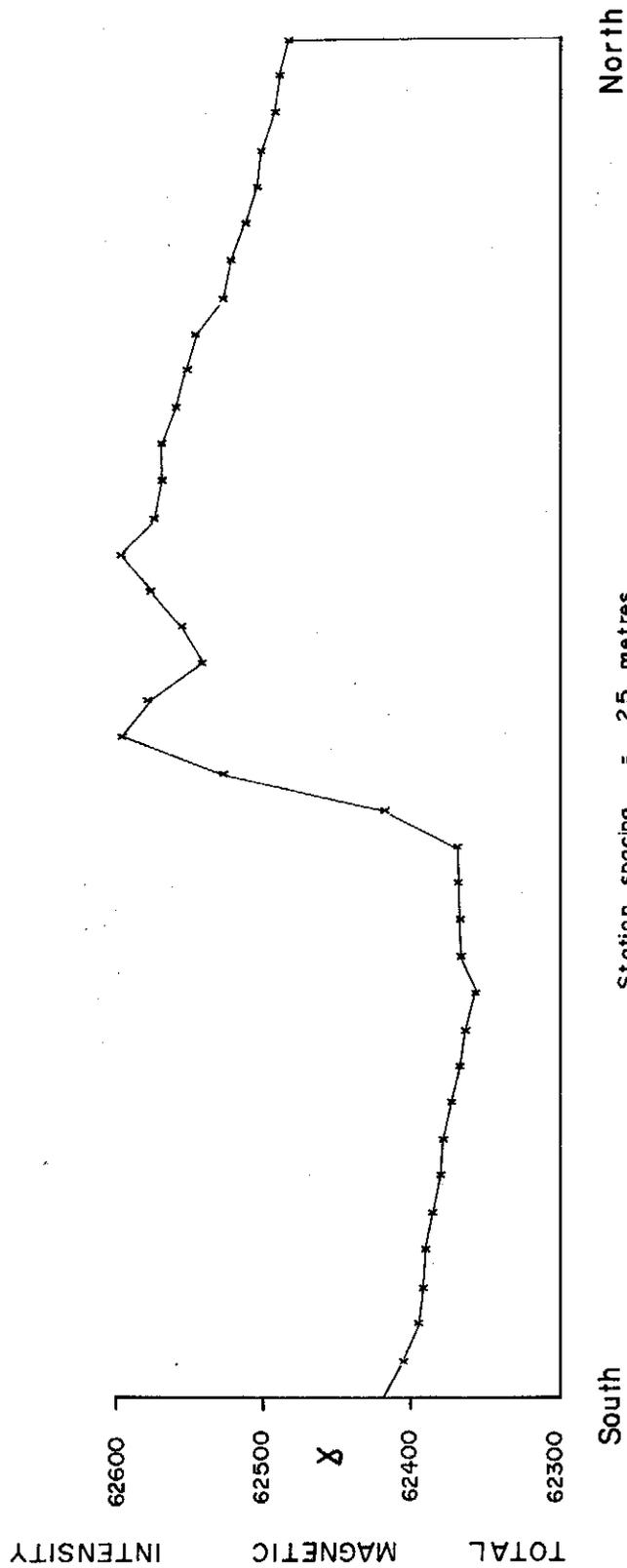
Drawn: C. W.  
 Traced: R. J. E.  
 Checked:  
 Revised by: Date:

TASMANIA  
 QUEEN HILL LICENCE AREA  
 "BIG ONE" Anomaly Traverse

Location code:  
 Date: June, 1978  
 Scale: 1:10,000 (air photo)  
 Plate No QH 97

003

254010



**Abminco Exploration**

Drawn: C.W.  
 Traced: R.J.E.  
 Checked:  
 Revised by: Date:

TASMANIA  
**QUEEN HILL LICENCE AREA**  
 "SILVER STREAM" ANOM. MAG. PROFILE

Location code:  
 Date: June, 1978  
 Scale: 1: 5000  
 Plate No QH 99



**LEGEND**

PERMIAN	32	Pt	Zeehan Glacial Formation				
DEVONIAN	23	Db	Bell Shale				
	23	Df	Florence Quartzite				
SILURIAN	59	S	Undifferentiated Formations ← Austral Creek Siltstone Keel Quartzite Amber Slate				
	59	Sc	Crotty Quartzite				
ORDOVICIAN	63	Og	Gordon Limestone				
	63	Om	Moina Sandstone				
CAMBRIAN	21	Ec	Crimson Creek Formation				
PROTEROZOIC	69	Puo	Oonah Quartzite and Slate ← <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>6</td></tr><tr><td>q</td></tr><tr><td>V</td></tr><tr><td>47</td></tr></table> Queen Hill Quartzite Basic Volcanics	6	q	V	47
6							
q							
V							
47							

**IGNEOUS ROCKS**

		Quartz feldspar porphyry, quartz porphyry
49	Eg	Gabbro
49	Es	Serpentinite

**SYMBOLS**

	Open cut
	Adit
	Shaft
	Old mine workings
	Unsealed roads
	Major roads - sealed
	Tramways
	Tracks
	Reference point for flight lines and magnetic overlay, XQH 21 a,b,c.

	Geological boundary - position accurate
	Geological boundary - position approximate
	Geological trend lines.
	Strike and dip of beds
	Strike and dip of cleavage
	Strike and dip of schistosity.
	Strike and dip of shearing
	Strike and dip of flow banding
	Strike and dip of joints.
	Plunge of fold axis
	Plunge of drag fold.
	Plunge of anticline.
	Plunge of syncline.
	Established fault with relative movement.
	Interpreted fault, air photo linear.
	Lodes with relevant mineralisation and dip direction.
	Interpreted underground extension of lode.
	C.E.P.L. and Abminco diamond drill hole location
	Placer diamond drill hole location
	BDI Bradshaws Drill hole
	Abminco E.L. boundary.
	Mineral claim boundary

NOTE: Zeehan South Comstock Ltd. - Company operating the old mining leases.

NOTE: The shafts, adits and old workings in the Queen Hill area have been omitted for the sake of clarity.

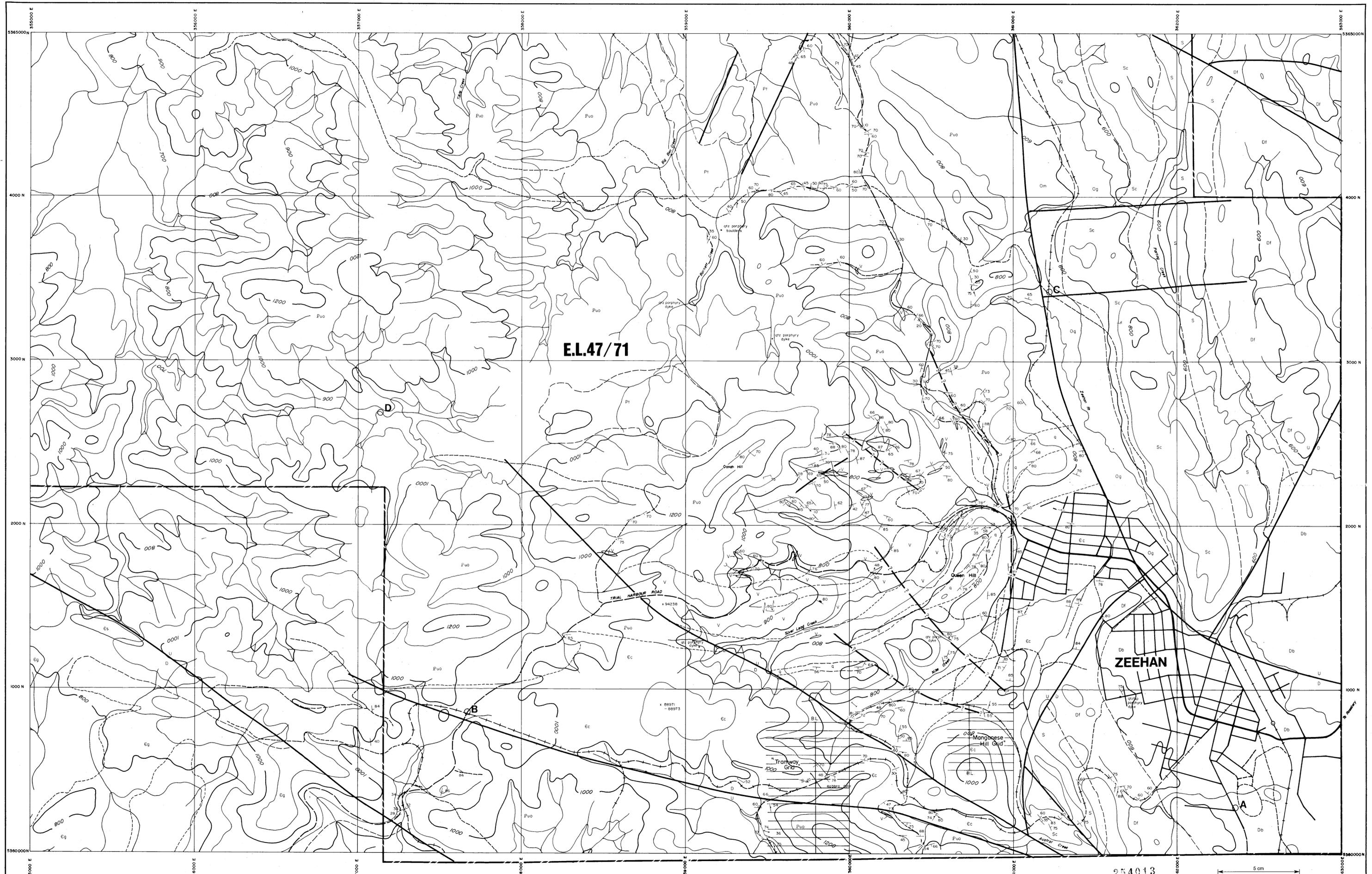
NOTE: Quarternary deposits were not distinguished during mapping.

NOTE: THIS LEGEND REFERS TO PLATES QH 86a,b and QH87a,b.

254012

**Abminco Exploration**

Geology:	<b>QUEEN HILL AREA - TASMANIA</b> <b>GEOLOGICAL LEGEND</b> 78-1272 <span style="float: right;">3287</span>	Location code:
Drawn: A.E.		Date: February 1978
Traced: A.E.R.		Scale:
Checked:		Plate No:
Revised by: Date:		QH 88



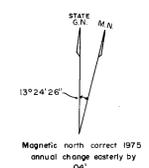
**E.L.47/71**

**ZEEHAN**

254013

5 cm

Mangonese Hill and Tramway Grids  
as at 6th June, 1978



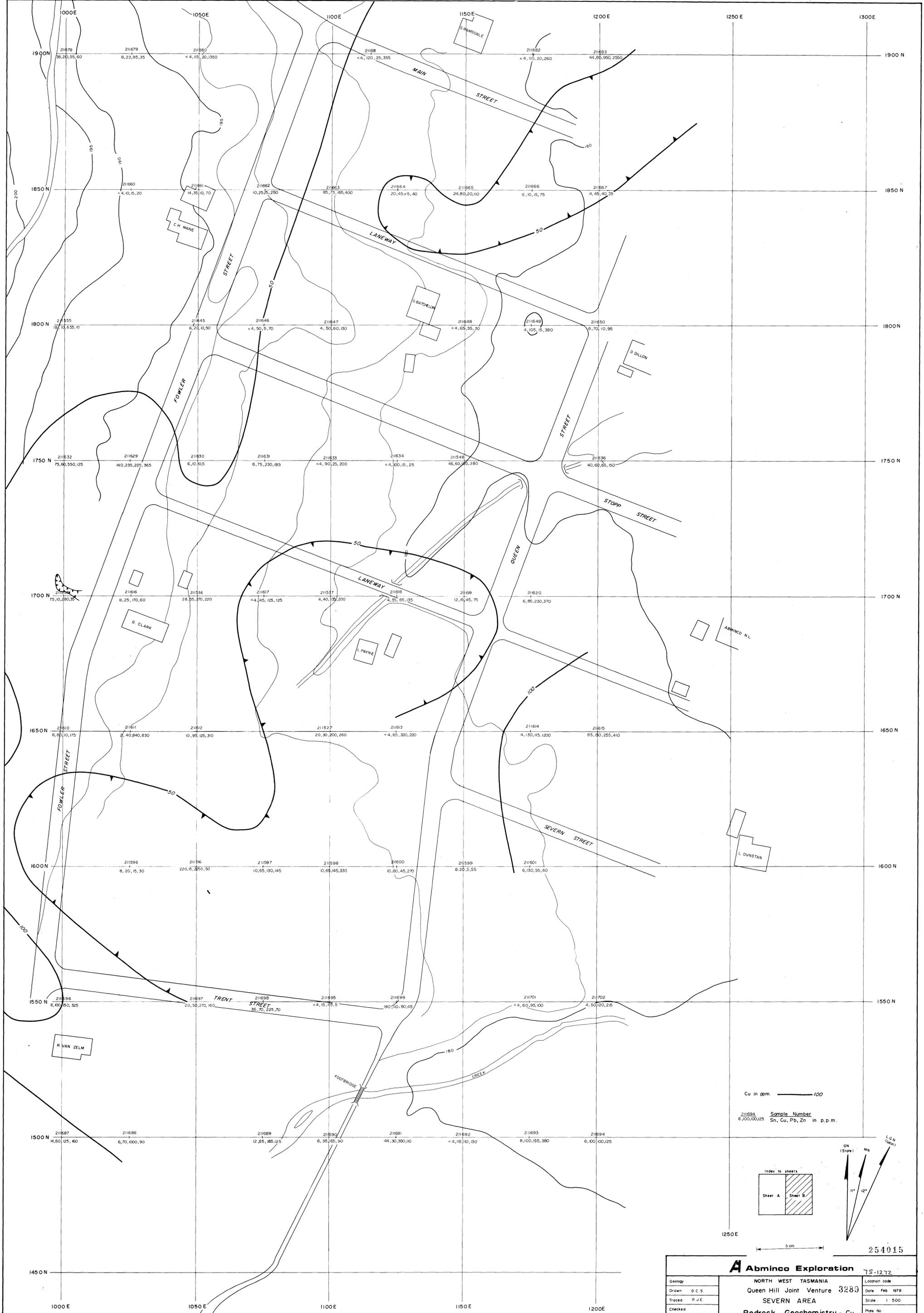
Contour interval 100 feet  
For geological legend  
see Plate QH 88

347/370	355/370	363/370
347/365	355/365	363/365
347/360	355/360	363/360

<b>Abminco Exploration</b>		Location code: K55/5/50
NORTH WEST TASMANIA QUEEN HILL, E.L. 47/71		Date: Feb 1978
Geology: AE	Drawn: AE	Scale: 1:10,000
Traced: RKY/JJB	Checked:	Photo No: QH 86 A
Revised by: Date:	GEOLOGICAL MAP 3286 78-1272	

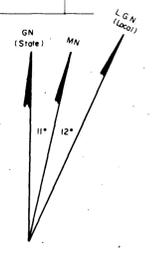
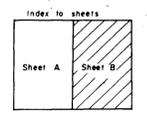


<b>Abminco Exploration</b> 254014 NORTH WEST TASMANIA Queen Hill Joint Venture 3288 SEVERN AREA Bedrock Geochemistry - Cu		Location code
		Date Feb 1978
Geology	Drawn D C S	Scale 1:500
Traced J.B.	Checked	Plate No QH 89A
Revised by	Date	



Cu in ppm. ——— / 100

211694 Sample Number  
6,300,100,125 Sn, Cu, Pb, Zn in p.p.m.



1250 E

5 cm

254015

<b>Abminco Exploration</b>		73-1272
NORTH WEST TASMANIA		Location code
Queen Hill Joint Venture 3283		Date Feb 1978
SEVERN AREA		Scale 1:500
Bedrock Geochemistry - Cu		Plate No QH89 B
Geology	Drawn D.C.S.	
Traced R.J.E.	Checked	
Revised by	Date	



Pb in ppm ——— 100  
 211684  
 10, 50, 105, 125  
 Sample number  
 Sn, Cu, Pb, Zn in ppm

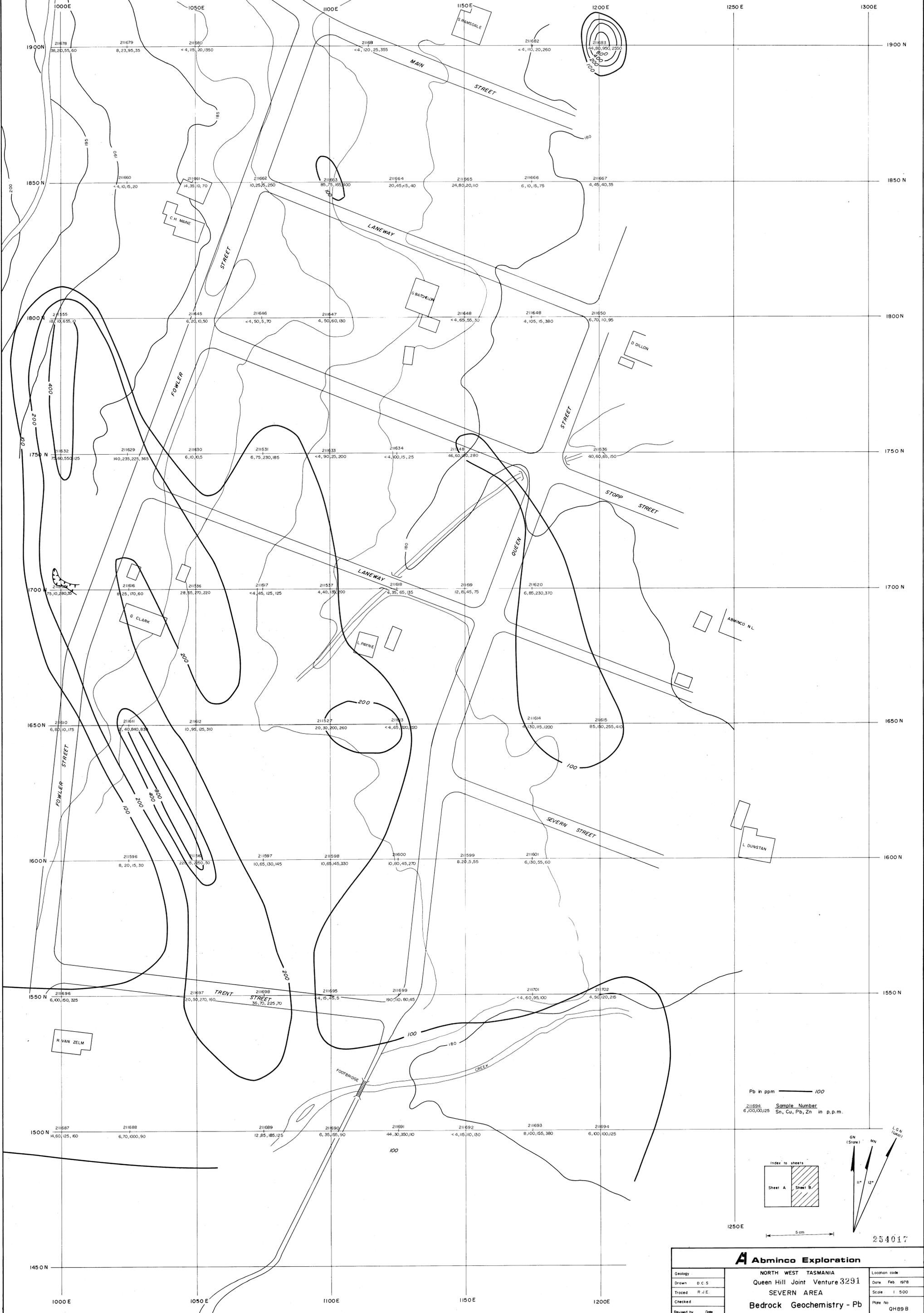
Index to sheets  
 Sheet A Sheet B

ON (Stone) MN  
 11° 12°  
 L.D.V. (Laser)

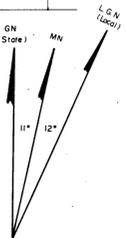
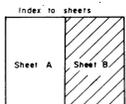
5 cm

254016

<b>A Abminco Exploration</b>		
Geology	NORTH WEST TASMANIA	Location code
Drawn	D.C.S.	Date Feb 1978
Traced	JJB	Scale 1:500
Checked		Plate No
Revised by	Date	QH 89A
Queen Hill Joint Venture 3230 SEVERN AREA Bedrock Geochemistry - Pb		



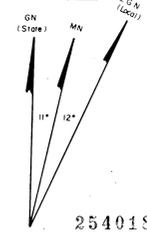
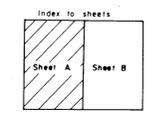
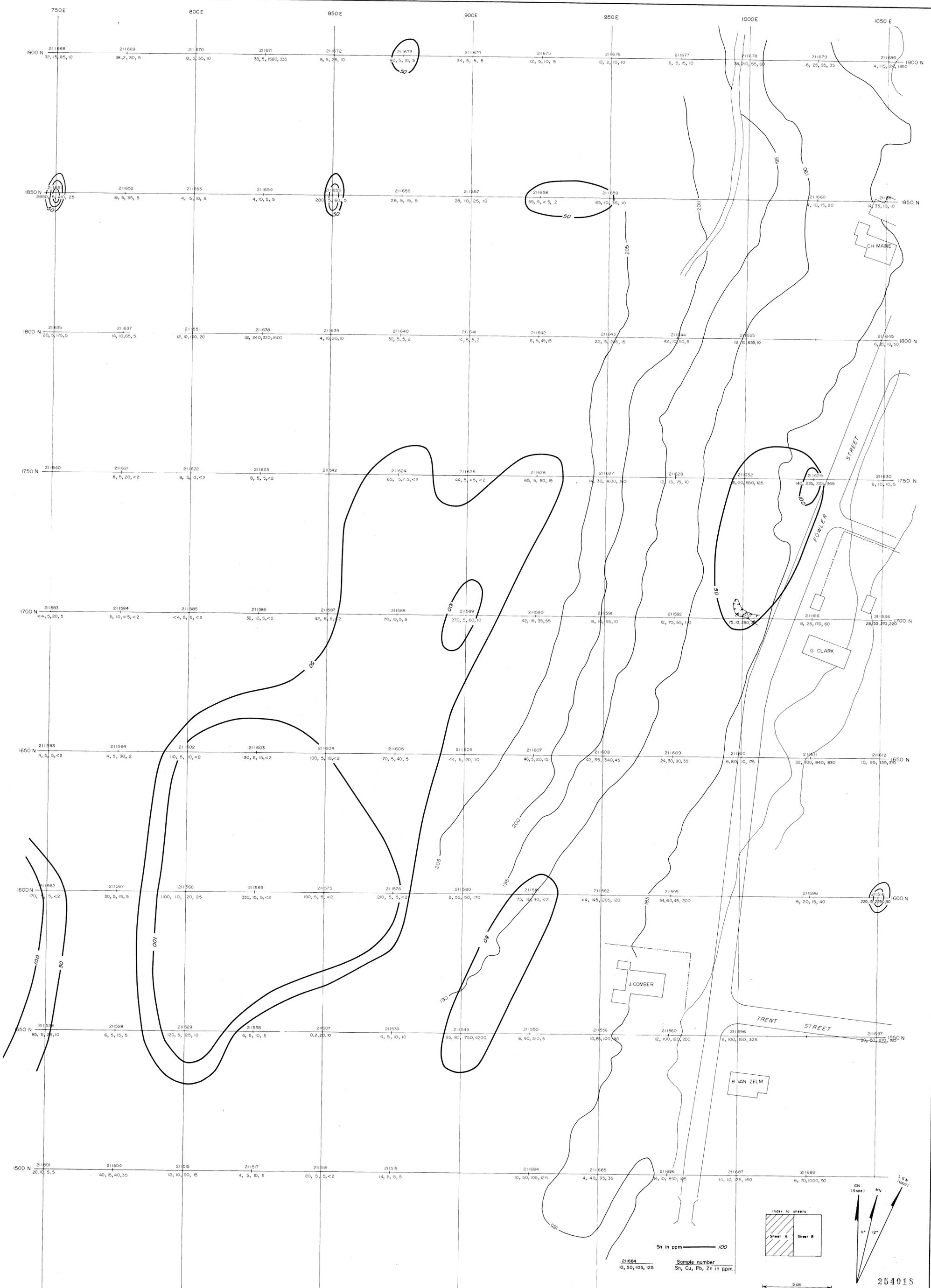
Pb in ppm ——— 100  
 211694 Sample Number  
 6,100,100,125 Sn, Cu, Pb, Zn in p.p.m.



1250 E  
 5 cm

254017

<b>A Abminco Exploration</b>		NORTH WEST TASMANIA		Location code	
Queen Hill Joint Venture 3291		SEVERN AREA		Date Feb 1978	
Bedrock Geochemistry - Pb		Scale 1:500		Plate No QH89 B	
Geology	Drawn D.C.S.	Traced R.J.E.	Checked	Revised by	Date

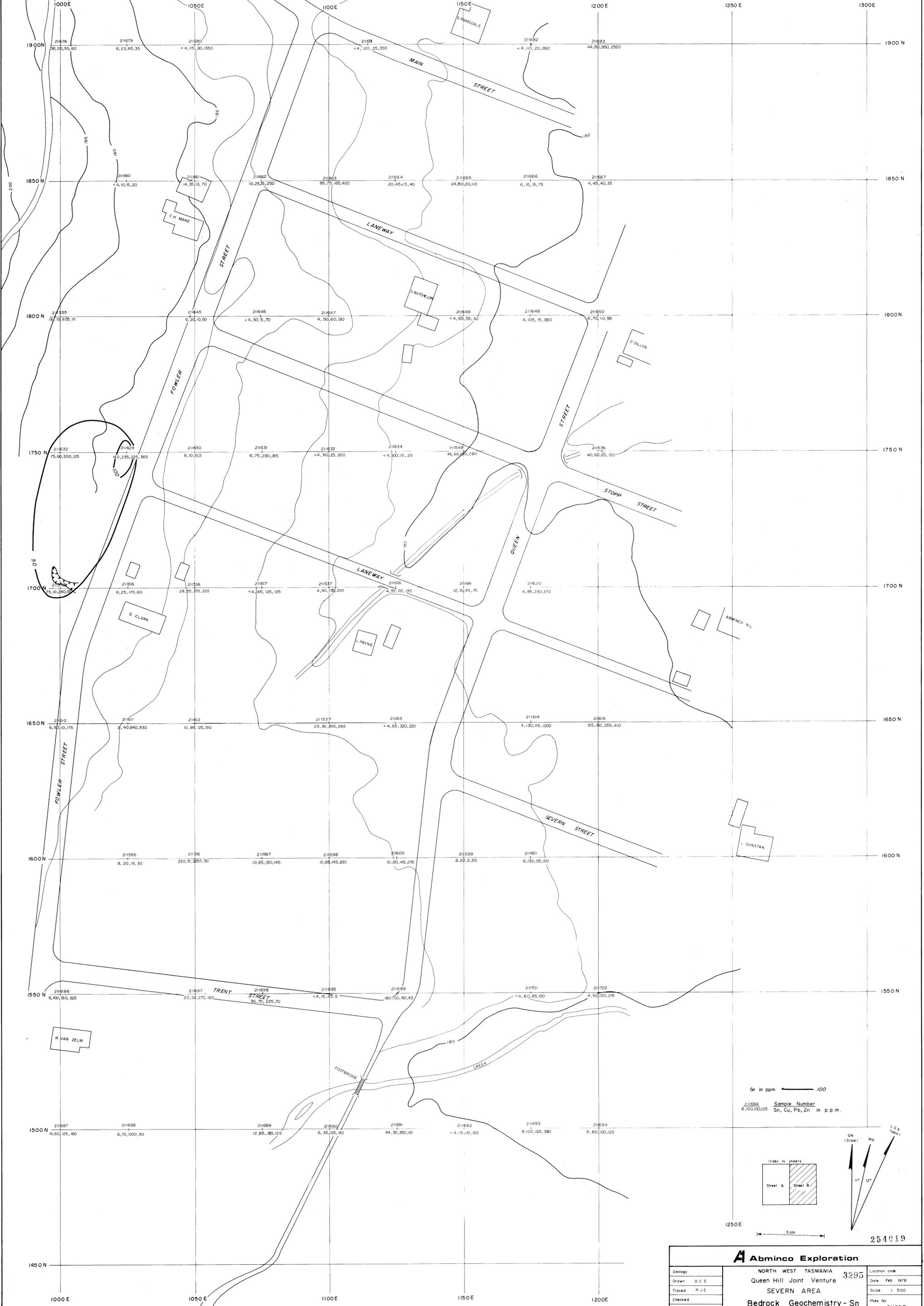


Sn in ppm ——— 100  
 Sample number  
 Sn, Cu, Pb, Zn in ppm.

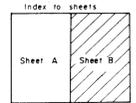
5 cm

25401S  
 73-12.72

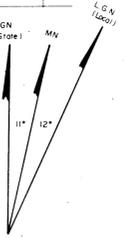
<b>Abminco Exploration</b>		
Geology	NORTH WEST TASMANIA	Location code
Drawn	D C S	Date Feb 1978
Traced	JJB	Scale 1:500
Checked		Plate No
Revised by	Date	QH 89A
<b>Bedrock Geochemistry - Sn</b>		
Queen Hill Joint Venture 3294 SEVERN AREA		



Sn in ppm  $\longleftarrow$  100  
 211694 Sample Number  
 6,100,100,125 Sn, Cu, Pb, Zn in p.p.m.



5 cm



254019

<b>Abminco Exploration</b>	
Geology	NORTH WEST TASMANIA
Drawn	Queen Hill Joint Venture 3295
Traced	SEVERN AREA
Checked	Bedrock Geochemistry - Sn
Revised by	Date
Location code	3295
Date	Feb 1978
Scale	1:500
Plate No	QH89B



254020

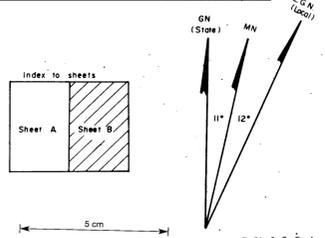
**A Abminco Exploration**

Geology	NORTH WEST TASMANIA	Location code
Drawn D.C.S.	Queen Hill Joint Venture 3292	Date Feb 1978
Traced JJB	SEVERN AREA	Scale 1:500
Checked	<b>Bedrock Geochemistry - Zn</b>	Plate No
Revised by		OH 89A



Zn in ppm ——— 100

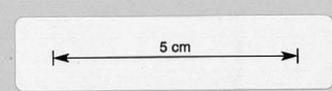
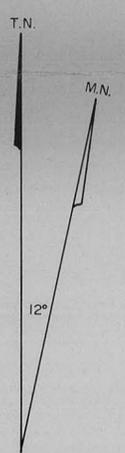
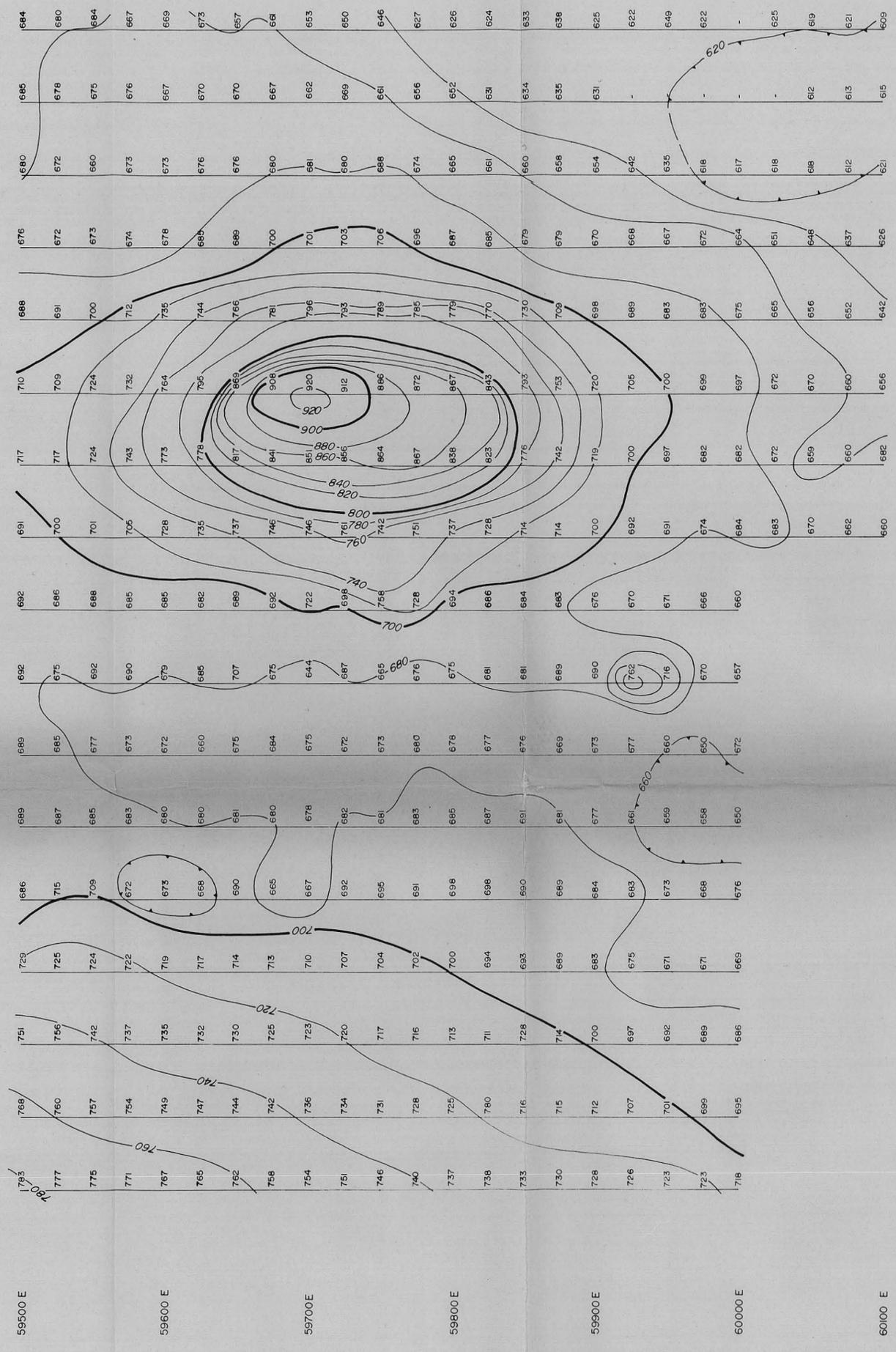
211694 Sample Number  
6,100,100,125 Sn, Cu, Pb, Zn in p.p.m.



254021

<b>Abminco Exploration</b> NORTH WEST TASMANIA Queen Hill Joint Venture 3293 SEVERN AREA Bedrock Geochemistry - Zn		Location code
		Date Feb 1978
Geology	Drawn D.C.S.	Traced R.J.E.
Checked	Revised by	Date
Scale 1:500		Plate No QH99 B

60800 N  
60700 N  
60600 N  
60500 N  
60400 N  
60300 N  
60200 N  
60100 N  
60000 N

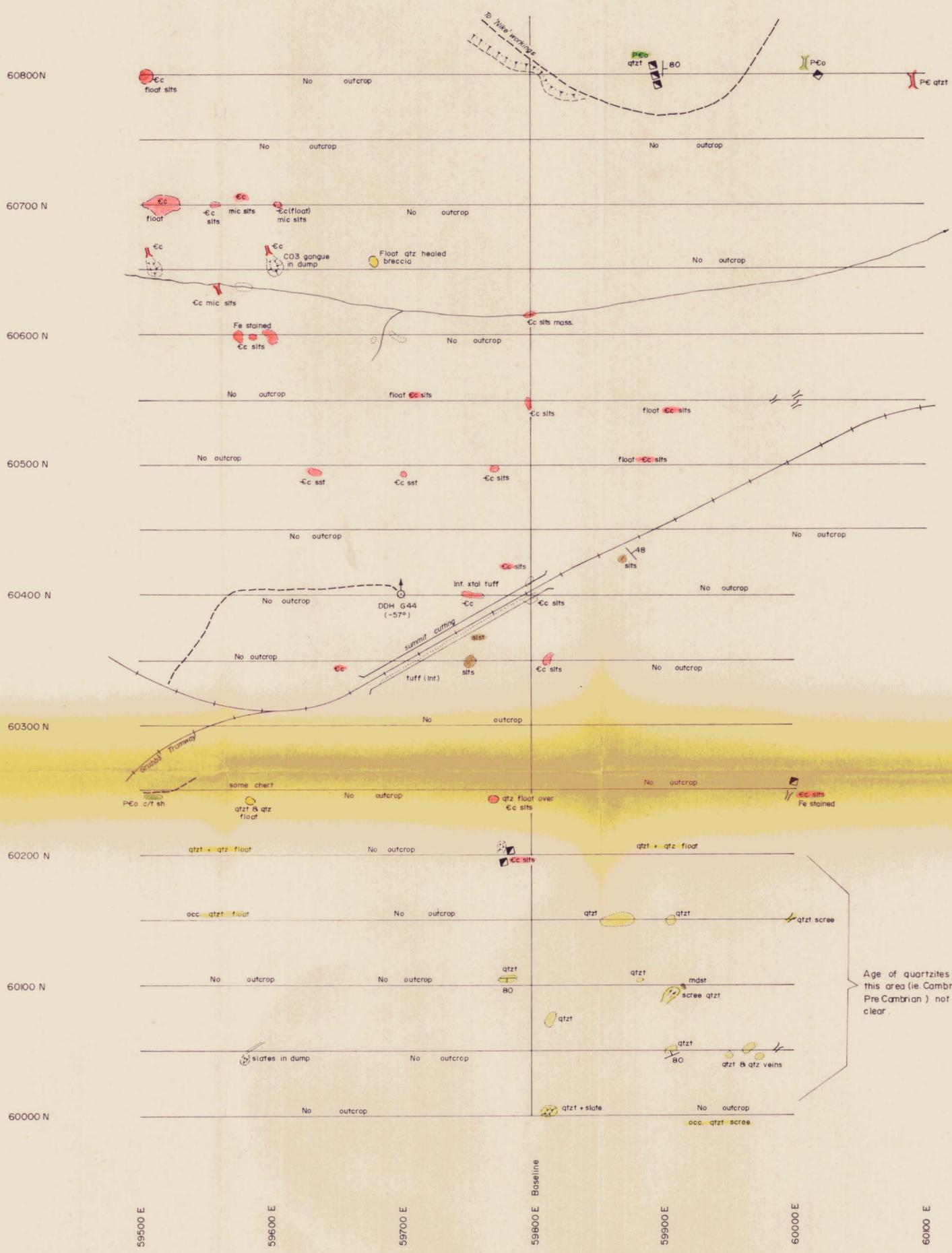


SCALE  
metres 0 50 100 200 metres

254022

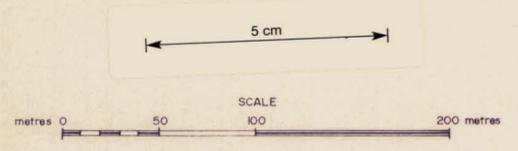
78-1272

<b>Abminco Exploration</b>		NORTH WEST TASMANIA 3296		Location code:
		QUEEN HILL - TRAMWAY GRID		Date: JUNE 1978
Geology:	CONTOURS OF TOTAL MAGNETIC INTENSITY		Scale: 1:2,500	
Drawn: SSW	(CONTOUR INTERVAL 20 gammas)		Plate N <sup>o</sup>	
Traced: RKY			QH 92	
Checked:				
Revised by:	Date:			



— LEGEND —

- |    |  |                         |  |                    |
|----|--|-------------------------|--|--------------------|
| 47 | <span style="border: 1px solid black; padding: 2px;">Pc</span>   | Oonah Quartzite         |  | Shaft              |
| 14 | <span style="border: 1px solid black; padding: 2px;">Cc</span>   | Crimson Creek Formation |  | Track              |
| 56 | <span style="border: 1px solid black; padding: 2px;">sist</span> | Siltstone               |  | Tramway            |
| 58 | <span style="border: 1px solid black; padding: 2px;">sst</span>  | Sandstone               |  | Creek              |
| 55 | <span style="border: 1px solid black; padding: 2px;">mdst</span> | Mudstone                |  | Diamond Drill Hole |
| 63 | <span style="border: 1px solid black; padding: 2px;">sh</span>   | Shale                   |  |                    |
| 6  | <span style="border: 1px solid black; padding: 2px;">qtzt</span> | Quartzite               |  |                    |
|    | mic  | micaceous               |  |                    |



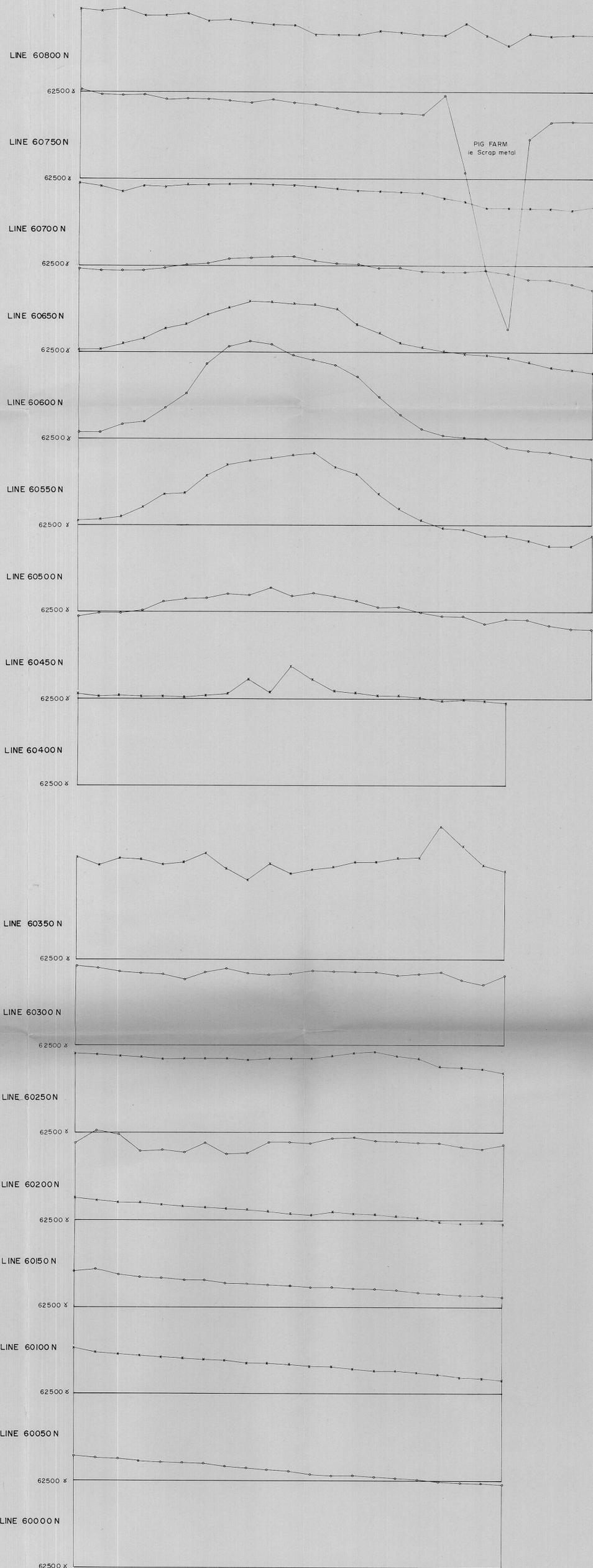
254023

78-1272

<b>Abminco Exploration</b>		Location code:
Geology: DCS	NORTH WEST TASMANIA 3297	Date: June 1978
Drawn: DCS	QUEEN HILL E.L. 41/75	Scale: 1:2,500
Traced: RKY	TRAMWAY GRID	Plate N <sup>o</sup>
Checked:	SURFACE OUTCROP GEOLOGY	QH 93
Revised by: Date:		

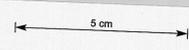
59500E 59600E 59700E 59800E 59900E 60000E 60100E

TOTAL MAGNETIC INTENSITY (1cm = 50 gammas)



59500E 59600E 59700E 59800E 59900E 60000E

254024



NB. Not corrected for time drift.

78-1272

<b>Abminco Exploration</b>	
Geology:	TASMANIA 3293
Drawn: C.W.	QUEEN HILL LICENCE AREA
Traced: R.J.E.	TRAMWAY GRID
Checked:	GROUND MAGNETIC PROFILES
Revised by: Date:	Location code: QH 94
	Date: June, 1978
	Scale: 1:2500

60800N

60700N

60600N

60500N

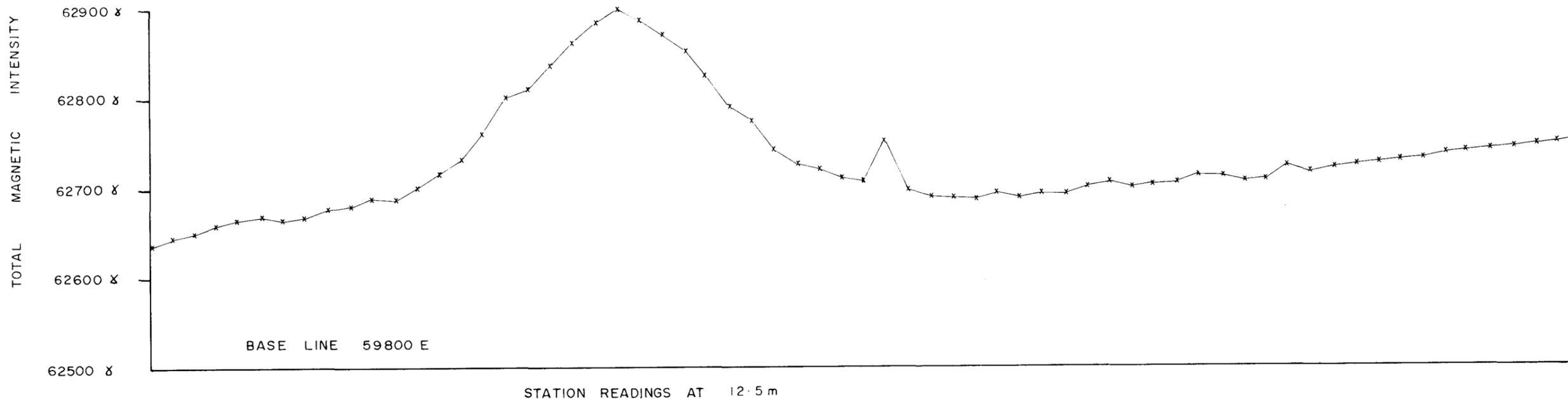
60400N

60300N

60200N

60100N

60000N



BASE LINE 59800 E

254025

5 cm

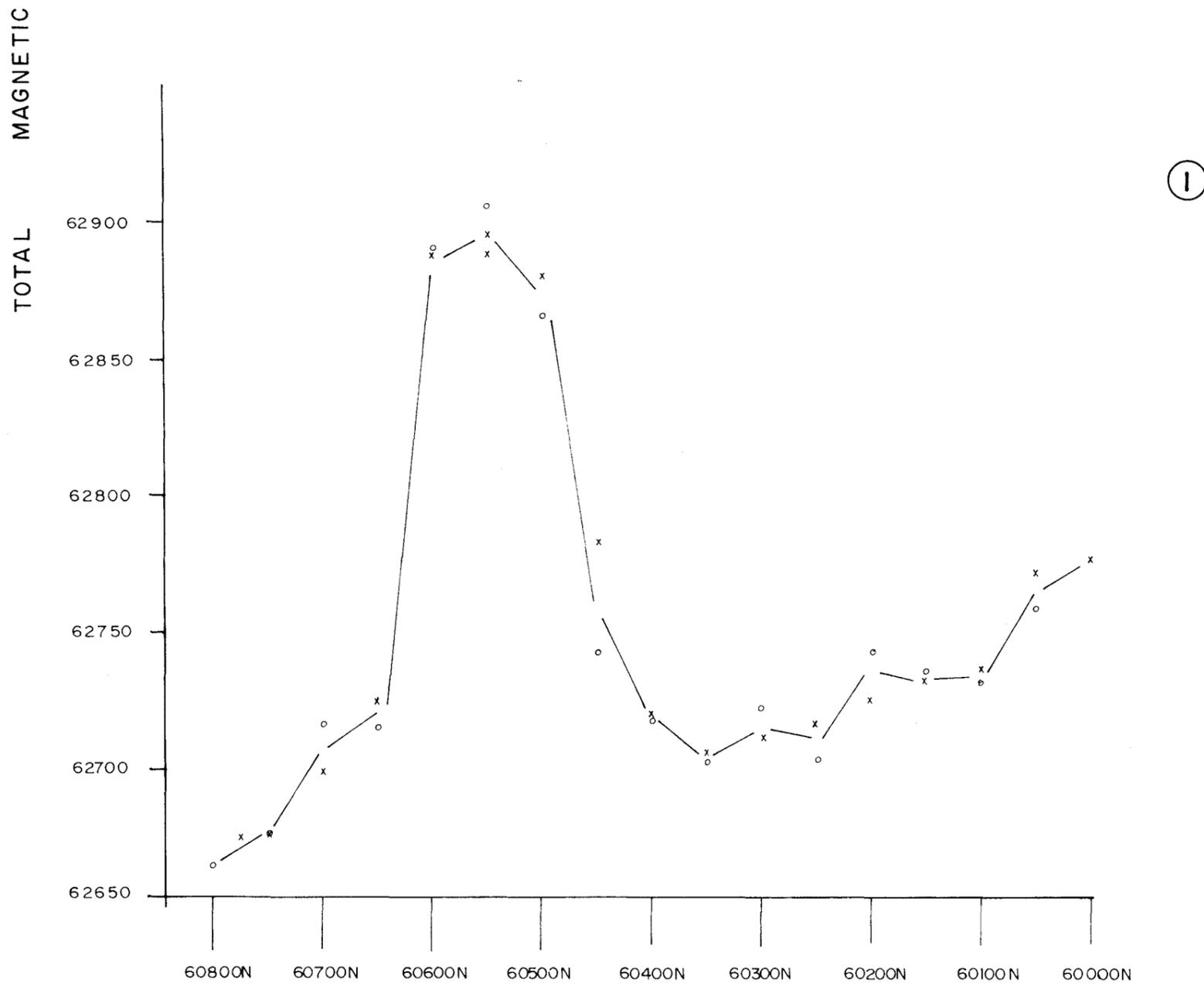
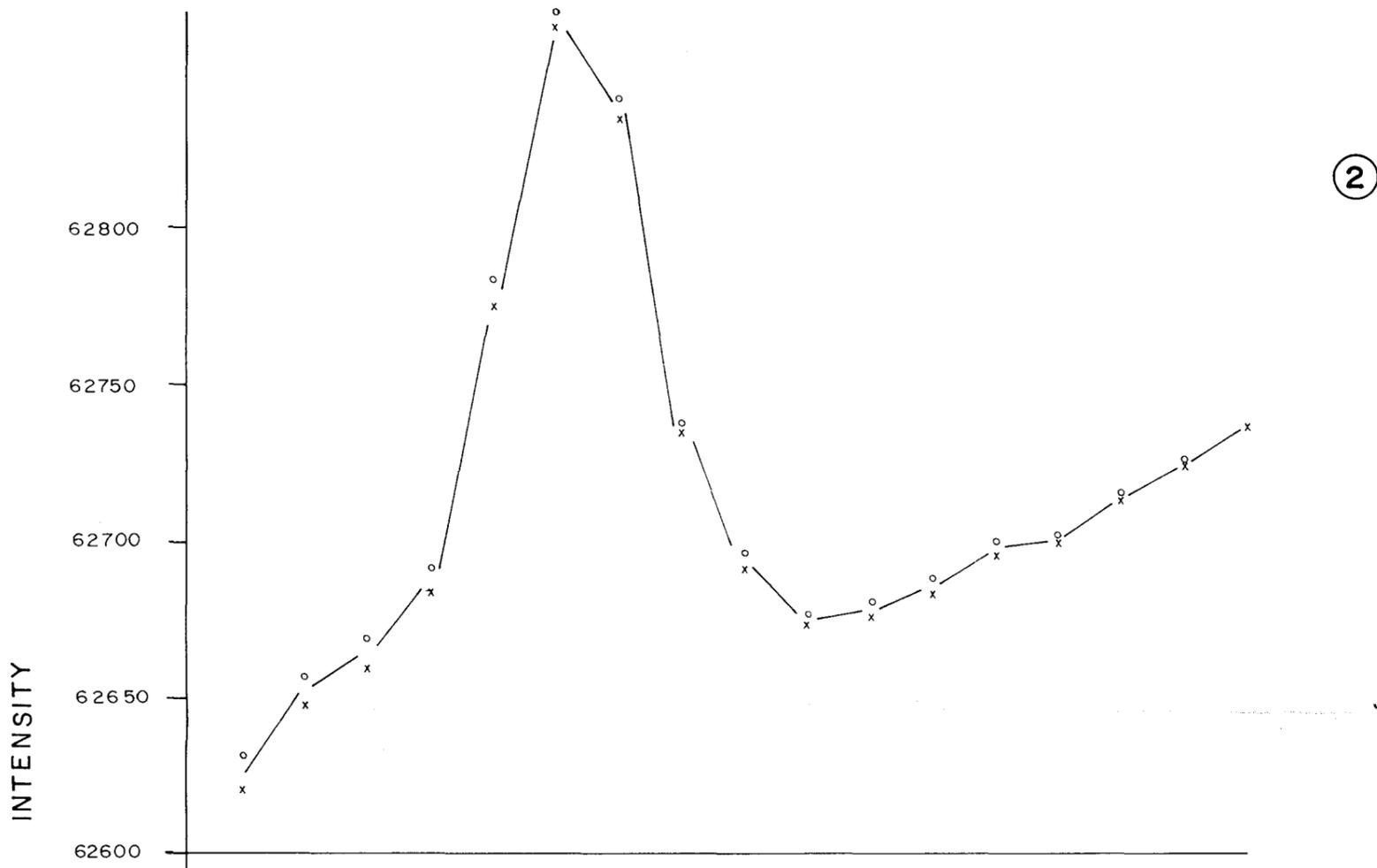
78-1272

**Abminco Exploration**

Geology:  
 Drawn: C.W.  
 Traced: R.J.E.  
 Checked:  
 Revised by: Date:

TASMANIA  
 QUEEN HILL LICENCE AREA  
 "TRAMWAY" GRID 3293  
 Ground Magnetic Profiles

Location code:  
 Date: June, 1978  
 Scale: 1:2500  
 Plate No QH95



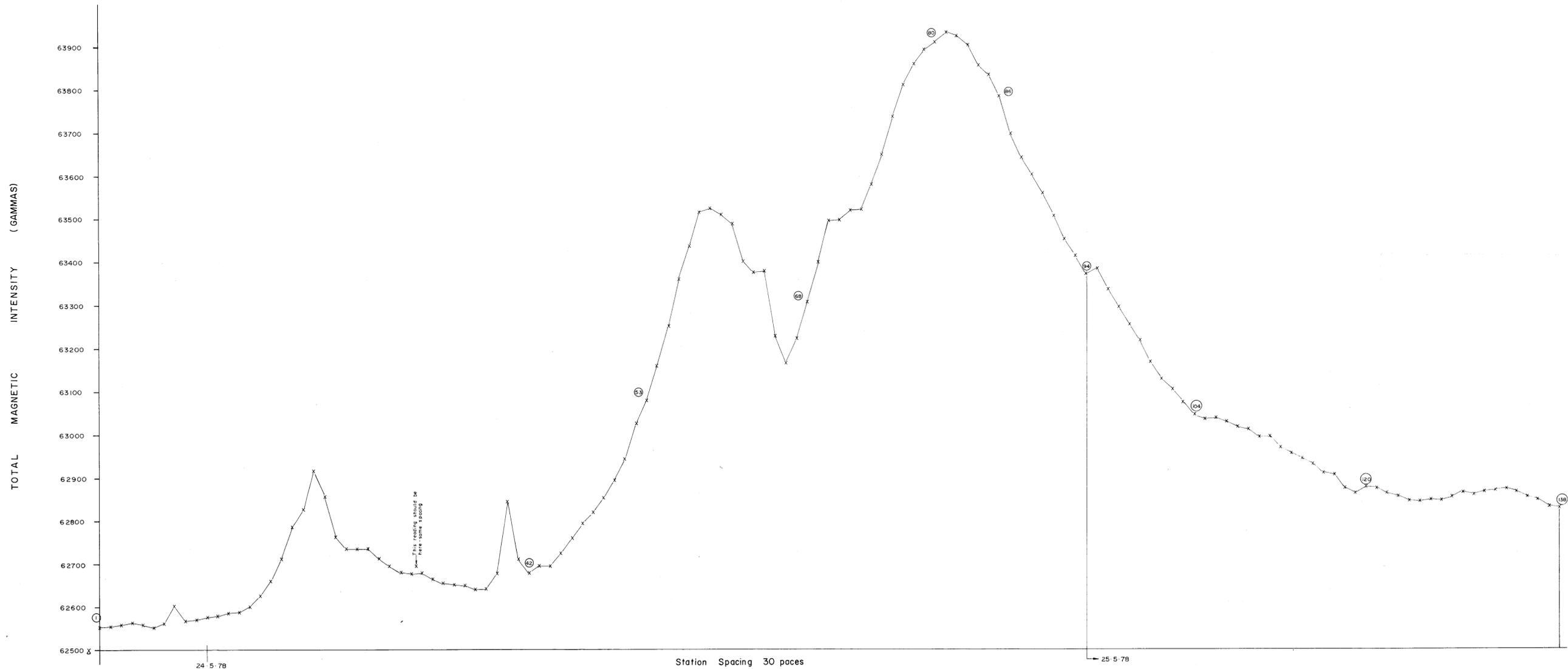
254026

Curve ① 17-3-78 back pack  
 Curve ② 28-3-78 with pole

5 cm

x Out  
 o Back

<b>Abminco Exploration</b>		
Geology:	TASMANIA 3300	Location code:
Drawn: D.C.S.	QUEEN HILL LICENCE AREA	Date: June, 1978
Traced: R.J.E.	"TRAMWAY" GRID	Scale: 1:5000
Checked:	Base Line Tie - Ground Magnetics	Plate No QH96
Revised by: Date:	78-1272	



254027

5 cm

(86) Station numbers — Correspond with location map numbers  
 Scale: Refer Plate QH 97

73-1273

<b>Abminco Exploration</b>	
Geology:	TASMANIA 3301
Drawn: C.W.	QUEEN HILL LICENCE AREA
Traced: R.J.E.	'BIG ONE' Anomaly
Checked:	MAGNETIC PROFILE
Revised by: Date:	Location code: QH 98

TOTAL MAGNETIC INTENSITY

62700 γ  
62600 γ  
62500 γ

EAST

track junction

Trig Stn.  
30 m N

STATIONS 25 m APART

WEST

metres 0 100 200 300 400 500 metres

1:5000

5 cm

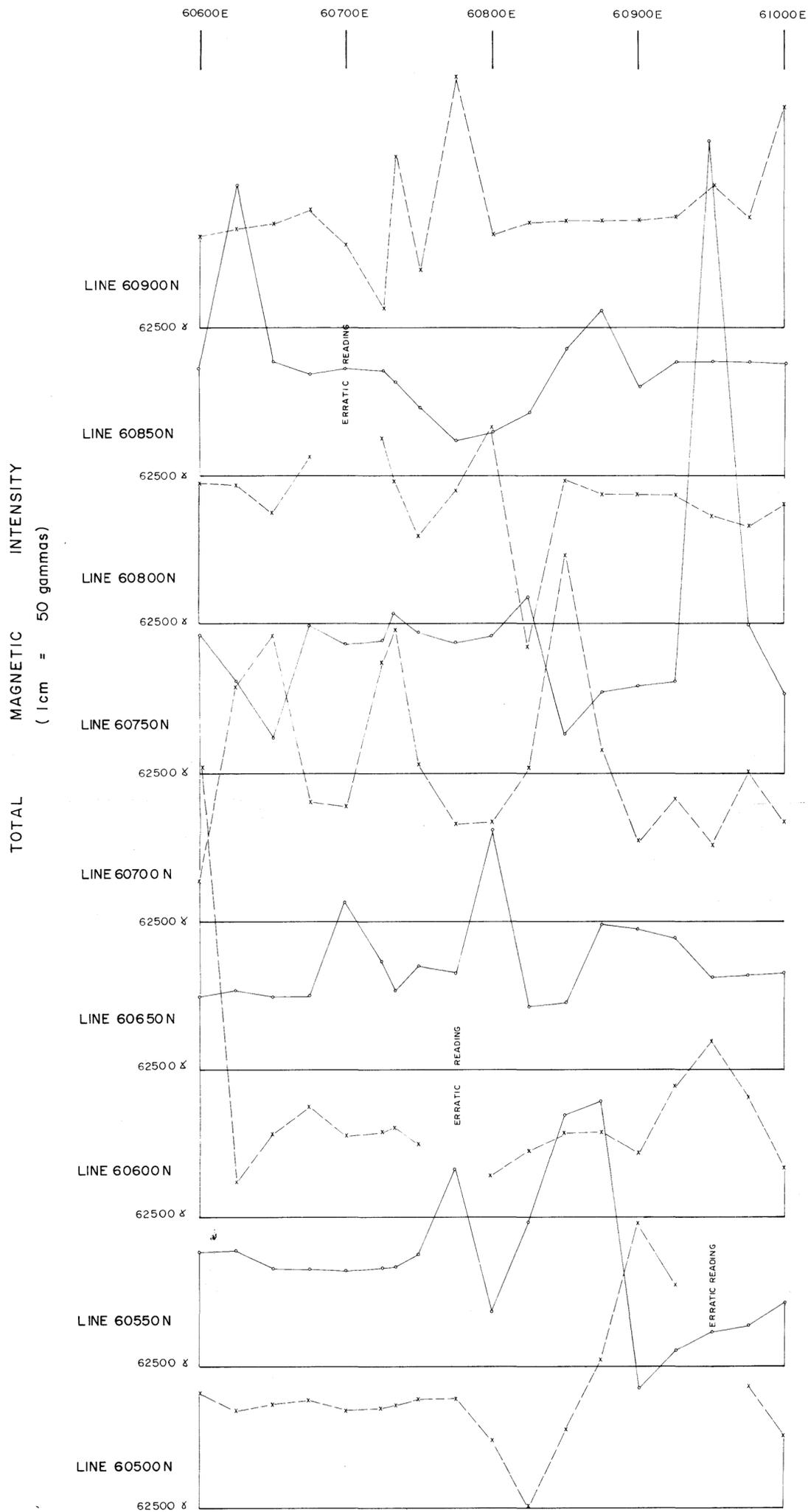
254028

78-1272

 **Abminco Exploration**

Geology:	TASMANIA	330.2	Location code:
Drawn: C.W.	QUEEN HILL LICENCE AREA		Date: June, 1978
Traced: R.J.E.	'JUNCTION' ANOMALY		Scale: 1:2500 γ
Checked:	Ground Magnetic Profile		Plate No QH 100
Revised by: Date:			





5 cm

254030

78-1272

<b>Abminco Exploration</b>	
Geology:	TASMANIA 3304
Drawn: C.W.	Location code:
Traced: R.J.E.	Date: June, 1978
Checked:	Scale: 1cm = 50 γ
Revised by:      Date:	Plate No QH103
<b>QUEEN HILL LICENCE AREA MANGANESE HILL GRID Ground Magnetic Profiles</b>	