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COMALCO LIMITED

EXPLORATION DEPARTMENT

E.L. 4/77 HIGHCLERE

REPORT ON ALL INVESTIGATIONS TO OCTOBER 1978

AMG REFERENCE POINTS ADDED

P.W. ASKINS.

November 1978

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0061. INTRODUCTION

E.L. 4/77 was first granted on 1 June 1977. The area covered by the licence is shown on Fig.1. The licence area now surrounds E.L. 17/68 (Tasminex N.L.) on its northern, western and southern edges. Originally E.L. 17/68 covered most of the area. When (in January 1977) it was noticed that E.L. 17/68 was pending for renewal a large area was applied for by Comalco. E.L. 17/68 was subsequently renewed but reduced to its present size, and the remaining area was offered to Comalco.

The area covered by this report includes that part of the licence area above 5430000 m N. The areas below are only 1 km wide and have been included in the report by G. Weste, entitled "E.L. 1/76 Guildford and southern part of E.L. 4/77 Highclere. Report on all investigations to September 1978".

Included in this report are all the regional investigations and also detailed investigations of gridded areas between Highclere and Hampshire (the Kingsclere grid, incorporating the "Buckby Prospect" and the Highclere Iron deposit).

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2. EXPLORATION AIMS AND METHODS

As a result of the discovery at Moina in E.L. 7/74 of fluorite rich magnetite skarns associated with the Dolcoath granite, it was decided to explore for similar skarns associated with the Husetop granite.

The bulk of the area granted is covered by basalt, but significant air-magnetic anomalies from a BMR survey (1955) occur, and these were thought to be possibly due to magnetite rich skarns similar to those at Moina, or similar to the scheelite bearing magnetite skarns at Kara, to the south.

Exploration of the area has therefore been primarily directed at assessing these air-magnetic anomalies.

Investigations have included: literature search, reconnaissance geological mapping to locate windows in the basalt cover, ground magnetometer traverses to locate air magnetic anomalies, gridding of a large area and subsequent detailed geological mapping, rock and soil sampling, ground magnetic surveying, induced polarization surveying, a localized gravity survey and diamond drilling.

Results of all investigations are covered in detail in the bulk of this report, but some of the significant findings are:

- (a) The large air magnetic anomalies are probably due to thick basalt flows filling steep sided Tertiary valleys.
- (b) In the basalt there are windows which have not been mapped on the Burnie 1 mile sheet.
- (c) The main window in the basalt is at the "Buckby Prospect" north of Nolan's Hill. Here newly discovered variously metasomatised cherty dolomitic limestone conglomerates of possible Cambrian age were investigated by drilling. They contain weak tin mineralization.
- (d) The northern sections of the Highclere Iron deposit skarn, (which had previously been thoroughly investigated in its southern sections) was found to be volumetrically small and therefore a poor exploration target.

009 4. TOPOGRAPHY, VEGETATION

Most of the area prospected has moderate relief and is part of a gently rising dissected plateau.

A large proportion of the area with good basalt soils is cleared for farming, mainly for dairy cattle. Some of the more rugged areas are forested, and Associated Forest Holdings (APPM) has extensive pine plantations in the eastern part of the licence area, generally over the poorer soils of the Housetop granite.

5. LITERATURE SEARCH

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A thorough search has been made of all literature covering areas surrounding the Housetop granite. The references at the end of this report cover E.L. 4/77 Highclere, E.L. 1/76 Guildford, and E.L. 8/77 Riana and are thought to be fairly comprehensive. The only area not comprehensively covered is the area of the Dial Range in E.L. 24/73 (Pennzoil).

In the 1950s and 1960s the area received some attention in the search for iron ores. The BMR carried out an airborne magnetic survey (Goodeve, 1955) and the Highclere Iron deposit was investigated by ground magnetics and drilling by the Mines Dept. (Jack, 1965). Core was analysed for Fe, Si, Al, Ti, Mn, P, S, V, but not for Sn, W or F.

A statewide BMR gravity survey conducted in the late 1960's(?) covers part of the area. No BMR airborne scintillometer traversing has been carried out over the area.

As part of a B.Sc. honours project Sheehan (1969) carried out a gravity survey in northern Tasmania, but the western most part of his survey only just reaches E.L. 4/77.

In 1972 CRAE carried out ground scintillometer work over the Husetop granite, chiefly in areas just east of E.L. 4/77, but did not detect any significant mineralization. (Porter, 1972).

From 1972 to 1974 Australia and New Zealand Exploration Co. (ANZECO) carried out exploration in the area over E.L. 1/69 held by Tasminex N.L. A copy of parts of reports of work done in those areas not currently held by Tasminex in E.L. 17/68 was kindly given to us by Anzeco. (Brandt, 1973, 1974). The work done was chiefly examination of stream sediment panned concentrates for the presence of scheelite, and also a percussion drilling program to evaluate the Highclere Iron deposit. The Highclere Iron deposit was found to be a skarn roof pendant of small size containing local high W values of more than 2000 ppm.

Scintrex Pty. Ltd. carried out an airborne magnetic survey over the area in 1973 for Anzeco/Tasminex. The Dept. of Mines kindly made available that section of the survey above the current Tasminex E.L. 17/68.

None of the prominent air magnetic anomalies in E.L. 4/77 apart from the Highclere Iron deposit were thoroughly evaluated by any previous investigators.

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7. NOTIFICATION OF LANDHOLDERS

Names and addresses of all property owners in the area were ascertained from relevant councils and the information plotted on 1:20,000 cadastral maps (on file Devonport Office).

All property holders were advised in advance of work to be done on their land.

Only two property owners objected to our presence: Messrs. W. Gaffney and M.R. & V. Cohen who own blocks covering the Highclere Iron deposit. After verbal reassurance of our good intentions both agreed to allow us to carry out the limited investigations so far completed.

The Regional geology has been described by Gee (1977) and the geology is shown on the Burnie 1 inch to one mile sheet Gee et al (1968). The St. Valentines one mile sheet area covers the southern part of E.L. 4/77, but this sheet has not yet been mapped. Comalco has compiled a geological map of this sheet, plan TAS-78-178, based on our own regional mapping and work carried out by other companies.

The oldest rocks in the area are the Proterozoic Burnie Formation, which is a NE trending folded sequence of siltstones, thought by Gee to be turbidites. Overlying these rocks presumably unconformably is a thin siliceous and ferruginous siltstone formation which is well exposed in the Blythe River between Cuprona and Natone. This unit is presumably Cambrian. The unit is host to the siliceous hematite lenses such as the Blythe River Iron deposit, and it is well described by Gee (1977). These deposits have a character that is part sedimentary (formed possibly under oxide facies near shore conditions) and part tectonic breccia (remobilized during or after sedimentation along faults flanking the Cambrian basin?).

In places the unit includes a characteristic dolomitic conglomerate. Dolomitic limestone chert conglomerate was intersected in core at Natone drilled by Minops, and is the main host rock at the Buckby Prospect (see Section 12). It is locally replaced close to granite contacts to a magnetite skarn such as at Natone; the Highclere Iron deposit is a magnetite skarn and is possibly a replacement of the same unit.

Minor volcanics occur in this Cambrian unit at the Buckby Prospect (see Section 12).

No Ordovician conglomerate or sandstone is known in the area covered by this report.

Nearly flat lying Permo-carboniferous mudstones, tillite etc occur in the north west part of the area.

The Devonian Housetop granite outcrops over large areas - it is a pale adamellite. At least two phases have been mapped by Porter (1972). Tin-tungsten-fluorine mineralization in the area is associated with this granite. No greisenization is known in the area covered by this report; the only known greisens occur south of Hampshire.

01A 9. DRAINAGE GEOCHEMICAL SURVEYA. GENERAL

An extensive drainage geochemical survey has been carried out, with the aim of detecting mineralization in rocks that outcrop or are covered by a thin veneer of Tertiary basalt.

The samples collected are conventional stream sediment, magnetic fraction of stream sediment, panned concentrates, and stream water. Sample locations have been marked on the ground by tying labelled flagging tape to the nearest tree branch; positions were plotted on air photographs, then transferred to 1:20,000 cadastral maps in the office.

There are 445 sample localities, as listed in Appendix 2.

B. CONVENTIONAL STREAM SEDIMENT

A total of 423 samples were collected in the usual manner, sieved to -80 mesh, and analysed by Comalco Research Centre Melbourne for Cu, Pb, Zn, Bi. For analytical methods used see Appendix 1.

Frequency distribution histograms for each element are Figs. 2, 3, 4, 5 and probability plots are on Fig.6. Data for the probability plots is in Appendix 6.

From the probability plot "possibly anomalous" values are taken at greater than 2.5 percentile i.e. Cu equal to or greater than 75 ppm
Pb equal to or greater than 35 ppm
Zn equal to or greater than 235 ppm
Bi equal to or greater than 35 ppm

A perusal of the geochemical data plotted on the 1:20,000 cadastral sheets 3943, 3944, 4043, 4044, drawings TAS-78-199, 220, 200, 198 shows the following:-

- (i) Copper: All three copper anomalies lie on sheet 3943. One area corresponds to the Buckby Prospect north of Nolan's Hill, another area is north of Oonah Road on Sanderson's Creek, and the third is just north west of Three Brook Plain in the upper Guide River.

- (ii) Lead: The highest value of 50 ppm occurs just north of a window in basalt with outcropping Precambrian siltstones, in a gully off the Guide River on sheet 3944 at 5440500 N. No mineralization was observed in this window, but in view of the anomaly minor veining containing galena is likely to occur.

Other values of 35 ppm occur at scattered localities; if values of 30 ppm are also included there are several areas, two of which have the most values per unit area. These two areas are the upper Guide River which is also anomalous for copper, and the area between Pet Road and Youralla Road, including the Highclere Iron deposit in the eastern part. This anomaly might reflect the same mineralized horizon as the Buckby Prospect and the Highclere Iron deposit, in an area where the overlying basalt is thin or absent.

- (iii) Zinc: High Zn values correspond to basalt and therefore Zn is not a useful trace element in this area.

- (iv) Bismuth: Values equal to or greater than 35 ppm occur from the Buckby anomaly towards the Highclere Iron deposit. The cluster of high values is particularly noticeable if values of 30 ppm are also included. As for the lead values this might reflect a mineralized horizon between the two deposits.

Another anomaly occurs just west of Paddy Sugar Loaf, and high values are associated with the Cu-Pb anomaly in the upper Guide River.

C. MAGNETIC FRACTION OF STREAM SEDIMENT

This fraction was collected at 193 sites as listed in Appendix 5 by moving a powerful magnet through the sediment in the creek bed.

The aim of the method was to detect skarns; it was thought that it should be possible to discriminate the magnetite (and other magnetic minerals) from skarns and from basalt by their trace element content, particularly the tin and tungsten content. Our experience at Moira was that Sn as extremely fine cassiterite can occur within magnetite; and this should remain in the magnetite in stream sediment. The method had not been attempted before and so was undertaken as a trial. The method seems to be successful and hence it was and will be used in other areas.

The samples were analysed by Amdel using a semiquantitative spectrographic technique for Sn, W, Be, Bi, Cu, Pb, Zn; Mo, V, Cr. Values except for W, V, Cr are plotted on 1:20,000 cadastral sheets 3943, 3944, 4043, 4044, drawings TAS-78-197, 195, 196, 194. All W values were below the detection limit of 50 ppm; All V values were from 80 to 200 ppm except for sample 18 with 500 ppm; All Cr values were from 100 to 300 ppm.

Frequency histograms have been plotted for Sn, Cu, Pb, Zn, figs 7, 8, 9, 10. Because analyses are semiquantitative the plots are only a rough guide to the distribution of values. The following arbitrary divisions were made visually from the histograms:

Sn	5 - 20 ppm	possibly anomalous
	> 20 ppm	anomalous
Cu	> 110 ppm	anomalous
Pb	30 - 45 ppm	possibly anomalous
	> 45 ppm	anomalous
Zn	> 400 ppm	anomalous

Values of Bi, Be and Mo are below or near the detection limit and are not considered significant.

For each element the following areas are anomalous or possibly anomalous.

Tin: Scattered anomalies occur throughout, but there is a tendency for a cluster of anomalies from Highclere north east to Circular road. No immediate skarn source for these anomalies could be found on the ground; patches of Tertiary alluvium from between or below basalt flows tend to occur in the area. The anomalous magnetic fraction is thought to be derived from this Tertiary alluvium whose ultimate source may have been from skarns in the vicinity of the Highclere Iron deposit and the Buckby Prospect. The majority of the other scattered anomalies are thought to have a similar cause i.e. derived from Tertiary alluvium which might be far removed from skarn.

Copper: Anomalous values are very isolated and do not show any apparent sensible correlation with other elements or other drainage geochemical samples and therefore are not regarded as significant unless they are accompanied by anomalous Tin values.

Lead and Zinc: Anomalous and possibly anomalous values are very scattered and are again not regarded as significant unless they are accompanied by anomalous Tin values.

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Tertiary basalt is extensive. Our drilling indicates that the pre-basalt topography was rugged, basalt having filled steep sided valleys in places.

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Areas which have combinations of three anomalous elements and for which no cause is yet known are:

- (i) east and west of Paddy Sugar Loaf;
- (ii) south of Oonah Road between Guide and Prospect Roads;
- (iii) Darling River at Circular Road;
- (iv) Talunah Road, west of Hampshire in the far north-west corner of E.L. 17/68 of Tasminex.

Each of these areas requires further evaluation.

D. PANNED CONCENTRATES

93 panned concentrates were collected from the sites listed in Appendix 4. Stream sediment was lightly panned and no records of initial sample weight nor concentrate weight have been kept. The method is merely a qualitative technique designed to detect heavy minerals, in particular scheelite. All samples were examined dry under short wave ultraviolet radiation and the presence or absence of scheelite is recorded in Appendix 4. No attempt was made to determine whether cassiterite was present because it is thought that early prospectors would already have located alluvial cassiterite if it were present. No gold was observed. Most samples contained zircon indicating that a significant proportion of heavy minerals had been collected and that the sample is therefore reliable.

The following areas contain scheelite:

- (i) Just north of the north-east part of Kingsclere grid, south of Pet Road. This probably corresponds to very small mapped magnetite skarn pendants in the top part of the main Kingsclere grid area.
- (ii) Highclere Iron deposit, just down stream. Scheelite is known to occur here.
- (iii) West of the Highclere Iron deposit between Youralla and Pet Roads. This area is anomalous for bismuth and lead in -80 mesh stream sediment and is where a mineralized horizon between the Buckby Prospect and the Highclere Iron deposit might occur.
- (iv) Three Brook Plain. Lead and copper anomalies in -80 mesh stream sediment also occur in this area. The dolomitic limestone conglomerate horizon present at the Buckby Prospect might extend through here under shallow basalt cover.

- (v) Oonah Road at Guide River. No other anomalies occur here. It is possible that the scheelite is derived from Tertiary alluvium far from its source, but the area requires further evaluation.
- (vi) Oonah Road at Sanderson's Creek. This area also contains copper anomalies and some anomalies in the magnetic fraction of stream sediment. A ground inspection here showed that post basalt alluvium containing limonite bands is present. This is possibly the source of the anomalies, but the ultimate source is still not known.
- (vii) Tributary of Sanderson's Creek in north western part of exploration licence. No other anomalous values are associated. Again it is possible that the scheelite is derived from Tertiary alluvium, but the area needs evaluation.
- (viii) 1 km South of Guide Falls. The same comments as for the area (vii) above apply here.

E. WATER SAMPLING

Water samples were collected at 439 sites and sent to the Comalco Research Centre in Melbourne for fluorine analyses. All locations except 420 to 426 were sampled.

The aim is to detect fluorite mineralization in or associated with skarns.

Experience outside the area of this report has shown that fluorine analyses of water is a very sensitive indicator of the presence of fluorite.

In most cases the detection limit is 0.05 ppm, but later analyses using an improved specific ion electrode had detection limits of 0.03 or 0.02 ppm.

The fluorine values are difficult to interpret because (a) most values lie below the detection limit; (b) the F content of water depends greatly on its source. Ground water surfacing as springs and seeps will contain more F than surface run-off after rain, rendering sampling during or soon after rain of little use.

These problems with detection limit and variable dilution mean that the results cannot be treated successfully with histograms or statistical techniques. However visual scan of the results shows that values equal to or more than 0.06 ppm are considerably anomalous.

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Fluorine anomalies occur very noticeably clustered in a north south zone extending north from Paddy Sugar Loaf to Guide Falls. This zone at the Buckby Prospect is known to be the western extremity of the Housetop granite and so the zone could reflect the western extremity in all areas, where it is obscured by thin basalt or thin Proterozoic cover.

If this zone corresponds to tin-tungsten fluorine mineralization it is the area where future exploration should concentrate.

021 10. REGIONAL GROUND MAGNETICS

The known skarns in the Hampshire area such as at Kara and the Highclere Iron deposit are magnetite rich. They have well defined air-magnetic anomalies in a survey conducted by the BMR in 1955 (Goodeve, 1955), Fig.11.

Fig.12 is an overlay of Fig.11 showing the air-magnetic survey conducted by Scintrex in 1973.

Many large air-magnetic anomalies apart from those which correspond to known skarns occur over areas covered by basalt to the west of the Housetop granite. Some of these could obviously correspond to skarns obscured by basalt. Therefore ground magnetometer traverses with a Scintrex MF 2 fluxgate magnetometer and later a Geometrics G816 proton precession magnetometer were made to locate some of these large air-magnetic anomalies.

The position of these traverses is shown on Fig.11. The proton precession traverse results are plotted on plan TAS-78-189, which was plotted as an overlay to the 1:20,000 cadastral maps. Profiles for the fluxgate traverses are:-

Fig. 13	Traverse 1 and 2
14	3
15	4
16	5
17	6
18	7
19	8

Profiles for the proton precession traverses have been drawn for some of the traverses:

Fig. 20	Traverse 1
21	2
22	7
23	8
24	9B
25	10
26	11A
27	17

Fig.28 shows the position of traverse 1 and 2 for the proton precession traverse, which differs from the fluxgate traverses. (for these two traverses only).

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A number of traverses with fluxgate magnetometers were made by Anzeco and the data is in Brandt (1973).

Most of the air-magnetic anomalies were located on the ground. The largest anomaly on the ground was the largest air-magnetic anomaly, which is present between traverses 3 and 8.

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11. THE KINGSCLERE GRIDA. GENERAL

The large air-magnetic anomaly located on the ground between traverses 3 and 8 was thought to be due to either skarn or basalt. It was therefore decided to grid this anomaly and carry out mapping, ground magnetics, I.P. and if necessary drilling to determine the cause.

B. GRIDDING

A large area was gridded with lines running east west magnetic, spaced 100 m apart. The area gridded is about 2.8 x 2.5 km. Most of the area is over cattle pasture, but some to the east is pine plantation. All landholders were notified; in many blocks the grid pegs have now been removed at the owner's request, but where grid lines intersect fences marker pegs have been left on the fence line.

The approximate area gridded is shown on Fig.11. An overlay to an airphoto enlargement showing the position of the grid is plan TAS-78-216. The grid line slopes are plotted on drawings TAS-78-221, 222. For convenience the 1:2,500 plans of the grids have been split into Sheet A and Sheet B, which are east and west of 1000W respectively.

C. MAGNETOMETER SURVEY

Readings with proton precession magnetometers were taken every 25 m along east-west lines spaced 50 m apart.

A Geometrics G816 was the instrument most commonly used, but also a Scintrex MP2 and an Austral PPM2; all instruments give identical readings.

Data for Sheet A is plan TAS-78-133 and Sheet B is TAS-78-233. Contours are plotted for Sheet A, plan TAS-78-208 and Sheet B TAS-78-207.

The most intense anomalies are north and south of the Kingsclere Road on Sheet A, and over Nolan's Hill on Sheet B. These anomalies are areally large and except for Nolan's Hill have distinct trends, which is unlike the sort of irregular active magnetic picture usually seen over basalts. The anomaly shapes suggested that their cause was lithological units.

D. GEOLOGICAL MAPPING

Geological maps are Sheet A, plan TAS-78-129 and Sheet B TAS-78-165.

The most intense magnetic anomalies referred to in the previous sub-section lie in basalt covered areas.

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Two small magnetite outcrops or subcrops were found on the north-eastern part of Sheet A - these appear to be surrounded by granite. They have small (areally) associated magnetic anomalies and so they are thought to be only small roof pendants, perhaps the erosional remnants of a larger skarn deposit.

A large previously unmapped window in the basalt occurs on Sheet B, between the Emu Bay Railway and the Burnie Highway, north of Nolan's Hill. This area was named by us the Buckby Prospect and is treated in detail in Section 12.

E. SOIL SAMPLING

Sheet A

Some trial lines of soil samples were taken over the main magnetic anomalies and over areas where basalt was thought to be thin.

Samples were sieved to -80 mesh and analysed for Cu, Pb, Zn, F, Bi, Mo, by Comalco Research Centre. Details of methods used are in Appendix 1. No attempt was made to analyse for Sn or W since it was thought that the analysed elements would be sufficient pathfinders.

The data is plotted on plan TAS-78-129.

Copper and Zinc values over basalt can be relatively high - up to 75 ppm for Cu and 185 ppm for Zn. Lead over basalt clusters around the 25 ppm level, but is as high as 125 ppm over granite. Fluorine is very erratic and is as high as 360 ppm over basalt - these are relatively high values and are suspected to be due to leakage from rocks below the basalt. In view of the results of drilling two holes KD 1, KD 2 in this area, the source rocks below the basalt are likely to be merely granite. The highest fluorine values, up to 2650 ppm occur on line 00, between the small magnetite occurrences, i.e. they reflect known mineralization.

Sheet B

Extensive soil sampling was done on this sheet area over the Buckby Prospect. The results are treated in Section 12.

F. INDUCED POLARIZATION SURVEY

(a) General

A time domain electrical induced polarization survey was carried out by Comalco personnel over most of the gridded area.

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The aim was to (i) locate massive skarns which should be more resistive than the surrounding rocks, (ii) locate skarns or other rocks containing disseminated sulphides, (iii) determine lithological boundaries beneath basalt and (iv) determine areas where basalt is thin.

(b) Sheet A

Stacked profiles for resistivity are plotted on plan TAS-78-192 and for chargeability on plan TAS-78-193. Some working interpretation plots are filed in the Devonport office - they have not yet been drafted.

No detailed interpretation or discussion of the results will be given here; this will be done when the interpretation plans are drafted.

Where basalt is thin and can be 'seen through' the I.P. signatures are consistent with granite beneath. Some areas of high resistivity e.g. 1800S/500W and areas to the north correspond to greybilly.

Fences in the area are prone to producing dramatic I.P. effects.

(c) Sheet B

Stacked profiles for resistivity are plotted on plan TAS-78-191 and for chargeability on plan TAS-78-190. Some working interpretation plots are filed in the Devonport office - they have not yet been drafted.

No detailed interpretation or discussion of the results will be given here; this will be done when the interpretation plans are drafted.

The data has been useful to interpret the geology at the Buckby Prospect, particularly to outline the granite contact.

G. DIAMOND DRILLING

Sheet A

Two diamond holes were drilled to test the large magnetic anomaly north of Kingsclere Road.

Hole KD1 was at 000/1250S, vertical. It penetrated basalt to 84 m, then mineralized granite to the end of the hole at 95 m. The basalt consists

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of several flows with amygdaloidal tops; most of the basalt was noticeably magnetic, to the extent that a suspended magnet was attracted to the core.

Hole KD2 was 500 m north of KD1, at 200W/750S, vertical. It also penetrated basalt to 126 m. The basalt is similar to that in KD1. No skarn was intersected.

Granite outcrops only 100 m east of KD1, so there must have been a very steep sided pre basalt valley trending through here.

The drilling therefore indicated that the distinct magnetic anomaly north of Kingsclere Road is due to magnetic basalt filling a steep valley. The distinct magnetic anomalies with similar shape and intensity probably have the same cause, hence a pre-basalt steep valley can be outlined trending north-east below Kingsclere Road, and north-west above the Kingsclere Road continuously to the top of the gridded area on Sheet B.

Sheet B

A small intense magnetic anomaly at 1950W/900S was drilled with hole KD3 and holes KD4 to 7 were drilled at the Buckby Prospect. The data for the Buckby Prospect is in Section 12.

Hole KD3 is west of the main road, about 500 m N of Nolan's Hill fire tower. The hole was to test a relatively small magnetic anomaly with associated chargeability high and resistivity high - thought to be possibly a mineralized calc-silicate deposit. The area is covered by basalt.

A summary log of KD3 is:-

0	-	36	Basalt
36	-	38	Clay-sand (deep lead)
38	-	74	Sandstone, siltstone
74	-	78	Basalt (dyke)
78	-	78.5	Altered granite (dyke)
78.5	-	79.5	Siltstone
79.5	-	81	Basalt (dyke)
81	-	92	Siltstone hornfels, some scattered pyrite
92	-	95	Altered granite
95	-	96	Hornfels, some pyrite
96	-	100.5	Granite, altered granite
100.5	-	116	Siltstone, sandstone, hornfels
116	-	123	Granite, weathered, altered

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The magnetic anomaly is probably due to the hole being sited over a basalt vent; the pyrite in the hornfels could account for the chargeability anomaly.

A. GENERAL

This prospect occurs in a small valley - a window in the basalt on Sheet B, north of Nolan's Hill, between the Burnie-Hampshire Highway and the Emu Bay Railway line, in the headwaters of the Pet River.

This window had not been previously mapped. Calc-silicate rocks occur in the window.

There is an air-magnetic low at this locality, indicating that large magnetite bearing skarn bodies do not exist. Nevertheless we collected soil and rock samples and completed routine ground magnetics, thinking that the calc-silicate rocks in the window might be hosts for scheelite mineralization like that at King Island. (i.e. skarns with no magnetite or fluorite).

B. GEOLOGICAL MAPPING

A full geological map for Sheet B is plan TAS-78-165, at a scale of 1:2500. Part of the geological map for the main are of interest of the Buckby anomaly is plan TAS-78-157, at a scale of 1:1250.

A simplified geological map of the Buckby Prospect is Fig.29, accompanied by geochemical and geophysical overlays.

The area has very poor outcrop of granite, siltstones, some black shale, cherty calc-silicate rocks, and highly to completely weathered gossanous altered dolomite and skarn.

C. ROCK SAMPLING

Rock samples collected from the grid during geological mapping were scanned with a short wave ultraviolet light, but no scheelite was detected. The samples were analysed, particularly to determine whether they were Au, Sn, etc, bearing. Analyses are in Appendix 9.

The highest Sn value is 700 ppm, which although well below economic grade is significantly high, indicating that the rocks in the area are mineralized with tin. Other analysed elements such as W, Bi, Be, Au are in relatively low abundance, but copper values of up to 700 ppm are relatively high for these weathered rocks.

SOIL SAMPLING

Soil samples of the C horizon at bedrock were collected with the aid of a hand auger where necessary, over areas where basalt was absent or thought to be thin. The samples were sieved to -80 mesh and sent to the Comalco Research Centre for Cu, Pb, Zn, F analyses.

When low order Cu, F anomalies were detected and relatively high Sn values were found in surface rocks, the samples were sent to Amde1 for semiquantitative spectrographic analyses for Sn, As, Ag, Bi and Sb.

Results are plotted on plan TAS-78-218, but no As, Ag, Sb values were included because all were below the limits of detection (50, 0.1, 30 ppm respectively).

Contours of fluorine in soil, plus the Sn values are on plan TAS-78-282 and copper contours are on TAS-78-219.

Tin is distinctly anomalous in the area, with values up to 70 ppm in a background of around 1 ppm.

The area of immediate interest at the Buckby Prospect is presented also as several overlays on Fig.29.

E. MAGNETOMETER SURVEY

A low order but distinct magnetic anomaly occurs at the Buckby Prospect, within or close to the area of the geochemical soil anomaly. (Plan TAS-78-207 and enlarged on TAS-78-206; also Fig.29).

This anomaly was thought to be possibly due to skarns containing a little magnetite or pyrrhotite, and therefore possibly similar to Cleveland.

F. INDUCED POLARIZATION SURVEY

As stated in Section 11, the I.P. data was useful particularly for outlining the granite contact in areas of no outcrop, and has been used in conjunction with the magnetics and the later drilling to produce the interpreted geology of Fig.29.

G. DRILLING(a) Aim

The area has outcropping calc-silicate rocks, is anomalous for F, Cu, Sn, has a low order magnetic anomaly and was therefore a prime prospect for Cleveland style mineralization. Outcrop is very poor but because the area is private cleared land no costeaning was attempted and diamond drilling was used to assess the anomaly.

Four holes were drilled in order to determine mineralization, structure, and rock types along one east-west section at 100S. This line was chosen because it contained coincident F, Cu, Sn and magnetic anomalies.

(b) Results

Drill logs and analyses are in Appendix 10.

There is a thick sequence of pyrrhotite bearing dolomitic limestones, dolomitic-limestone-conglomerate and chert, all variously metasomatized to pyrrhotite-diopside-phlogopite skarns and magnetite-diopside-phlogopite skarns. Minor acid volcanics, rhyolitic in appearance, occur within the sequence, and the sequence is bounded by siltstone (hornfels) and overlain by acid lithic tuff. Many faults and fractures occur. Granite, altered but unmineralized occurs at the bottom of holes KD4, 5, 6.

Scheelite is virtually absent in the core. Fluorite was not observed but minor black fine grained tourmaline occurs. No cassiterite was observed.

The highest Sn value by the Amdel semiquantitative spectrographic method is about 500 ppm. Check XRF analyses were done of several samples and the highest Sn values by XRF tend to be about half those of the spectrographic values. A geological cross section showing simplified drilling data is drawing TAS-78-130.

Summary logs of each hole are: KD4, co-ords 100S/1560W, vertical

0	-	23 m	Metasomatized dolomitic limestone conglomerate (MDLC) (pyrrhotite or pyrite rich in places).
23	-	28	Ditto with chert cobbles or interbeds
28	-	35	Chert
35	-	41	MDLC
41	-	43	Aplite (dyke)
32	-	52	MDLC + chert
52	-	57	Hornfels
57	-	60	MDLC
60	-	70	Hornfels, some calcsilicate rock
70	-	71	Fault breccia
71	-	77	Cherts, hornfels
77	-	78	MDLC
78	-	93	Cherts, hornfelses, brecciated
93	-	101	MDLC
101	-	118	Cherts, hornfelses
118	-	152	Altered and fresh granite

KD 5 100S/1650W, 45° to the east.

0	-	12 m	Calc-silicate rock
12	-	17	Magnetite skarn
17	-	20	Calc-silicate rock
20	-	26	Magnetite skarn
26	-	32	Altered chert
32	-	44	Skarn (metasomatized dolomitic limestone conglomerate (MDLC))
44	-	49	Altered siltstone
49	-	52	Skarn (MDLC)
52	-	72	Dolomite, dolomitic limestone conglomerate in fault zone
72	-	98	Skarn (MDLC)
98	-	108	Fault zone in skarn
108	-	114	Skarn (MDLC)
114	-	126	Dolomitic limestone
126	-	132	Skarn (MDLC)
132	-	133	Aplite dyke
133	-	149	Hornfels
149	-	152	Altered granite
152	-	165	Granite

KD 6 100S/1650W, vertical

0	-	17 m	Skarn (very weathered)
17	-	25	Hornfels
25	-	36	Altered skarn (MDLC)
36	-	43	Magnetite skarn (MDLC)
43	-	55	Altered skarn (MDLC)
55	-	57	Pyrrhotite skarn
57	-	59	Magnetite skarn (MDLC)
59	-	61	Skarn (MDLC)
61	-	78	Silty dolomite
78	-	129	Skarns and partially altered dolomites and dolomitic limestone conglomerate
129	-	152	Amphibole skarn (MDLC)
152	-	168	Skarns etc. as 78-129; fault breccias
168	-	172	Siltstone
172	-	174	Dolomitic siltstone
174	-	175	Hornfels
175	-	224	Variously altered dolomitic siltstones, dolomites
224	-	250	Altered granite
250	-	251	Granite

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KD 7. 100S/1850W, 45° to the east.

- 0 - 37 Tertiary basalt
- 37 - 41 Greybilly
- 41 - 78 Altered tuff (felsic andesitic ash flow?)
- 78 - 79 Hornfels

Difficult drilling caused KD7 to be abandoned before the carbonate sequence was reached.

(c) Petrology

A few samples of "chert" and skarns were sent from KD4 and KD5 to Wally Fander. The "chert" was found to be metasomatically altered acid volcanic. The skarns were found to be diopside phlogopite - ± tourmaline rocks with either magnetite or pyrrhotite, replacing dolomitic rocks. Petrographic descriptions by W. Fander are in Appendix 11.

The association of dolomitic pebbly carbonates, volcanics, pyroclastics, close to Precambrian rocks suggests that they are basal Cambrian rocks.

(d) Down hole induced polarization

This was carried out for semi-routine reasons in KD 3, 4, 5, 6. In most cases receiver electrode spacings were run at 5 and 10 metres. Results are plotted as Figs. 30 - 36.

H. CONCLUSIONS

Disappointing analyses were obtained in the core, but a significant prospective carbonate horizon has been discovered. The skarns have uneconomic but very anomalous values of Sn, indicating that the correct conditions for the formation of pyrrhotite-cassiterite deposits possibly occur here.

The area clearly also has prospectivity for scheelite skarn deposits replacing this carbonate horizon. These may be devoid of magnetite and pyrrhotite and hence difficult to find in basalt covered areas.

From a development point of view the area has very considerable advantages. It has good access, and being a farming area is close to population centres, water, power and services.

A. GENERAL

Some information on the work carried out here by previous investigators is given in Section 6.

The Highclere Iron deposit is a small pendant in granite consisting of weathered magnetite rich skarn with W values up to 5000 ppm and up to 200 ppm Sn, (percussion drilled for scheelite by ANZECO and diamond drilled for iron by the Mines Department). It lies on line between the Buckby Prospect carbonate sequence and pebbly carbonates intersected at Natone in drilling by Minops (now in Comalco E.L. 8/77, Riana). It is therefore possibly a replacement of the same horizon.

The testing by the Mines Dept. and Anzeco seems to have been definitive in the southern part of the deposit, where the confined nature of the pendant plus sporadic, overall low W values were found. However lower order magnetic anomalies in the northern part close to Youralla Road had not been evaluated so most of the Comalco investigations were carried out in the northern part.

B. MINES DEPT CORE; LOGGING AND ANALYSES

A summary log of each of the Mines Dept. holes has been made based on logs by Jack (1965) and Comalco. All core is very broken; recoveries were very low-

<u>DDH 1, vertical:</u>	0 - 19 ft.	Limonitic clay
	19 - 50 ft.	Limonitic clay containing nodules of hematite and magnetite. Are nodules replacement of pebbles? No Scheelite.
	50 - 93.5 ft.	Highly to completely weathered calc-silicate rock containing narrow bands and small crystals of magnetite.
<u>DDH 2, vertical:</u>	0 - 90 ft.	Very fragmentary core, limonitic clay, limonite after magnetite with interstitial clay after garnet? Limonite ranges from black to yellow. Some white encrustation in places. A few yellow fluorescent scheelite grains to 50 ft. A very few bluish fluorescent specks after 50 ft.
	90 - 120 ft.	Yellowish clayey completely weathered calc-silicate rock? Little limonite. No Scheelite.

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DDH 2A, vertical: 0 - 8 ft. Limonitic clay
8 - 43 ft. Similar to 0 - 90 above. No scheelite visible

DDH 3, vertical: 0 - 37 ft. Limonitic clay with some hematite nodules
37 - 61 ft. Limonitic clay with some hematite nodules and small crystals of magnetite
61 - 85 ft. Highly to completely weathered calc-silicate rock and clay with numerous hematite nodules and small crystals of magnetite
85 - 91 ft. Limonitic clay

DDH 4, Bearing 105⁰ Dip 52⁰
0 - 16 ft. Limonitic clay containing small crystals of magnetite and nodules of hematite.
16 - 36 ft. Limonitic clay
36 - 65 ft. Mixed hematite, limonite and magnetite.
65 - 69 ft. 6" Highly weathered rock and limonitic clay.

Analyses of the core by the Dept. of Mines are in Appendix 12. Grab samples of small fragments of the very broken core were collected and sent for analysis, particularly to determine their Sn, W and related element content. Results are in Appendix 12. The weathered magnetite rocks contain up to 5000 ppm W and 200 ppm Sn, and so are clearly mineralized skarns.

C. GRIDDING

A small grid was made over the northern part of the area, and tied to the Kingsclere grid as shown on TAS-78-216.

D. GEOLOGICAL MAPPING

A geological map of the grid is plan TAS-78-209. There is very little outcrop of granite and some ironstone float; most of the area is obscured by basalt or basalt soils.

E. SOIL SAMPLING

One line of soil sampling at 2600N for Cu, Pb, Zn and F was completed. Results are on Fig.37; the analyses fail to define mineralization and so no further soil sampling was attempted.

F. MAGNETOMETER SURVEY

The gridded area was surveyed with a proton precession magnetometer. Data is on plan TAS-78-214 and contours on TAS-78-217.

A distinct anomaly occurs over the Highclere Iron outcrop. A small anomaly

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of dimensions about 75 x 50 m occurs just south of Youralla Road, and a weak anomaly about 100 x 75 m occurs centred on 2650N/700E, north of the road. Elsewhere the magnetics are fairly dead.

G. GRAVITY SURVEY

A traverse east along Youralla Road, and the north along a track through the north-east part of the grid, was carried out with a Soden gravity meter. The Bouguer gravity profile is plotted on TAS-78-124.

H. INDUCED POLARIZATION SURVEY

Gradient array time domain I.P. was carried out at 100 m line spacing. Stacked profiles for resistivity are on TAS-78-232 and chargeability on TAS-78-231.

The ironstone tends to be resistive and chargeable, the granite resistive and non-chargeable. The small magnetic anomalies mentioned above have easily recognizable chargeability and resistivity peaks suggesting disseminated sulphides (pyrrhotite?) in a calc-silicate rock. As for the magnetic anomalies there peaks are very localized and cannot be traced to adjacent lines.

I. CONCLUSION

The mapping, magnetic gravity and I.P. data all strongly indicate that at the northern end of the Highclere Iron deposit there is only very small isolated roof pendants of magnetite skarn/calc-silicate rocks. They are also likely to be mostly extremely weathered and so they do not rate as good targets for tungsten, tin or fluorine mineralization. No further work here is recommended.

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The Buckby Prospect is clearly a carbonate horizon which could be mineralized in areas so far not drilled; the carbonate horizon is obviously prospective but it presents a major problem to chase its extent beneath basalt.

Some recommendations for future work are:

1. BUCKBY PROSPECT, FURTHER DRILLING

The section of the Buckby Prospect drilled may not be the most mineralized. At the northern-most part of the anomaly at its interpreted faulted edge there may be a plumbing system which could have produced better mineralization. The southern portions of the prospect also remain untested.

2. TRACING THE CARBONATE HORIZON

In the section on geochemical exploration possible extensions of the carbonate horizon were suggested i.e. between the Buckby Prospect and the Highclere Iron deposit, and Three Brook Plain. These need evaluation by surface inspection, resampling and ground magnetometer traverses. If either area shows promise it would require gridding and then systematic mapping, magnetics, I.P. to evaluate.

3. FOLLOW UP ALL GEOCHEMICAL ANOMALIES

All geochemical anomalies mentioned in Section 9 need ground follow up.

4. FURTHER DRILLING OF MAGNETIC ANOMALIES

It is likely that magnetic anomalies such as that at Nolan's Hill are due to magnetic basalt. However it is possible that such anomalies could be due to magnetite skarn, and drilling is the only certain method to establish which is the case.

5. POSSIBLE EXTENSIONS OF SKARNS IN TASMINEX E.L.17/68.

About 1 km NNW of Hampshire there is a broad relatively low order magnetic high (Fig.11, 12). This could correspond to skarns replacing Gordon Limestone, but now covered by basalt. Initially the area should be checked by geological and magnetic traversing, then gridded if necessary.

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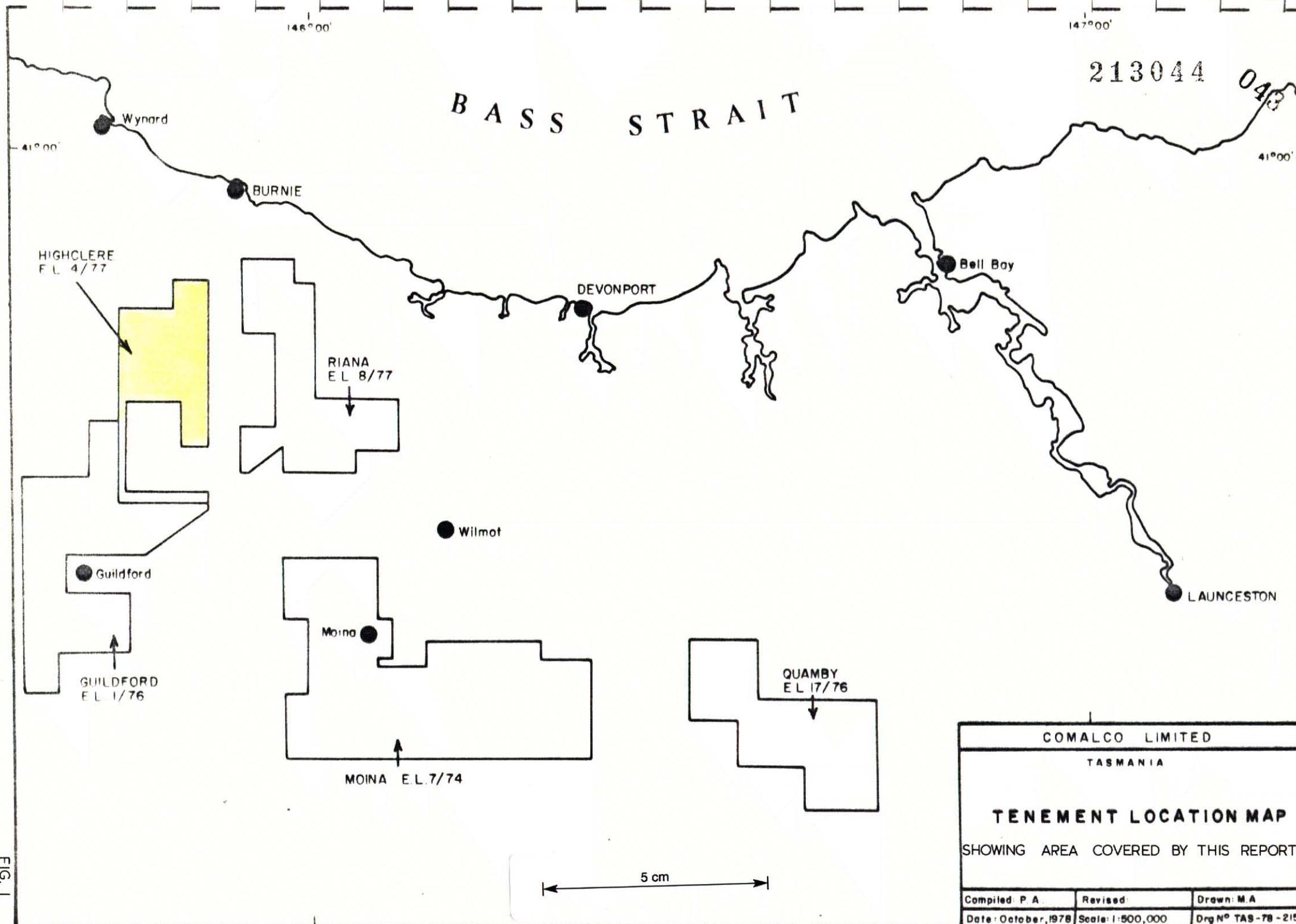


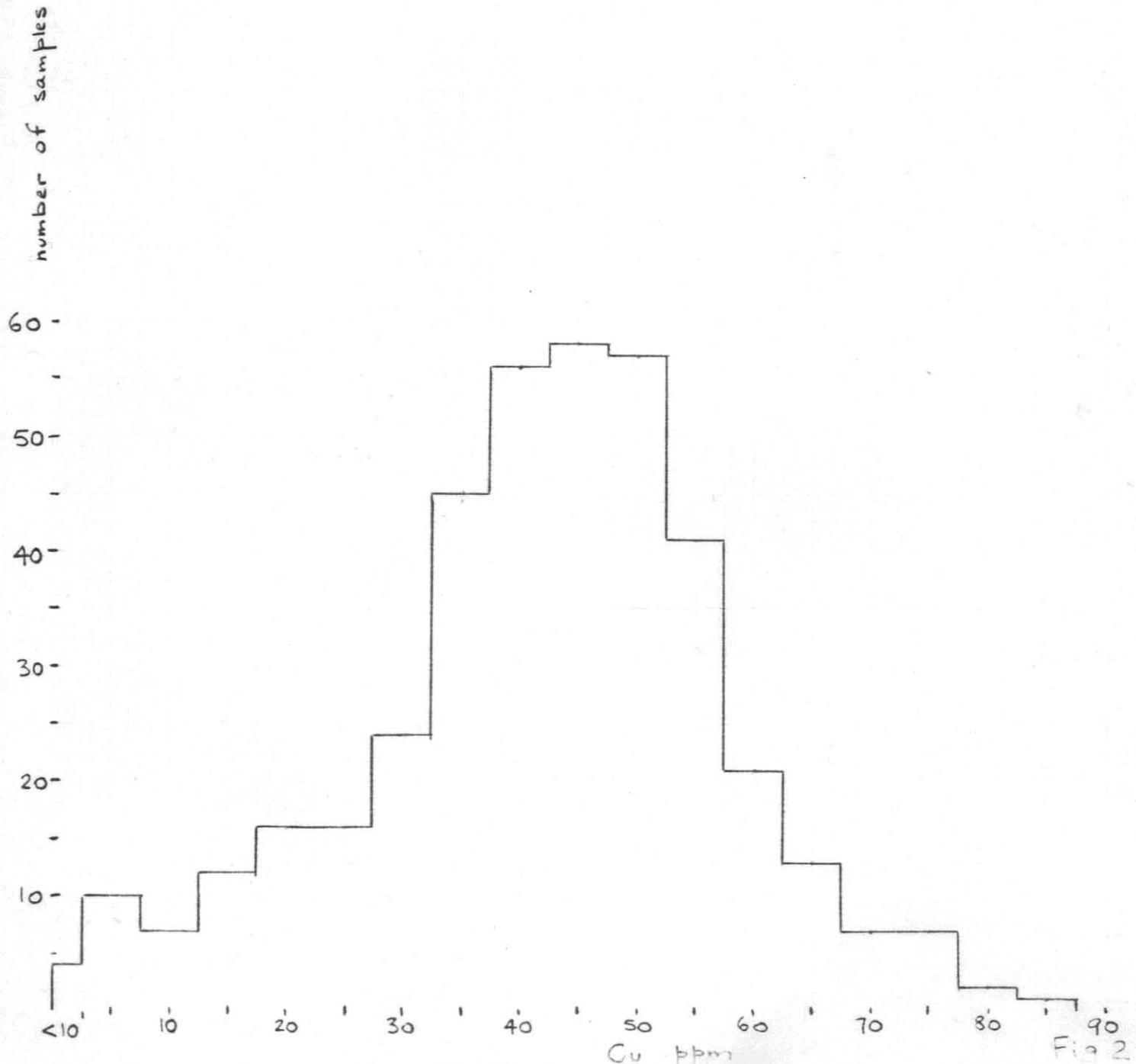
FIG. 1

COMALCO LIMITED		
TASMANIA		
TENEMENT LOCATION MAP		
SHOWING AREA COVERED BY THIS REPORT		
Compiled: P. A.	Revised:	Drawn: M. A.
Date: October, 1978	Scale: 1:500,000	Drg N° TAS-78-215

044

213045

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
Cu ppm in -80 mesh
stream sediment



045

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
Pb ppm in -80 mesh
stream sediment

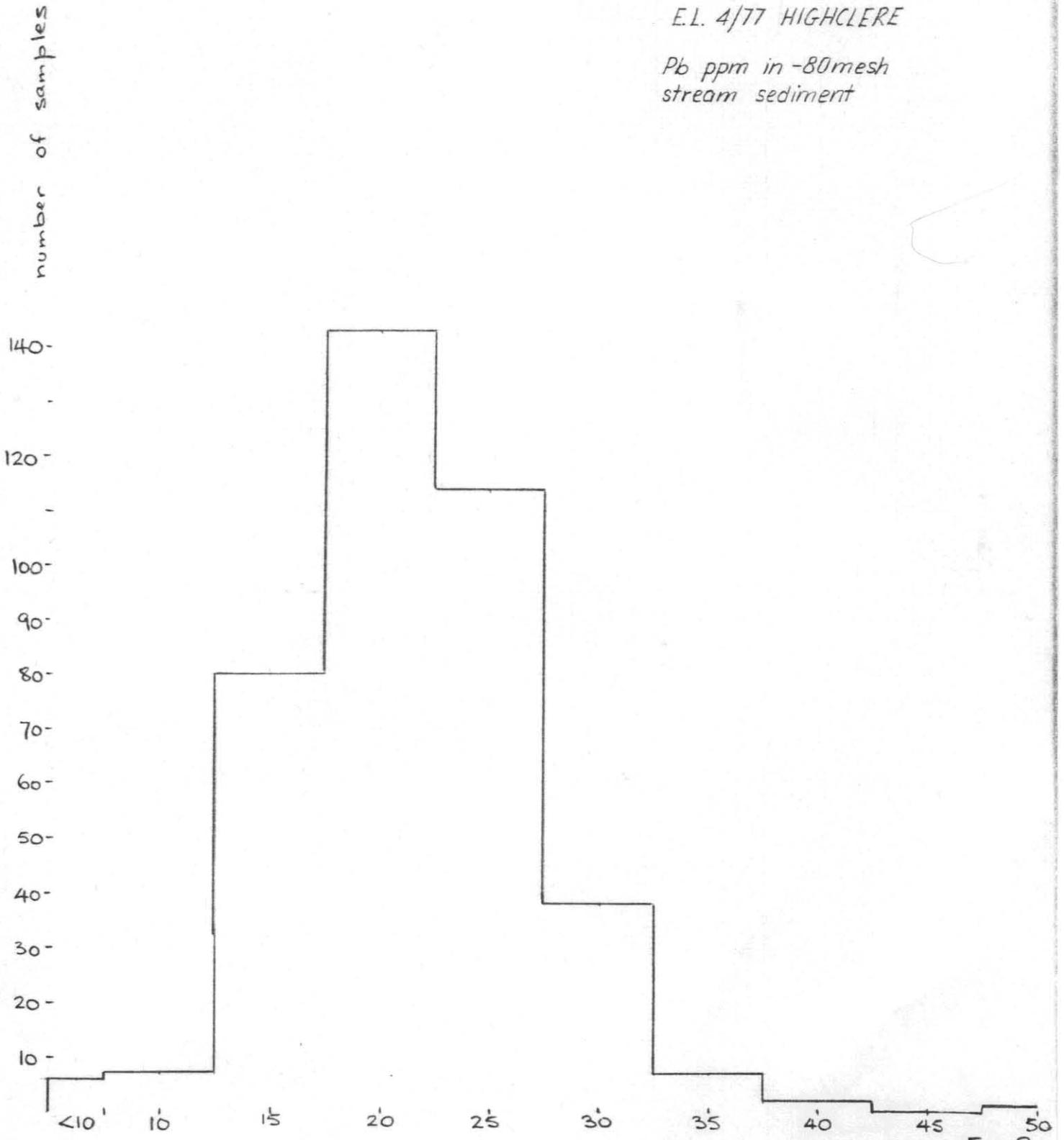


Fig 3.

046

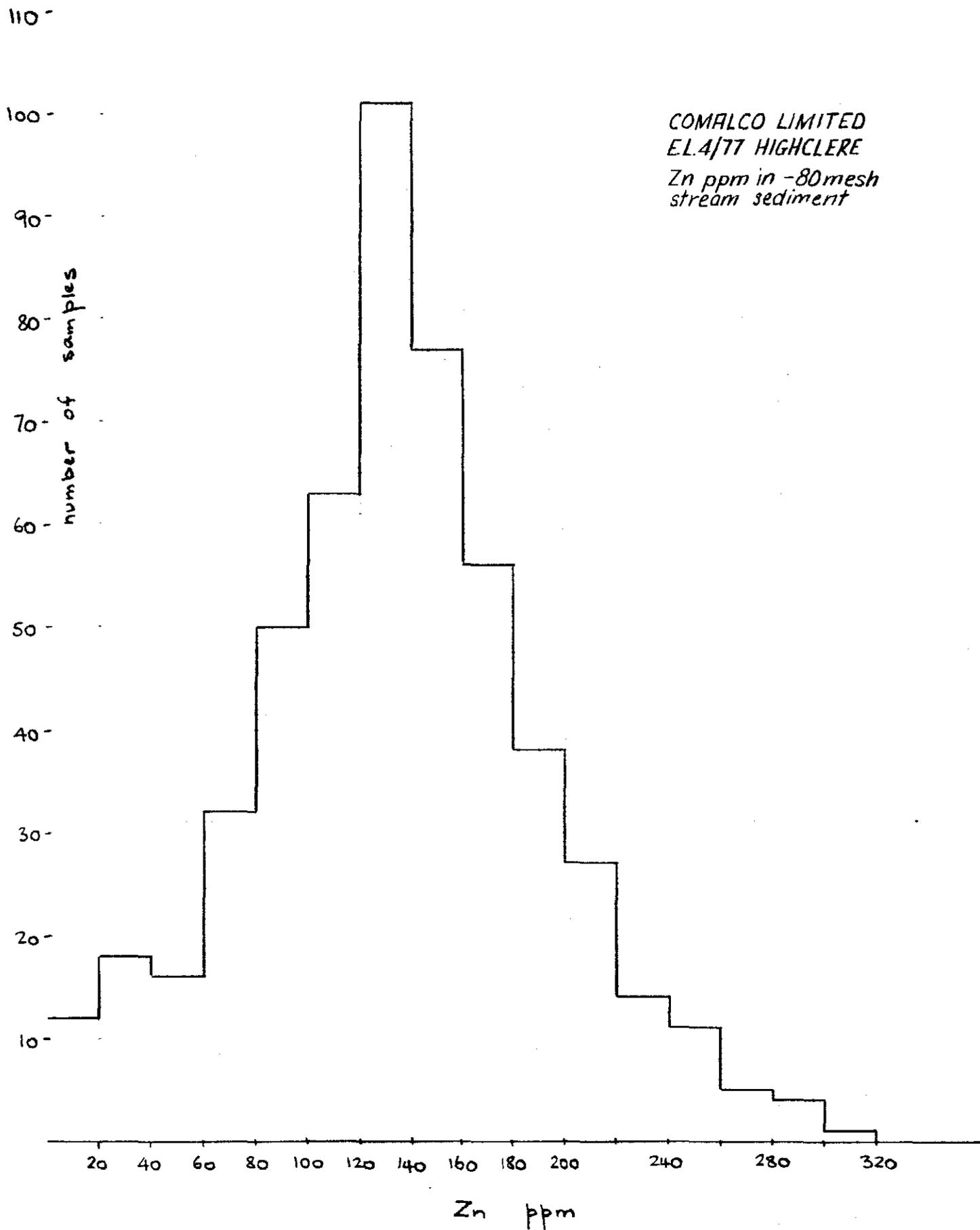


Fig 4

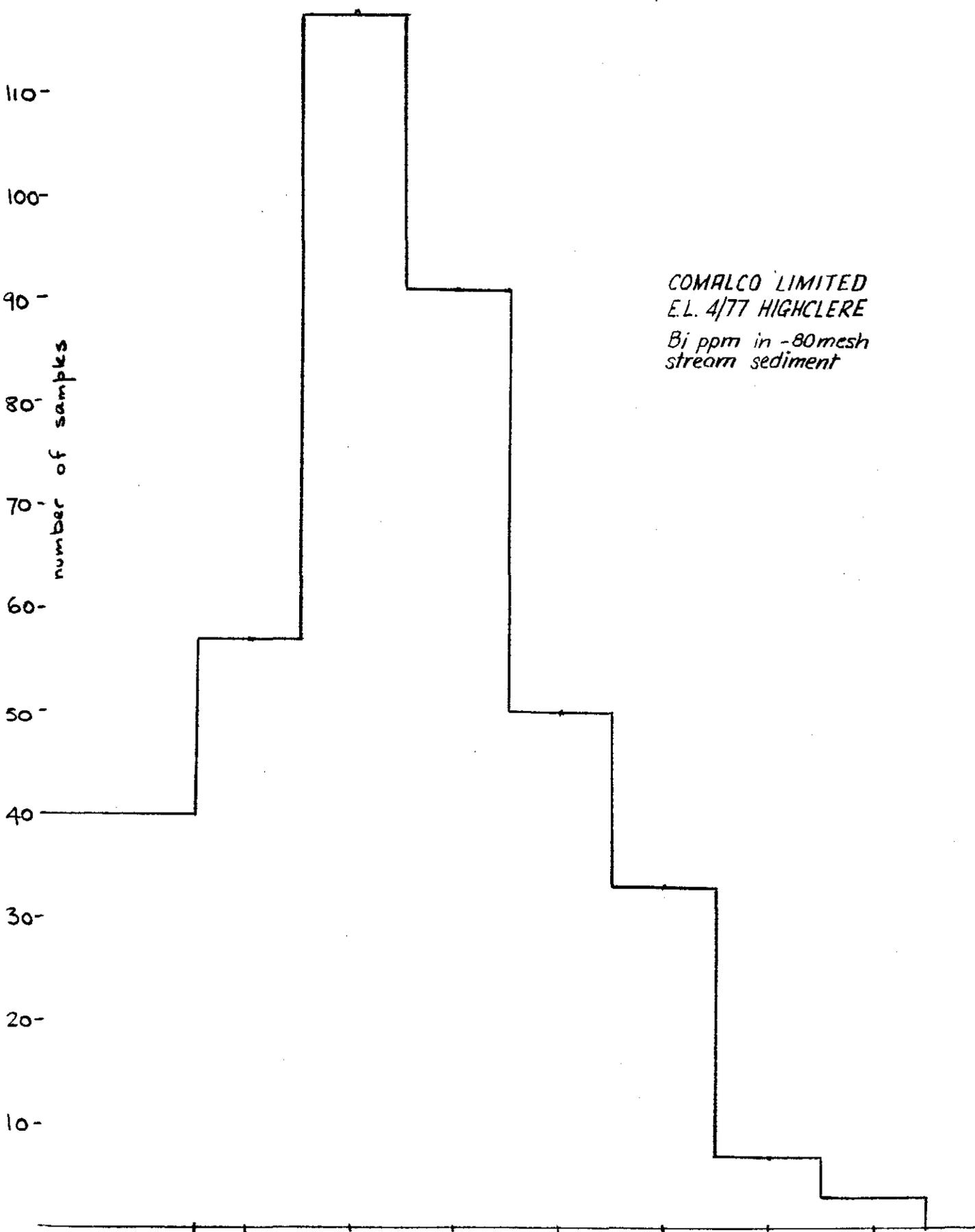
120-
110-
100-
90-
80-
70-
60-
50-
40-
30-
20-
10-

number of samples

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
Bi ppm in -80 mesh
stream sediment

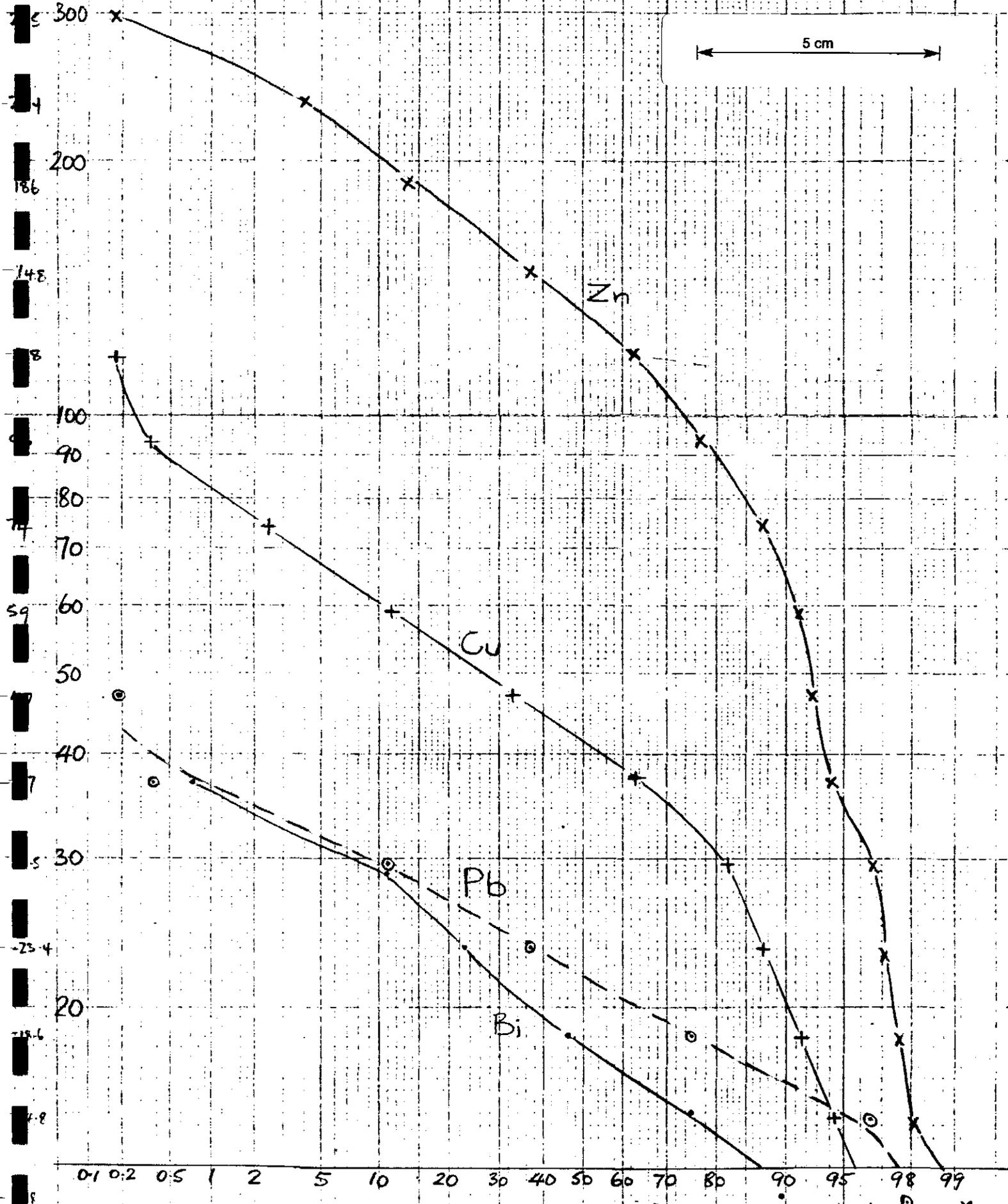
<10 10 15 20 25 30 35 40

Bi ppm

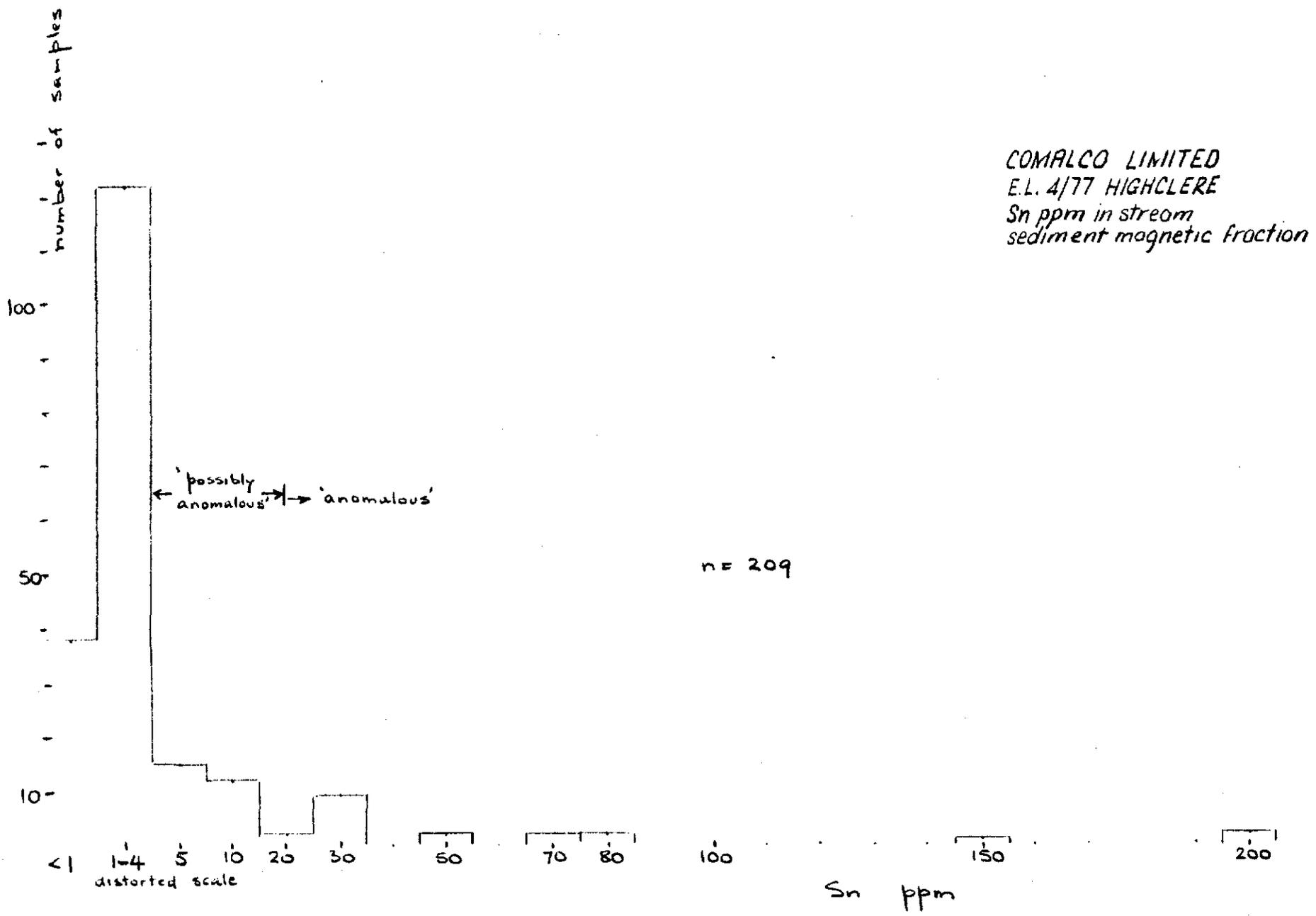


COMALCO LTD
E.L. 4/77 HIGHCLERE
PROBABILITY PLOTS
- 80 mesh stream sediment

048
ppm



+ Fig 6. x



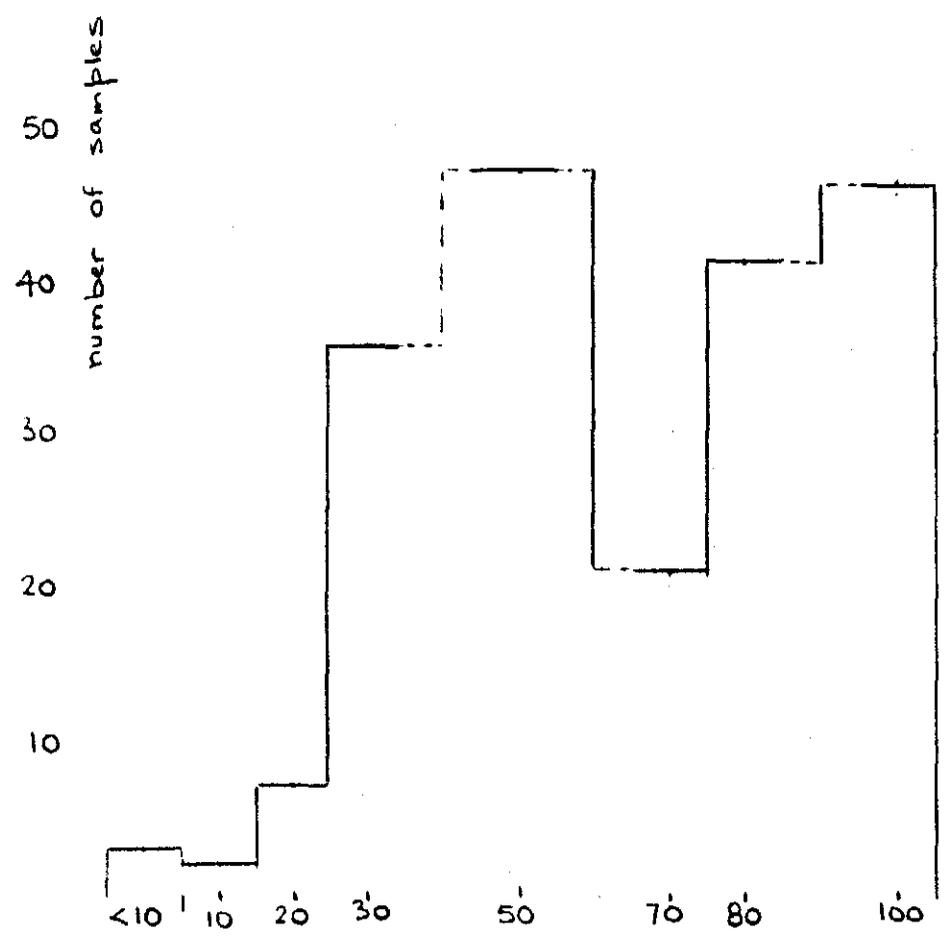
213050

Fig 7

213051

050

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
Cu ppm in stream
sediment magnetic fraction



n = 207

150

200

Cu ppm

Fig. 8

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
Pb ppm in stream
sediment magnetic fraction

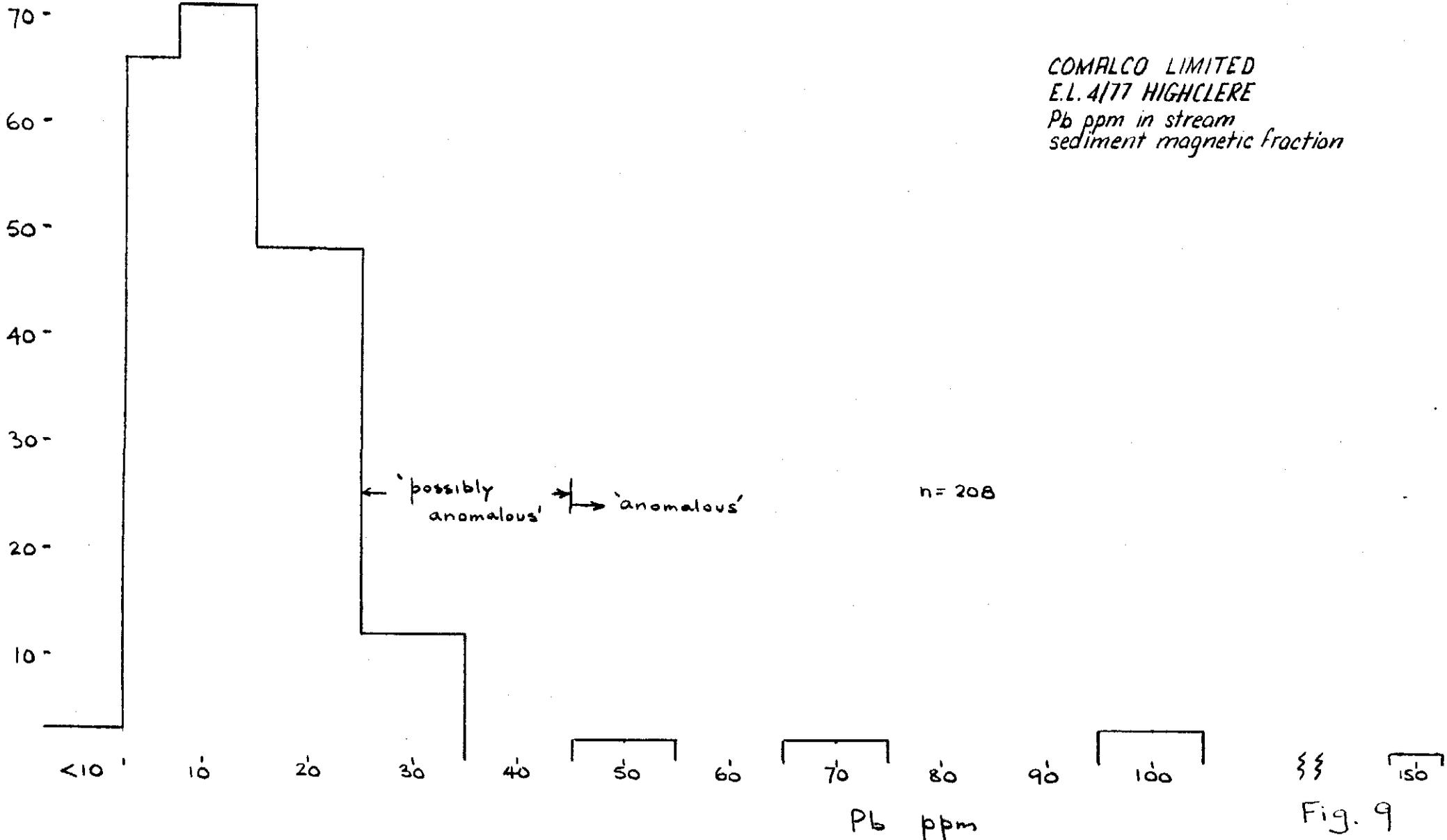


Fig. 9

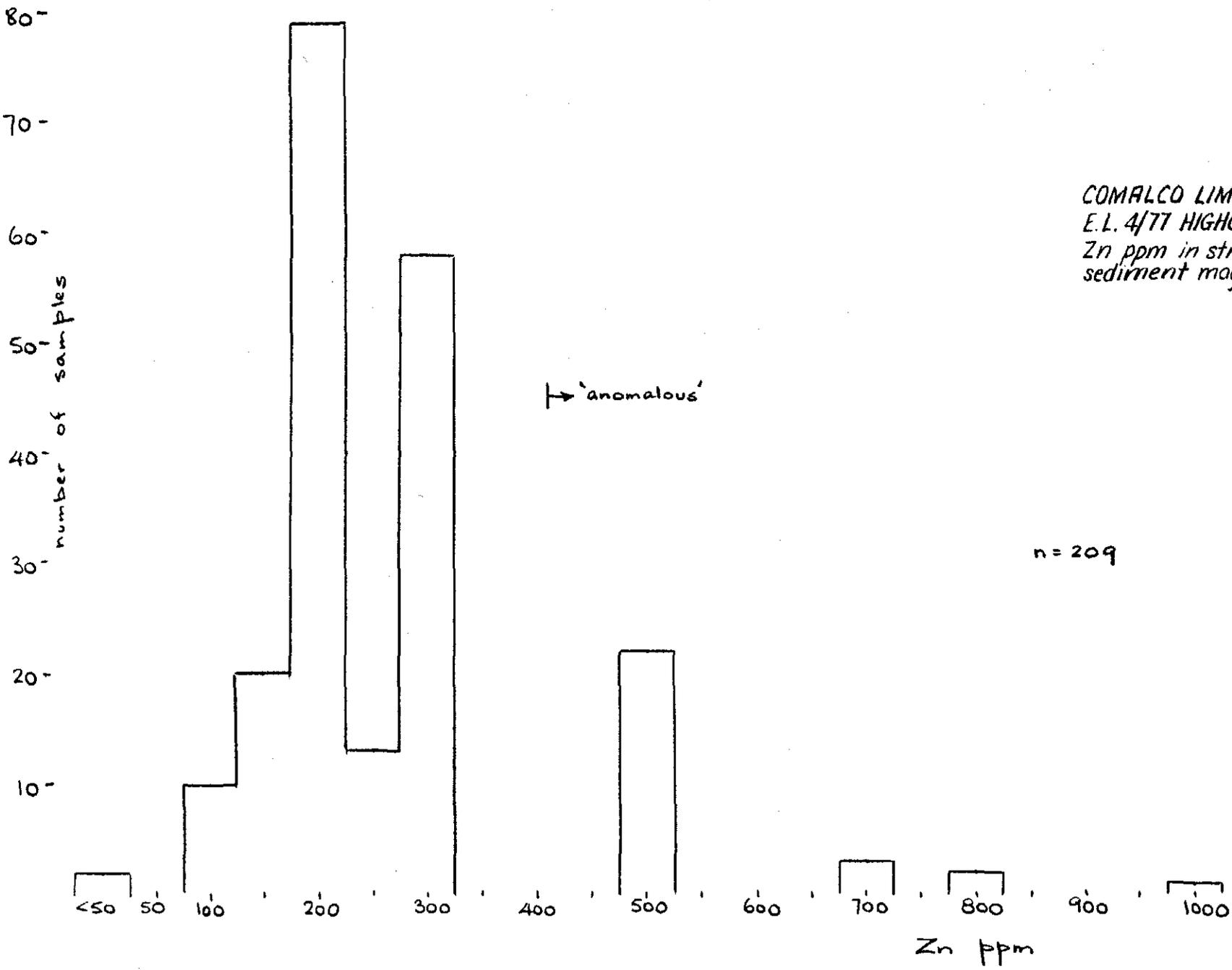


Fig. 10

053

213054



**SCINTREX AEROMAGNETIC SURVEY
REDUCED FROM ORIGINAL
SCINTREX PTY. LTD. DATA
Scale: 1 inch = 1 mile**

5 cm

FIG. 12

054



Scale 1 inch = 1 mile
1 km

213055

EL 4/77

HIGHCLERE

EMU

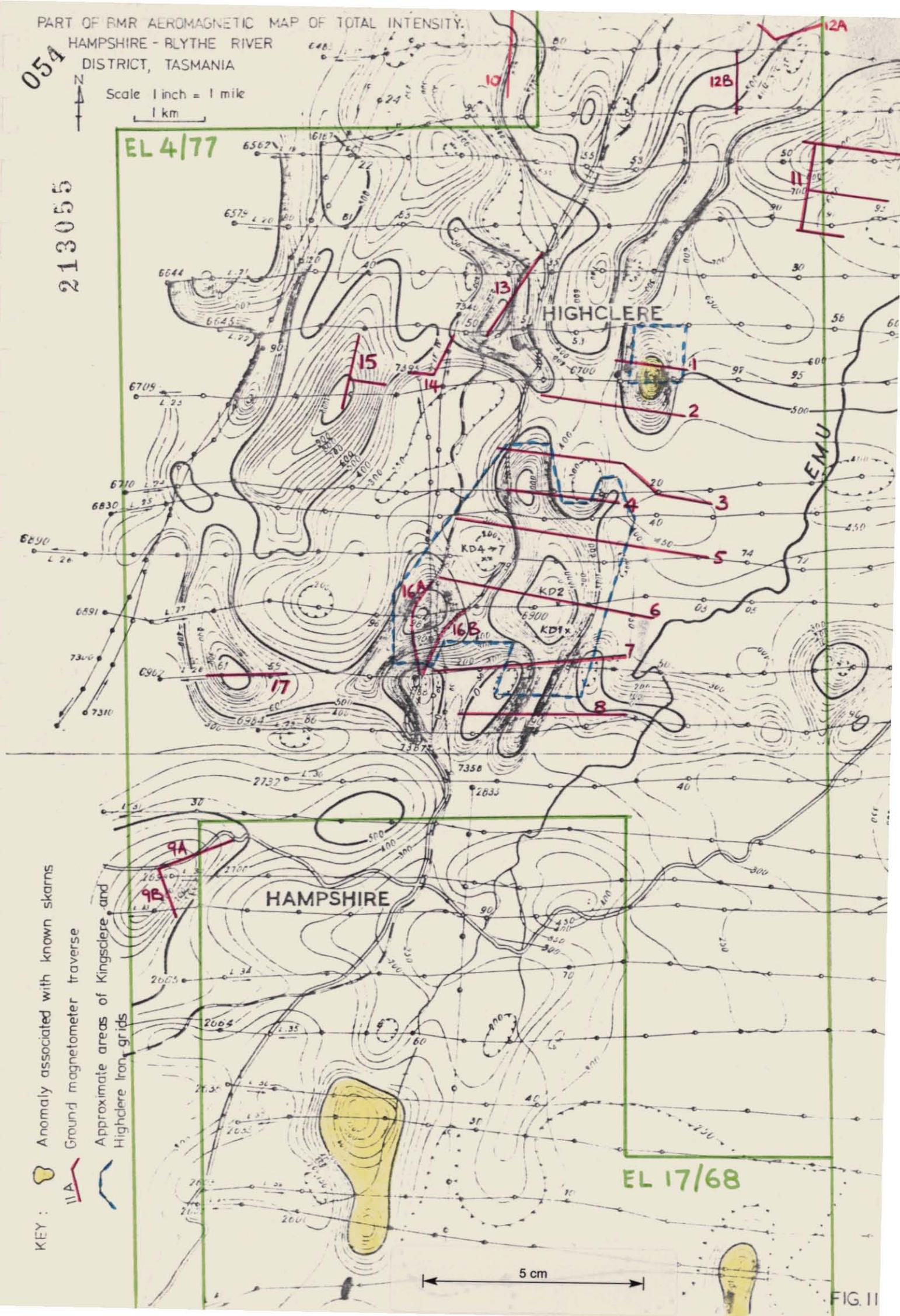
HAMPSHIRE

EL 17/68

- KEY :
-  Anomaly associated with known skarns
 -  Ground magnetometer traverse
 -  Approximate areas of Kingsclere and Highclere iron grids

5 cm

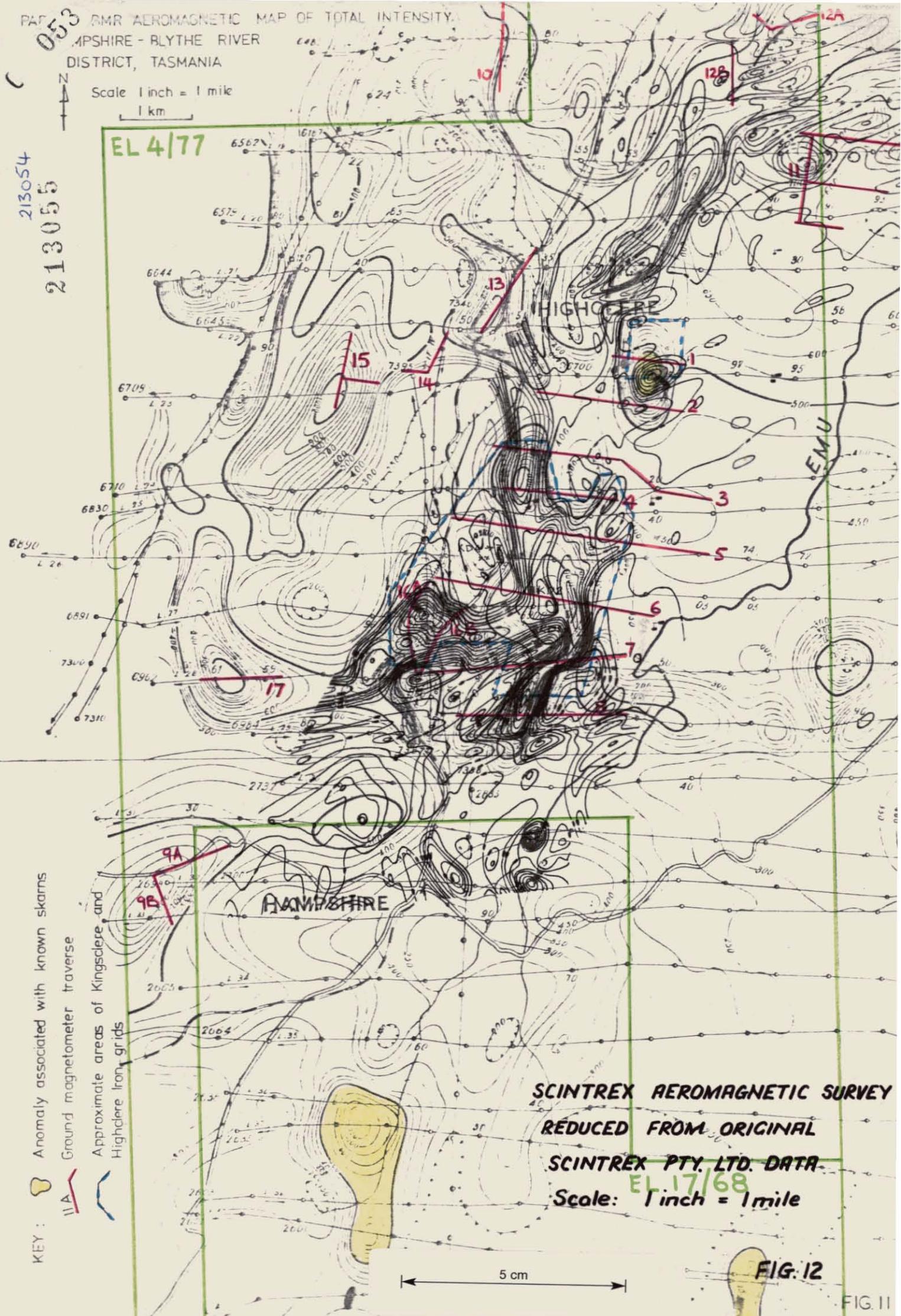
FIG. 11



Scale 1 inch = 1 mile
 1 km

213054
 213055

EL 4/77



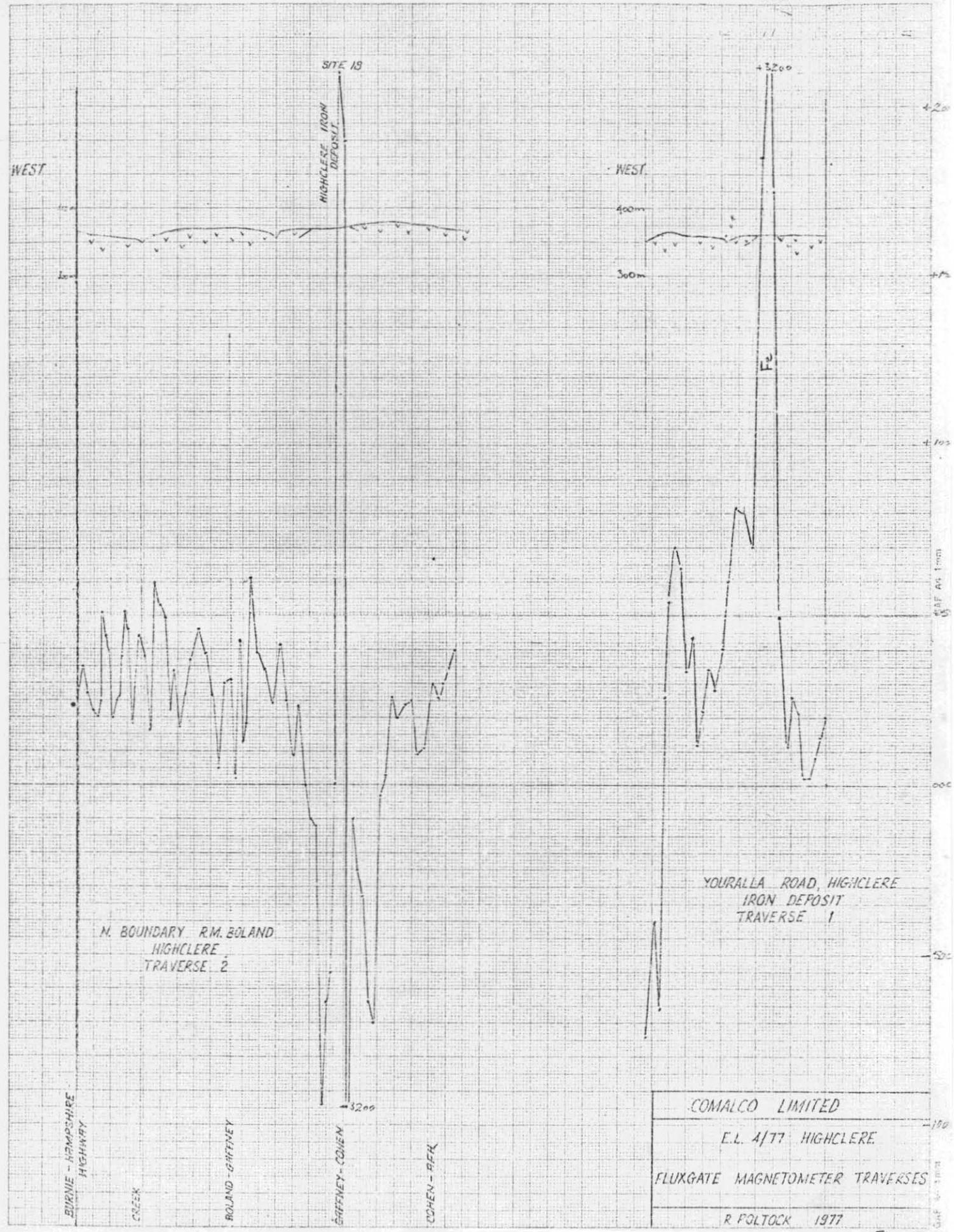
- KEY :
- Anomaly associated with known skarns
 - Ground magnetometer traverse
 - Approximate areas of Kingsclere and Highclere iron grids

SCINTREX AEROMAGNETIC SURVEY
 REDUCED FROM ORIGINAL
 SCINTREX PTY. LTD. DATA
 Scale: 1 inch = 1 mile

EL 17/68

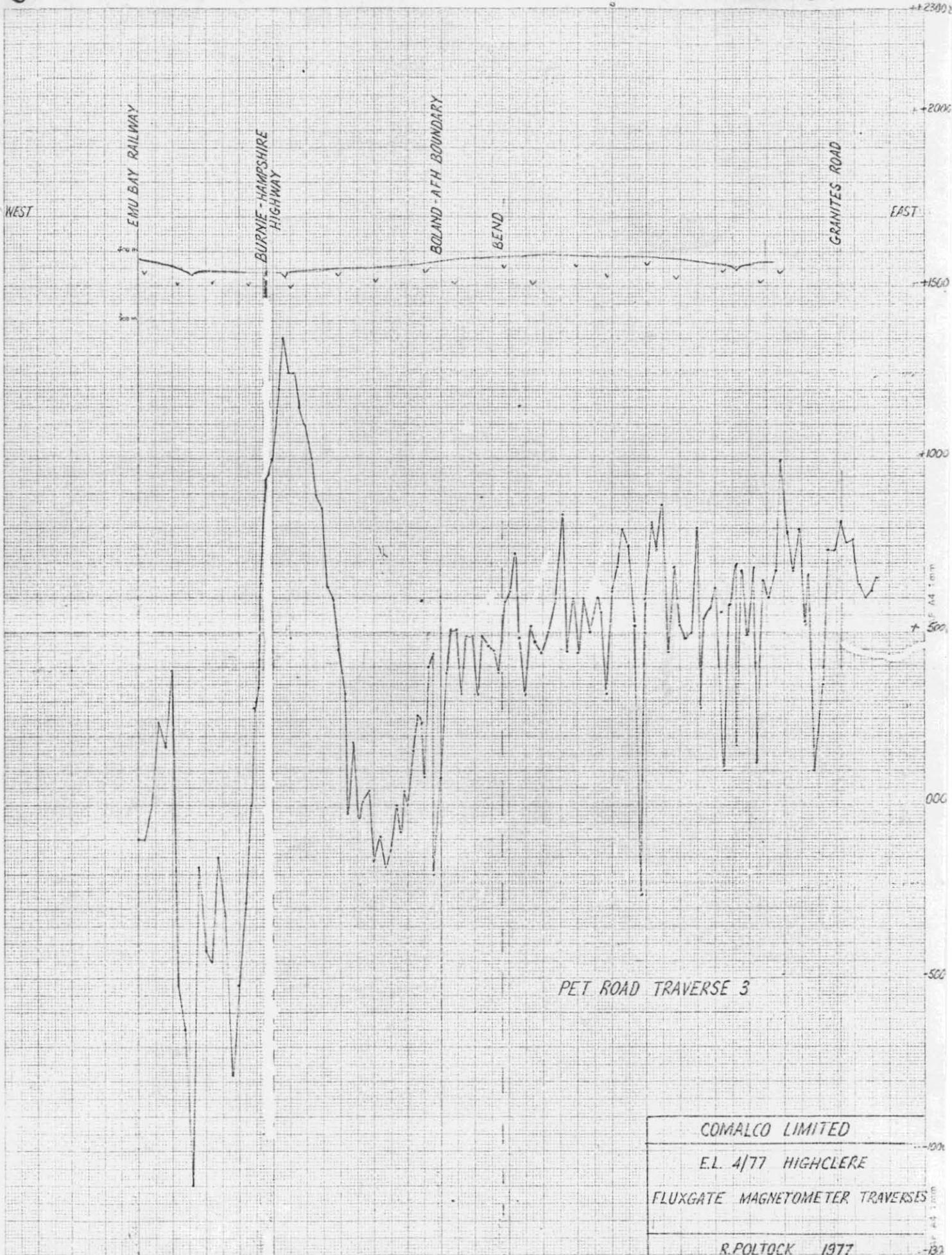
5 cm

FIG. 12



5 cm

Fig. 13



PET ROAD TRAVERSE 3

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
FLUXGATE MAGNETOMETER TRAVERSES
R. POLTOCK 1977

Fig 14

5 cm

057

213058

+1700

5 cm

+1500

+1000

400m

300m

+500

000

BOLAND-WATSON BOUNDARY
TRAVERSE 4

-500

BURNIE - HAMPSHIRE HIGHWAY

WATSON - R.F.H.

COMALCO LIMITED

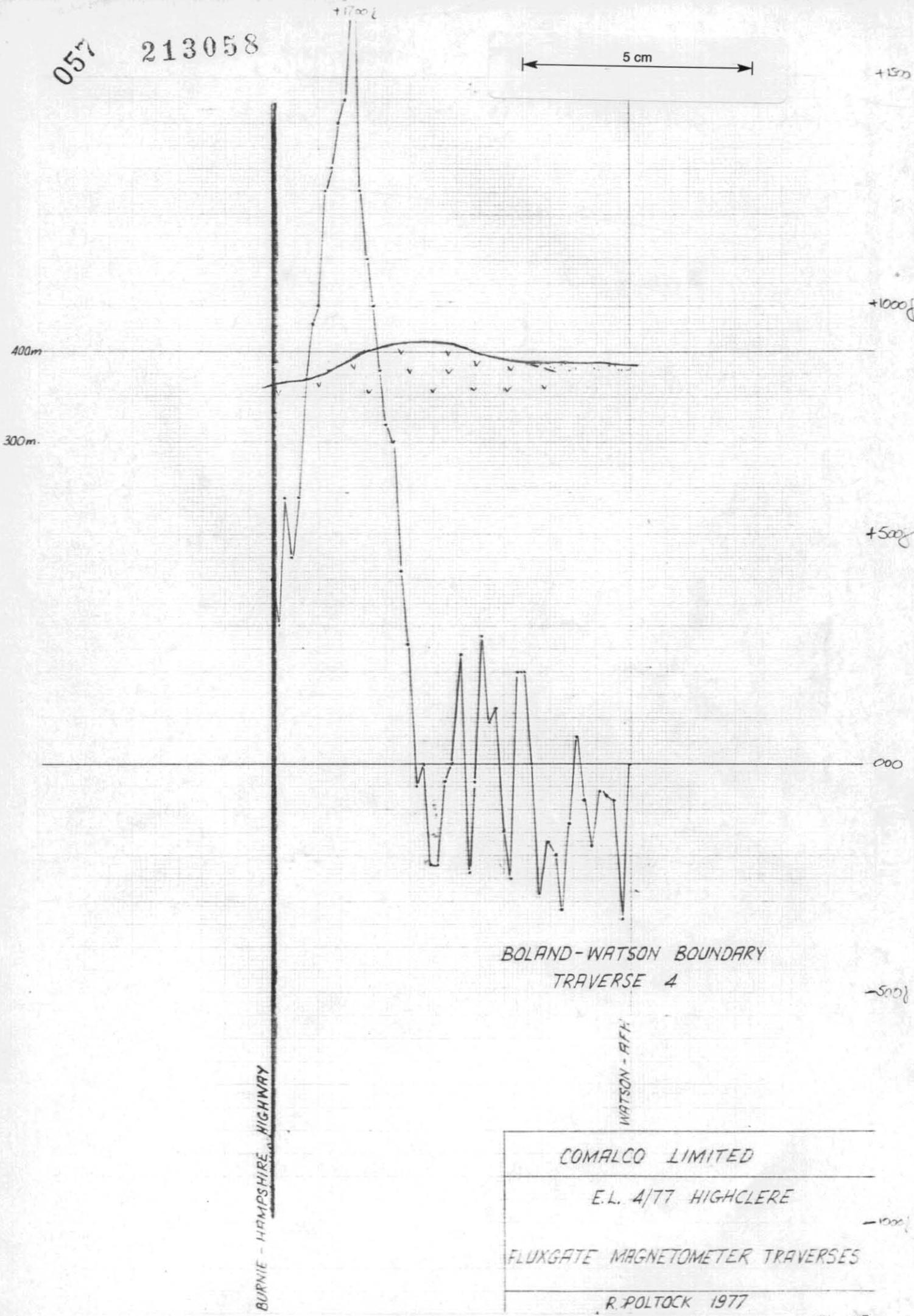
E.L. 4/77 HIGHCLERE

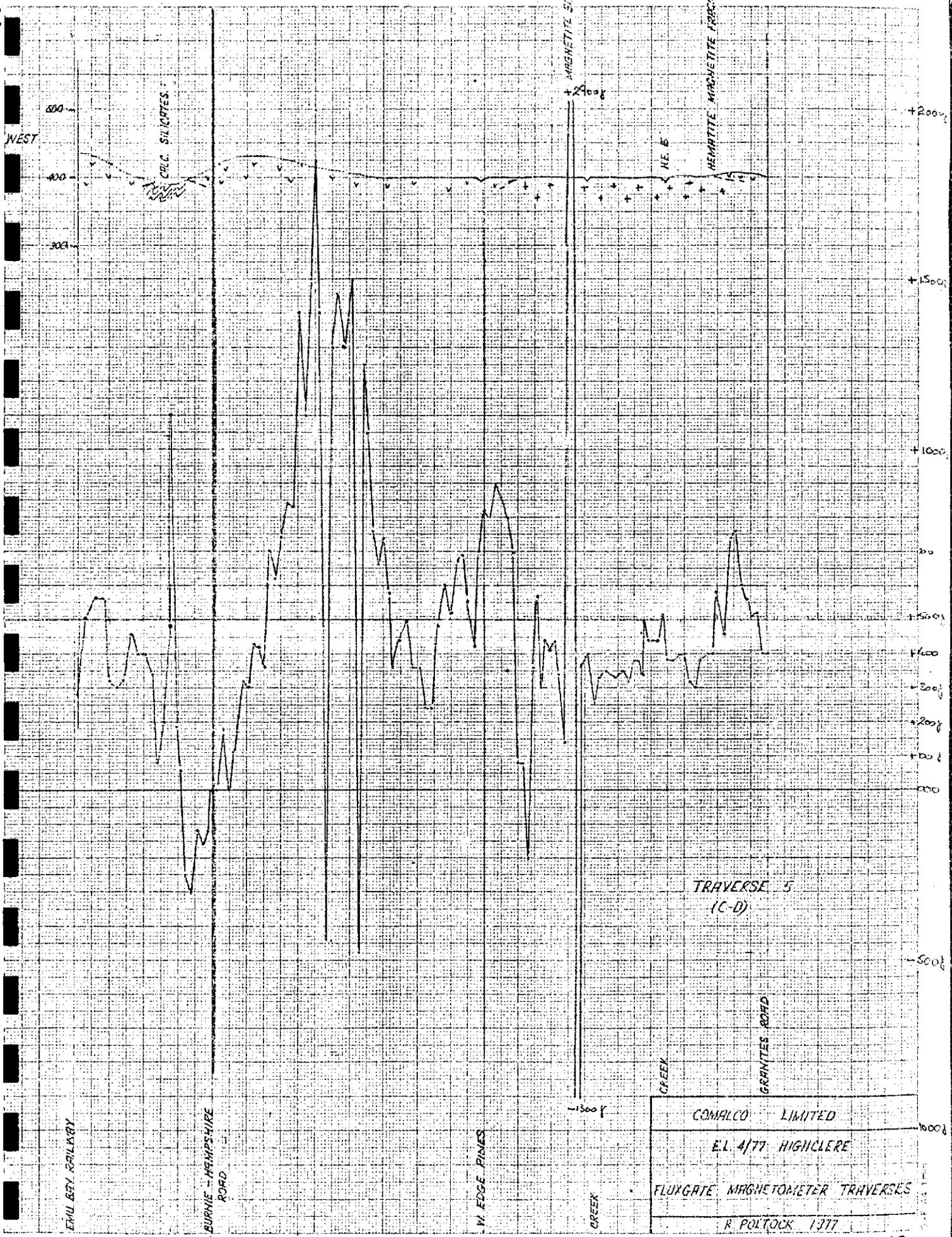
-1000

FLUXGATE MAGNETOMETER TRAVERSES

R. POLTOCK 1977

Fig. 15





TRAVERSE 5
(C-D)

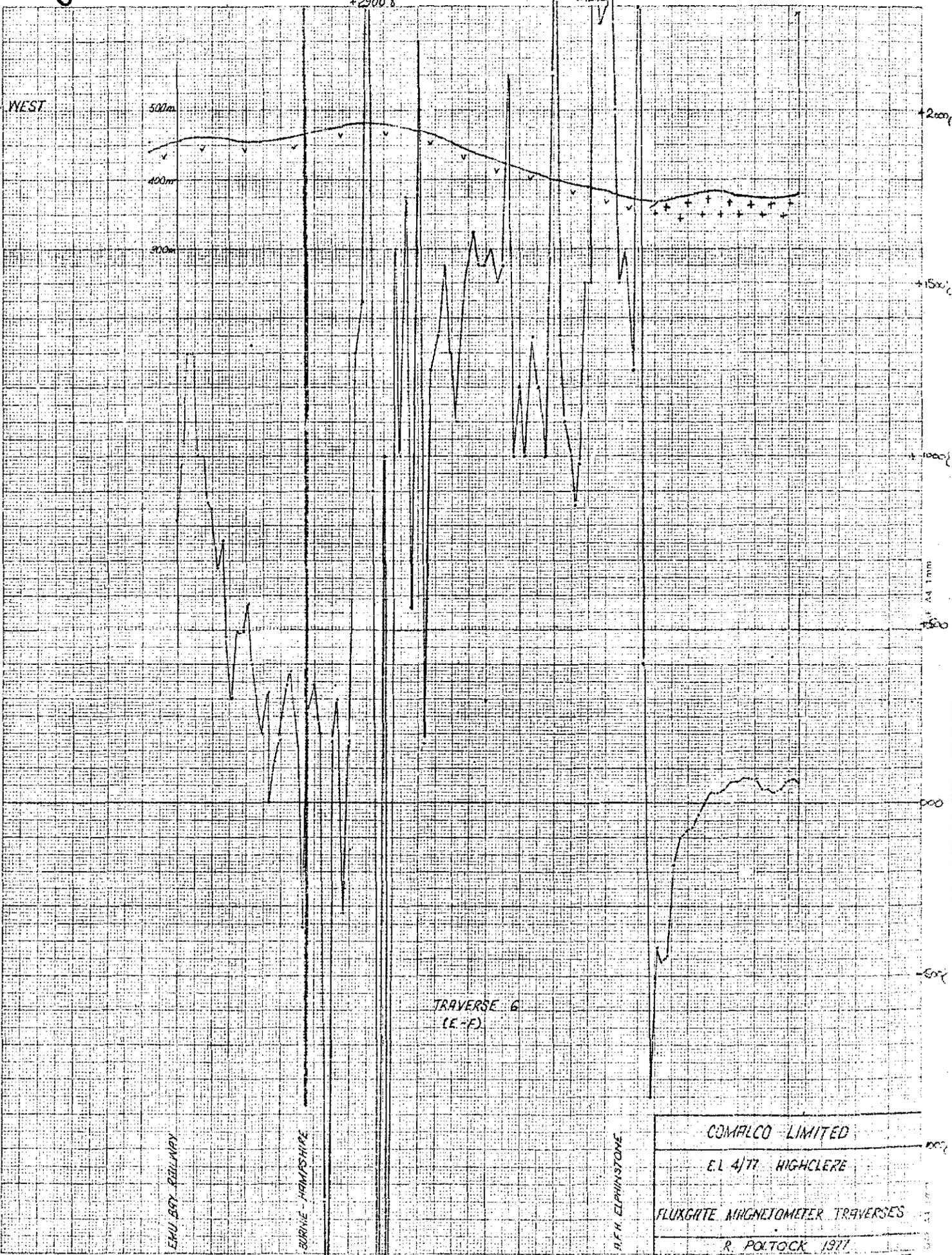
COMALCO LIMITED
 E.L. 4/77 HIGHCLERE
 FLUGATE MAGNETOMETER TRAVERSES
 R. POLTOCK 1977

5 cm

Fig 16

059

213060



TRAVERSE 6
(E-F)

EMU. BR. RAILWAY

BORING - HAMPSHIRE

A.F. ALPINSTONE

COMALCO LIMITED
 EL 4/77 HIGHCLERE
 FLUXGATE MAGNETOMETER TRAVERSES
 R. POLTOCK 1977

Fig. 17

5 cm

213061

+ 2500

060

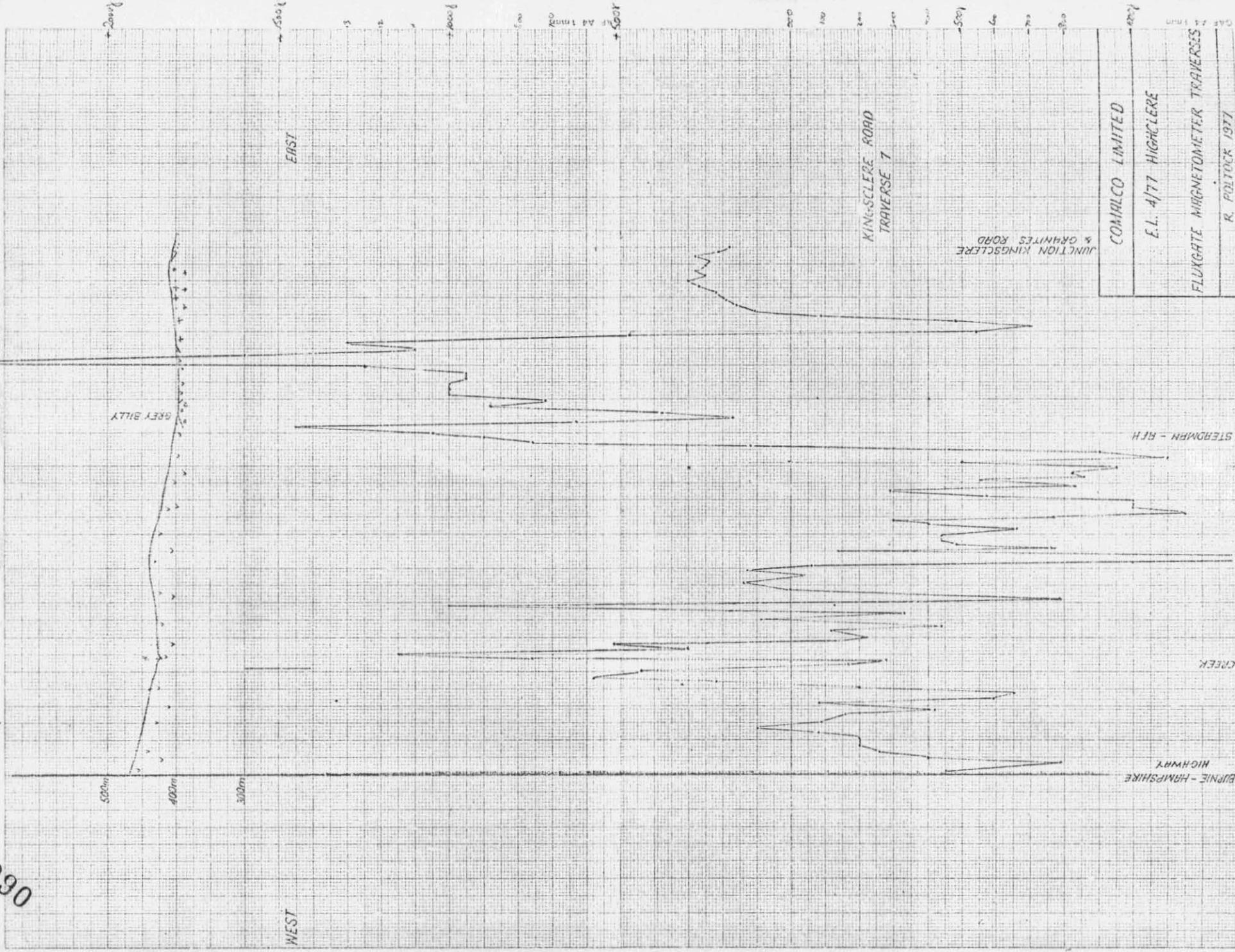


Fig. 18

5 cm

061

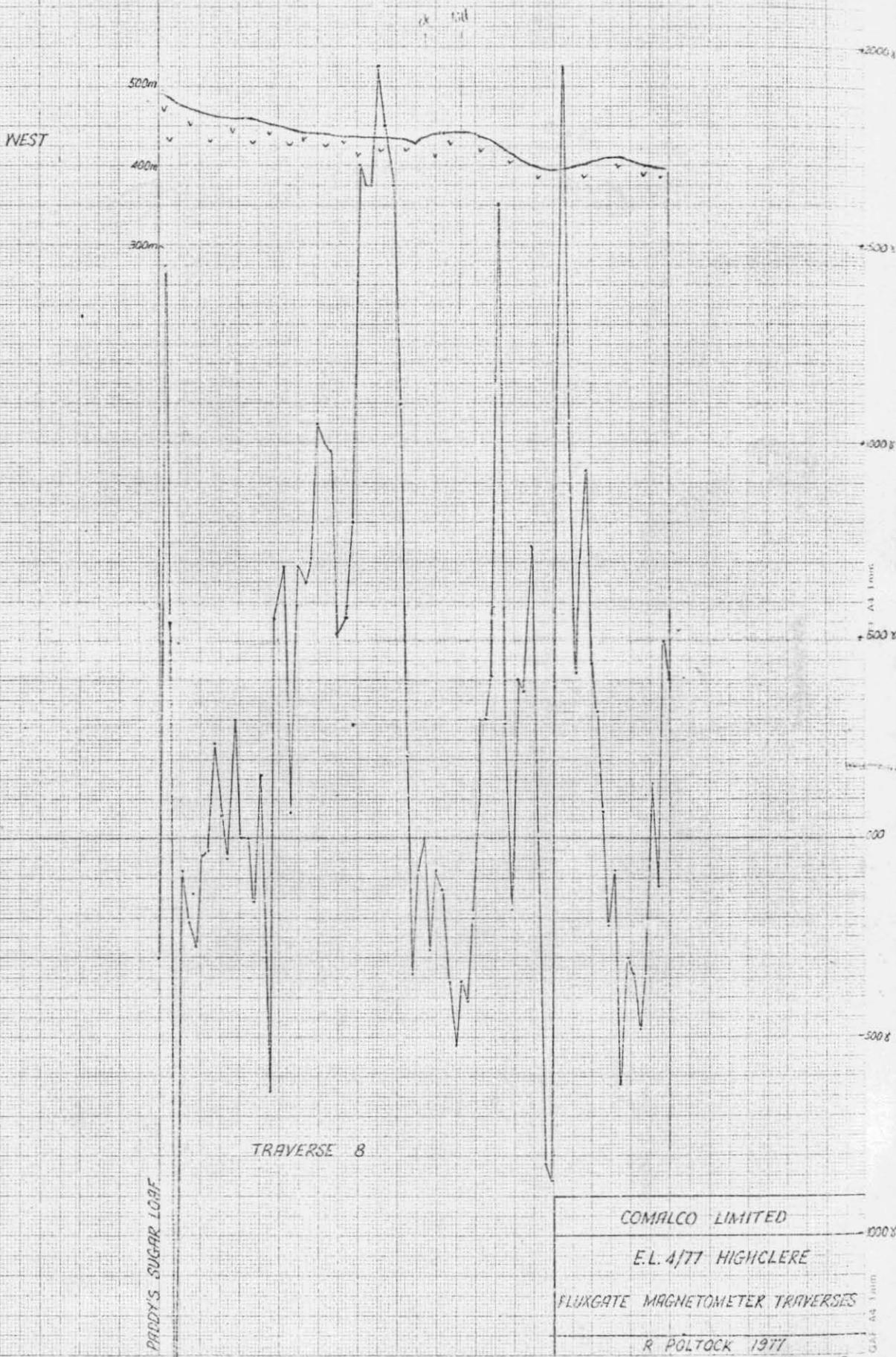


Fig. 19

213063 062

62600

62500

62400

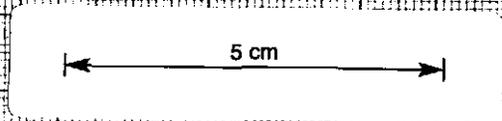
62300

62200

62100

NORTH APPROX

ARCILLUM



TRAVERSE 1
HIGHCLERE IRON
COMALCO LIMITED
E.L. 4/77 HIGHCLERE
PROTON PRECESSION
MAGNETOMETER TRAVERSES

GRAVITY SURVEY STATION

R. POLTOCK 1978

1450 1500 1550 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600

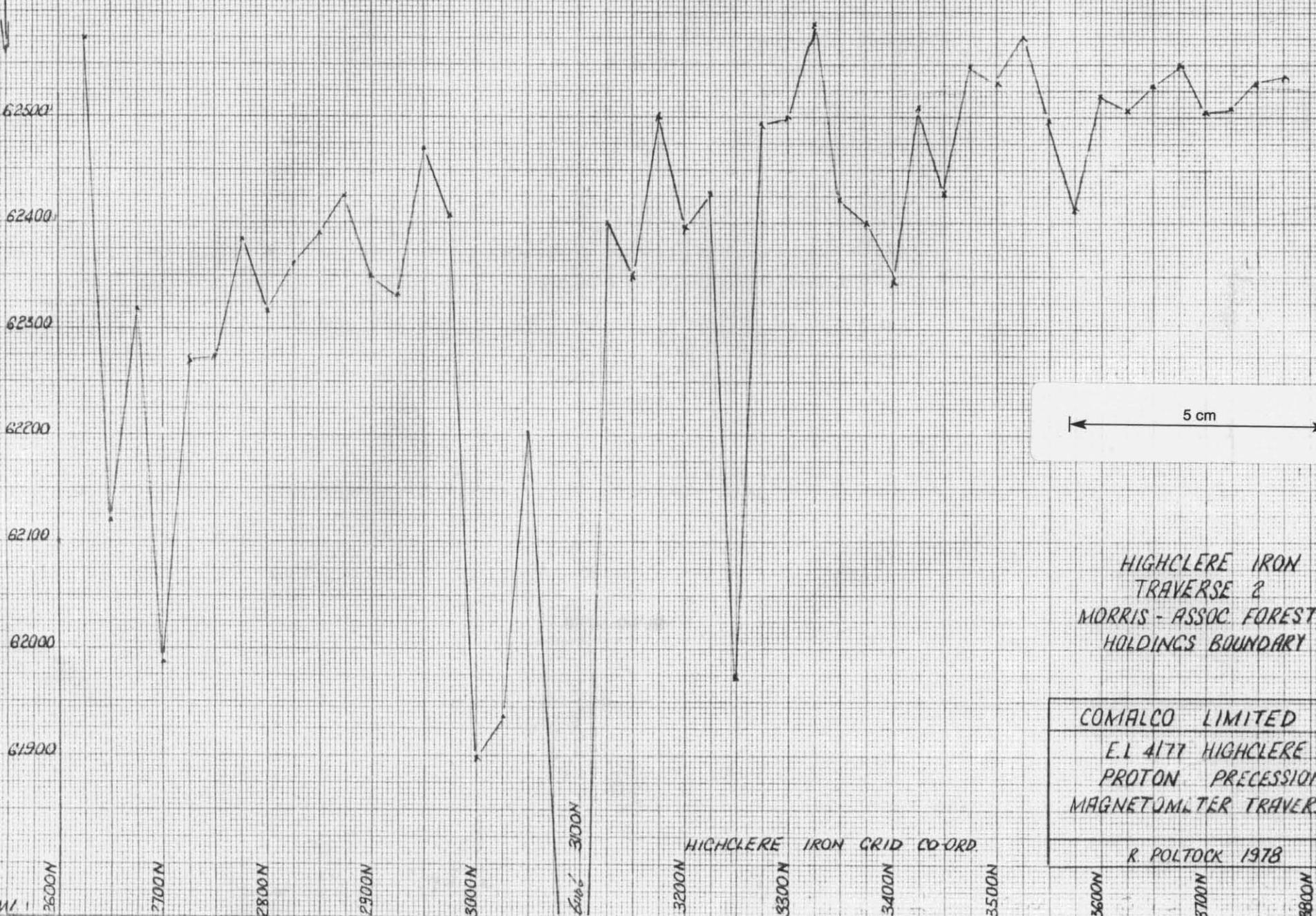
Fig. 20

213064 063

Tertiary Basalt

Granite and quartzite fragments

YOURALLA ROAD NORTH



5 cm

HIGHCLERE IRON TRAVERSE 2
 MORRIS - ASSOC. FOREST HOLDINGS BOUNDARY

COMALCO LIMITED
 E.L. 4177 HIGHCLERE PROTON PRECESSION MAGNETOMETER TRAVERSE

R. POLTOCK 1978

Fig 21

064

213065

COMALCO LIMITED
E.L. 4/77 HIGHCLERE PROTON PRECESSION MAGNETOMETER TRAVERSES
R. POLTOCK 1977

KINGSLERE ROAD
TRAVERSE 7

64000 γ

63000 γ

62000 γ

61000 γ

EAST
60000

WEST

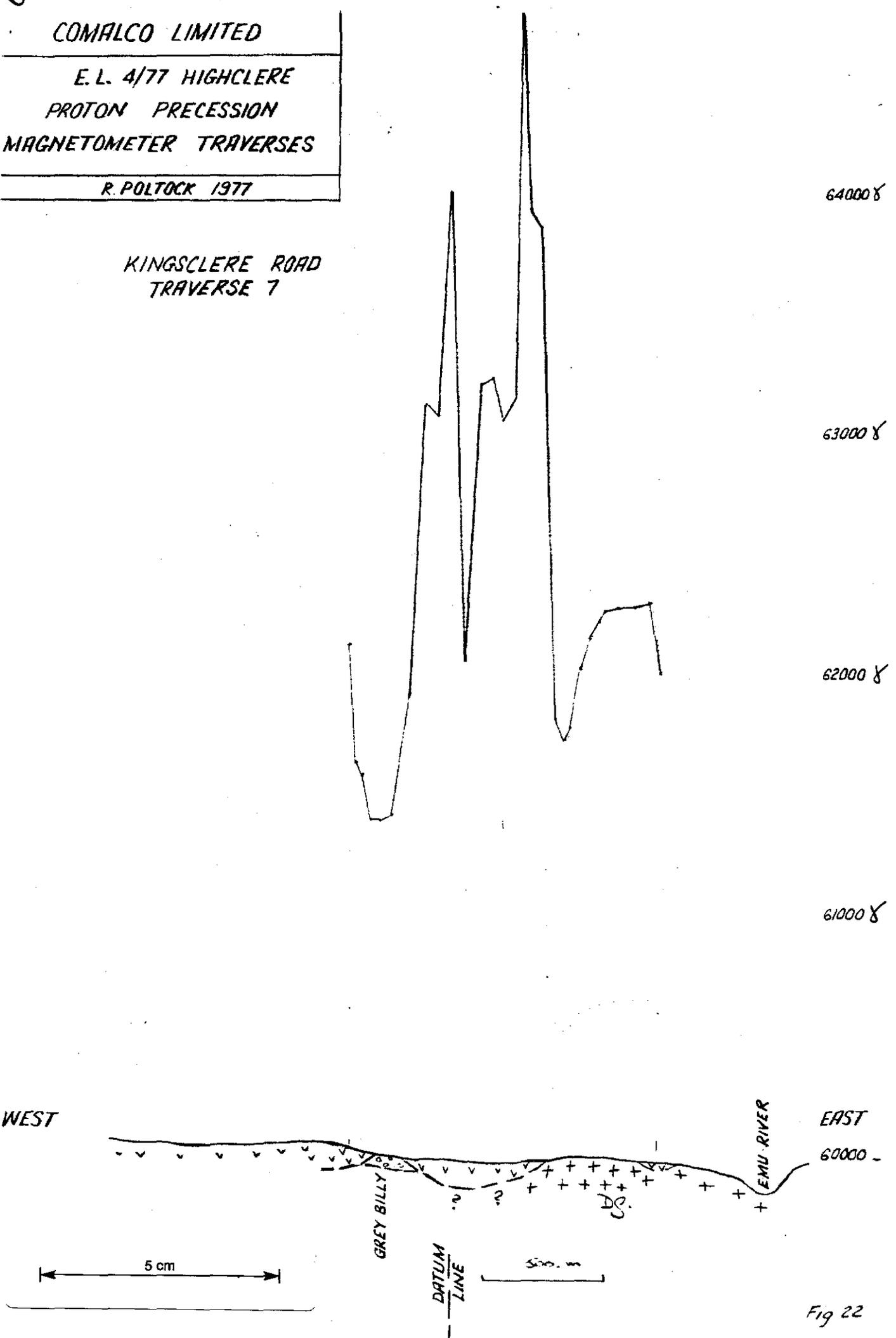


Fig 22

065

213066

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
PROTON PRECESSION
MAGNETOMETER TRAVERSES
R. POLTOCK 1977

64000 γ

SECTION 1km SOUTH KINGSCLERE RD.
TRAVERSE 8

63000 γ

62000 γ

61000 γ

500. m

5 cm

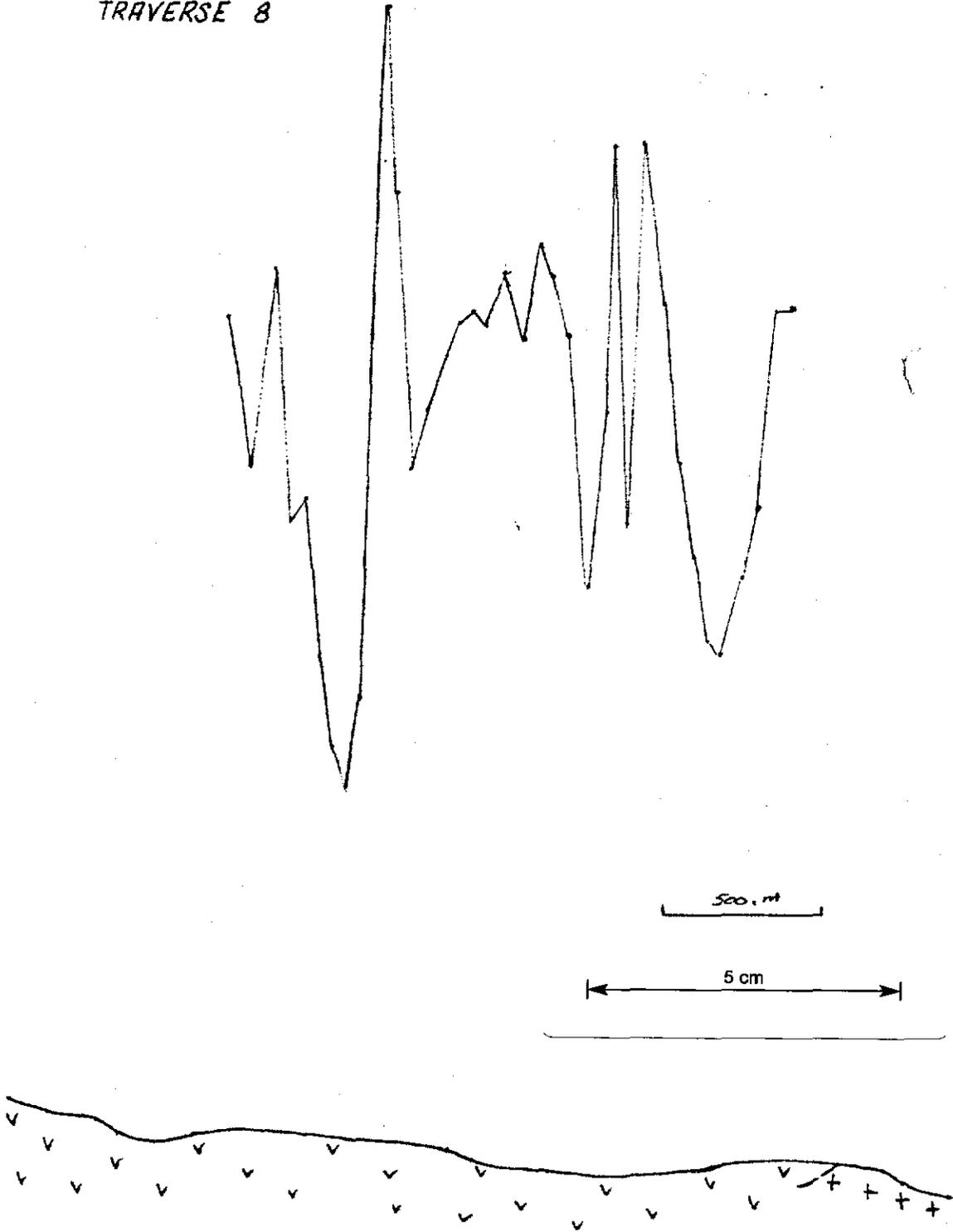
60000 γ

W.S.W.

ENE 40°

DATUM
LINE

Fig 23



066

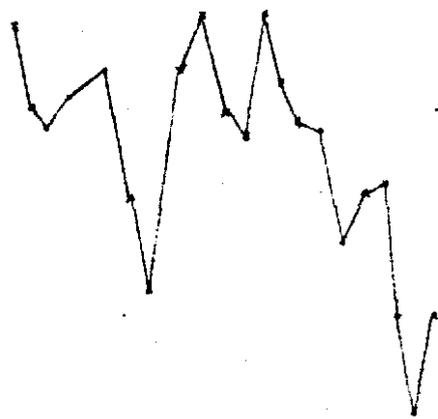
213067

COMALCO LIMITED
E.L. 4/77 HIGHCLERE
PROTON PRECESSION
MAGNETOMETER TRAVERSES
R. POLTOCK 1977

64000 γ

TALUNAH ROAD
TRAVERSE 9B

63000 γ



62000 γ

61000 γ

SOUTH

NORTH

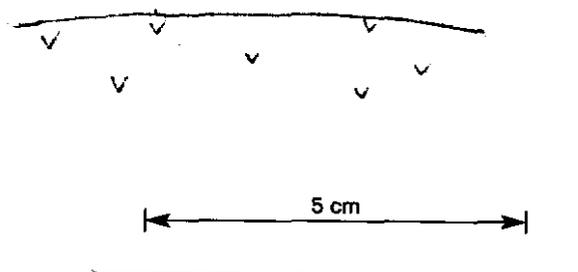


Fig. 2A

067

COMALCO LIMITED

E.L. 4/77 HIGHCLERE
PROTON PRECESSION
MAGNETOMETER TRAVERSES

R. POLTOCK 1977

GUIDE FALLS
TRAVERSE 10

64000 γ

63000 γ

62000 γ

61000 γ

SOUTH

NORTH

PE

PE

COLUMNAR
BASALT

ALLUV

GUIDE FALLS

SILICA GOSSAN?

RIDGLEY - WEST ROAD

QUARRY

65901

5 cm

Fig. 25

068

213069

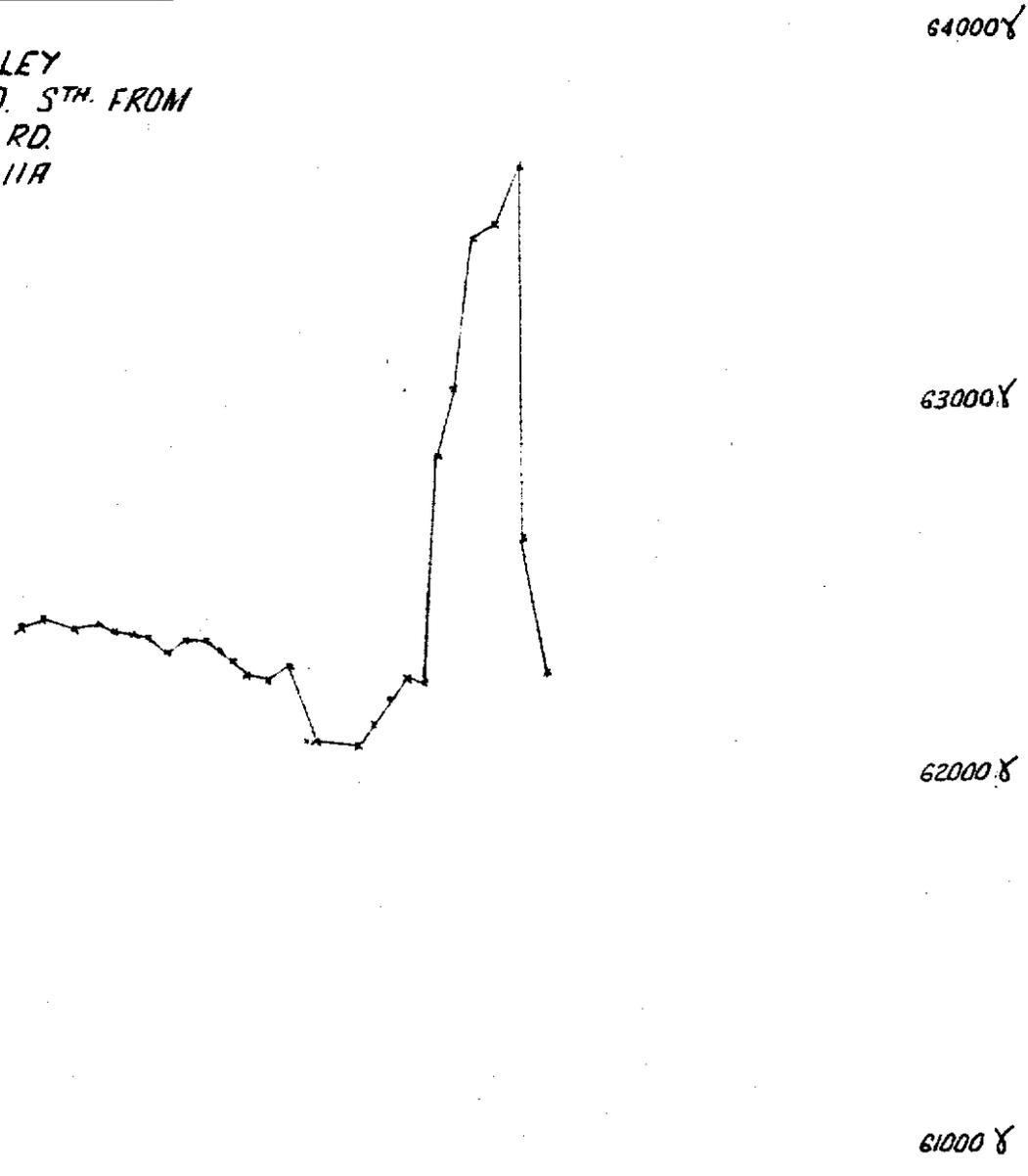
COMALCO LIMITED

E.L 4/77 HIGHCLERE

PROTON PRECESSION
MAGNETOMETER TRAVERSES

R. POLTOCK 1977

EAST RIDGLEY
KINGSCLERE RD. STH. FROM
CIRCULAR RD.
TRAVERSE 11A



SOUTH

NORTH

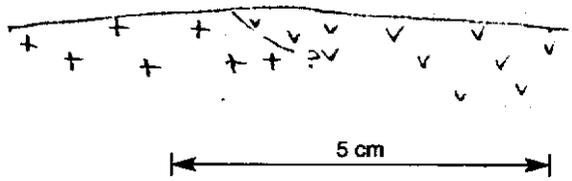


Fig 26

069

213070

COMALCO LIMITED

EL. 4/77 HIGHCLERE
PROTON PRECESSION
MAGNETOMETER TRAVERSES

R. POLTOCK 1977

ST. JOSEPHS RIVER
TRAVERSE 17

64000 γ

63000 γ

62000 γ

61000 γ

WEST

EAST

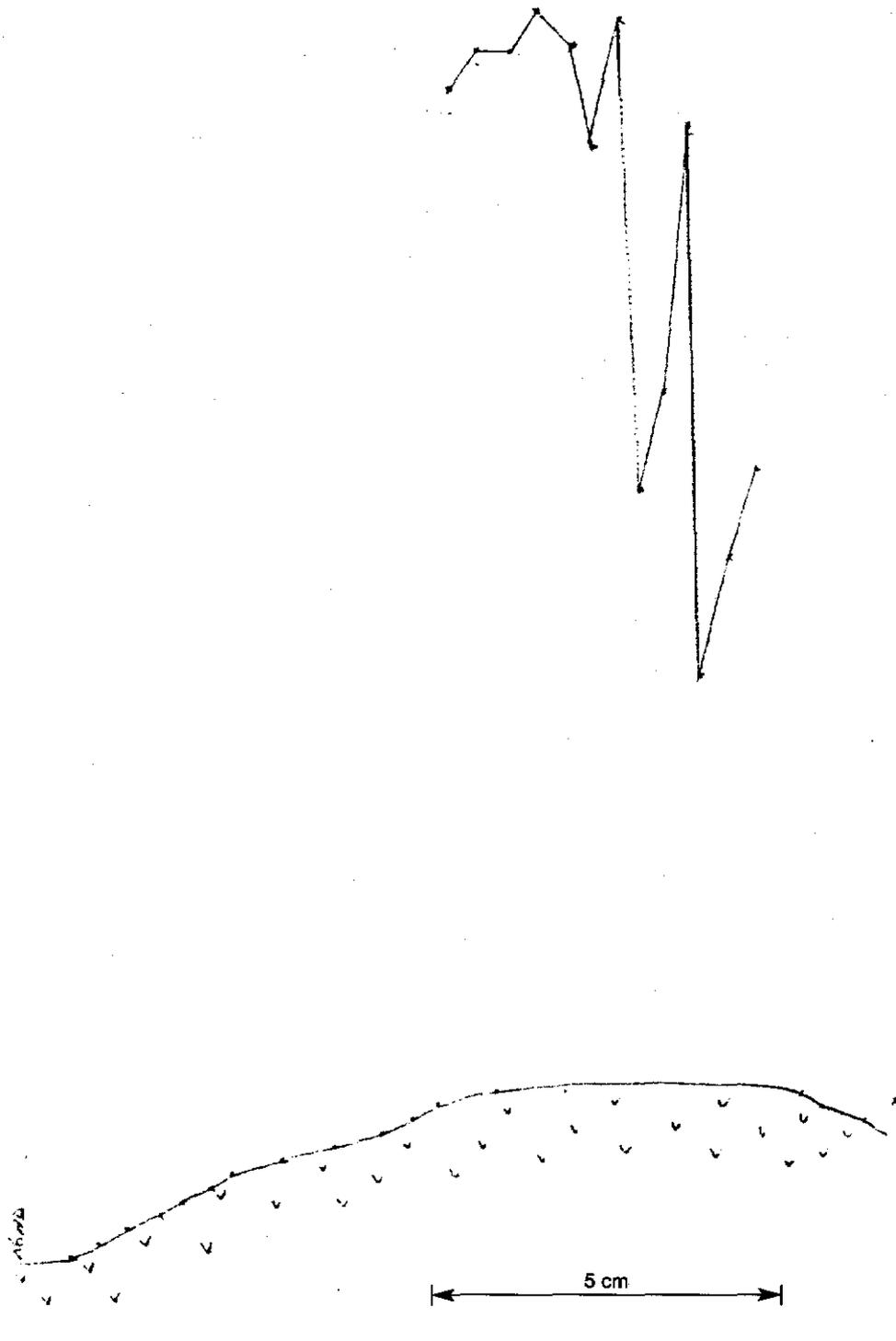


Fig 27

070

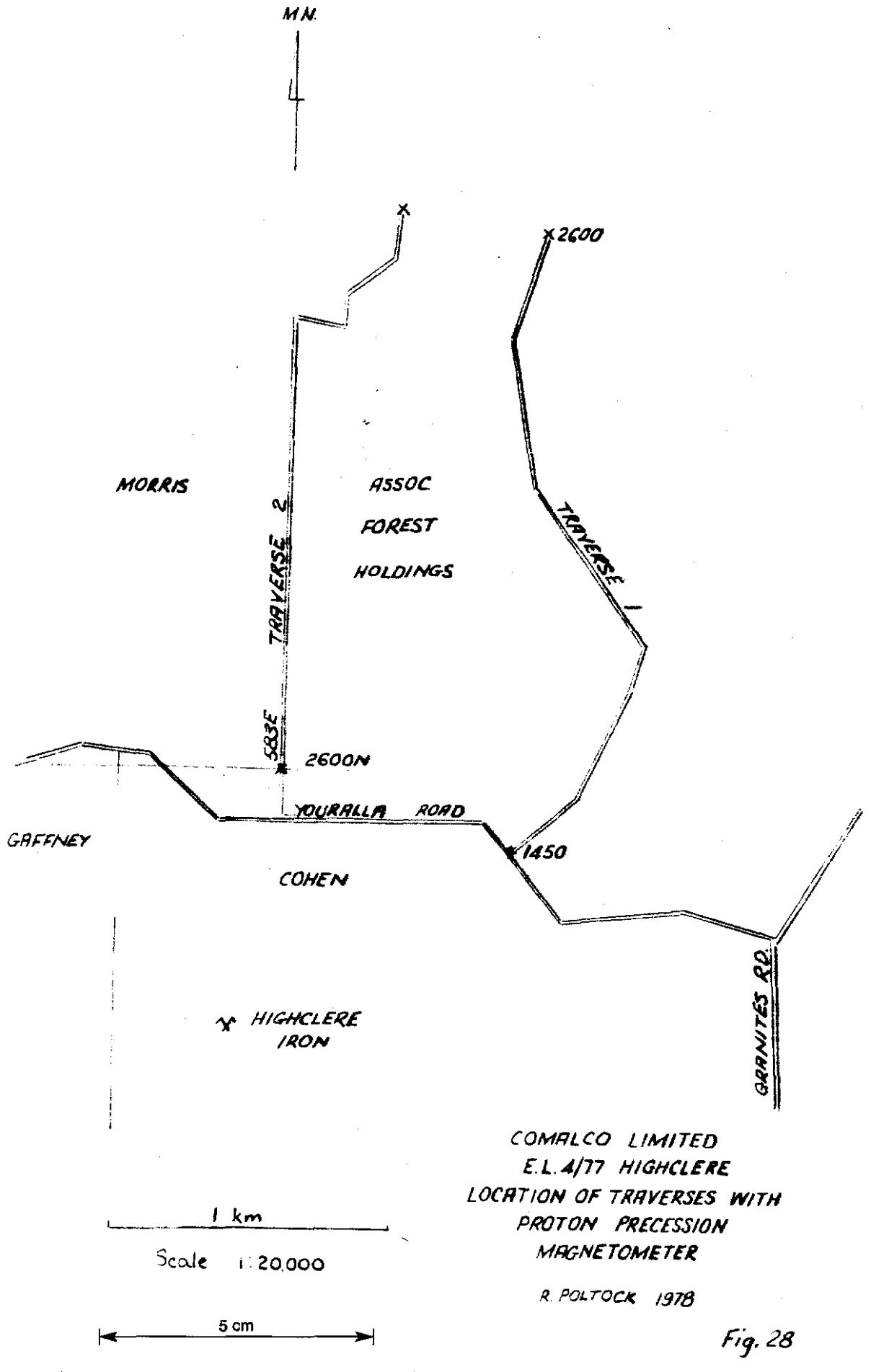
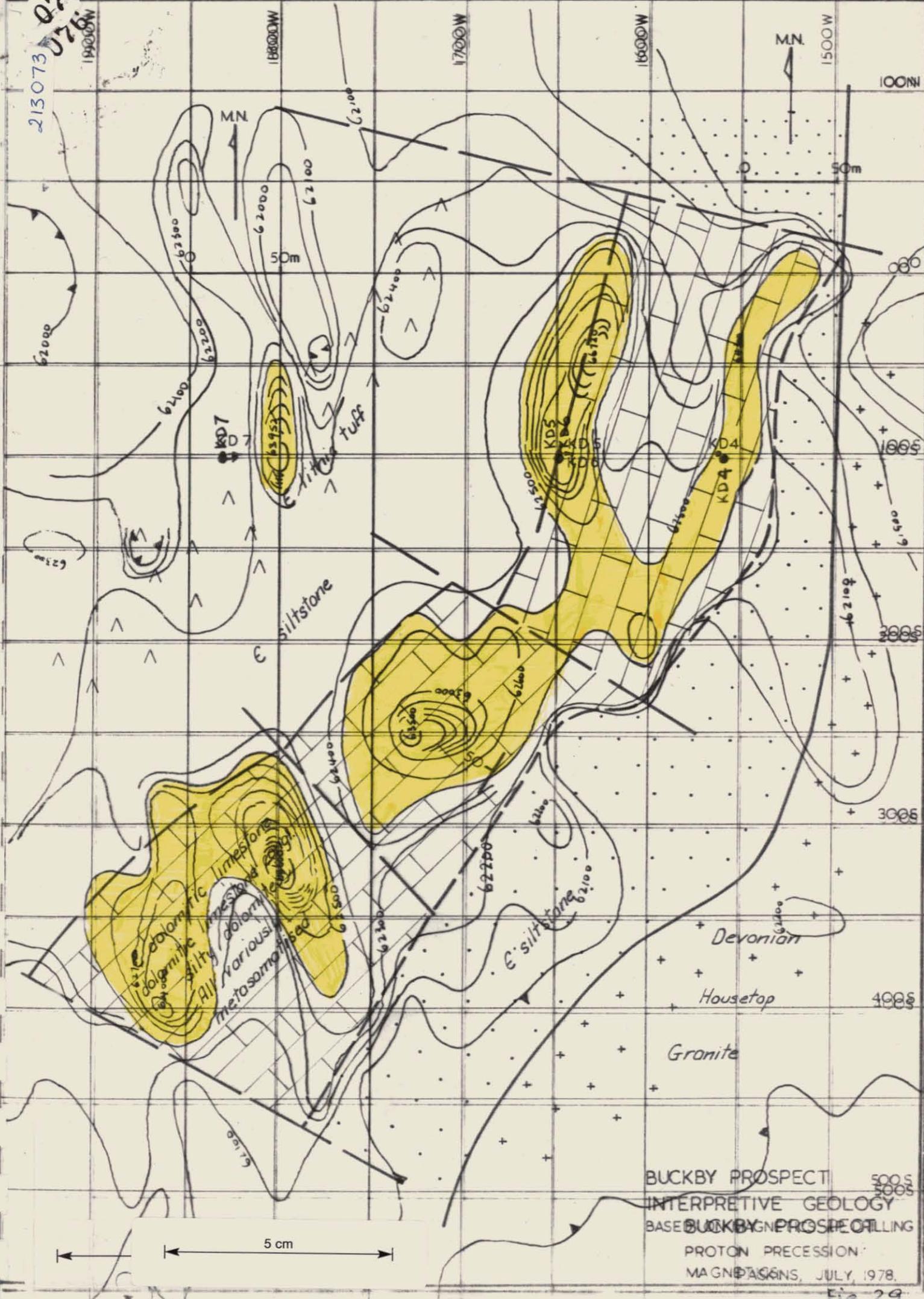


Fig. 28

213073
07A
076
1980



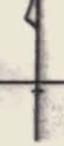
BUCKBY PROSPECT
 INTERPRETIVE GEOLOGY
 BASED ON PROTON PRECESSION
 MAGNETICS, JULY, 1978.

213074
073
1900

BUCKBY PROSPECT

FLUORINE ppm (contours)
TIN ppm (values) in -80
mesh C Horizon soil.
50m

MN



50m

E. lithic tuff

E. siltstone

E. dolomitic limestone
dolomitic limestone congl.
silty dolomites
All variously
metasomatised

E. siltstone

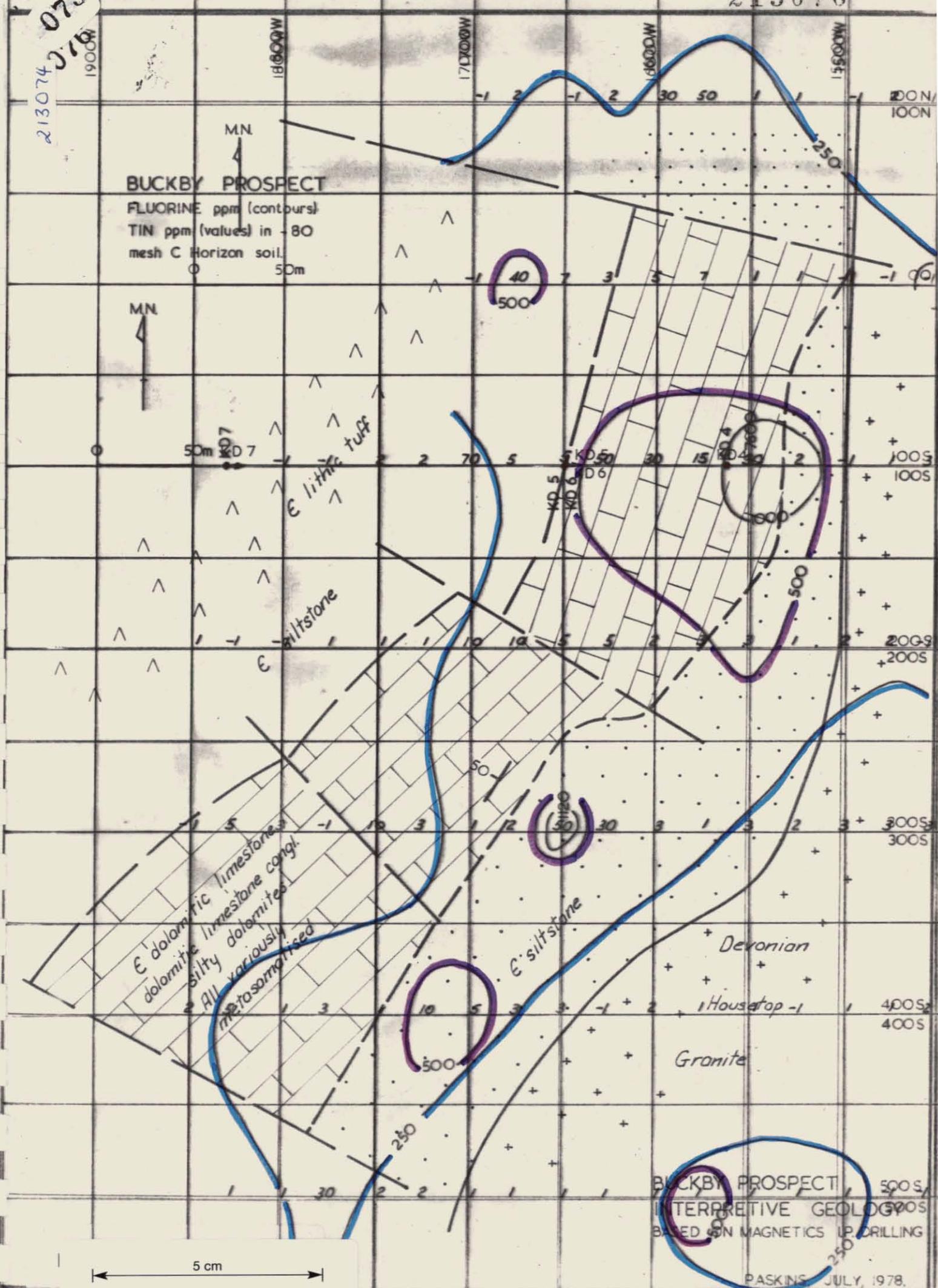
Devonian

House top -1

Granite

BUCKBY PROSPECT
INTERPRETIVE GEOLOGY
BASED ON MAGNETICS & DRILLING

PASKINS JULY, 1978.



072
076
1980QW

213075

BUCKBYN PROSPECT
COPPER ppm IN -80 MESH
C HORIZON SOIL



50m
50m

KD7

KD5
KD6

KD4

KD3

KD2

KD1

E Siltstone

E dolomitic limestone
dolomitic limestone congl.
Silty dolomites
All variously
metasomatised

100 E siltstone

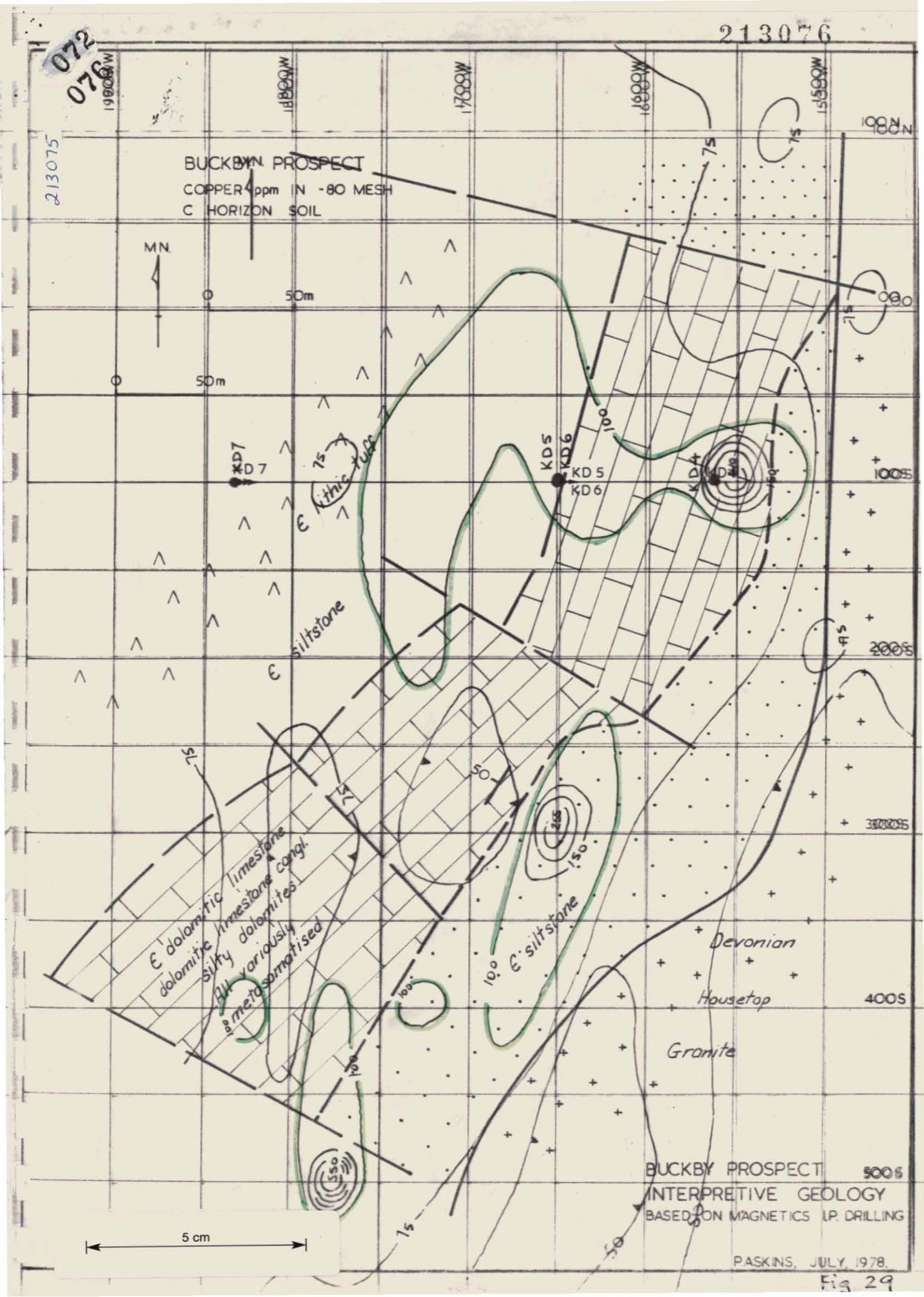
Devonian

Housetop

Granite

BUCKBY PROSPECT 5005
INTERPRETIVE GEOLOGY
BASED ON MAGNETICS I.P. DRILLING

5 cm



075

213072

BUCKBY PROSPECT
OUTCROP GEOLOGY

M.N.



50m

KD 7

c.w. skarn
KD 5
KD 6

KD 4

hornfels
calc-silicate
rocks

c.w. skarn
Block
siltstone
sandstone
grain

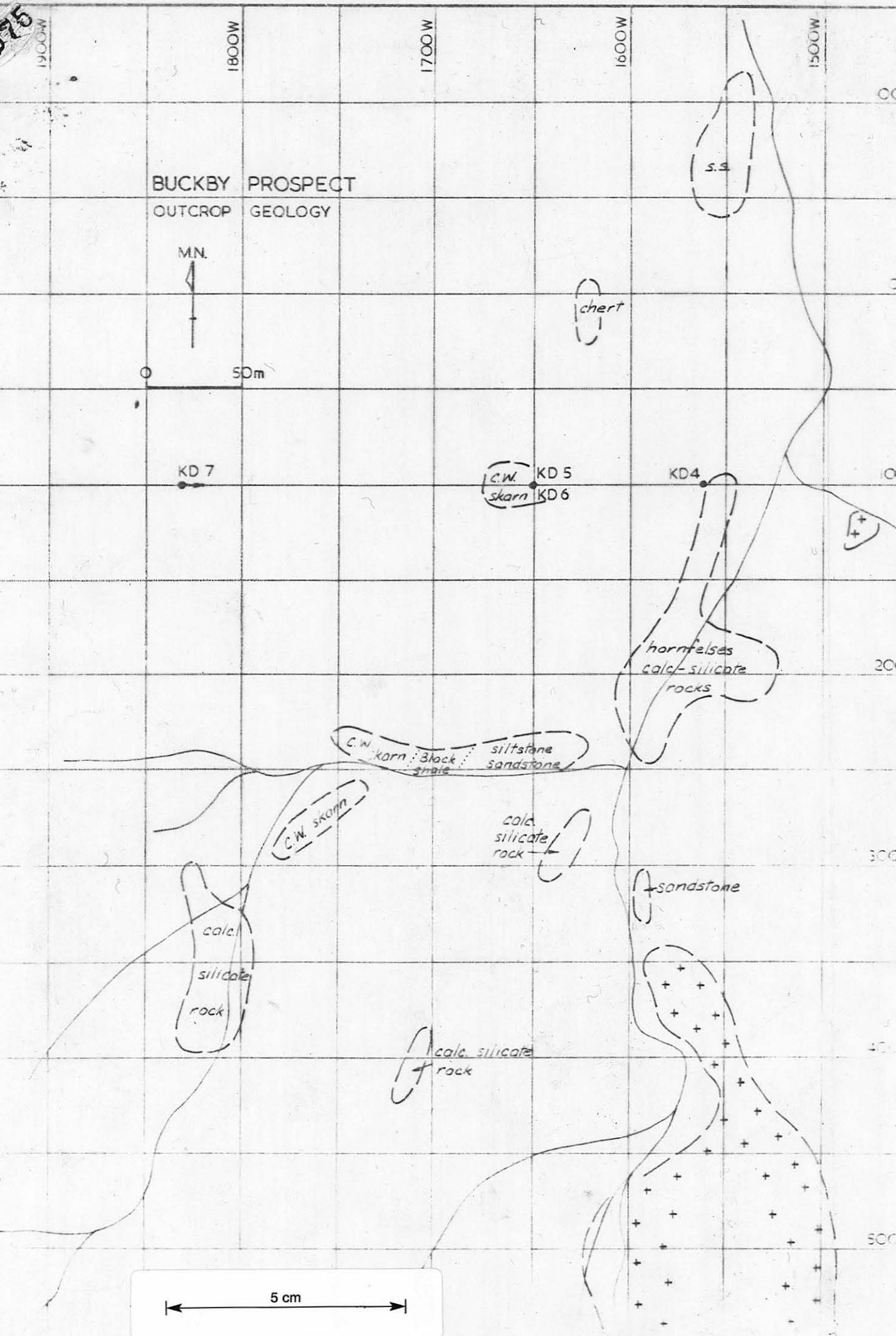
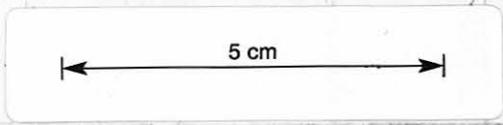
c.w. skarn

calc.
silicate
rock

calc.
silicate
rock

sandstone

calc. silicate
rock



213073 Q7A

1900W

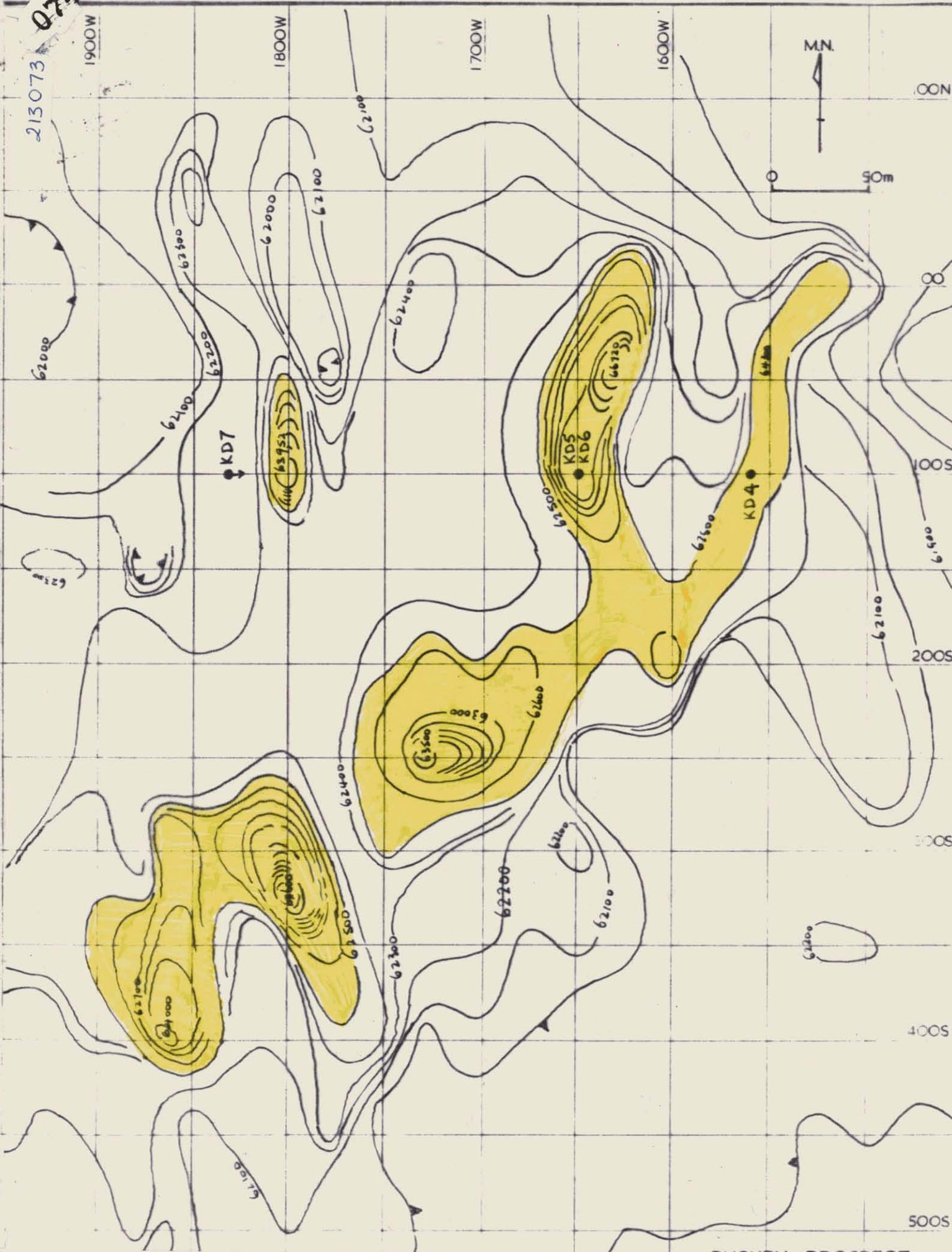
1800W

1700W

1600W

M.N.

50m



5 cm

BUCKBY PROSPECT
PROTON PRESSION
MAGNETICS

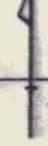
073

213074

BUCKBY PROSPECT

FLUORINE ppm (contours)
TIN ppm (values) in -80
mesh C Horizon soil.

MN



50m KD7

50m

KD5

KD6

KD4

KD3

KD2

KD1

KD0

KD-1

KD-2

KD-3

KD-4

KD-5

KD-6

KD-7

KD-8

KD-9

KD-10

KD-11

KD-12

KD-13

KD-14

KD-15

KD-16

KD-17

KD-18

KD-19

KD-20

KD-21

KD-22

KD-23

KD-24

KD-25

KD-26

KD-27

KD-28

KD-29

KD-30

KD-31

KD-32

KD-33

KD-34

KD-35

1800W

1700W

1600W

1500W

-1 2 -1 2 30 50 1 1 -1 2

250

40
500

KD 5
KD 6

1000

500

100S

200S

50
120

300S

10
500

400S

500
250

500S

5 cm

072

213075

1900 W

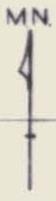
1800 W

1700 W

1600 W

1500 W

BUCKBY PROSPECT
COPPER ppm IN -80 MESH
C HORIZON SOIL



50m

KD7

KD5
KD6

KD4

100 N

75

100 S

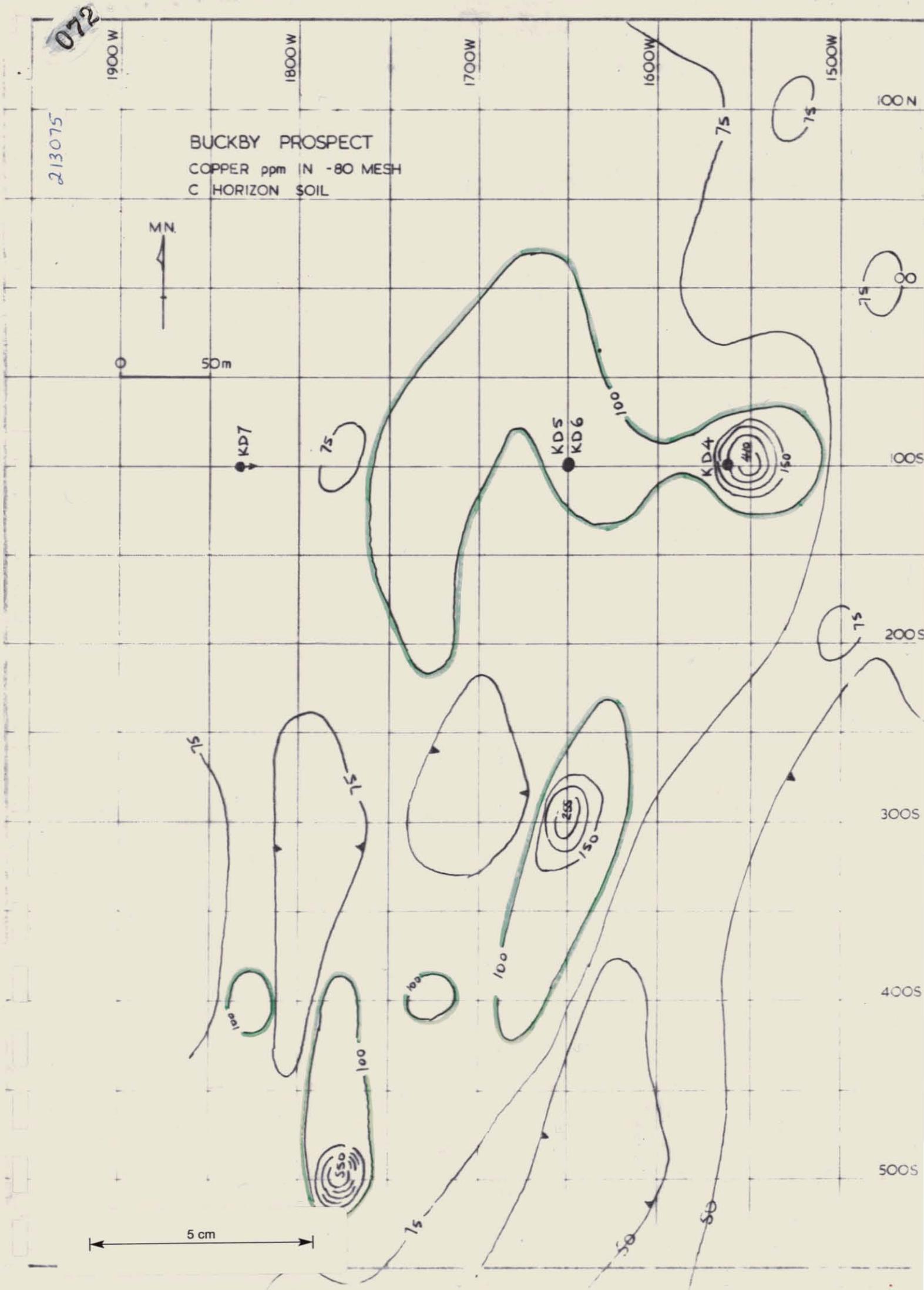
200 S

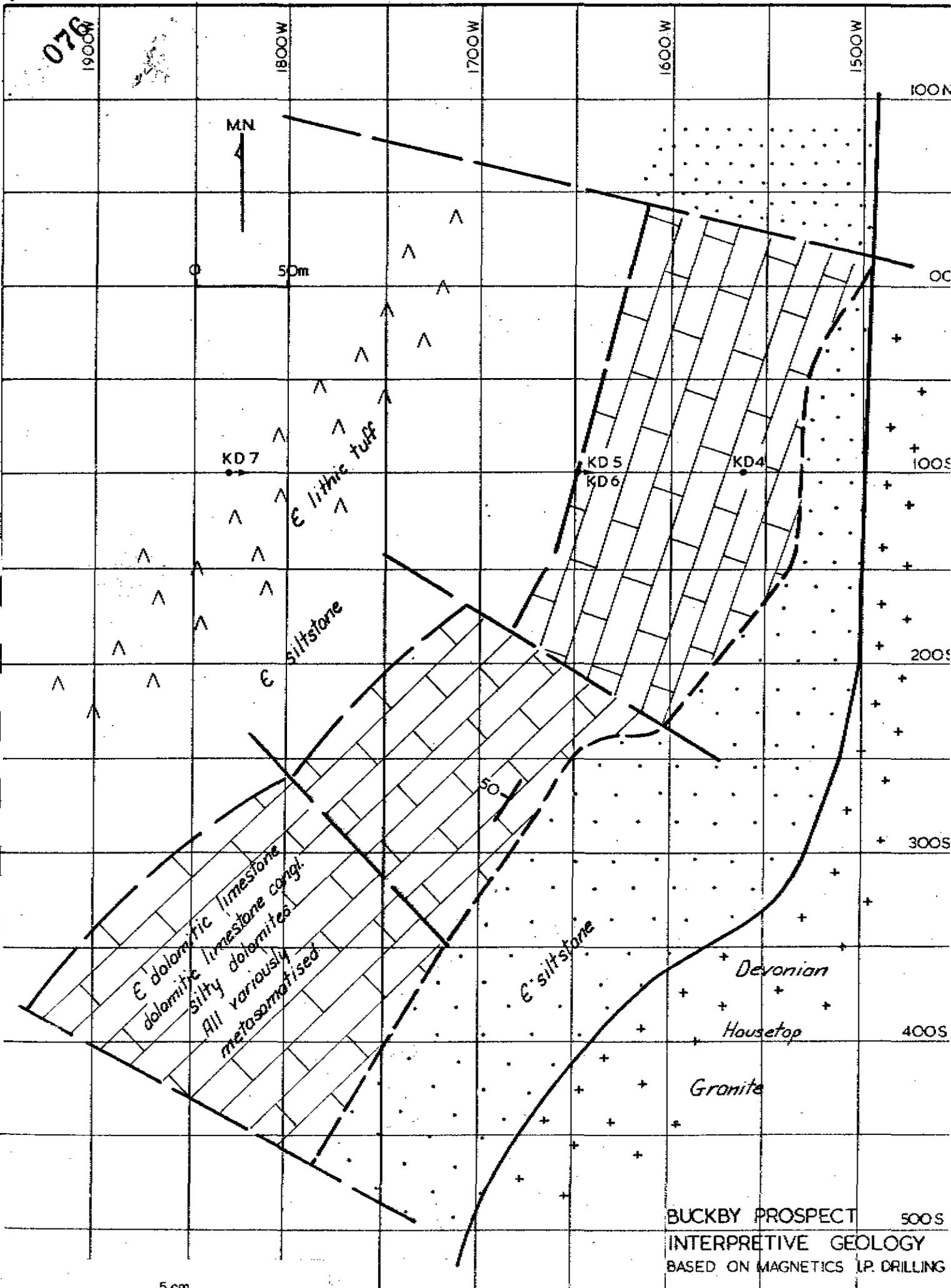
300 S

400 S

500 S

5 cm





BUCKBY PROSPECT 500S
 INTERPRETIVE GEOLOGY
 BASED ON MAGNETICS & DRILLING

PASKINS, JULY, 1978.

Fig. 29

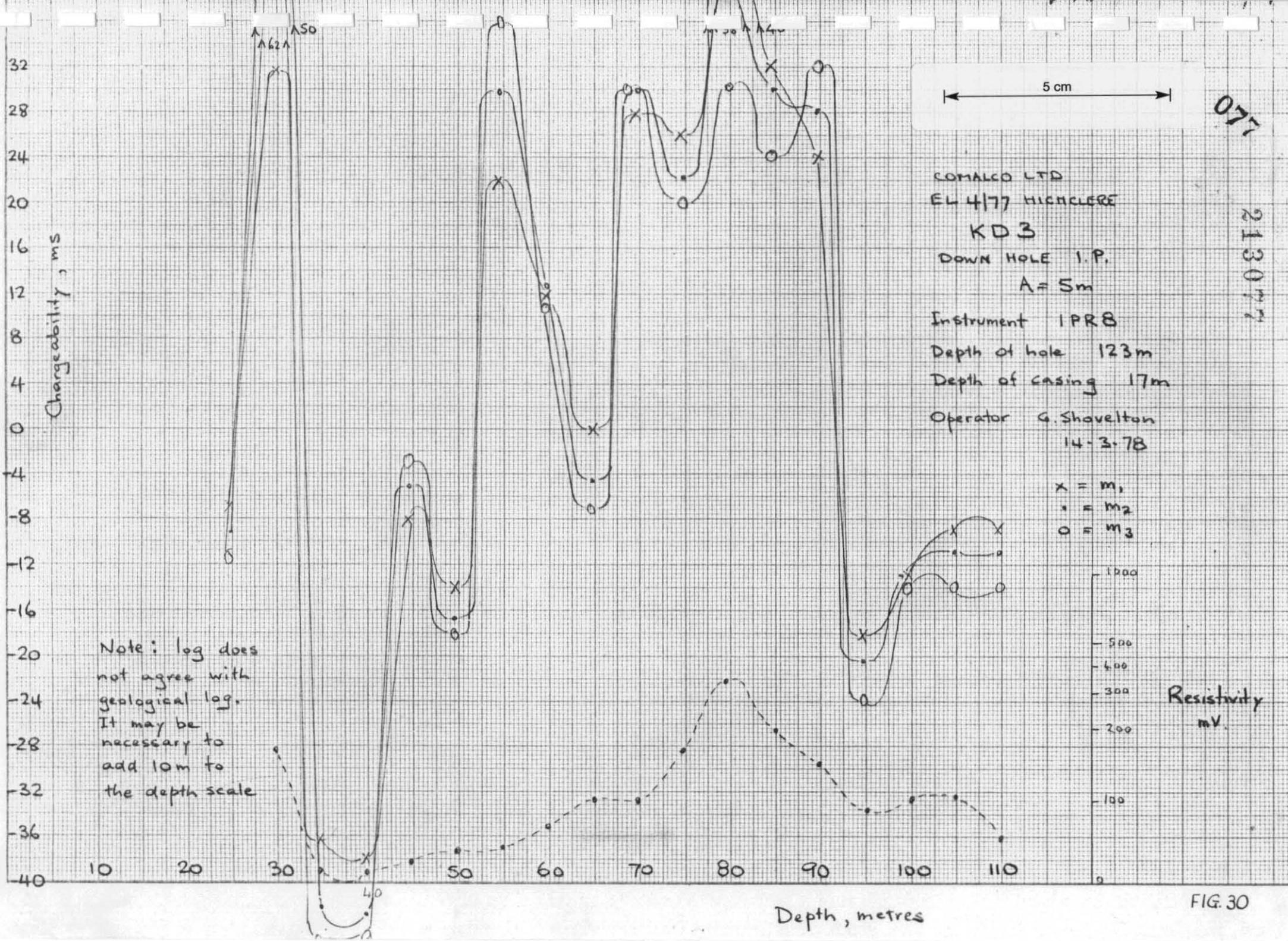


FIG. 30

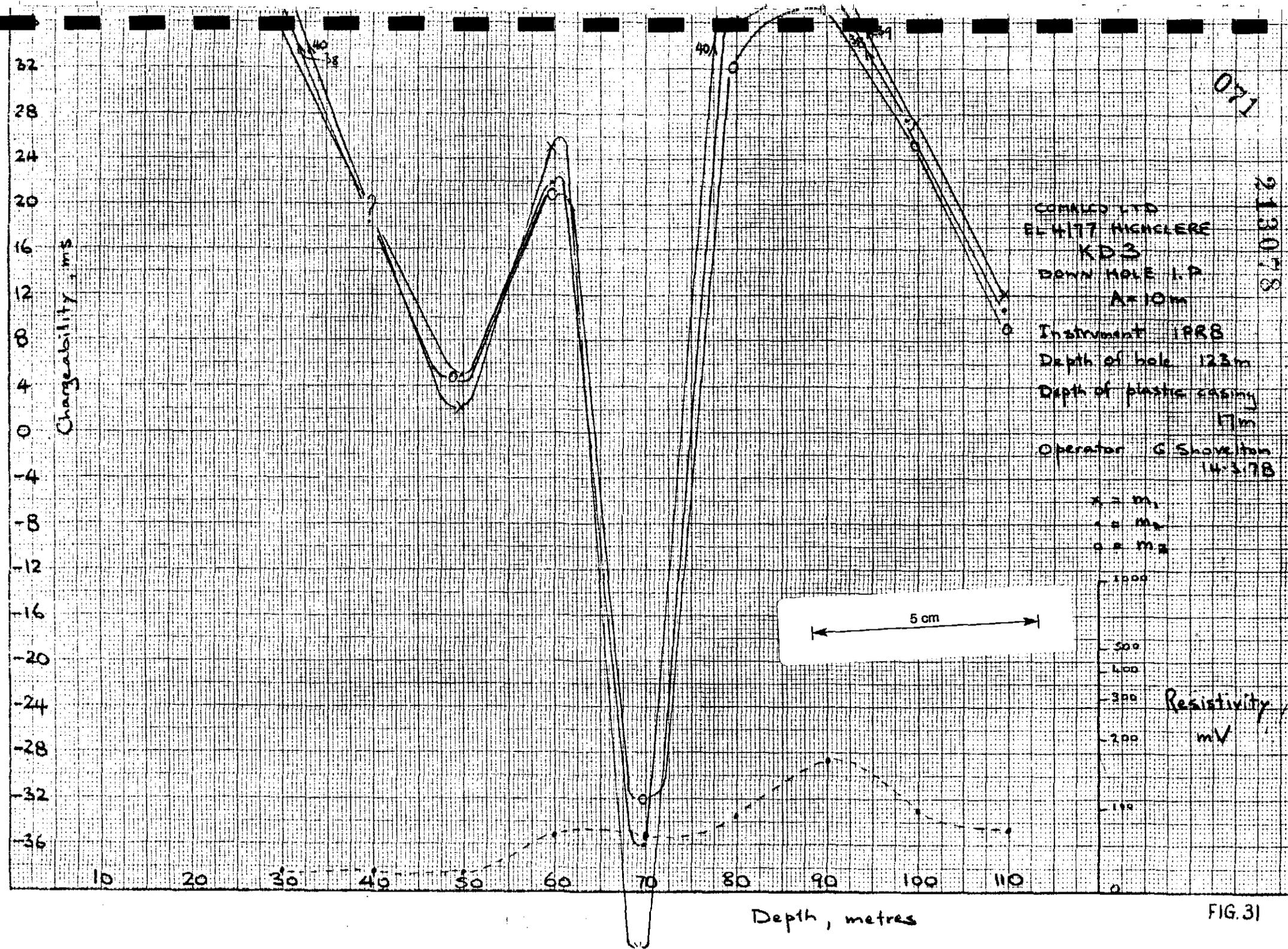
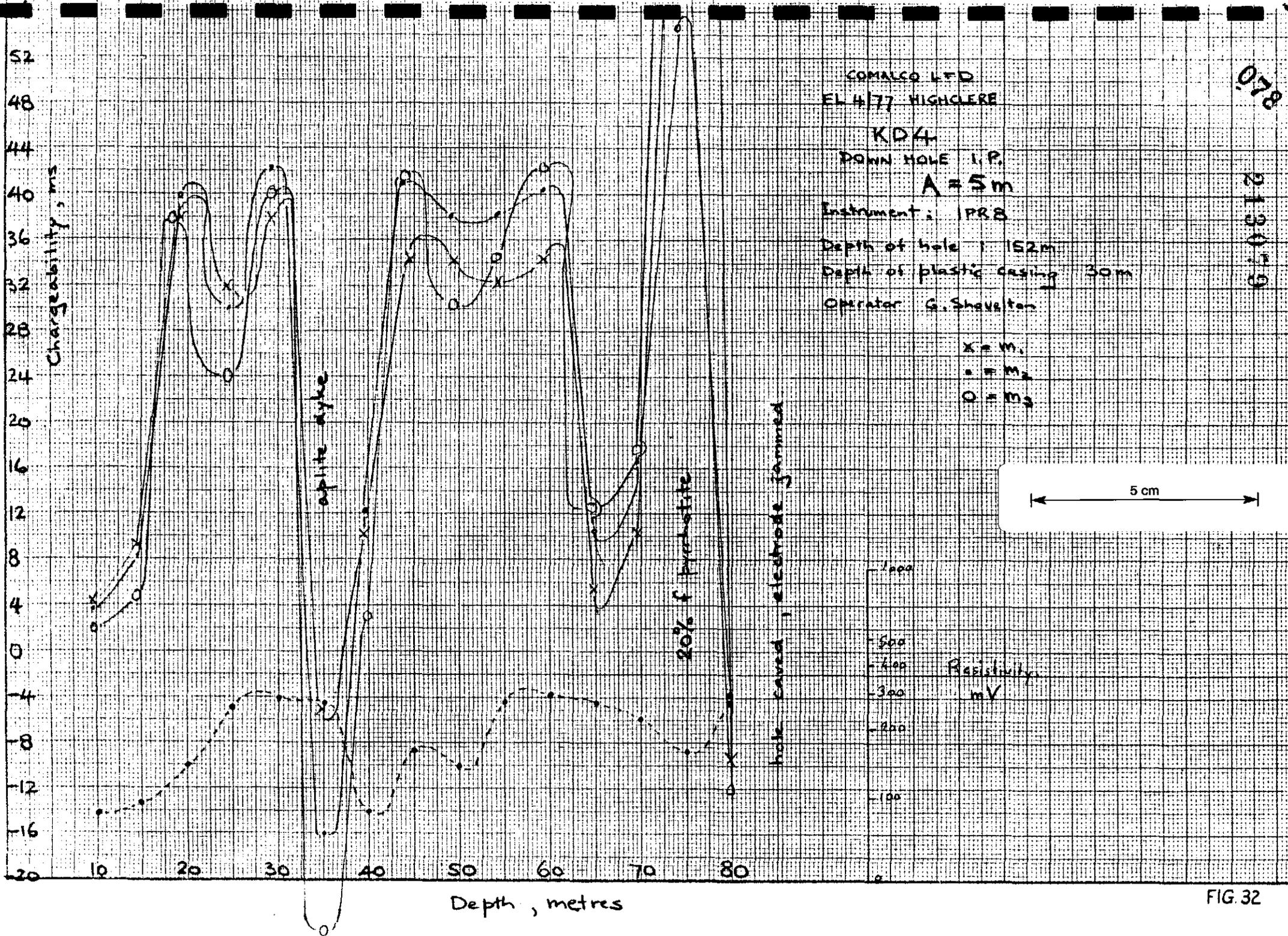


FIG. 31



078

213019

FIG. 32

079

213080

COMALCO LTD
BL 4/77 HIGHCLERE
KD 4
DOWN HOLE I.P.
A = 10m

Instrument IPRB
Depth of hole 132m
Depth of plastic casing 30m
Operator G. Shavelton
14.3.78

x = M₁
o = M₂
o = M₃

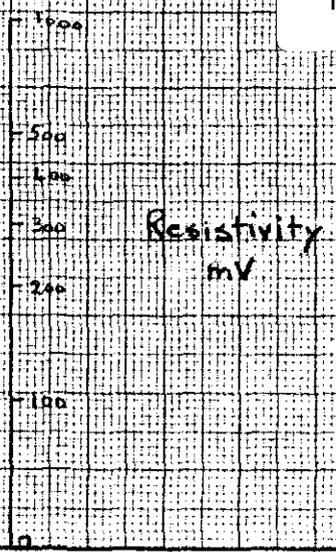
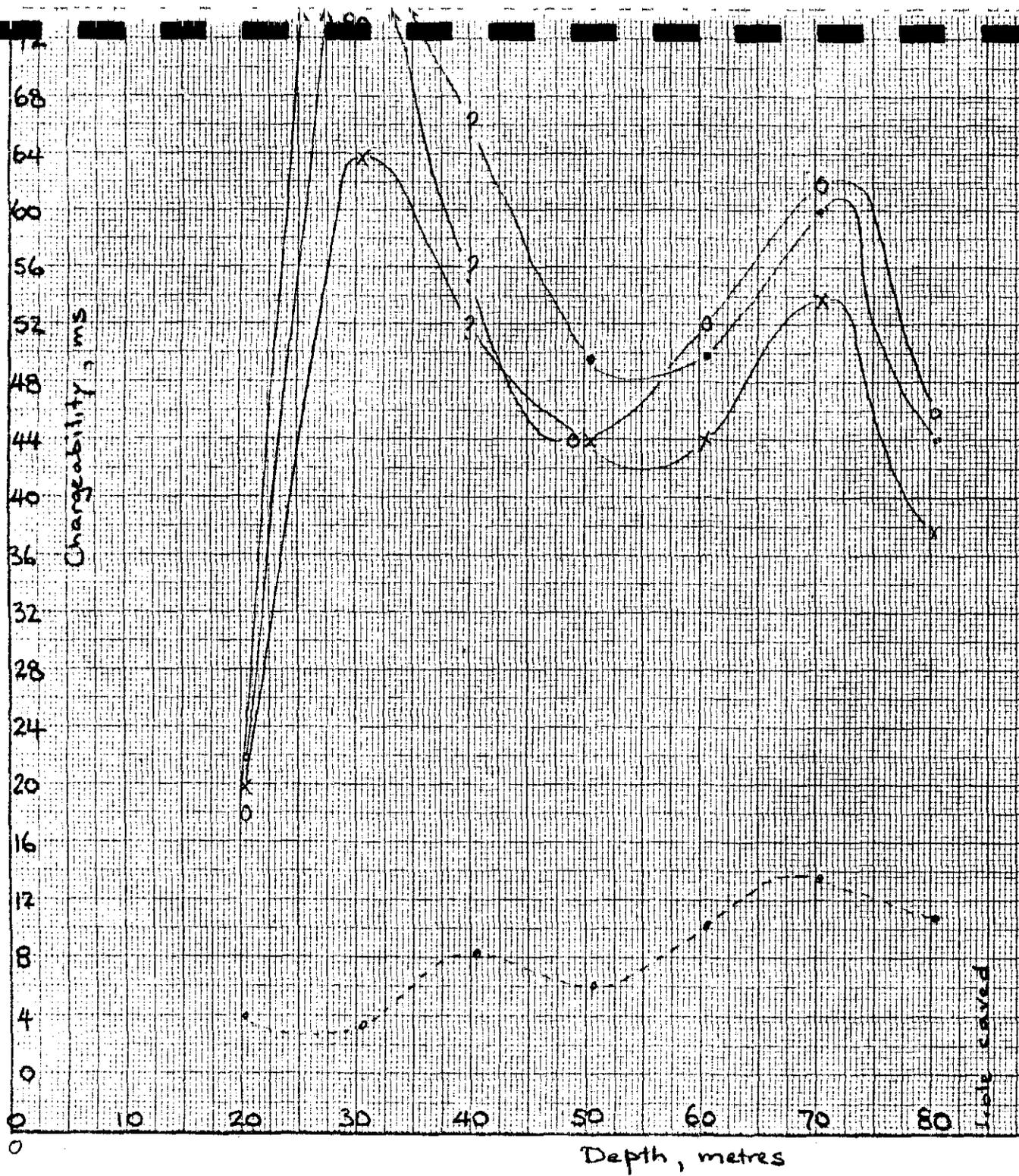
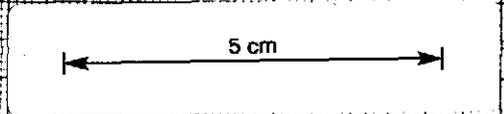


FIG 33

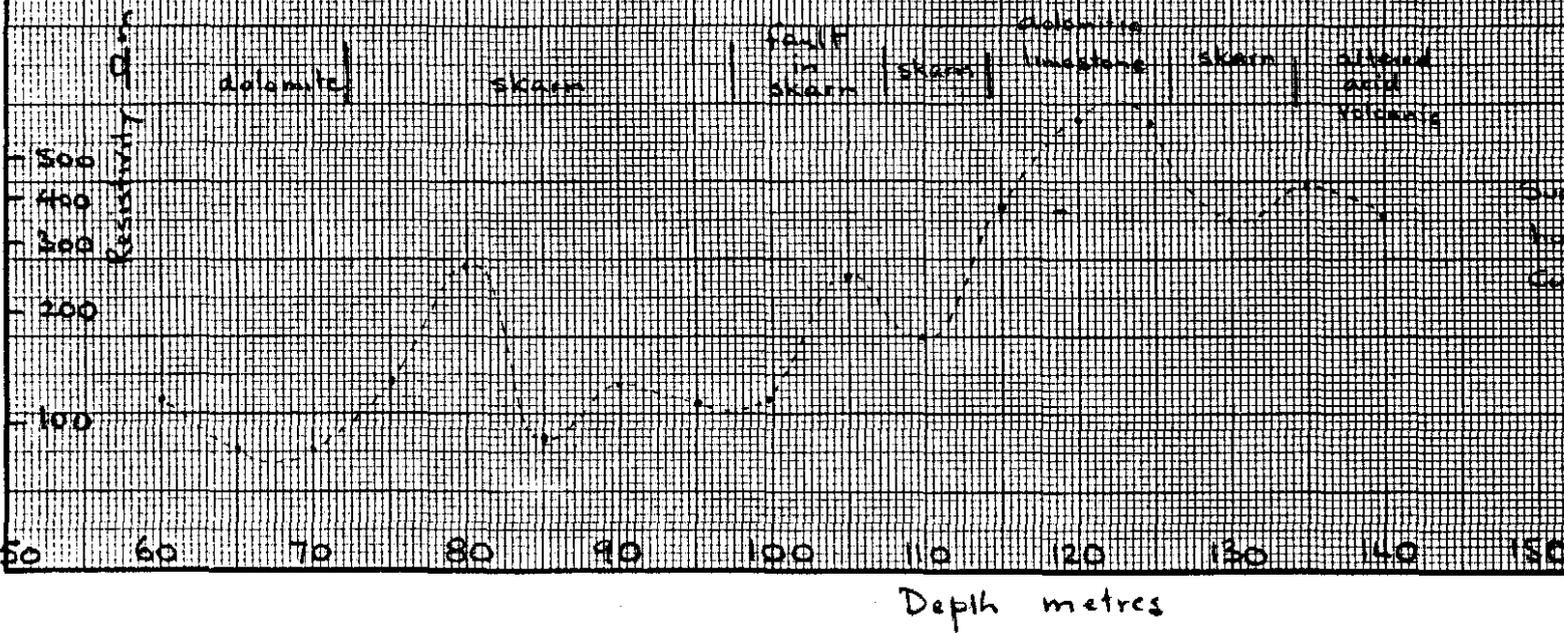
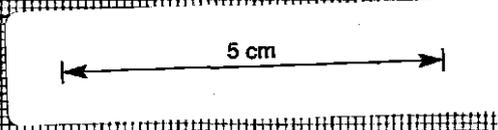
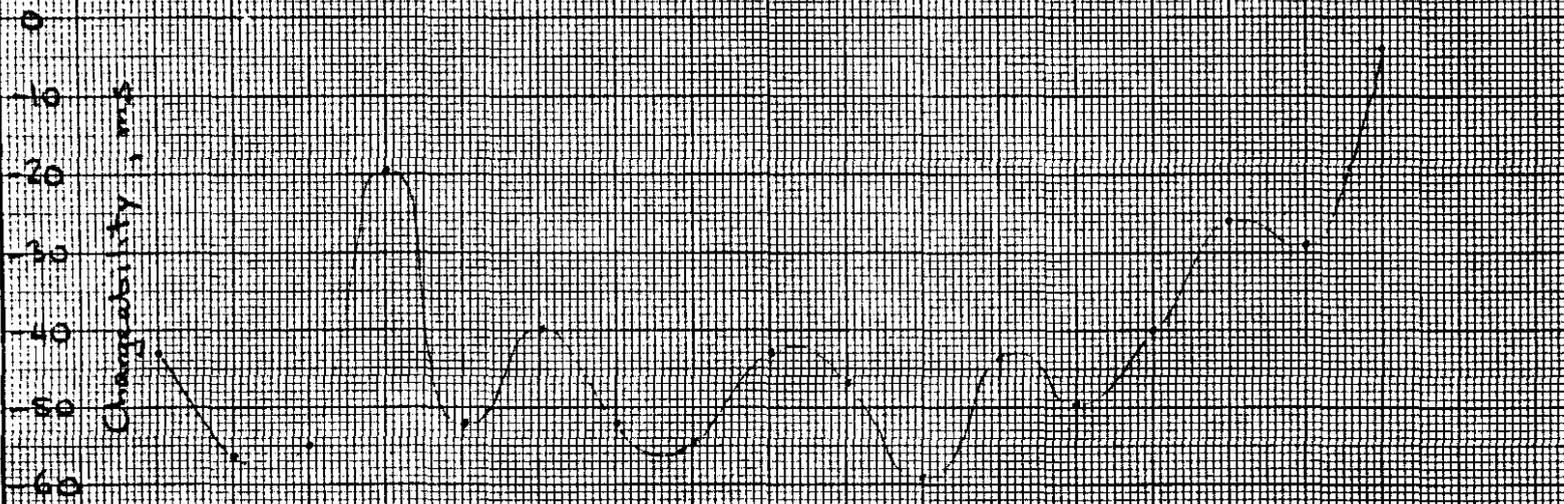
213081

CONRAD LTD
SU 4/77 MANGLERE
KDS
DOWN HOLE LP
TIME DOMAIN POLE POLE

080

A=5m n=1

Instrument PR7
Depth of hole 165m
Depth of plastic casing 28m
Operator S Skovtholm
10-4-78



Survey stopped due to
hole collapse
Current electrode test down hole

Depth metres

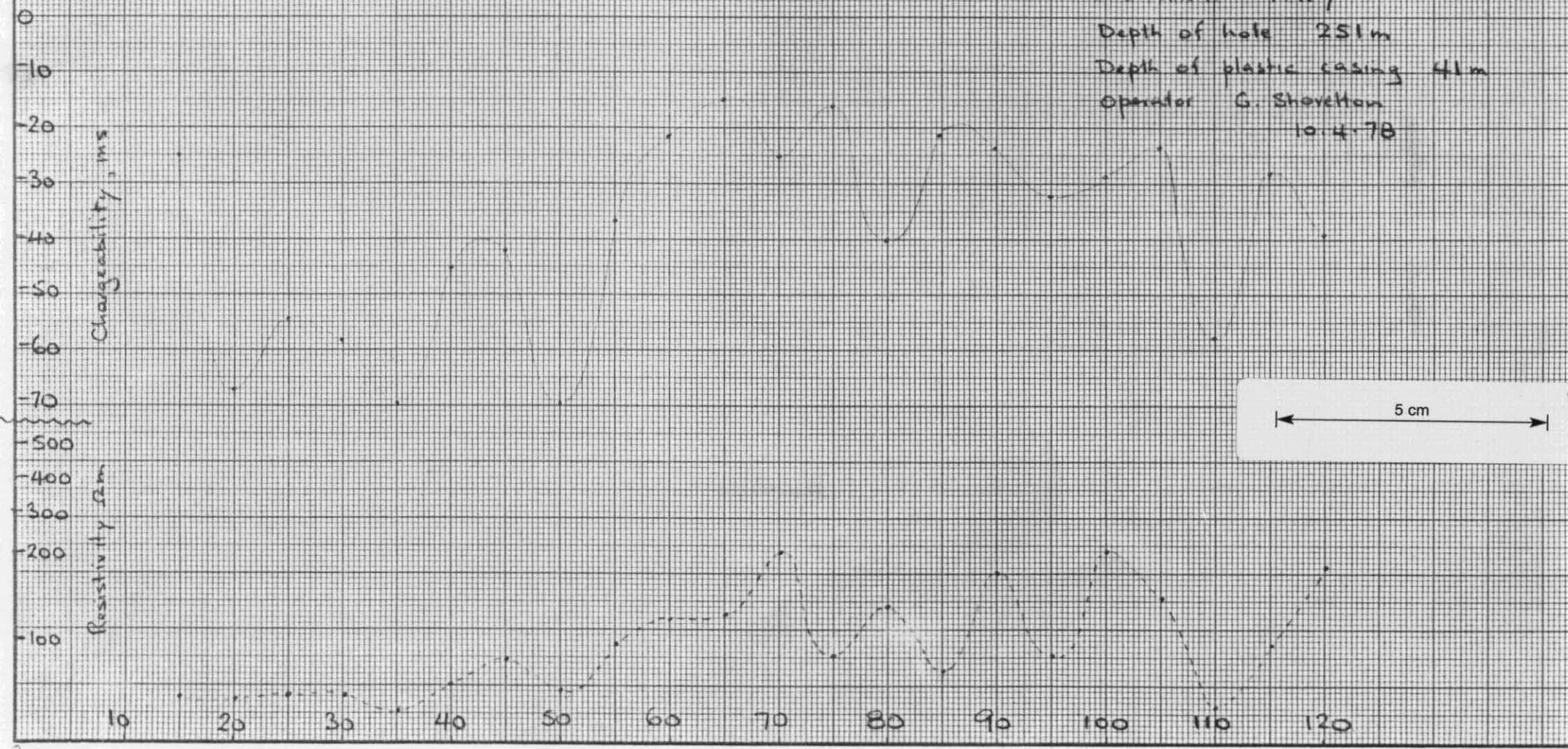
FIG 34

213082

081

COMALCO LTD
EL 4/77 HIGHCLERE
KD6 (SHEET 1)
DOWN HOLE I.P.
TIME DOMAIN POLE DIPOLE
A = 5m

Instrument IPR7
Depth of hole 251m
Depth of plastic casing 41m
Operator G. Shovelton
10.4.78

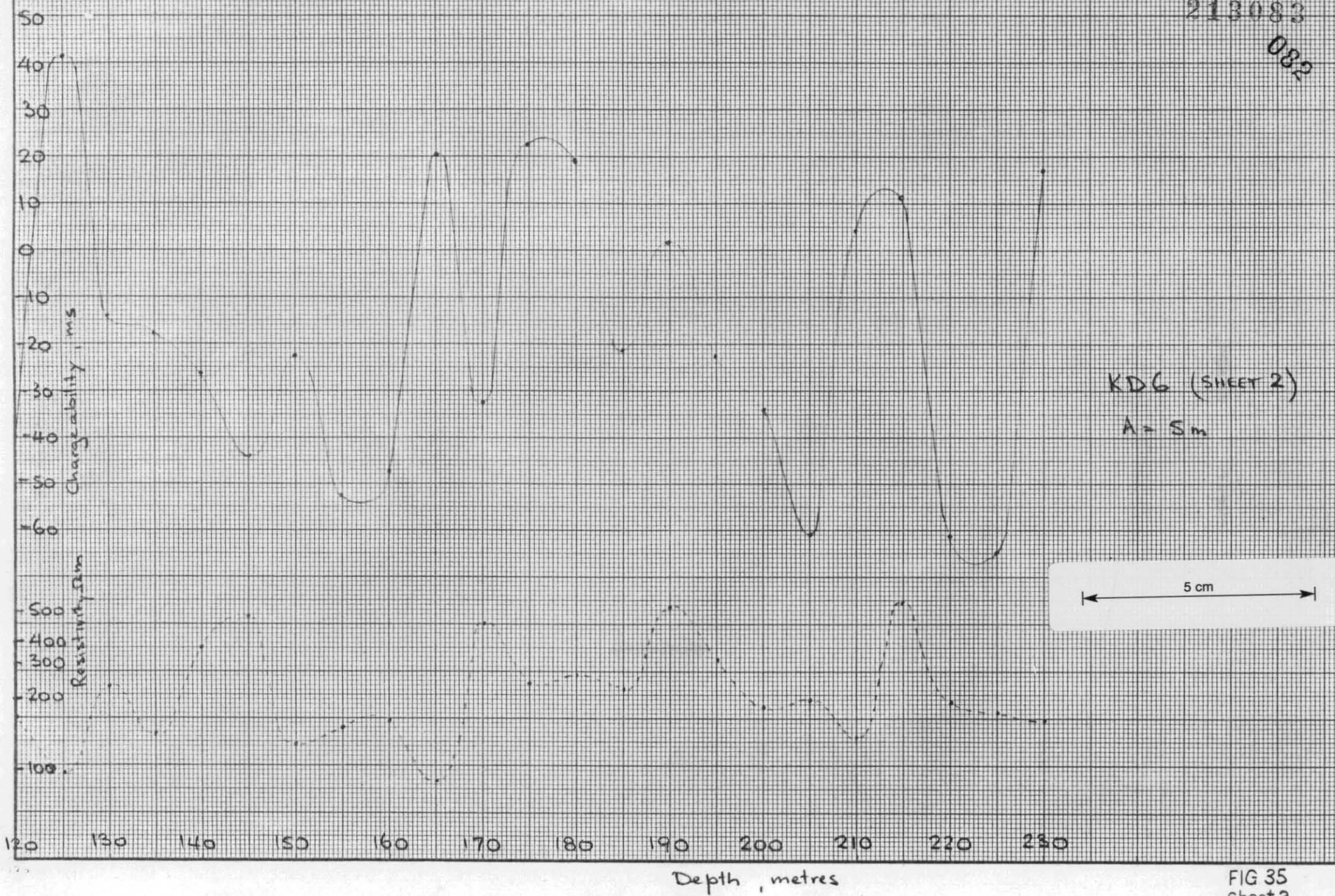


Depth, metres

FIG. 35
sheet 1

213083

082



KDG (SHEET 2)

A = 5m

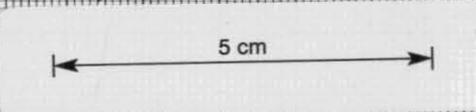
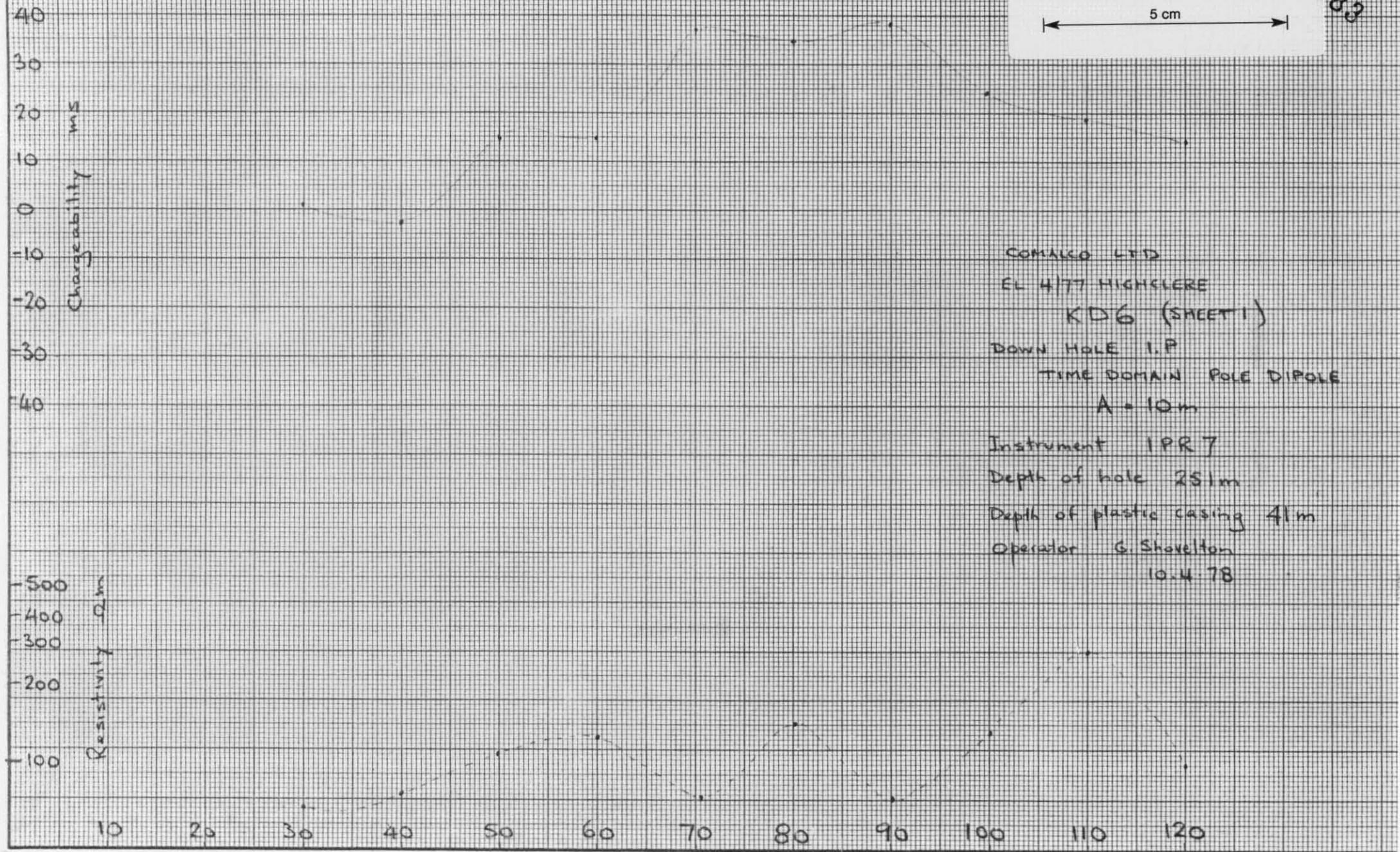
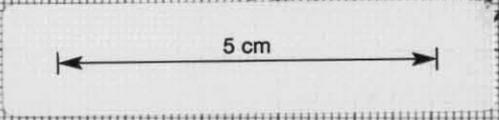


FIG 35
sheet 2

213084

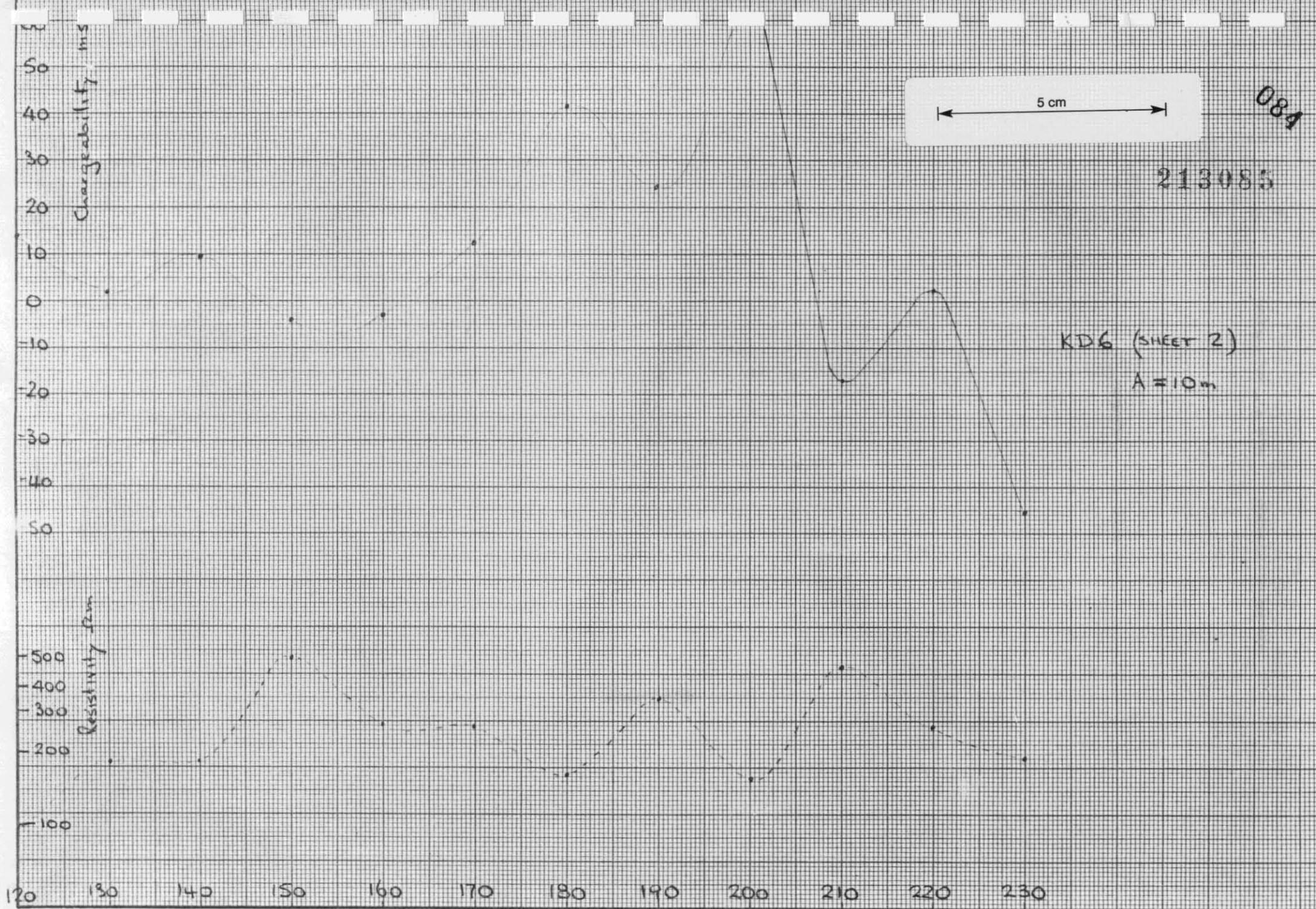
783



COMALCO LTD
 EL 4/77 HIGHCLERE
 KDG (SHEET 1)
 DOWN HOLE I.P
 TIME DOMAIN POLE DIPOLE
 A = 10m
 Instrument IPR 7
 Depth of hole 251m
 Depth of plastic casing 41m
 Operator G. Shovelton
 10.4.78

Depth metres

FIG 36
sheet 1



084

213085

KD6 (SHEET 2)
A = 10m

Depth, metres

FIG. 36
sheet 2

213086

085

300E

400E

500E

600E

700E

800E

KEY:	Cu	F
	Pb	
	Zn	

ppm in C soil horizon

Analyses by Comalco Research Centre, for Cu, Pb, Zn
by AAS after hot acid digestion; for F by SIE after fusion.



60	160	60	180	75	160	70	100	65	110	65	180	60	80	60	110	55	150	60	180	65	120	55	220	65	100	70	90	65	120	65	140	60	190	50	90	45	210	50	120	35	190			
35	35	35	35	35	35	35	35	30	30	35	40	35	35	30	35	35	30	35	35	35	40	35	35	30	35	35	30	40	35	35	30	40	35	35	30	40	35	35	35	35	35	35	35	35
95	95	80	85	85	70	70	70	70	65	70	55	70	80	80	65	70	50	65	60	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55

2600 N

COMALCO LIMITED
 E.L. 4/77 HIGHCLERE
 Highclere Iron soil geochemistry
 Scale 2cm = 50metres.

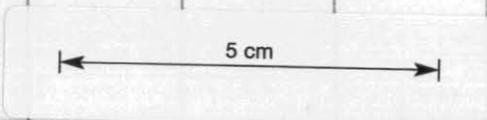


FIG. 37

APPENDIX 1Analytical techniques used by Comalco, Amdel.A. COMALCO LABORATORIES (COMALCO RESEARCH CENTRE).1. STREAM SEDIMENT AND SOIL SAMPLES.Cu, Pb, Zn, Bi, Mo, Co, Ni:

Determination by AAS after dissolution of 1 g sample in hot HCl + HNO₃ (Scheme 1).

Ag, Mo, Bi:

Determination by AAS after dissolution of 5 g sample in hot HNO₃. (Scheme 2).

Fluorine: (total)

Determination by specific ion electrode after fusion of 0.25 g sample with flux of Na₂CO₃, KNO₃, K₂CO₃, SiO₂ and water leach. (Scheme 8).

2. ROCK SAMPLES.Cu, Pb, Zn, Bi, Mo, Co, Ni, Cr:

Determination by AAS after attack of 1 g sample in hot HCl + HNO₃ + HClO₄, evaporated to fuming HClO₄, and dissolution in HCl. (Scheme 3). Where silicates are suspected the method is the same but attack is by HF, HNO₃ + HClO₄. (Scheme 5).

Ag, Mo, Bi, Sb:

Determination by AAS after dissolution of 5 g sample in hot HCl + HNO₃. (Scheme 4).

W:

Fusion of 0.25 g sample with KHSO₄, leach with HCl, add SnCl₂ solution, determined with Zn-dithiol indicator in a spectrophotometer, compared with known solutions. (Scheme 7).

Au:

10 g of sample roasted, leached to dryness with HCl + HNO₃, dissolved in HCl, transfer to organic solvent and determine by AAS.

Fluorine:

As for stream sediment and soil samples.

3. WATER.

Fluorine:

Read directly by specific ion electrode after addition of buffer solution.

B. AMDEL.

CODE A. Semi quantitative analyses by emission spectroscopy.

CODE B. XRF. All XRF analyses are by Code B1 unless otherwise stated.

B1 XRF, accuracy \pm 5%, detection limits as quoted.

B2 XRF, accuracy \pm 3%, detection limits as quoted.

CODE C. AAS

C1 Bi, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Zn, accuracy \pm 5%, detection limits as quoted. Dissolution in hot HClO₄.

C2 Ag, Mo, accuracy \pm 5%. Dissolution in hot HCl + HNO₃?

C3 Au, accuracy dependent on sample, detection limit 0.05 ppm. Details of method not available, but dissolution in HCl + HNO₃.

CODE E. E3 F as CaF₂. Method is not available but is suspected to be leaching in near boiling aluminium sulphate and determination by specific ion electrode. The method is more or less specific for CaF₂ and does not give total F in the sample i.e. F tied up in micas, topaz, amphibole, etc).

CODE K. K4/2 Au by fire assay and AAS, detection limit 0.005 ppm.

088

APPENDIX 2

213089

E.L. 4/77 HIGHCLERE - DRAINAGE SAMPLELOCALITIES

(a) Collected 1977

Sample No.	Photo No. Hellyer South	1,20,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HE/D			
1	RUN 1/36	3943	54387/3960
2	"	"	54382/3978
3	RUN 1/35	"	54382/3982
4	"	"	54382/3984
5	RUN 1/33	4043	54385/4003
6	RUN 1/34	"	54384/4011
7	"	"	54384/4016
8	RUN 2/14	"	54378/4023
9	"	"	54374/4021
10	"	"	54364/4017
11	"	"	54365/4014
12	"	"	54363/4015
13	"	"	54358/4012
14	"	"	54358/4013
15	"	"	54357/4016
16	RUN 2/15	"	54378/4026
17	"	"	54381/4028
18	"	"	54379/4030
19	"	"	54376/4033
20	"	"	54370/4028
21	"	"	54373/4032
22	"	"	54371/4037
23	"	"	54371/4033
24	"	"	54373/4032
25	"	"	54369/4029
26	"	"	54365/4025
27	"	"	54359/4027
28	"	"	54363/4023
29	"	"	54359/4005
30	"	3943	54359/3999
31	RUN 2/14	4043	54342/4003
32	"	"	54351/4003
33	"	"	54351/4001
34	"	3943	54350/3999
35	"	"	54343/3998

089

Sample No.	Photo No. Hellyer South	1.20,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HE/D			
36	"	"	54345/3998
37	"	"	54344/3999
38	RUN 2/14	4043	54346/4001
39	"	"	54347/4005
40	"	"	54344/4002
41	"	3943	54340/4000
42	"	"	54338/4000
43	"	"	54336/3995
44	"	"	54335/3994
45	"	"	54334/3992
46	"	"	54333/3990
47	"	"	54332/3990
48	"	"	54333/3993
49	"	"	54334/3995
50	"	"	54334/3996
51	"	"	54333/3996
52	"	"	54333/3997
53	RUN 3/240	4043	54332/4002
54	RUN 2/14	"	54334/4004
55	"	"	54337/4008
56	"	"	54339/4008
57	"	3943	54344/3996
58	"	"	54342/3993
59	"	"	54345/3990
60	"	"	54345/3989
61	"	"	54343/3988
62	"	"	54342/3987
63	"	"	54341/3981
64	"	"	54342/3991
65	"	"	54337/3988
66	RUN 3/240	"	54329/3980
67	RUN 2/14	4043	54367/4005
68	"	"	54366/4004
69	"	"	54366/4007
70	"	"	54368/4007
71	"	3943	54336/3986
72	"	"	54335/3984
73	"	"	54334/3988

090

-3-

213091

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HE/D			
74	RUN 2/14	3943	54332/3988
75	"	"	54367/3992
76	"	"	54369/3996
77	"	"	54367/3995
78	"	"	54366/3989
79	"	"	54365/3981
80	"	"	54363/3982
81	"	"	54362/3981
82	"	"	54361/3990
83	"	"	54361/3991
84	"	"	54364/3991
85	"	"	54358/3993
86	"	"	54359/3991
87	"	"	54358/3991
88	"	"	54356/3991
89	"	"	54355/3989
90	"	"	54353/3981
91	"	"	54352/3987
92	"	"	54350/3987
93	"	"	54351/3988
94	"	"	54351/3989
95	"	"	54352/3990
96	"	"	54354/3990
97	"	"	54358/3986
98	"	"	54359/3989
99	"	"	54357/3988
100	"	"	54356/3982
101	"	"	54372/3987
102	"	"	54372/3986
103	"	"	54370/3982
104	"	"	54373/3982
105	"	"	54374/3981
106	"	"	54370/3990
107	"	"	54372/3991
108	"	"	54375/3993
109	"	"	54375/3995
110	"	"	54374/3996

091

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord.
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RD/T/HE/D

111	RUN2/14	3943	54371/3995
112	"	"	54372/3996
113	"	4043	54377/4006
114	"	"	54378/4002
115	"	"	54380/4001
116	"	"	54377/4002
117	"	"	54376/4002
118	"	"	54375/4001
119	"	"	54374/4002
120	RUN 1/34	"	54379/4018
121	RUN 1/33	"	54394/4023
122	"	"	54391/4018
123	"	"	54387/4017
124	RUN 1/34	3943	54386/3999
125	"	"	54387/3994
126	RUN 2/14	"	54366/3974
127	"	"	54371/3976
128	"	"	54372/3978
129	"	"	54377/3998
130	"	"	54379/3997
131	"	"	54380/3999
132	RUN 1/34	3944	54421/3994
133	"	"	54416/3992
134	"	"	54412/3991
135	"	"	54410/3988
136	"	"	54410/3985
137	"	"	54406/3985
138	"	"	54405/3984
139	"	"	54401/3981
140	"	"	54402/3984
141	"	3943	54391/3981
142	"	"	54388/3981
143	RUN 2/13	"	54376/3981
144	"	"	54337/3966
145	"	"	54338/3965
146	"	"	54341/3967
147	"	"	54342/3968
148	"	"	54341/3969

092

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
149	RUN 2/13	3943	54343/3969
150	"	"	54343/3971
151	"	"	54343/3973
152	"	"	54342/3974
153	"	"	54343/3976
154	"	"	54341/3978
155	"	"	54339/3976
156	"	"	54339/3974
157	"	"	54341/3974
158	"	"	54342/3976
159	"	"	54343/3977
160	"	"	54333/3971
161	"	"	54332/3970
162	"	"	54332/3974
163	"	"	54336/3971
164	"	"	54337/3972
165	"	"	54341/3972
166	"	"	54341/3973
167	"	"	54344/3965
168	RUN 1/34	4044	54402/4010
169	"	"	54405/4013
170	"	"	54406/4011
171	"	"	54406/4008
172	"	"	54405/4006
173	"	"	54401/4004
174	RUN 1/33	4044	54403/4033
175	"	"	54401/4032
176	"	4043	54398/4031
177	"	"	54387/4027
178	"	"	54390/4027
179	"	"	54392/4025
180	"	"	54392/4034
181	"	"	54392/4030
182	RUN 2/14	3943	54382/3998
183	"	"	54383/3998
184	"	4043	54381/4004
185	"	"	54381/4006

093

Sample No.	Photo No. Hellyer South	1,2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
186	RUN 2/14	4043	54384/4004
187	"	"	54359/4001
188	"	3943	54360/3999
189	"	"	54359/3997
190	"	"	54357/3999
191	"	"	54356/3996
192	"	"	54355/3997
193	RUN 3/241	"	54318/3968
194	"	"	54316/3968
195	"	"	54314/3968
196	"	"	54318/3966
197	"	"	54318/3964
198	"	"	54304/3963
199	"	"	54310/3966
200	"	"	54312/3966
201	"	"	54312/3967
202	"	"	54310/3968
203	RUN 1/35	"	54388/3950
204	"	"	54395/3953
205	"	3944	54402/3954
206	"	"	54404/3955
207	"	"	54412/3953
208	"	"	54418/3954
209	"	"	54418/3955
210	"	"	54424/3955
211	"	"	54413/3952
212	"	"	54415/3952
213	"	"	54412/3959
214	"	"	54414/3960
215	"	"	54414/3963
216	"	"	54419/3964
217	"	"	54419/3966
218	"	"	54417/3966
219	"	"	54416/3966
220	"	"	54414/3966
221	"	"	54414/3964
222	"	"	54411/3964

094

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
223	RUN 1/35	3944	54409/3964
224	"	"	54406/3967
225	"	"	54405/3967
226	"	"	54406/3966
227	"	"	54405/3964
228	"	"	54404/3963
229	"	"	54403/3962
230	"	"	54405/3961
231	"	"	54404/3962
232	"	"	54409/3959
233	"	"	54401/3962
234	"	3943	54399/3961
235	"	"	54399/3960
236	"	"	54399/3959
237	"	3944	54400/3959
238	"	"	54402/3960
239	"	3943	54398/3965
240	"	"	54397/3970
241	"	"	54396/3970
242	"	"	54397/3966
243	"	"	54394/3968
244	"	"	54392/3968
245	"	"	54394/3965
246	"	"	54392/3965
247	"	"	54392/3966
248	"	"	54391/3965
249	"	"	54390/3965
250	"	"	54388/3965
251	"	"	54386/3963
252	"	"	54388/3961
253	"	"	54389/3961
254	"	"	54403/3949
255	"	"	54406/3951
256	"	"	54404/3949
257	"	"	54401/3949
258	"	"	54398/3952
259	"	"	54399/3951
260	"	"	54386/3954

095

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
261	RUN 1/35	3943	54383/3956
262	"	"	54381/3955
263	RUN 2/13	"	54378/3963
264	"	"	54378/3965
265	"	"	54382/3966
266	"	"	54383/3965
267	"	"	54380/3962
268	"	"	54372/3966
269	"	"	54369/3962
270	"	"	54369/3961
271	"	"	54375/3959
272	"	"	54374/3961
273	"	"	54373/3962
274	"	"	54374/3965
275	"	"	54375/3966
276	"	"	54384/3966
277	"	"	54379/3967
278	"	"	54384/3968
279	"	"	54384/3970
280	"	"	54379/3974
281	"	"	54379/3977
282	"	"	54381/3976
283	"	"	54380/3979
284	RUN 2/15	4043	54383/4014
285	"	"	54382/4010
286	RUN 1/34	3943	54394/3978
287	"	"	54395/3975
288	"	"	54396/3976
289	"	"	54396/3976
290	"	"	54398/3979
291	"	"	54396/3978
292	"	"	54399/3983
293	"	"	54401/3979
294	"	"	54404/3979
295	RUN 1/33	4043	54389/4011
296	"	"	54393/4012
297	"	"	54393/4013
298	"	"	54393/4014

096

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
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RD/T/HI/D

299	RUN 1/33	4044	54401/4014
300	"	"	54405/4022
301	"	"	54401/4020
302	"	4043	54398/4019
303	"	"	54394/4019
304	"	4044	54408/4033
305	"	"	54407/4032
306	"	3943	54387/4011
307	RUN 3/241	"	54325/3959
308	"	3943	54325/3958
309	"	"	54324/3956
310	"	"	54324/3957
311	"	"	54321/3955
312	"	"	54318/3955
313	"	"	54325/3952
314	"	"	54328/3956
315	"	"	54328/3959
316	"	"	54328/3960
317	"	"	54319/3959
318	"	"	54320/3959
319	"	"	54331/3958
320	"	"	54334/3958
321	"	"	54335/3960
322	RUN 2/13	"	54334/3964
323	"	"	54336/3964
324	"	"	54336/3965
325	"	"	54337/3964
326	"	"	54336/3963
327	"	"	54335/3962
328	"	"	54337/3961
329	"	"	54336/3960
330	"	"	54335/3962
331	"	"	54342/3964
332	RUN 2/13	3943	54341/3962
333	"	"	54341/3960
334	"	"	54341/3959
335	"	"	54340/3959
336	"	"	54345/3957

097

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D 337	RUN 2/13	3943	54345/3953
338	"	"	54352/3970
339	RUN 3/242	"	54320/3947
340	"	"	54321/3946
341	"	"	54322/3945
342	"	"	54322/3944
343	"	"	54323/3945
344	"	"	54324/3943
345	"	"	54326/3944
346	"	"	54327/3944
347	"	"	54328/3942
348	"	"	54327/3943
349	"	"	54329/3943
350	"	"	54331/3942
351	"	"	54333/3942
352	"	"	54310/3949
353	"	"	54303/3949
354	"	"	54306/3946
355	"	"	54302/3944
356	"	"	?
357	RUN 1/33	4044	54410/4025
358	"	"	54410/4027
359	"	"	54406/4022
360	"	"	54405/4028
361	"	"	54404/4023
362	"	"	54408/4024
363	"	"	54412/4024
364	"	"	54412/4027
365	"	"	54414/4029
366	"	"	54412/4031
367	"	"	54422/4034
368	"	"	54421/4 35
369	"	"	54419/4034
370	"	"	54418/4032
371	"	"	54419/4032
372	"	"	54417/4031
373	"	"	54418/4029
374	"	"	54417/4031

098

Sample No.	Photo No. Hellyer South	1.2,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
375	RUN 1/33	4044	54426/4034
376	"	"	54426/4035
377	"	"	54427/4037
378	"	"	54431/4038
379	"	"	54431/4037
380	"	"	54434/4038
381	"	"	54431/4035
382	RUN 1/34	4043	54395/4006
383	"	"	54392/4005
384	"	"	54393/4005
385	"	"	54392/4002
386	"	"	54393/4002
387	"	"	54395/4001
388	"	"	54398/4003
389	"	"	54397/4006
390	"	"	54396/4007
391	"	3943	54392/3976
392	"	"	54392/3977
393	"	"	54391/3977
394	"	"	54390/3978
395	"	"	54388/3977
396	"	"	54385/3971
397	RUN 1/35	3944	54406/3972
398	"	"	54405/3971
399	"	"	54406/3972
400	"	"	54407/3975
401	RUN 2/13	3943	54380/3960
402	"	"	54381/3959
403	"	"	54382/3960
404	"	"	54384/3960
405	"	"	54384/3961
406	"	"	54385/3961
411	RUN 3/241	3943	54322/3971
412	"	"	54322/3981
413	RUN 1/34	4044	54433/4002
414	"	"	54429/4005
415	"	"	54428/4004
416	"	"	54426/4004
417	"	"	54423/4004

099

Sample No.	Photo No. Hellyer South	1,2,000 Cadastral Topo Sheet	National Grid Coord.
------------	----------------------------	------------------------------------	-------------------------

RD/T/HI/D

418	RUN 1/34	4044	54423/4005
419	"	"	54435/4004
420	"	"	54437/4003
421	RUN 2/14	"	54364/3978
422	"	"	54365/3979
423	"	"	54363/3979
424	"	"	54360/3976
425	"	"	54353/3978
426	"	"	54352/3978

100

APPENDIX 2

213101

E.L. 4/77 HIGHCLERE - DRAINAGE SAMPLELOCALITIES

(b) Collected 1978

Sample No.	Photo No. Hellyer South	1.20,000 Cadastral Topo Sheet	National Grid Coord
RD/T/HI/D			
525	RUN 2/12	3943	54368/3944
526	"	"	54370/3944
527	"	"	54372/3942
528	"	"	54374/3942
529	"	"	54375/3941
530	"	"	54376/3941
531	"	"	54377/3939
532	"	"	54378/3939
533	"	"	54366/3944
534	"	"	54363/3945
535	"	"	54361/3946
536	"	"	54361/3947
537	"	"	54353/3947
538	"	"	54353/3948
539	"	"	54350/3947
540	"	"	54348/3946
541	"	"	54345/3947
542	"	"	54334/3942
543	"	"	54337/3945
544	"	"	54341/3946
545	"	"	54343/3947
546	"	"	54349/3954
547	"	"	54351/3952

APPENDIX 3STREAM SEDIMENT SAMPLES

Conventional stream sediment samples sieved to -80 mesh were collected at each site listed in Appendix 2, except for the following:

14
34
37
54
61
104
105
117
221
260
261
271
295
324
355
363
368
369
372
377
411
412

102

PROJECT E.L. 4/77 HIGHCLERE

SUBJECT UV LAMPING OF PAN CONCENTRATES

PREP. BY

DATE

SHEET

1 OF 1

SAMPLE NO RD/T/H/H	SCHEELITE grains	ZIRCON	SAMPLE NO	SCHEELITE	ZIRCON	SAMPLE NO	SCHEELITE	ZIRCON
1	1 f	✓	158		✓	531		✓
2		✓	159		✓	532		✓
3	2 f	✓	160		✓	533		✓
4		✓	161		✓	534		✓
5		✓	162		✓	535		✓
6		✓	169		✓	536		✓
7	3 f	✓	170		✓	537		✓
8		✓	171		✓	538		✓
9		✓	193		✓	539		✓
10		✓	196		✓	540		✓
11		✓	199		✓	541		✓
12	f specks	✓	201		✓	542		✓
19		✓✓	203		✓	543		✓
20		✓	206		✓	544		✓
27		✓	214	1 worn	✓	545		✓
31		✓	228		✓	546		✓
36		✓	262		✓	547		✓
52		✓	294		✓			
89		✓	296		✓			
104		✓	298		✓			
114	1 f	✓	301		✓			
115	1 f ?	✓	303		✓			
129		✓	307		✓			
131		✓	331		✓			
132	1 m	✓	338		✓			
133		✓	351		✓			
135		✓	384		✓			
137		✓	389		✓			
140		✓	410		✓			
141		✓✓	444		✓			
142		✓✓	445		✓			
143		✓	416		✓			
145		✓	525		✓			
148		✓	526		✓			
149		✓	527		✓			
150		✓	528		✓			
152		✓	529		✓			
157	1 f	✓	530		✓			

APPENDIX 5MAGNETIC FRACTION STREAM SEDIMENT SAMPLES

The following stream sediment magnetic fraction samples were collected:-

1 - 4, 7, 10 - 13, 20, 25, 27 - 33, 36, 38 - 41, 43, 48, 52, 53, 57 - 60, 64, 74, 89, 90, 110, 115, 129 - 131, 133, 135, 137, 140 - 143, 145, 152 - 155, 157 - 164, 168 - 172, 183 - 185, 188, 190, 192 - 197, 199 - 216, 218 - 220, 222, 224 - 228, 234, 236, 239, 241 - 244, 246 - 247, 250 - 252, 255, 258, 262, 263, 265, 266, 270, 272, 273, 275 - 281, 285, 289 - 292, 294 - 299, 301 - 304, 306 - 313, 315 - 317, 319, 321 - 323, 325 - 331, 334, 335, 337 - 339, 343, 345, 347, 354, 356, 357, 362, 363, 365, 367, 371, 382, 390, 398, 399, 401, 403 - 405, 407, 409, 410, 413 - 415, 417, 420, 525 - 547.

All samples have been analysed except for 525 - 547 for which analyses are awaited.

10A

PROJECT EL 4177 HIGHCLERE (TOP PART) No.
 SUBJECT DATA FOR PROBABILITY PLOTS - 80 mesh stream sediment
 PREP. BY DATE 1978 SHEET 1 OF 1

COPPER

0-9 10-14.9 15-18 19-23 24-29 30-37 38-47 48-59 60-74 75-93 94-118 119-148 int

18	10	15	23	28	96	158	118	47	10	1	1	no of samples
3.43	1.90	2.86	4.38	5.33	18.28	30.09	22.48	8.95	1.90	0.19	0.19	Σ 525
99.98	96.55	94.65	91.79	87.41	82.08	63.80	33.71	11.23	2.28	0.38	0.19	Σ 2

LEAD

0-9 10-14.9 15-18 19-23 24-29 30-37 38-47 48-59 60-74 75-93

11	8	110	204	136	54	1	1	no of samples	Σ 525
2.10	1.52	20.95	38.86	25.90	10.29	0.19	0.19		Σ 2
100	97.90	96.38	75.43	36.57	10.67	0.38	0.19		Σ 2

ZINC

0-9 10-14.9 15-18 19-23 24-29 30-37 38-47 48-59 60-74 75-93 94-118 119-148 149-186 187-234

4	6	2	3	3	12	9	7	21	51	72	141	119	54
0.76	1.14	0.38	0.57	0.57	2.26	1.71	1.33	4.00	9.71	13.71	26.86	27.67	10.29
99.96	99.2	98.06	97.68	97.11	96.54	94.28	92.57	91.24	87.24	77.53	63.82	36.96	10.29

235-295 296-370

20	1
3.81	0.19
4.00	0.19

Note: Values are plotted on fig 6 at the lower class limit

Σ 525

BISMUTH

0-9 10-14.9 15-18 19-23 24-29 30-37 38-47 48-59

40	57	117	91	50	40	3	Σ 398
10.05	14.32	29.40	22.86	12.56	10.05	0.75	Σ 2
99.99	89.94	75.62	46.22	23.36	10.80	0.75	Σ 2

APPENDIX 7

FLUORINE IN WATER OVER 0.06ppm

SAMPLE No.	Fppm	SHEET No.	CO-ORDS	SAMPLE No.	Fppm	SHEET No.	CO-ORDS
33	.06	4043	54351/4001	107	.08	3843	54372/3991
34	.07	3943	54350/3999	108	.06	3943	54375/3993
35	.09	3943	54343/3998	109	.06	3943	54375/3995
36	.07	3943	54345/3998	110	.06	3943	54374/3996
37	.08	3943	54344/3999	111	.06	3943	54371/3995
38	.07	4043	54346/4001	113	.06	4043	54377/4006
40	.10	4043	54344/4002	116	.06	4043	54377/4002
42	.06	3943	54338/4000	118	.06	4043	54375/4001
43	.06	3943	54336/3995	132	.06	3944	54421/3994
44	.06	3943	54335/3994	133	.06	3944	54416/3992
46	.08	3943	54333/3990	136	.06	3944	54410/3985
48	.06	3943	54333/3993	137	.07	3944	54406/3985
49	.07	3943	54334/3995	138	.06	3944	54405/3984
53	.07	4043	54332/4002	140	.06	3944	54402/3984
55	.07	4043	54337/4008	141	.07	3943	54391/3981
62	.06	3943	54342/3987	142	.06	3943	54388/3981
63	.06	3943	54341/3981	283	.07	3943	54380/3979
77	.07	3943	54367/3995				
86	.06	3943	54359/3991				
92	.06	3943	54350/3987				
93	.07	3943	54351/3988				
94	.08	3943	54351/3989				
96	.06	3943	54354/3990				
103	.06	3943	54370/3982				
104	.06	3943	54373/3982				
105	.09	3943	54374/3981				
106	.08	3943	54370/3990				

106

PROJECT EL 4/77 HIGHCLERE
 SUBJECT ANALYSES, ROCK SAMPLES
 PREP. BY DATE SHEET 1 OF 1

ppm

SAMPLE NUMBER	Sn	W	Bi	Be	Mo	Cu	Pb	Zn	Ag	As	Au	F%
1/13/12	6	x	60	x	20	1000	150	30	1.0	10,000	0.55	0.01
1/15/12	x	x	x	x	x	200	20	50	x	x	0.05	0.03
DETECTION LIMIT	1	50	1	1	3	1	1	20	0.1	50	0.05	0.01%
ANALYTICAL METHOD	AMDEL SEMI-QUANTITATIVE SPECTROGRAPHIC CODES A1, A2										AMDEL AAS CODE C3	AMDEL SIE CODE E3

SAMPLE LOCALITIES :

	CO-ORD	DESCRIPTION
1/13/12	40 3000 mE 5441500 mN	HORNFELS, AT NW EDGE OF HOUSETOP GRANITE, NEAR CIRCULAR ROAD
1/15/12	397800 mE 5435500 mN	PRECAMBRIAN METASILTSTONE WITH PYRRHOTITE, TRIBUTARY OF GUIDE RIVER WEST OF BUCKBY PROSPECT.

107

PROJECT EL 4/77 HIGHCLERE
 SUBJECT BUCKBY PROSPECT, SURFACE ROCK SAMPLES, ANALYSES
 PREP. BY P. ASKINS DATE SHEET 1 OF 1

SAMPLE CO-ORDS	ppm											
	Sn	W	Bi	Be	Mo	Cu	Pb	Zn	Ag	As	Au	F%
100N 1550W	x	x	x	x	x	50	20	x	0.4	50	x	x
00 1600W	200	x	6	5	x	150	200	30	0.7	5000	0.05	x
00 1675W (A)	700	x	1	x	x	700	20	100	0.1	100	0.10	x
00 1675W (B)	500	x	x	1	x	200	20	x	0.4	x	x	0.01
200S 1560W	70	x	x	3	x	150	20	30	0.1	x	x	0.04
200S 1530W	5	x	x	1	x	200	20	x	x	x	x	0.03
240S 1775W	250	x	x	1	3	700	50	70	0.4	x	x	x
250S 1725W (A)	6	x	x	5	30	150	70	x	0.3	x	x	0.04
250S 1725W (B)	100	x	x	1	x	80	20	30	0.3	x	x	0.01
400S 1825W	30	x	x	1	x	200	10	30	0.1	x	x	0.37
500S 1800W	10	x	x	x	x	200	15	30	x	x	x	0.51
DETECTION LIMIT	1	50	1	1	3	1	1	20	0.1	50	0.05	0.01%
ANALYTICAL METHOD	AMDEL SEMI-QUANTITATIVE SPECTROGRAPHIC CODES A1, A2										AMDEL MS CODE C3	AMDEL SIE CODE E3

x indicates below the limit of detection

APPENDIX 10DIAMOND DRILL LOGS AND ANALYSESNOTES:

A. Bedding angles quoted are measured from the core axis

B. Abbreviations used:

(a) Grain sizes

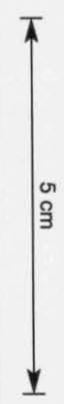
<u>f</u>	very fine grained	grains not visible to naked eye.
f	fine grained	less than 1 mm
m	medium grained	1 - 10 mm
crs	coarse grained	1 - 2 cm
<u>crs</u>	very coarse grained	2 cm +

(b) Degrees of Chemical Weathering:

CW	Completely weathered	<ul style="list-style-type: none"> * Crumbles and disintegrates when gently shaken in water.
HW	Highly weathered	<ul style="list-style-type: none"> * All of fabric weathered. * Iron oxide staining permeates the fabric grain boundaries. * Weakened to the extent that pieces the size of 5 cm diameter core can be broken and crumbled by hand. * Gives a dull sound when struck with a hammer. * Does not disintegrate when soaked in water
MW	Moderately weathered	<ul style="list-style-type: none"> * Most of the fabric weathered. * Iron oxide staining permeates the fabric grain boundaries. * Pieces the size of 5 cm diameter core cannot be easily broken by hand. * Does not ring when struck with a hammer.
SW	Slightly weathered	<ul style="list-style-type: none"> * Some of the fabric weathered (Much feldspar weathered to clay/sericite). * Fine grained rocks may have a bleached appearance. * Iron oxide staining not usually throughout the fabric. * Strength approaches that of fresh rock. * Rings when struck with a hammer.
	Frst. Fresh with limonite stained joints	<ul style="list-style-type: none"> * Fabric not weathered. * No iron oxide staining in the fabric. * Joint faces are superficially coated or stained with limonite. (Possibly also stained with manganese oxides).
Fr	Fresh	<ul style="list-style-type: none"> * Fabric not weathered. * Joints not limonite stained (but may be coated with other minerals including chlorite, calcite, pyrite, quartz or clay.)

No sulphide minerals such as pyrite are present in any rock which is more weathered than slightly weathered. In a slightly weathered rock most sulphides are usually converted to oxides, carbonates, etc.

COMALCO LIMITED
DRILL HOLE LOG



TAS-78-118

HOLE No: KD.1

LOCATION: R50.S 000

CORE SIZE: 0-78-10 NQ
78-10-9525 BQ

DATE DRILLED: NOV 77

PROJECT: KINGSCLEERE

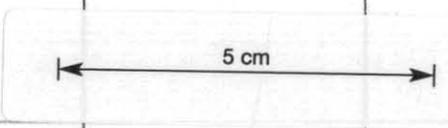
ORIENTATION: Vertical

Core split: No
Geophysics logged: No
Photographed: No

LOGGED BY: R. P. Hock
SCALE: 2cm = 5m

FROM	TO	GRAPHIC LOG	ROCK NAME	ORIGINAL ROCK (if different to rock name)	RECOVERY	WEATHERING	COLOUR	GRAIN SIZE	FABRIC TEXTURE COMPOSITION	MINERALIZATION (Sulphides cassiterite etc)	SCHEELITE by UV lamp	reaction to dilute HCl	BEDDING .	FRACTURES BRECCIATION VEINING ETC	REMARKS
2.10			BASALT RUBBLE.			SW									
5			BASALT			FR	GRY- GREEN	F	MASSIVE						FRACTURES - 1-2cm ± carbonaceous chlorite, quartz
10			BASALT												
15			1175-1185 ASH-CLAY		10%	FR	Gry green	F	Amygdaloidal						Amygdaloides consist of carbonate, chlorite, zeolite, chlorodolomite
20															
25			BASALT			FR	Dx Gry green	F	MASSIVE						More than fractures ± carbonate, zeol chlorite
30															

30		✓	BASALT	FR	dk grey green	f	Amygdaloidal					Amygdaloid Chalcedony, carbonate	Slightly magnetic
35	34.80	✓											
		✓	BASALT	FR	dk grey green	f	Massive					Minor fracturing ± carb, chlorite	"
40		✓											
45	45.00	✓	BASALT	FR	"	f	Amyg					Amyg & carbonate - ferite	
50	48.30	✓	BASALT	FR	"	f	Massive					Very minor fracturing ± above minerals	"
	52.00	✓											
55	54.90	✓	BASALT	FR	"	f	Amyg					Amyg zeolite, carbonate chlorite	
	57.40	✓	BASALT	FR	"	f	Massive						"
60		✓	BASALT	FR	"	f	Amyg small & scattered at base						
	62.30	✓											
65		✓	BASALT	FR	"	f	Massive					Very minor fracturing	"
		✓											
70	67.70	✓	BASALT	FRST	dk grey yellow	f	Amyg					FRACTURED	SIFT chlorite Lith. grain remains
	72.50	✓	AMYD SILT				m. cemented					FLAT LYING	
	73.50	✓	GRIT				"					"	
75		✓											



12%

FLAT LYING
" "

15
30
35
40
5

77.00	77.00	▼	BASALT
77.25		▲ ▲	BASALT
		▼	BASALT
81.50	81.30	▼	SILT-ASH
		▼	BASALT
84.15	84.00	▼	GRIT
85.25	85.25	+	GRANITE
87.50		+	GRANITE
		+	GRANITE
		+	GRANITE
95.25		+	GRANITE
			END OF HOLE

	FRST	olive green	f	Amygdaloidal
	FRST	"	<10cm	AGGLOMERATE
90%	FRST	"	f	Amygdaloidal
		GREY	f	UNCEMENTED
90%	FRST	olive	f	Amyg.
		YEL-GREY	m	
	FR	PINK	m	
	SWI	PINK	m	
	FR	PINK	M	

BROKEN
BROKEN
5 cm

Chlorhyd
"
"
Pink fragments
ALL GRANITE
PLANT FRAGS
Epidote

112
213113

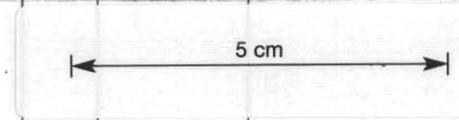
75	75.70	▲ ▼	BASALT	Fr	Grey	m	Brecciated	Caliche zeolite fillip
77.40		▲ ▼						
80		▼	BASALT	Fr	Grey	f	Amygdaloidal	Amygdale - chl
83.70		▼						
85		▼	BASALT	Fr	Grey	f	Massive	5 cm
90		▼						
93.00		▼						
95	95.70	▼	BASALT	Fr	Grey	f	Amygdaloidal	Amygdale, caliche rim chl. cores
96.00		▲	BASALT	Fr	"	m	AGGLOMERATE	very chloritic
		▼						
	99.00	▼	BASALT	Fr	Grey	f	Amygdaloidal	Amygdale as above
100		▲						
		▲	BASALT	Fr	Grey green	m to cfs	Agglomerate	Caliche chlorite cement
104		▲						
104.60		▼	BASALT	Fr	Grey	f	Amygdaloidal	
105		▲	BASALT	Fr	Grey green	m	Agglomerate	Caliche, chlorite, zeolite as cement
107.10		▲						
		▼	BASALT	Fr	Grey	f	Amygdaloidal	Amygdale - caliche
110		▼						
	112.90	▼						
		▲	BASALT	Fr	Grey	m- cfs	Agglomerate	Caliche cement
115		▲						
		▲						
120		▲						

85%
75%
90%

90%

76%

125	125.50	▲	BASALT	Fr	Dark Grey	F	Amygdaloidal				Amygdules - chl	
	126.70	▼	BASALT	Fr	Dark Grey	f					Chloritic - salt	Conchoidal fracture
	127.40	+	GRANITE	HW	Pale Pink	m	EQUIGRANULAR				Chlorite	
130	130.20	+	Aplite	MW to SW	Pale green	f	"				veinif qtz chl + chl, epidote throat	
		+										
		+										
135		+	Granite	SW	Pink to Green (pale-chl)	m	Epi granular	minor pyrite in qtz chlorite veins + some epidote.			Core very broken	alteration patchy fields to chlorite
		+										
		+										
140	140.00	+										
		+	Granite	Frst	Pink	m	Epi granular	pyrite & chlorite				above alteration zones < 30cm
	144.00	+										
145		+										
		+										
		+										
150		+	Granite	Fr	Pink	m	Epi granular					
		+										
		+										
155		+										
		+										
160	160.40	+	GRANITE	Fr	cream	f-m						
	161.10	+	END OF HOLE									



147.30 - 147.40
152.60 - 153.50

Reg. note 160.70 - 160.85

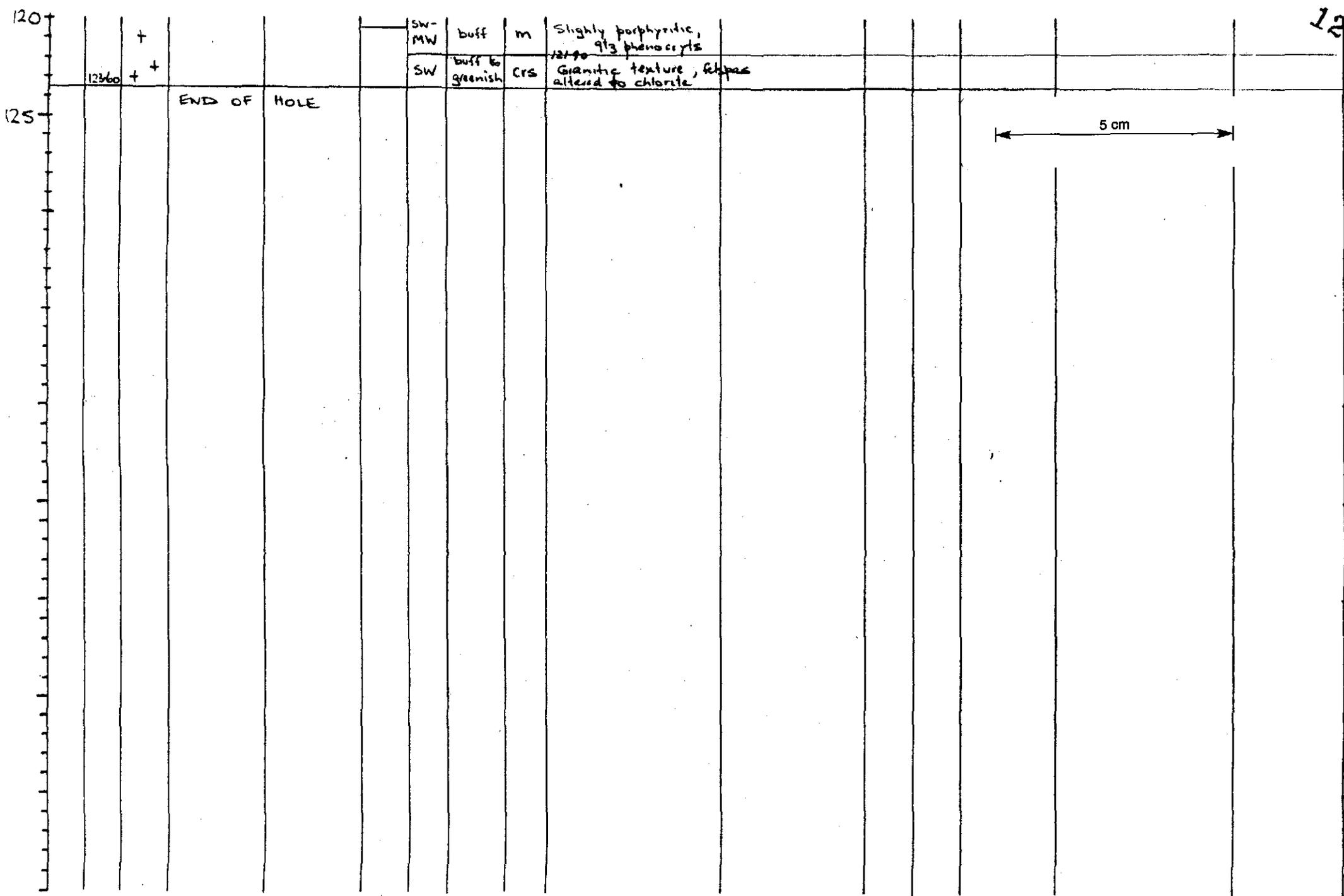
5 cm

118

30	31.17	▲▲▲	AGGLOMERATE		Frst	Grey	f-m	MASSIVE BASALT PYRITIC HORNFELS + BLOCKS											
	32.90	■	SILTSTONE		Frst	Black	f		magnetic, pyritic										Soft chloritized
								97.6% 80%											
35	35.70	▼▼	BASALT		Frst	Olive	f	some vesicles	magnetic										Soft chloritized
	36.50	▼▼	CLAY-SILT.			Grey	f	slight consolidation											
	38.00	■	CLAY-GRIT			Yellow	m	ABUND' QTZ grains											
	40.00	■	SANDSTONE & SILTSTONE		MW	Grey brown	f-m												Fractured
		M						86.7%											
		M						55%											
		M						90%											
45		M	SANDSTONE SILTSTONE		Fr	Pale grey	f-m	poorly indurated.											Slickensides frequent
		M						72%											Joints E magnetic & chlorite 42-53
		M						63%											Biotite veins 43-45
		M						52%											
	54.80	M																	
55		M	HORNFELS	SILTSTONE	Frst	DK grey black	f	Irreg frags of coarser sandstone or siltstone included irregularly in fabric. ? sedimentary brecciation											Fractured
		M						65%											
		M						66%											
60	60.25	+	APLITE		Frst	PALE PINK	f												
	61.50	+	HORNFELS	SILT-SANDST	Frst	DK grey	f												
	62.00	+	APLITE		Frst	WHITE	f												
		M																	
65		M	HORNFELS	SANDSTONE	Fr	DK grey	f-m	Abundant brn mica	veining 62.25 siltstge mica magnetic course pyrrhotite										30-40 at 62.7
	65.25	M																	
		M																	
		M	HORNFELS	Silt-sandst	Fr	Grey	f	Abundant brown mica	possible skarn py, chl, magnetic 67.70-69.30										75-80 at 66.3 veining < 1mm - mag, py, mica - py, chl - qb - minor qtz, magnetic, pyrrhotite at 71.40-73.60
		M																	
		M																	
	73.60	▼	BASALT		Fr	Grey	f	vesicular											CONTACT 70*
75		▼																	dyke

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120

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213121

122

From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
60.25											
62.00	1.75	x	x	x	30	0.2	x	100	x	200	x
63.00	1.00	x	x	x	20	0.3	3	100	x	100	30
67.70	0.30	20	x	x	50	x	100	250	100	300	30
68.00	0.90	6	x	x	40	0.2	5	300	x	300	x
68.90	1.10	50	x	x	50	0.2	3	200	x	600	30
70.00	1.00	2	x	x	30	0.3	x	250	200	400	20
72.00	1.00	1	x	x	40	x	10	300	300	300	x
73.00	1.00	2	x	x	30	0.1	40	250	50	500	30
73.50	0.50	x	x	x	20	0.1	50	300	x	200	30

COMALCO LIMITED
DRILL HOLE LOG

TAS-78-118

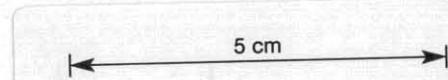
104

HOLE NO: KD 4	LOCATION: 100S/1560W	CORE SIZE: 0-15 H	DATE DRILLED: JAN '78
PROJECT: BUCKBY PROSPECT	ORIENTATION: VERTICAL	15 - 29.55 NQ 29.55 - 152.20 BQ	LOGGED BY: P. ASKINS
		core split ✓; geophys. logged ✓; photographed ✓	SCALE: 2cm = 5m 1:250

FROM	TO	GRAPHIC LOG (no orientation implied)	ROCK NAME	ORIGINAL ROCK (if different to rock name)	RECOVERY, %	WEATHERING	COLOUR	GRAIN SIZE	FABRIC TEXTURE COMPOSITION	MINERALIZATION (Sulphides cassiterite etc)	SCHHEELITE by UV lamp	reaction to dilute HCl	BEDDING	FRACTURES BRECCIATION VEINING ETC	REMARKS
5	12-20	M M M M M M M M M M	Sludge collected: probably CW SKARN		80 40 20	CW	pale greenish	f	sludge very rich in pyrite. sludge panned down giving concentrate of pyrite only, as ~100µm pyritohedrons		NIL			5 cm	
15	12-50	M M M M M M M M M M	SKARN	sludge as above		MW	pale greenish	m-crs	as below		NIL				
20	14-50	M M M M M M M M M M	SKARN	DOLOMITIC LIMESTONE CONGLOM.		SW- MW	drab greenish	f- m	rounded pebbles up to 3cm, some cherty, some carbonate etc, in an original carbonate matrix. Rock now consists of carbonate pale f diopside, epidote, phlogopite, other f dark greenish calc silicates	>1% f dissem PY	NIL	✓ weak in places	1cm wide crs drusy calc-dolomite vein parallel to core at 15.7m		
25	20-25	M M M M M M M M M M	SKARN	interlayered CHERT and DOLOMITIC LIMESTONE		Fr	dirty greenish	f- m	Irreg interlayered chert and carbonate. Chert as irreg patches up to several cm, f, pale pink off white is banded pale + dark calc silicate minerals	>1% f dissem PY <1% mag	NIL	✓ weak in places	banding in places 45°-60°		see note below about chert
30	23-40	M M M M M M M M M M	SKARN + CHERT	MIX of CHERT and DOLOMITIC LIMESTONE CONGLOMERATE		Fr	drab greenish off white chert	m-crs f	Chaotic mix of chert and skarn. Chert mostly off white f, with aggregates of po. as beds or cobbles? up to 50 cm across Skarn as 14.50-20.25 but m-crs dk brown phlog.		NIL	✓ weak in places	minor fractures at 10° 5mm wide with crs carbonate filling	Some or all of the chert is probably metasomatized acid volcanic	
	28-40	M M M M M M M M M M													

213125

Depth (m)	Stratigraphic Unit	Lithology	Fracture	Color	Texture	Notes	Dissemination	Other	Alteration	Thin section description
30-35	META-ACID VOLCANIC	RHYOLITE or TUFF	Fr	off white to buff	f-f	Wistpy texture, internally brecciated and healed Breccia fragments up to 1cm, angular. Minor patches of alteration with dark green minerals.	Aggregates of po in places; f po/py dissemin throughout	NIL	-	Thin section description by W.Fander at 30.00
35-40	SKARN	DOLOMITIC LIMESTONE CONGLOMERATE	Fr	drab greenish	f-crs	Similar to that 14.50-20.25	>1% f dissemin py + po	Trace at 39.35 bluish fluores	Some carbonate still present	locally bleached and leached. Aplitic pyritic 1cm wide 45° at 40.40 (veinlet)
40-45	APLITE		Fr	grey	m	Typical aplitic texture etc	<1% dissemin mag	NIL	-	Contacts sharp - at 41.15 45°, at 43.25 about 60°
45-50	SKARN	DOL-LIMEST. CONGLOM.	Fr	dark drab greenish	f-crs	Similar to 35.25-41.15		NIL	✓	
50-55	SKARN + CHERT	Mix of CHERT and DOLOMITIC LIMESTONE CONGLOMERATE (60:40)	Fr	chert off white skarn dark greenish	f f-crs	Skarn similar to above irregularly mixed with chert which now resembles f quartzite		NIL	✓	Chert is probably altered acid volcanic.
55-60	META ACID VOLC	RHY or TUFF	Fr	pale buff	f-f	Similar to 28.90-35.25		NIL		
60-65	META CALC SILTST	CALC-SILTSTONE	Fr	pale green	f	Irreg pale greenish calc silicates	<1% dissemin po (+py?)	NIL	✓ some relict carbonate	partially preserved at 50° fracture network and alteration give brecciated appearance or pseudo pebbles
65-70	HORNFELS	SILTSTONE	Fr	grey to pale green	f	Irregular but typical hornfels texture		NIL	NIL	50° 52-40 0° 55.25 to 56.75 minor microveinlets and veinlets of quartz or carbonate
70-75	RHYOLITE BRECCIA		Fr	pinkish grey	f-f	Angular fragments of pink rhyolite(?) in a siliceous matrix		NIL	NIL	
75-80	SKARN	DOL-LIMEST. CONGLOM.	Fr	dark brown	f-crs	Texture similar to 14.50-20.25. Frags + pebbles relatively unaltered. Matrix rich in biotite.	pyrrhotite esp in matrix increases after 59.15	NIL	✓ weak	
80-85	QUARTZITE	QUARTZ SILTSTONE	Fr	off white	f	Massive, with 0.1mm fels and bio grains in clear matrix. Minor calc silicate beds		NIL	NIL	70° at 61.90 contact of calc silicate layer
85-90	CALC SIL ROCK	CALC SILTST	Fr	green	crs	pale + dk green amphibole		NIL	✓	45° defined by conc of pale silic amphibole
90-95	QUARTZITE	QUARTZ SILTSTONE	Fr	off white	f	As at 60.25-62.65		NIL	NIL	45° defined by layers up to 15cm thick
95-100	SILTSTONE		Fr	dark purplish grey	f	Mostly massive even textured, hard, siliceous		NIL	NIL	60° 67.50 45° 69.80 Only minor fracturing and alteration.
100-105	FAULT BRECCIA		Fr			Angular frags cherty + silty rocks up to 3cm cemented by quartz or calcite. Dissemin gn, sl (amber) up to 3mm in matrix				70.75
105-110	ALTERED DOLOMITIC LIMESTONE	DOLOMITIC LIMESTONE	Fr	pale cream pinks greens	f	Irregular textures - f-f pale wistpy dolomites and recrystallized and partially metasomatized limestone-dolomite	a little patchy dissemin po	Speck at 73.90	mostly weak	Irreg network of calcite +/- dolomite veinlets esp to 73.55. Partially brecciated and reheated



Thin section description by W.Fander at 30.00

locally bleached and leached. Aplitic pyritic 1cm wide 45° at 40.40 (veinlet)

Contacts sharp - at 41.15 45°, at 43.25 about 60°

Chert is probably altered acid volcanic.

fracture network and alteration give brecciated appearance or pseudo pebbles

minor microveinlets and veinlets of quartz or carbonate

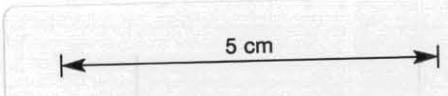
Minor alteration along microfractures

scattered calc-silicate layers up to 15cm thick

Only minor fracturing and alteration.

Irreg network of calcite +/- dolomite veinlets esp to 73.55. Partially brecciated and reheated

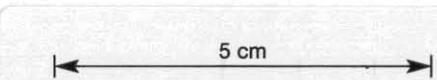
75		M					Altered to green to dark brown, m.	20% m dissemin po 76.40-76.50											
77.60	78.55	A	DOL. LST CONGL.		Fr	pale cream	f	Irreg particles up to 1cm some olive green, some cream, rounded with darker centres	Minor sl, gn at edge of brecc frag at 77.60	NIL	✓ weak								whole rock brecciated with fragments up to several cm cemented by carbonate
80		M	ALTERED DOLOMITIC LIMESTONE	DOLOMITIC LIMESTONE	Fr	greenish pinkish brownish		Variably altered	Patchy dissemin aggregates of po	NIL	✓ weak								Internally brecciated and healed Irreg qtz-fluorite vein 10cm wide at 45° 82.70-83.00
84.65		M																	
85		M	ALT. DOL. LST. CONGLOM.	DOL. LST. CONGL	Fr	cream, buff, grey,	f-m	Similar to 77.60-78.55 Resembles greywacke in texture in places	Dissemin po thru out	NIL	✓ weak								30cm open cavity 86.90-87.40; leached adjacent All very brecciated - ? partially tectonic, partially sedimentary
87.75		M																	
90		A	BRECCIATED DOL. LST CONGLOM	DOL. LST CONGLOM	Fr	cream	f	Breccia fragments similar texturally to 77.60-78.55 Locally altered, brownish.	Patchy po in places	one speck	✓ weak								Network of dolomite veins and veinlets spaced 0.5-5cm define the breccia
93.10		A																	
95		M	SKARN	DOLOMITIC LIMESTONE CONGLOMERATE	Fr	dark brown grey	f-m	Texturally similar 14.50-20.25	Dissemin po thru out	NIL	✓ locally vigorous								
99.75		M																	
100		M	ALTERED DOLOMITIC LIMESTONE	(SILTY) DOLOMITIC LIMESTONE	Fr	pale grey to pinkish locally brown	f	Very irregular in patchy, wispy textures. Locally altered, brown	Dissemin po	NIL	✓ weak	finely bedded	Dark microveinlets and minor carbonate veinlets.						
106.40		..										30° 102.00							
		..										40° 103.50							
		..										0° 104.50							
109.15		....	SILTSTONE		Fr	dark brown	m	Massive, spotted	A little dissemin po	NIL	NIL								
110		....																
		M	HORNFELS	CALCAREOUS DOLOMITIC SILTSTONE	Fr	greenish brownish	f-m	Variable textures variably bleached, altered, locally brecciated, dolomitic.		NIL	✓ weak, locally vigorous or nil	60° 118.20	Network of irreg dolomite-calcite veinlets						
												1cm altered aplite vein at 111.65						
												1cm " " " 70° 118.15						
												10cm " " " 45° 118.45						
118.80		M																	
120		+	ALT. GRANITE	GRANITE	Fr														



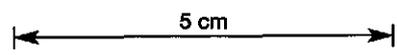
120

KD 4
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213127

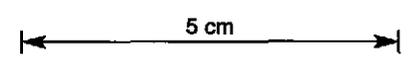
120	122.40	+	ALTERED GRANITE	GRANITE	Fr	pale green	m-crs locally crs	All feldspars and ferromags altered		Parallel veins of qtz-carbonate 120.50-121.00	
125	126.50	+	GRANITE		Fr	pink	m-crs locally crs	Slightly altered in places			
	126.25	+	ALT. GRAN.	GRANITE	Fr	green		similar to above			a few qtz veins at 45° up to 5cm wide
	127.25	+	GRANITE		Fr	pink	crs-crs				
130		+	ALTERED GRANITE	GRANITE	Fr	green	m-crs locally crs	Similar to above	qtz-calc, crs, vein at 138.75-138.95		
135		+									
140		+									
145	143.25	+	GRANITE		Fr	pink	m-crs locally crs	mostly fresh; altered, green, 146.55-147.00			
150	152.20	+									
			END OF HOLE								

	FROM TO	INT.	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge	CaFr
30	30.90												
	33.00	2.10	1	x	x	10	0.1	x	70	x	30	1	
35	35.25	2.25	5	x	x	5	x	x	50	x	50	x	
	36.25	1.00	20	x	x	1	x	x	500	x	30	x	0.60
	37.25	1.00	50	x	x	15	1.5	x	150	x	20	1	
	38.25	1.00	60	x	x	15	0.1	x	150	x	70	1	
	39.25	1.00	50	x	x	15	x	x	200	x	30	1	
40	40.25	1.00	40	x	x	15	0.2	x	200	x	70	1	
	41.15	0.90	30	x	x	30	x	x	150	x	70	1	
	43.25	2.10	1	x	x	30	x	3	10	x	70	x	1.20
	44.25	1.00	50	x	1	5	0.2	x	700	x	70	2	
45	45.75	1.50	20	x	1	3	0.2	x	500	x	50	2	
	47.25	1.50	10	x	1	10	x	x	150	x	50	2	
	48.25	1.00	10	x	x	1	x	x	150	x	50	2	
50	50.10	1.85	5	x	x	3	x	x	100	x	30	x	
	51.25	1.15	5	x	x	10	x	x	200	x	50	1	
	52.25	1.00	30	x	x	50	x	50	150	x	100	2	
	53.25	1.00	3	x	x	5	x	x	200	x	30	3	
55	55.25	2.00	1	x	x	5	x	x	150	x	30	1	
	57.30	2.05	5	x	x	10	x	x	250	x	50	1	
	58.25	0.95	5	x	x	3	x	10	250	x	70	2	
	59.15	0.90	30	x	x	20	x	x	300	x	50	2	
60	60.25	1.10	30	x	x	20	0.1	x	500	x	50	1	
	62.65	2.40	5	x	x	10	x	x	100	x	70	x	
	63.25	0.55	10	x	x	70	x	x	10	x	50	1	
65	65.25	2.00	10	x	x	50	x	x	10	x	50	x	
70	70.50												
	71.25	0.75	30	x	x	3	x	x	20	x	10	x	
	73.55	2.30	20	x	x	20	x	x	20	x	30	x	
75		1.50	15	x	x	10	2.0	x	50	50	70	x	



130

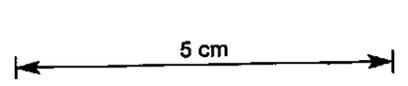
	From/To ISOS	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge	CaF ₂
75	76.85	1.80	20	x	x	20	x	x	100	x	20	x	
	78.55	1.70	10	x	x	10	x	x	100	x	20	x	0.05
80	80.70	2.15	20	x	x	10	0.2	x	200	x	70	x	
	82.70	2.00	2	x	x	10	1.5	x	50	x	80	x	
	84.65	1.95	20	x	x	20	0.3	x	200	x	50	x	
85	87.75	3.10	10	x	1	15	3.0	30	300	100	50	x	
	89.25	1.50	8	x	x	10	0.5	x	50	50	30	x	
90	91.25	2.00	10	x	x	10	3.0	30	200	100	50	x	
	93.10	1.85	30	x	x	30	0.3	x	100	100	50	x	
	94.25	1.15	20	x	x	3	x	x	30	x	30	x	
95	95.25	1.00	5	x	x	20	x	3	100	x	50	x	
	96.25	1.00	10	x	x	20	x	x	100	x	50	1	
	97.25	1.00	20	x	x	30	x	x	100	x	50	1	0.65
	98.25	1.00	70	x	x	70	x	x	300	x	100	2	
	99.75	1.50	30	x	x	50	x	x	300	x	70	1	
100	100.75	1.00	20	x	x	30	x	x	250	x	50	1	
105													
110													
	113.25												
	114.25	1.00	1	x	x	20		70	70		30		
115													
120													



213131

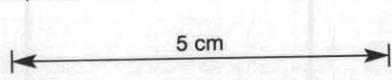
From/to	INT.	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge	CaF ₂
120 121-25 122-25	1.00	1	x	x	20	x	30	10	<	100	x	
125 125-50 126-25	0.75	5	x	x	50	x	100	30	x	200	x	0.10
130												
135												
140												
150												

131

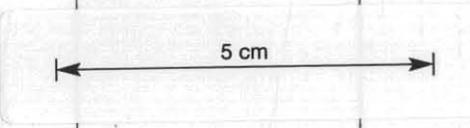


213132

30	32.00	C'M M c		75%									
35		M	SKARN	DOLOMITIC LIMESTONE CONGLOMERATE	Frst- grey for Frst HW leached in places buff where weath.	m	Similar to 20.15-26.30 but little or no magnetite	Some mag in places Pyrite locally abundant	NIL	NIL	-	Very fractured, much pale green and dark green chlorite.	
40		M		46%									
45	43.90	M		91%									
45		... A ... A ...	ALTERED BRECCIATED SILTSTONE		Frst grey	f-f	Internally brecciated and reheated in places Texture is typical for siltstones.	f-f py 710% in some places	NIL	NIL	fine bedding 20° 46'00	microfractures thru out	
50	49.25	M	SKARN	DOL-LST CONGL.	Fr grey		Similar to previous	Rare magnetite. Py locally	NIL	✓ weak in pl.	-	qtz-carbonate-chloritic fractures.	
55	51.50	M ▲	FAULT ZONE	DOLOMITES, DOLOMITIC LIMESTONE CONGLOM.	Fr? greys	f-m	Consists of an irregular array of soft leached altered green equivalent of skarn above, plus f grey or pink dolomite with typical irregular wispy texture.	Some py, po residual in skarn. Some py on joints	NIL	✓ weak in skarn, dolomite and in fracture fill carbonate	?45° 57.25 in dolomite	Very fractured with pale green alteration. Leached in places. Much irregular off-white carbonate filling fractures, many sub-parallel to core. Possibly is secondary dolomite. Post mineralization faulting.	
60		M ▲		15%									
65		M ▲											
70	72.00	M ▲		84%									
70	72.40	M			Fr pale green	f	Weak incipient altm to skarn		NIL	✓ moderate		Minor fract. with carbonate fill	
75		M	SKARN										



75	M	SKARN	DOLOMITIC LIMESTONE CONGLOM.		Fr	dark grey	f-m	Similar to previous. Texture accentuated due growth of biotite especially in matrix Much of the rock is unreplaced. In places is f grey dolomite	po > 5% as f aggregates. po often occurs within original pebbles	NIL	mod efferv of unrepl dol-1st.		Minor fractures with carbonate filling in most places. Some fractures at 25° to core, about 3cm wide, carbonate filled, at 75.00, 80.60, 83.30. Locally altered soft, leached, greenish.
80	M												
85	M												
90	M												
94-75	M												
95	95-75	CHERTY DOLOMITE			Fr	reddish brown	f	massive		NIL	NIL	-	network of cracked carbonate microfractures
	M		DOLOMITIC LST-CONGLOM + CHERT		Fr	grey	f-m	As at 72.90-94.75. Chert at e.g. 96.75-97.75 has irreg wispy texture pinkish greenish, very broken, much f-f pd locally.					
98-40	M	SKARN			Fr	grey	f-m						
100	M	FAULT ZONE IN SKARN	DOLOMITIC LIMESTONE CONGLOMERATE	83%	Fr	grey	f-m	Skarn fabric etc similar to above		NIL	weak	-	Very fractured. Stockwork of dolomite veins, a little quartz, trace galena sphalerite. Skarn is drusy and very leached in places.
105	M			60%									
107-75	M												
110	M	SKARN	DOLOMITIC LIMESTONE CONGLOMERATE		Fr	grey	f-m	Similar to above but much unreplaced carbonate		NIL	✓	-	Some carbonate filled fractures Thin section descriptions 111-15 ← by W.Fander 112.50 ←
113-75	M												
115		DOLOMITIC LIMESTONE			Fr	pale greys	f	Mostly massive Partly replaced in patches to dark green chlorite		← 115.90 trace in vein sub parallel to core	✓		Fault zone 114.50-123.05: Stockwork of carbonate (dolomite) veins, many sub-parallel to core. Trace sl, pale brown, up to 3mm, in veins
120													



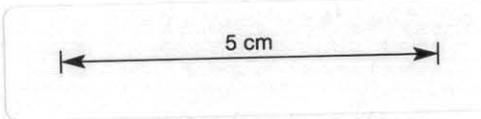
213135

HOLE NO KD 5
PROJECT BUCKBY PROSPECT

COMALCO LTD
ANALYSES OF SPLIT CORE, ppm
X indicates below limit of detection

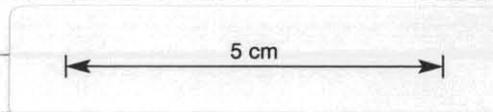
DATE MARCH 1978

ANALYTICAL LAB: AMDEL		SEMI QUANTITATIVE SPECTROGRAPHIC, CODE A1, A2 XRF										
ANALYTICAL METHOD												
DETECTION LIMIT		1	50	1	1	0.1	3	1	50	10	3	4
FROM / TO, m	INTERVAL, m	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge	Sn
9.30	9.30	1	x	x	3	0.2	30	60	x	70	x	
12.30	3.00	4	x	x	3	x	20	50	x	50	x	18
13.40	1.60	30	x	x	5	0.3	x	150	x	60	x	65
14.40	1.00	30	x	x	10	0.1	x	700	x	30	x	100
15.40	1.00	50	x	x	10	x	x	200	x	30	x	130
17.50	1.60	50	x	x	3	0.1	x	300	x	40	x	
20.15	2.65	60	x	x	20	0.2	100	40	x	70	x	
21.30	1.15	60	x	x	10	0.1	x	300	x	40	x	
22.30	1.00	50	x	x	10	x	x	200	x	60	x	
23.30	1.00	80	x	x	10	0.1	x	300	x	30	x	110
24.30	1.00	30	x	x	10	x	x	250	x	20	x	
25.30	1.00	50	x	x	10	0.4	x	250	x	40	x	
26.30	1.00	30	x	x	5	0.2	x	500	x	60	x	
27.60	1.30	3	x	x	20	0.1	x	80	x	60	x	14
30	2.60	x	x	x	30	0.2	x	100	x	60	x	x



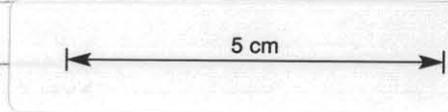
127

From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge
30-30											
32-00	1.80	x	x	x	30	x	x	70	x	40	x
34-00	2.00	40	x	x	10	0.2	x	300	x	60	x
37-40	3.40	50	x	x	20	0.2	x	200	x	50	x
40-00	2.60	50	x	x	30	0.8	x	100	50	50	x
42-00	2.00	15	x	x	10	0.2	x	300	x	60	x
43-90	1.90	7	x	x	30	0.4	x	200	x	50	x
44-25											
51-50	2.25	4	x	x	5	0.3	3	200	x	50	x
55-00	3.50	20	x	x	20	0.3	x	20	x	50	x
58-00	3.00	3	x	x	10	0.2	5	60	x	30	x
61-00	3.00	7	x	x	10	0.6	x	200	x	30	x
64-00	3.00	5	x	x	20	0.3	x	200	100	40	x
67-00	3.00	3	x	x	10	0.7	x	150	200	25	x
70-00	3.00	7	x	x	20	0.4	x	150	x	30	x
72-00	2.00	10	x	x	20	0.2	x	200	x	50	x
72-90	0.90	1	x	x	30	0.1	x	300	x	70	x
75-00	2.10	5	x	x	5	0.1	x	200	x	40	x



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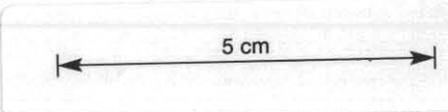
From/To	INT	Sn	W	Pi	Be	Ag	Mo	Cu	As	Y	Ge
75-77.00	2.00	20	x	x	10	0.3	x	100	x	50	x
77-79.00	2.00	50	x	x	15	0.1	x	80	x	60	x
80-81.00	2.00	5	x	x	5	0.1	x	200	x	30	x
81-83.00	2.00	4	x	x	1	0.1	x	300	x	30	x
83-85.00	2.00	3	x	x	5	0.1	x	300	x	40	x
85-87.00	2.00	4	x	x	5	0.1	x	300	x	40	x
87-89.00	2.00	5	x	x	5	x	x	300	x	60	x
89-91.00	2.00	7	x	x	3	0.1	x	200	x	40	x
91-93.00	2.00	10	x	x	5	0.2	x	100	x	60	x
93-94.75	1.75	15	x	x	5	0.6	x	200	200	30	x
94.75-95.75	1.00	1	x	x	10	x	x	70	x	60	x
95.75-97.40	1.65	7	x	x	5	0.1	x	300	x	70	x
97.40-98.40	1.00	10	x	x	20	0.1	x	200	50	50	x
98.40-101.40	3.00	7	x	x	10	1.0	5	100	200	20	x
101.40-104.75	3.35	7	x	x	10	0.8	10	150	100	40	x
104.75-107.75	3.00	2	x	x	10	0.4	x	200	x	50	x
107.75-109.75	2.00	4	x	x	10	0.6	x	200	x	30	x
109.75-111.75	2.00	4	x	x	5	0.4	x	300	x	40	x
111.75-113.75	2.00	5	x	x	5	1.5	x	200	200	30	x
113.75-115.75	2.00	7	x	x	20	0.2	x	20	x	60	x
115.75-116.75	1.00	20	x	x	30	0.5	100	50	x	50	x
116.75-119.75	3.00	7	x	x	10	0.3	10	5	x	50	x



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20

From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Ge
120 - 123.05	3.30	5	x	x	10	0.2	x	15	x	40	x
125 - 126.00	2.95	5	x	x	20	0.2	x	15	x	40	x
- 128.00	2.00	5	x	x	5	x	x	300	x	60	x
- 130.00	2.00	5	x	x	10	0.8	x	300	x	50	x
130 - 131.55	1.55	3	x	x	5	0.5	40	150	x	50	x
- 132.70	1.15	x	x	x	30	0.1	500	70	x	100	x
- 134.70	2.00	1	x	x	20	0.2	400	300	x	100	x
135 - 136.70	2.00	1	x	x	20	0.1	50	300	x	70	x
40 - 148.50											
50 - 150.00	1.50	x	x	x	20	0.1	10	10	x	100	x
- 151.65	1.65	2	x	x	30	0.1	x	5	x	100	x



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COMALCO LIMITED
DRILL HOLE LOG

TAS-78-118

IAC page 1 of 6

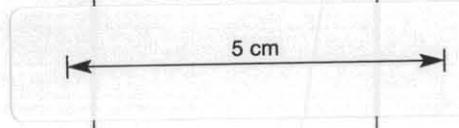
HOLE No: KD 6	LOCATION: 100S/16S0W	CORE SIZE: 0-10.30 H 10.30-41.25 NQ 41.25-251.25 BQ	DATE DRILLED: MAR '78
PROJECT: BUCKBY PROSPECT	ORIENTATION: Vertical	Core split ✓ Geophys logged ✓ Photographed ✓	LOGGED BY: P. ASKINS
			SCALE: 1:250

FROM	TO	GRAPHIC LOG	ROCK NAME	ORIGINAL ROCK (if different to rock name)	RECOVERY	WEATHERING	COLOUR	GRAIN SIZE	FABRIC TEXTURE COMPOSITION	MINERALIZATION (Sulphides cassiterite etc)	SCHHEELITE by UV lamp	reaction to dilute HCl	BEDDING	FRACTURES BRECCIATION VEINING ETC	REMARKS
5		M M M	SKARN	? CARBONATE ROCK	3%	Hw- CW	brown	m	only gossanous material recovered		NIL	NIL			← 5 cm →
10	~10.30	M M M	ALTERED SKARN	? CARBONATE ROCK	12% 57% 54% 33% 50%	Fr?	grey + olive green	m	Completely altered. Chlorite rich Some scattered hornfels	Dissem py	NIL	NIL		Very broken, fractured slickensided, leached Much dark chlorite associated with slickensides	Pyrite is interpreted to be a secondary alteration of pyrothite
15	17.25	M... ... M... ... M...	HORNFELS	SILTSTONE	80%	Fr	grey	f-m	Typical siltstone texture plus irregular texture due to metasomatism	A little dissem py. plus some py as aggregates	NIL	NIL	Overall 30°- 40° at 22.30 23.25, 24.25 finely bedded	Dislocated, folded, brecciated and rehealed bedding. Broken, with dark slicks of chlorite on fractures Locally completely altered, leached	
25	24.60	M M	ALTERED SKARN	DOLOMITIC LIMESTONE PULVERULENT	63% 55% 84%	Fr	olive green	f-m	As below but Soft, porous leached	Dissem py	NIL	NIL	—		
30	~42.5														

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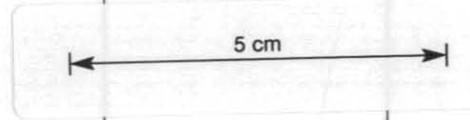
30		M	ALTERED SKARN	DOLOMITIC LIMESTONE CONGLOM.		Fr	dark drab green	f-m	Typical pebble-cobble texture. Consists mostly of dk green chl replacing pre-existing calc-silicate minerals. 20cm of white quartzite at 31.00	Dissem py	NIL	weak in places thruout	Locally leached, porous especially after 33.25
35	36.25	M											
40		M	MAGNETITE SKARN	DOLOMITIC LIMESTONE CONGLOMERATE		Fr	dark grey	f-m	Texture as above but rock hard, slightly magnetic. Siliceous rock with pebbly texture 38.20-38.40	Dissem py, Some mag, some crs patches with calcite-dab, tourmaline-pale actinolite	NIL	weak in places thru-out	Contact at 38.40 with siliceous rock, 60°
43.15		M			87%								Minor calcite veins some with trace mauve fluorite. Slickensided chloritic fracture parallel to core 42.00-43.15
45		M	ALTERED SKARN	DOLOMITIC LIMESTONE CONGLOM.		Fr	drab green	f-m	As at 33.25 - 36.25. Becomes relatively unaltered after 53.50		NIL		
50		M											
55	54.50	M	PYRROHITTE SKARN	DOLOMITE?		Fr	dark grey	m-crs	Crudely layered, crs act other c.s minerals, po. Irreg mesh like texture in places	← first appearance of po in Up to 50% po in places. A little py, cp	NIL	NIL	Crude layering 70° SS 00
56.85		M	MAGNETITE SKARN	DOLOMITIC LIMESTONE CONGLOM.		Fr	dark grey	f-m	Similar to 36.25 - 43.15		NIL	NIL	
60	61.25		SKARN	DOLOMITE		Fr	dark + pale grey	f-m	In places massive pale c.s minerals. In places is skarn after abt 61.25. In places is dolomite	A little po as below	a little in veinlet at 60.40	near nil	
65		...	SILTY DOLOMITE			Fr	variable grey, greenish, dark reddish brown	f-f	Irregular textures. Overall resembles siltstone. Textures complicated by irreg metasomatic effects, brecciation.	Dissem pyrite, po in places	a little in veinlets -62.50	strong to weak in most places	-62.00 50° -62.25 40° -68.00 50° -68.90 -69.20 -69.90 crs -71.40, 35° -72.20, 35° -73.00 -73.25
70		...											Veinlets of pink carbonate, trace purple fluorite, locally trace scheelite. Local brecciation. Network of pale carb in brecciated f. black tourmaline? rk. Pink carb veinlets as irreg network, locally much scheelite. A little f black rk associated.
75		...											



213142

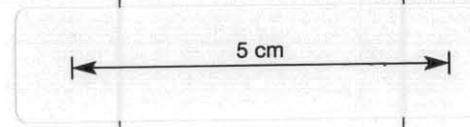
142

75	78.70	78.30	M	Pg SKARN	DOLOMITE	Fr	black dark grey	m-crs	Mesh of po (30%) in crs hornblende	75.35 76.35	at a little at 78.70	nil or weak	76.00 60°	76.25 layered calcite filled fracture at 20°
80			M	SKARN	DOLOMITE	Fr	greys	f-m	Pale + dark CS minerals, po up to 20% locally Unreplaced dol in places 80.45 Typical pebbly texture		NIL	weak in places	80.00 0° finely bedded (where preserved)	80.45 Dark chloritic slickensides at 0°-20° 81.30
85	84.15		M		DOLOMITIC LIMESTONE CONGLOM.	Fr	pale greys, green etc	f-m	Very broken array of dolomite and replaced dolomite		NIL	mod.		Network pale carb veinlets; healing of breccia by carbonate cement.
85	86.15		Δ	DOLOMITE		Fr	grey	f-m	Typical texture. Predominantly pale CS minerals and phlogopite		NIL	mod. rarely		
90			M	SKARN	DOLOMITIC LIMESTONE CONGLOM.	Fr	grey	f-m	Typical texture. A little disseminated po		NIL	mod. rarely		
95			M											
100			M											
105	103.35		M	SKARN, CALC-SILICATE ROCK	DOLOMITE, SILTY DOLOMITE	Fr	CS pale green skarn dark grey	CS f-m skarn m-crs	Skarn is crs-crs bio + 104.25 diopside rock. Skarn is as 86.15-102.35 CS massive, pale. 105.60		NIL	NIL	bedding fine	bedding dislocated brecciated, folded
110			M			Fr	dark grey	m-crs	Interbedded sequence originally similar to 61.25-78.30, but compositionally same as skarn at 86.15-103.35		NIL	NIL	108.25 50° 109.75 30°	
115	112.15		M	SKARN, CALC-SILICATE ROCK, DOLOMITES	SILTY DOLOMITE	Fr	greenish grey pale to dark greys	m	111.35 massive pale CS rk		NIL	NIL	fine bedding	111.25 Irreg ytz stringed parallel to core
115			M			Fr		f-m	Irregular textures. Partial replacement		NIL	for silty dol	dislocated in pl; overall at 30°	112.70 carb vein brecciated at 45°. Minor carb veinlets elsewhere
120	119.00		M		DOLOMITIC LIMESTONE CONGLOM + SILTY DOLOMITE	Fr			Rock types as above		NIL	for silty dol		3cm of sheeted carb veinlets at 45° 117.15 117.25 1-2cm carb vein (white + pink) overall at 45°



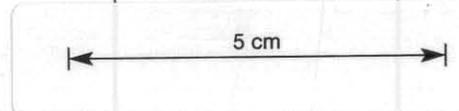
143

120	122-85	M	ALTERED SKARN	DOLOMITIC LIMESTONE	Fr	grey to greenish	f-crs	Similar to 29-25-36-25. Epidote thru out, espec. as repl of cores of original pebbles	Dissem py	NIL	mod	-	Core soft, broken in most places
125		M	SKARN	CONGLOM. VEIN	Fr	dark grey	f-m	As above but unaltered	Dissem po	NIL	weak		Minor carb veins + veinlets
125	125-65	M		SILTY DOLOM.	Fr	grey	f-m	Partial replacement textures	A little dissem f po	one speck -12700	Variable	dislocated folded bedding mostly 45°-60°	124-25 Vein of crs pale carb with brecc frags up to 2cm of country rock partially altered to black f tourmaline? Contacts 45°
130		M	AMPHIBOLE SKARN	DOLOMITIC LIMESTONE CONGLOM	Fr	very dark green	m-crs	Predom. very dark green hornblende. Original texture nearly obliterated in places	Dissem m-crs po, trace cp. Locally 75% po	NIL	weak		
135		M											
140		M		VEIN	Fr	buff	f-crs	pale dol + f drab olive chlorite? trace purple fluorite. Fragments of country rock		NIL	weak		Contact 60°
140		M		DOLOMITIC LIMESTONE CONGLOM	Fr	very dark green;	f-crs	Similar to above but less crs hornbl in some places, so that original pebbly texture easily recognizable	Dissem po only in unaltered sections	NIL	weak	absent where altered	e.g. 14100 Many carb veins veinlets with trace magne fluorite, common orientation 45°, up to several cm across, with associated alteration up to 20 cm adjacent. In places assoc with alteration is black tourmaline and very dark brown axinite blades up to 1cm.
145		M				pale olive green where altered		Alteration assoc. with faulting:- olive green chlorite replaces hornblende	145-80 Scattered magnetite, up to 20% locally				145-50 145-80 crs axinite in vein, also crs magnetite.
150	152-10	M											
155	156-55		ALTERED DOLOMITIC LIMESTONE CONGLOM	DOL. LST CONGL.	Fr	pale green	f-m	Typical texture; Alteration is pale green, f, through fabric	Dissem py	15360 one speck	mod		Very fractured by network of carb veinlets
160		M	SKARN	DOLOMITIC LIMESTONE CONGLOM	Fr	dark greenish grey	f-m	Typical texture; Much unreplaced carbonate evenly distributed	Dissem po, py	NIL	mod		Irregular minor carbonate veinlets
165	164-95	M											



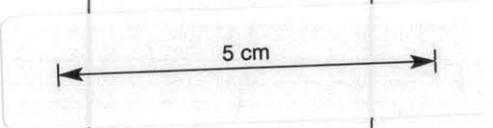
144

165	167.90	ALT. DOL. LST. CONGLOM.	DOL LST CONGL.	Fr	mostly pale green	f-m	Similar to 157.10-166.55 -166.00 pink f silty dol. -166.25 -167.30 skarn as 156.55-164.75 Angular frags up to 3cm of alt dol siltst? in	dissem py >1% in places	NIL mod	Carb veining common. Several orientations -166.30 -166.90 Sheared veins at 45°	Orientation 55°	
168.00		FAULT BRECCIA							NIL	bale of carb matrix		
170	172.25	SILTSTONE		Fr	dark reddish brown	f	Typical siltstone texture only weak metasomatic textures		NIL NIL	Indistinct at 169.75 at 20°	Network irreg carb microveinlets	
173.50		SILTY DOLOMITE		Fr	grey	f-m	Similar to 112.15-114.85		NIL	mostly 20°	Irreg carb veinlets Slicks parallel core 173.00	
175	175.10	HORNFELS	SILTSTONE	Fr	dark reddish brown	f-m	Spotted hornfels; diffuse white 1mm spots in rock as 168.00-172.25		NIL NIL		Minor carb veining	
180		DOLOMITES, CALC-SILICATE ROCK	DOLOMITE, SILTY DOLOMITE,	Fr	greenish greys	f-m	Similar to 114.85-119 Some irreg interbedded siltstone at top		NIL	Variable	-178 Carb veining intense -179 Carb veinlets thru out	
185												
187.10												
189.35	184.35	SKARN, C.S. ROCK	DOL LST. CONG. + SILTY DOL	Fr	greenish grey	f-m	Mostly skarn as 166.55-164.45 -188 Mostly calc-silicate Some unrepr dol		NIL	variable		
190		DOLOMITES ALTERED SILTY DOL,	DOL + SILTY DOL.	Fr			Very variable as for 175.10-187.10		NIL	Variable	Dislocated fine bedding 20°-60° 3cm irreg carb vein at 20°	
195		CALC-SILICATE ROCKS,									Irreg sheeted carb, a little qtz vein with elongate frags of country rock. Sheeting 70° -194.25 -194.50 -196.75 Similar -196.95 -198.50 Carb-qtz veinlet 2cm wide 15°	
200												
205	207.55	ALTERED FRACTURED DOL LST.	DOLOMITIC LST	Fr	pale greenish	f-m	Array of irreg veinlets of carb in f carb-m reddish bronze specs of ? brittle mica	Dissem py + jagged aggregates	NIL	mod	194 -202, 20° 203.10 Vein? similar to 203.25 204.35-207.55. Upper contact 45°	fractures anastomose parallel to core
210		DOLOMITES, ALTERED SILTY	DOL +								-207.90 0° wavy bedding in pink dol.	



145

210			DOLOMITES CALC-SILICATE ROCKS	SILTY DOL.	Fr			Similar to 189.35-204.35 but overall darker colour and more silty. Pebbly in places	NIL			
212.50			ALTERED DOLOMITE	DOL.	Fr	pale buff, greenish	f	Consists of v pale ortho pyrox + qtz. Remnant pebbles in places	Trace sl along microveinlets	NIL	NIL	Talc coated fractures
215	215.25		ALTERED SILTY DOL.	SILTY DOL.	Fr			Similar to 207.35-212.50 but mostly silty dol. Variably altered, bleached in many places	Dissem f py in places	NIL	weak in places	-219.50 3cm vein containing breccia at 45° Minor carb veinlets thru out
220												
224.40												
225		+	ALTERED GRANITE	GRANITE	Fr	pale greenish	m- crs	Granite texture preserved but only quartz is unreplaced. Alteration is predominantly chlorite of various types and colours	Trace dissem py	NIL	NIL	-225.55 6cm wide vein at 30° of qtz-m brown sl - trace gr Many carbonate veinlets. Traces of sphalerite in veinlets.
230		+										
235		+										
240		+										
245		+										
250	250.60	+	GRANITE		Fr	pink	m-crs	246.50 partially 247.50 altered.	Pink orthoclase >> plag. Qtz. ~1% mafics	NIL	NIL	
251.25			END OF HOLE									
255												

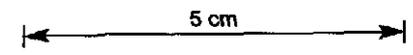


HOLE NO KDG
PROJECT BUCKBY PROSPECT

COMALCO LTD
ANALYSES OF SPLIT CORE, ppm
X indicates below limit of detection

DATE 1978
146

ANALYTICAL LAB: AMDEL
ANALYTICAL METHOD: SEMI QUANTITATIVE SPECTROGRAPHIC CODE A1, A2 XRF
DETECTION LIMIT: 1 50 1 1 0.1 3 1 50 10 20 4

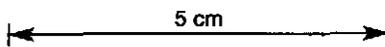


FROM/ TO, m	INTERVAL m	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn	Sn
10-30	10-30	5	x	x	20	0.2	300	700	x	60	400	
14-10	3-80	6	x	1	20	0.2	3	600	x	80	1000	
17-25	3-15	10	x	x	30	0.1	50	200	x	200	700	
18-60	1-35	2	x	x	10	0.1	20	100	x	70	70	
20-25	1-65	x	x	x	10	0.1	15	100	x	50	30	
22-25	2-00	x	x	x	15	0.1	15	150	x	70	30	
24-60	2-35	5	x	x	5	0.4	20	200	x	25	30	6
27-60	3-00	70	x	x	30	0.2	600	300	x	60	400	70
29-25	2-35	30	x	x	20	0.3	50	200	x	60	200	28

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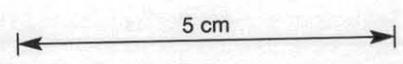
147



From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn	
30-31.25	2.00	30	x	x	20	0.1	50	300	x	60	200	
33-33.25	2.00	50	x	x	10	0.1	50	250	x	50	100	
35-36.25	3.00	50	x	x	10	0.2	70	300	x	70	300	
38-38.25	2.00	80	x	x	40	0.3	5	500	x	70	100	
40-40.25	2.00	70	x	x	50	0.2	20	500	x	100	400	
43-43.15	2.90	200	x	x	30	0.3	5	300	x	50	600	95
44-44.25	1.15	40	x	x	10	0.1	30	200		60	70	
45-47.25	3.00	50	x	x	20	0.3	80	200	x	70	200	
50-50.25	3.00	100	x	x	20	0.3	3	200	x	60	500	
54-54.50	4.00	100	x	x	20	0.2	200	250	x	60	300	
55-56.85	2.35	70	x	x	50	0.2	x	3000	x	50	100	
59-59.10	2.25	200	x	x	30	0.2	30	700	x	150	300	100
60-61.25	2.15	200	x	x	40	0.6	x	400	x	100	200	95
64-64.25	3.00	50	x	x	30	0.3	100	500	x	60	200	26
65-66.25	2.00	200	100	x	30	1.0	10	400	200	70	1500	60
68-68.50	2.25	20	x	5	20	0.4	5	800	x	70	1500	14
68.90	0.40	300	100	10	10	5.0	50	1500	x	100	5000	150
70-71.25	2.35	60	x	x	30	0.1	x	100	x	70	200	
72-72.85	1.60	60	100	1	30	0.5	20	300	x	60	500	
73-73.35	0.50	70	3000	x	20	0.1	30	100	100	70	200	
75-	3.00	30	100	x	20	0.1	5	300	x	50	200	

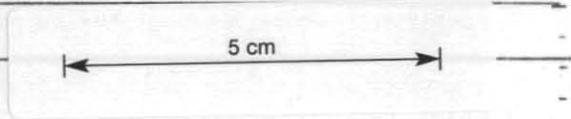
From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn	
75-76.25												
78.30	2.05	100	1000	x	30	0.4	7	700	x	80	200	50
78.90	0.60	500	100	2	70	0.5	x	5000	x	300	300	320
80-80.45	1.55	300	x	x	50	0.3	3	1000	x	80	200	
82.30	1.85	200	x	x	30	0.1	x	300	x	40	100	
84.15	1.85	300	50	x	20	0.2	x	600	x	60	400	
85-86.15	2.00	50	x	x	10	0.5	x	300	x	50	700	
89.25	3.10	30	x	x	5	x	3	150	x	40	400	
90-92.25	3.00	80	x	x	10	0.3	3	250	x	50	300	
95-95.25	3.00	50	x	x	5	0.2	10	300	x	50	400	
98.25	3.00	15	2000	x	5	0.5	15	700	x	100	200	
100-101.25	3.00	30	x	x	5	0.5	5	300	x	100	200	
103.35	2.10	50	x	x	10	0.3	x	400	x	50	400	
105-105.60	2.25	30	x	x	70	0.1	3	300	x	100	300	
108.40	2.80	40	x	x	10	0.4	x	600	x	50	400	
110-111.35	2.95	20	x	x	10	0.2	3	500	x	50	300	
112.15	0.80	10	x	x	5	0.7	100	1000	x	80	200	
114.85	2.70	50	x	x	20	0.3	x	300	x	50	1000	
115-116.90	2.05	60	x	x	30	0.2	5	400	x	60	400	
119.00	2.10	40	x	x	50	0.1	x	100	x	80	30	
120-												

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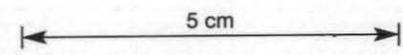
149

	From/To	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn	
20	121.00	2.00	15	x	x	10	0.3	x	150	x	50	70	
	122.85	1.85	30	x	x	10	0.1	15	300	x	50	200	
	124.25	1.40	200	x	x	30	0.2	5	300	x	50	400	
25	124.85	0.60	100	x	3	30	1.0	15	250	x	70	800	
	126.85	2.00	60	x	x	30	0.2	5	1500	x	80	300	
	128.85	2.00	30	x	x	30	0.1	20	800	x	70	200	
30	130.65	1.80	250	x	x	60	0.2	5	400	x	100	400	210
	132.65	2.00	400	x	x	70	0.4	x	700	x	100	500	240
	134.65	2.00	500	x	x	70	0.1	x	500	x	500	600	270
35	136.65	2.00	300	x	x	70	x	3	150	x	100	600	
	137.85	1.20	300	x	x	100	x	5	600	x	100	700	
	138.50	0.65	80	x	x	50	0.5	x	400	x	50	700	
40	142.00	3.50	200	x	x	70	x	x	250	x	100	500	
45	145.50	3.50	400	x	x	70	x	x	250	50	100	500	
	145.80	0.30	300	x	x	80	x	x	100	x	200	300	
	148.80	3.00	500	x	x	100	x	5	250	x	200	1000	
50	152.10	3.30	300	x	x	100	0.1	5	150	x	100	800	
	154.30	2.20	60	x	7	40	1.5	40	100	x	50	1500	
55	156.55	2.25	15	x	3	10	0.4	5	200	x	30	600	
	159.55	3.00	x	x	x	30	0.2	x	80	x	30	200	
60	162.55	3.00	x	x	x	10	0.2	3	60	x	25	30	
65	164.45	1.90	x	x	x	20	0.2	15	100	x	40	30	



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FROM/TO	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
210- 212.50											
215-215.25	2.75	x	x	x	30	0.4	50	150	50	70	4000
224-20											
225-225.75	1.55	5	x	x	30	1.0	50	50	x	150	10,000
227-75	2.00	x	50	x	30	x	30	10	x	500	150
230-											
235-											
240-											
245-											
250-											
255-											



HOLE NO

KD7

COMALCO LTD

ANALYSES OF SPLIT CORE, ppm

PROJECT

BUCKBY PROSPECT

x indicates below limit of detection

DATE

1978

ANALYTICAL LAB:

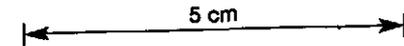
AMDEL

ANALYTICAL METHOD

SEMI-QUANTITATIVE SPECTROGRAPHIC, CODE A1, A2

DETECTION LIMIT

1 50 1 1 0.1 3 1 50 10 20

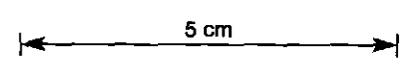


FROM/ TO, m	INTERVAL, m	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
5											
10											
15											
20											
25											
30											

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Page 1 of 3

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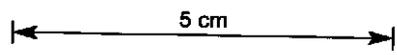
150



FROM/TO	INT	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
52.50											
54.10	1.60	1	x	x	x	0.1	3	10	x	10	150
65.50											
71.10	5.60	40	500	20	30	7.0	60	4000	500	40	2000
73.50	2.40	20	x	x	20	x	5	50	200	10	70
74.55	1.05	x	x	x	x	x	3	30	x	x	150

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FROM/TO	INT.	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
75-											
77.85	3.30	x	x	1	3	x	x	60	50	15	50
79.00	1.15	x	x	x	3	0.2	3	300	x	15	100
80-											



HOLE NO. KD.3		HOLE NO. KD3		COMALCO LTD		ANALYSES OF SPLIT CORE, ppm											
PROJECT: BUCKBY PROSPECT		PROJECT BUCKBY PROSPECT		X indicates below limit of detection													
ANALYTICAL LAB: AMDEL		ANALYTICAL METHOD: SEMI QUANTITATIVE SPECTROGRAPHIC, CODE A1, A2															
DETECTION LIMIT		1	50	1	1	0.1	3	1	50	10	20						
FROM	TO	GRAPHIC LOG	ROCK NAME	ORIGINAL ROCK (if different to rock name)	RECOVERY	FROM TO, m	INTERVAL, m	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
5			BASALT		30%												
15	13.25		BASALT														
20	15.50		BASALT		72%												
30	28.25		BASALT		47%												
30	31.17		ARGILLITE		71.4%												
30	32.90		SILTSTONE		80%												
35	35.70		BASALT		30%												
35	36.50		CLAY-SILT														
35	38.00		CLAY-GRIT														
40	40.00		SANDSTONE & SILTSTONE		80.7%												
40	40.00		SANDSTONE		55%												
45			SANDSTONE		78%												
45			SILTSTONE		72%												
50					83%												
55	54.80		HORNIFELS	SILTSTONE	64%												
60	60.25		APLITE		63%	60.25											
60	62.00		HORNIFELS	SANDSTONE	63%	62.00	1.75	x	x	x	30	0.2	x	100	x	200	x
65	63.00		HORNIFELS	SANDSTONE		63.00	1.00	x	x	x	20	0.3	3	100	x	100	30
65	65.25		HORNIFELS	Silt-sandst		67.70	0.30	20	x	x	50	x	100	250	100	300	30
65	68.00					68.00	0.90	6	x	x	40	0.2	5	300	x	300	x
65	68.40					68.40	1.10	50	x	x	50	0.2	3	200	x	600	30
65	71.00					71.00	1.00	2	x	x	30	0.3	x	250	200	400	20
65	72.00					72.00	1.00	1	x	x	40	x	10	300	300	300	x
65	73.00					73.00	1.00	2	x	x	30	0.1	40	250	50	500	30
65	73.50					73.50	0.50	x	x	x	20	0.1	50	300	x	200	30
75			BASALT														
75	78.00		SEM. APLITE			78.00											
75	78.35		GILFELD SAND	SILT-SANDSTONE		78.35	0.35	x	x	x	10	x	2000	20	x	100	x
80			HORNIFELS	SILT-SANDSTONE													
85			HORNIFELS	SILT-SANDSTONE													
90	92.80		HORNIFELS			92.80											
90	93.80		GRANITE			93.80	1.00	x	x	x	10	x	5	30	x	600	x
95			HORNIFELS	SILTSTONE													
100			APLITE														
100	100.40		HORNIFELS	SILTSTONE		107.40											
100	109.00		GRANITE			109.00	1.60	1	x	x	10	0.5	7	300	x	100	500
110			HORNIFELS	SILT-SANDSTONE													
115	116.25		Altered Granite			116.25	1.00	x	x	x	5	0.1	x	20	x	200	30
120																	
125	123.60		END OF HOLE														

KD.3 page 2 of 4

KD.3 page 3 of 4

KD.3 page 4 of 4

HOLE No: KD 7		PROJECT: BUCKBY PROSPECT		HOLE No: KD 7		PROJECT: BUCKBY PROSPECT		ANALYSES OF SPLIT CORE, ppm		X indicates below limit of detection							
ANALYTICAL LAB: AMDEL		ANALYTICAL METHOD: SEMI-QUANTITATIVE SPECTROGRAPHIC, CODE A1, A2		DETECTION LIMIT		1		50		10							
FROM	TO	GRAPHIC LOG	ROCK NAME	ORIGINAL ROCK (if different to rock name)	RECOVERY	FROM TO, m	INTERVAL, m	Sn	W	Bi	Be	Ag	Mo	Cu	As	Y	Zn
0																	
5		✓	NO CORE														
10		✓	SOIL, BASALT														
15		✓															
20		✓															
22.50		✓															
25		✓	BASALT		37%												
		✓			75%												
		✓			80%												
		✓			35%												
30		✓			56%												
		✓			70%												
35		✓															
37		✓			40%												
40		○	GRAVEL?		3%												
40-50		○															
45		^	ALTERED TUFF	LITHIC FELSIC ? ANDESITIC TUFF	32%												
		^															
50		^															
		^			72%	52-50											
		^			38%	54-10	1.60	1	x	x	x	0.1	3	10	x	10	150
55		^			78%												
		^			36%												
		^			43%												
60		^			45%												
		^			74%												
65		^			64%												
65-65.50		^			25%	65-50											
		^	ALTERED TUFF ?		3%												
		^			7%												
70		^			25%		5.60	40	500	20	30	7.0	60	4000	500	40	2000
		^			20%	71-10											
		^	ALTERED TUFF		160%	73-50	2.40	20	x	x	20	x	5	50	200	10	70
		^			79%	74-55	1.05	x	x	x	x	x	3	30	x	x	150
75		^			66%												
		^			20%												
		^			33%	77-85	3.30	x	x	1	3	x	x	60	50	15	50
77.85		^															
74.00		M	HORNfels SILTSTONE		75%	79.00	1.15	x	x	x	3	0.2	3	300	x	15	100
80			Hole abandoned due														



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Central Mineralogical Services Pty. Ltd.

231 Magill Road
Meylands, S.A. 5069
Telephone 42 5659

9th March 1978

Mr. P. Askins,
Geologist,
Comalco Limited,
P.O. Box 691,
DEVONPORT. TAS. 7310

REPORT CMS 78/3/4

YOUR REFERENCE: PA/T/BUCKBY

DATE RECEIVED: 2nd March 1978

SAMPLE NOS.: KD4:30.00, KD5:112.50,
KD5:111.15 and
KD5:21.50

SUBMITTED BY: P. Askins

WORK REQUESTED: Petrology


H.W. Fander, M.Sc.

159

213167

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 9.3.78

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
KD4:30.00
METASOMATISED VOLCANIC ROCK

Job No. CMS 78/3/4 Date Received: 2.3.78
 Reference PA/T/BUCKBY
 Sample No. KD4:30.00
 Nature of Sample: D.D. Core

DESCRIPTION SECTION No. 23499

a. Hand Specimen:

Grey medium-crystalline rock with pyrrhotite grains. K-feldspar stain test positive.

Microscopic:

An extensively and pervasively metasomatised rock, whose original lithology is not known with certainty; it is, however, believed to have been an acid volcanic (probably a rhyolitic lava/tuff lava), and not a chert.

Highly-irregular, squeezed, brecciated and contorted fragments of a strongly flow-banded rock, composed dominantly of K-feldspar, sericite and quartz, show typical pyroclastic textures; they are extensively metasomatised, with the development of fine, almost colorless dravite, pale phlogopite, and quartz, accompanied by pyrrhotite and traces of very fine ? cassiterite. The rock fragments are set in a matrix of mosaic quartz with pale phlogopite and pyrrhotite.

Several lines of evidence suggest that the rock fragments were volcanic; cherts are generally unreactive and are seldom metasomatised to the extent seen here.

The identification of ?cassiterite is doubtful because of its fine grain size (generally <20µ); if an assay shows significant tin, this would confirm the identity. It is clearly part of the metasomatic phase.

H.W. Fander, M.Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 9.3.78

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/3/4 Date Received: 2.3.78

Reference PA/T/BUCKBY

Sample No. KD5:112.50

Nature of Sample: D.D. Core

DESCRIPTION SECTION No. 23500

a. Hand Specimen:

Grey, medium/fine-grained rock with mica; minor pyrite. K-stain test negative.

Calcite stain test negative.

Microscopic:

Because of metasomatism and absence of relict features, as well as poor orientation of the thin section (restricted by the sample), the nature of the original rock is not known; it may have been a cherty dolomite or dolomitic chert.

The rock now consists of random patches of fine-grained dolomite and vaguely defined, fine cloudy quartz, intimately intergrown and forming the bulk of the rock. There are scattered small sericite aggregates and irregular grains of deep blue-green tourmaline, small crystals of apatite and occasional flakes of muscovite throughout, pervading the rock.

Sulphides are relatively conspicuous, and include pale sphalerite (sometimes with pyrite rims), chalcopyrite, and pyrite. No discrete tin minerals were detected, but ultrafine whitish material, thought to be leucoxene, could be cassiterite-hydrocassiterite (regarded as unlikely).

H.W. Fander, M.Sc.

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CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 9.3.78 ²¹³¹⁶⁹

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/3/4 Date Received: 2.3.78
Reference PA/T/BUCKBY
Sample No. KD5:111.15
Nature of Sample: D.D. Core

IDENTIFICATION
KD5:111.15
DIOPSIDE-PHLOGOPITE ROCK

DESCRIPTION SECTION No. 23501

a. Hand Specimen:

Dark micaceous rock with sulphides. K-stain test negative.

b. Microscopic:

A metasomatic, diopside-phlogopite rock whose original composition is not known; it was possibly an impure dolomite, but may have contained other components (grains, pebbles) of different constitution.

The rock consists of dense masses of small, random flakes of pale phlogopite, irregular matted aggregates of cloudy diopside, and vaguely ovoid patches of granular quartz-diopside intergrowths and diopside-phlogopite. There are also occasional patches (?pebbles) of microgranular diopside with phlogopite pseudomorphs after ?feldspar phenocrysts, possibly representing a metasomatised porphyry of some type. Small stubby prismatic crystals of pale tourmaline occur sporadically throughout, and there are scattered sulphide patches. Fine carbonate is intimately intergrown with much of the diopside.

The major sulphide is pyrrhotite, as irregular masses, with occasional inclusions of chalcopyrite up to 100 μ in size. No tin minerals were seen.

H.W. Fander, M.Sc.

213170

Date 9.3.78

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

IDENTIFICATION
KD5:21.50m
DIOPSIDE-PHLOGOPITE ROCK

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/3/4 Date Received: 2.3.78
 Reference PA/T/BUCKBY
 Sample No. KD5:21.50
 Nature of Sample: D.D. Core

DESCRIPTION SECTION No. 23502

a. Hand Specimen:

Fine micaceous rock with sulphides. K-stain test negative.

b. Microscopic:

This is a metasomatic diopside-phlogopite rock, and closely resembles the intersection at 111.15m. Vaguely ovoid to irregular patches of different composition may well reflect original variations, perhaps due to pebbles.

Diopside occurs as matted aggregates and as subradiating sheaves of prismatic crystals, with ovoid masses sometimes showing concentric structures; some of these have cores of very coarse greenish phlogopite (flakes up to 3-4mm). They are randomly set in a mass of fine, stubby flakes of pale green phlogopite.

Sulphides are present as aggregates of small grains, and occasional larger patches, fairly haphazardly distributed through the rock.

polished section shows that the major opaque minerals are granular magnetite and pyrite, often intergrown. The pyrite contains occasional blebs of chalcopyrite up to 60 μ in size, and chalcopyrite also occurs independently. No tin minerals were detected.

H.W. Fander, M.Sc.

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PROJECT HIGHCLERE IRON DEPOSIT
 SUBJECT ANALYSES OF MINES DEPT. CORE
 PREP. BY P. ASKINS DATE 1977 SHEET 1 OF 2

SAMPLE NO.		ppm											
PART/HI/-													
HOLE NO	DEPTH, ft.	Sn	W	Bi	Be	Ge	Cu	Pb	Zn	Cd	Ag	Au	
2A	0-21	80	1000	x	3	2	150	10	300	x	0.1	0.05	
	30-43	100	5000	2	10	2	700	10	250	x	0.3	0.10	
2	50-90	200	500	2	3	1	200	5	200	x	0.5	<0.05	
	90-120	80	500	5	10	x	200	20	300	x	0.1	0.05	
3	0-16	30	100	x	3	x	250	80	150	x	x	0.10	
	16-56	100	300	x	3	x	500	70	250	x	x	0.05	
	56-91	80	300	x	5	x	300	50	300	x	x	0.10	
4	0-10	70	100	1	3	x	100	10	80	x	x		
	10-29	100	50	5	5	x	100	50	500	x	x	0.10	
	29-45	100	50	10	5	x	150	30	200	x	x	0.05	
	45-70	150	50	30	3	x	200	100	500	x	x	0.10	
DETECTION LIMIT		1	50	1	1	3	1	1	20	3	0.1		
ANALYTICAL METHOD		AMDEL, SEMI QUANTITATIVE SPECTROGRAPHIC										AMDEL	
		CODES A1 A2										AAS	
												CODE C.	

Notes: 1. x indicates below detection limit.
 2. Sample consists of small fragments of the extremely broken core collected over the sample interval.

16A

PROJECT HIGHCLERE IRON DEPOSIT
 SUBJECT ANALYSES OF MINES DEPT CORE
 PREP. BY DATE SHEET 2 OF 2

TABLE: ASSAYS OF CORE SAMPLES

D.D. Hole No.	From Ft. In.	To Ft. in.	Recovery %	Total Fe %	Si %	Al %	Ti %	Mn %	P %	S %	V %	Calculated Fe %
1	6 0	22 0	15	58.3	..	..	..	..	..	..	..	..
	22 0	32 0	35	41.4	..	..	..	..	..	..	..	..
	32 0	42 0	23	33.9	..	..	..	..	..	..	..	..
	42 0	52 0	22	38.1	..	..	..	..	..	..	..	..
	52 0	62 0	37	30.6	..	..	..	..	..	..	..	..
	62 0	72 0	35	54.5	..	..	..	..	..	..	..	..
	72 0	82 0	40	31.3	..	..	..	..	..	..	..	..
	82 0	93 6	46	28.3	..	..	..	..	..	..	..	..
	50 0	53 0	Sludge	56.1	..	..	..	..	..	..	..	..
	53 0	72 0	Sludge	59.2	..	..	..	..	..	..	..	..
	72 0	87 0	Sludge	53.2	..	..	..	..	..	..	..	..
	87 0	93 6	Sludge	45.2	..	..	..	..	..	..	..	..
	6 0	93 6	Comb.	..	9.44	5.29	0.17	0.18	0.10	0.05	Nil	40.7
2	0 0	10 0	80	52.0	..	..	..	..	..	..	..	..
	10 0	21 0	68	54.8	..	..	..	..	..	..	..	..
	21 0	31 0	52	55.6	..	..	..	..	..	..	..	..
	31 0	38 6	93	55.7	..	..	..	..	..	..	..	..
	38 6	43 0	72	58.7	..	..	..	..	..	..	..	..
	43 0	52 0	20	60.3	..	..	..	..	..	..	..	..
	52 0	62 0	35	62.5	..	..	..	..	..	..	..	..
	62 0	72 0	76	61.2	..	..	..	..	..	..	..	..
	72 0	82 0	17	64.7	..	..	..	..	..	..	..	..
	82 0	87 0	25	62.2	..	..	..	..	..	..	..	..
	0 0	8 0	Sludge	48.4	..	..	..	..	..	..	..	..
	8 0	12 0	Sludge	62.8	..	..	..	..	..	..	..	..
	12 0	17 0	Sludge	60.5	..	..	..	..	..	..	..	..
	17 0	22 0	Sludge	62.0	..	..	..	..	..	..	..	..
	22 0	27 0	Sludge	58.1	..	..	..	..	..	..	..	..
	30 0	37 0	Sludge	55.6	..	..	..	..	..	..	..	..
	37 0	47 0	Sludge	58.8	..	..	..	..	..	..	..	..
	47 0	52 0	Sludge	61.5	..	..	..	..	..	..	..	..
	52 0	54 0	Sludge	61.0	..	..	..	..	..	..	..	..
	54 0	62 0	Sludge	59.9	..	..	..	..	..	..	..	..
62 0	67 0	Sludge	60.0	..	..	..	..	..	..	..	..
67 0	77 0	Sludge	58.1	..	..	..	..	..	..	..	..
77 0	82 0	Sludge	60.9	..	..	..	..	..	..	..	..
82 0	95 0	Sludge	58.5	..	..	..	..	..	..	..	..
95 0	100 0	Sludge	38.3	..	..	..	..	..	..	..	..
0 0	87 0	Comb.	..	3.69	1.22	0.05	0.12	0.10	0.05	Nil	59.2	
0 0	110 0	Comb.	..	4.94	1.69	0.05	0.16	0.09	0.05	Nil	55.6	
3	0 0	6 0	75	25.5	..	..	..	..	..	..	..	..
	6 0	13 0	68	40.6	..	..	..	..	..	..	..	..
	13 0	19 6	69	35.4	..	..	..	..	..	..	..	..
	19 6	29 6	65	44.1	..	..	..	..	..	..	..	..
	29 6	39 6	70	37.6	..	..	..	..	..	..	..	..
	39 6	47 0	27	55.6	..	..	..	..	..	..	..	..
	47 0	56 0	55	49.4	..	..	..	..	..	..	..	..
	56 0	66 0	35	54.5	..	..	..	..	..	..	..	..
	66 0	76 6	38	52.0	..	..	..	..	..	..	..	..
	76 6	85 6	61	40.9	..	..	..	..	..	..	..	..
	85 6	91 0	27	28.4	..	..	..	..	..	..	..	..
	0 0	91 0	Comb.	..	8.52	4.91	0.10	0.09	0.12	0.07	Nil	43.5
	4	0 0	10 0	100	51.9
10 0		16 0	66	58.8	..	..	..	..	..	..	..	..
16 0		26 0	80	29.3	..	..	..	..	..	..	..	..
26 0		36 0	95	31.8	..	..	..	..	..	..	..	..
36 0		45 0	90	38.3	..	..	..	..	..	..	..	..
45 0		54 0	39	57.6	..	..	..	..	..	..	..	..
54 0		65 0	36	46.2	..	..	..	..	..	..	..	..
65 0		69 6	90	32.2	..	..	..	..	..	..	..	..
0 0		69 6	Comb.	..	7.7	5.4	0.24	0.11	0.21	0.06	Nil	..

from JACK, R. (1965).

16E

TRANSPARENCIES Held
LIST OF PLANS

78-1313

213173

<u>TOPIC</u>	<u>DWG NO.</u> (TAS)	<u>TITLE</u>	
TOPOGRAPHIC	78 - 216	Location of Kingsclere and Highclere Iron grids.	
	78 - 222	Kingsclere grid sheet A - grid line slopes.	
	78 - 221	Kingsclere grid sheet B - grid line slopes.	
GEOLOGY	78 - 178	Guildford, Highclere, Riana regions, Geology.	
	78 - 129	Kingsclere grid sheet A - geology.	
	78 - 165	Kingsclere grid sheet B - geology.	
	78 - 157	Buckby prospect - geology fact map.	
	78 - 130	Buckby prospect - cross section at 100S.	
	78 - 209	Highclere Iron deposit - geology.	
	GEOCHEM	78 - 199	Cadastral 1:20,000 sheet 3943. Analyses of -80 mesh stream sediment and fluorine in stream water.
		78 - 220	Ditto 3944
78 - 200		Ditto 4043	
78 - 198		Ditto 4044	
78 - 197		Cadastral 1:20,000 sheet 3943. Analyses of magnetic fraction of stream sediment.	
78 - 195		Ditto 3944	
78 - 196		Ditto 4043	
78 - 194		Ditto 4044	
78 - 131		Kingsclere grid sheet A - soil geochemistry data sheet.	
78 - 218		Part of Kingsclere sheet B - Buckby prospect. Soil geochemistry data sheet.	
78 - 282		Ditto - Fluorine in soil, tin in soil.	
78 - 219		Ditto - Copper in soil.	
MAGNETICS	78 - 189	Ground Traverses Proton Precession Magnetometer.	
	78 - 133	Kingsclere grid sheet A - Proton precession magnetics - data sheet.	
	78 - 208	Ditto - contour plan.	
	78 - 233	Kingsclere grid sheet B - Proton precession magnetics - data sheet.	
	78 - 207	Ditto - contours	
	78 - 206	Buckby Prospect - Proton precession magnetics - contours	
	78 - 214	Highclere Iron deposit - Proton precession magnetics - data sheet.	
	78 - 217	Ditto - contours	

GRAVITY

I.P.

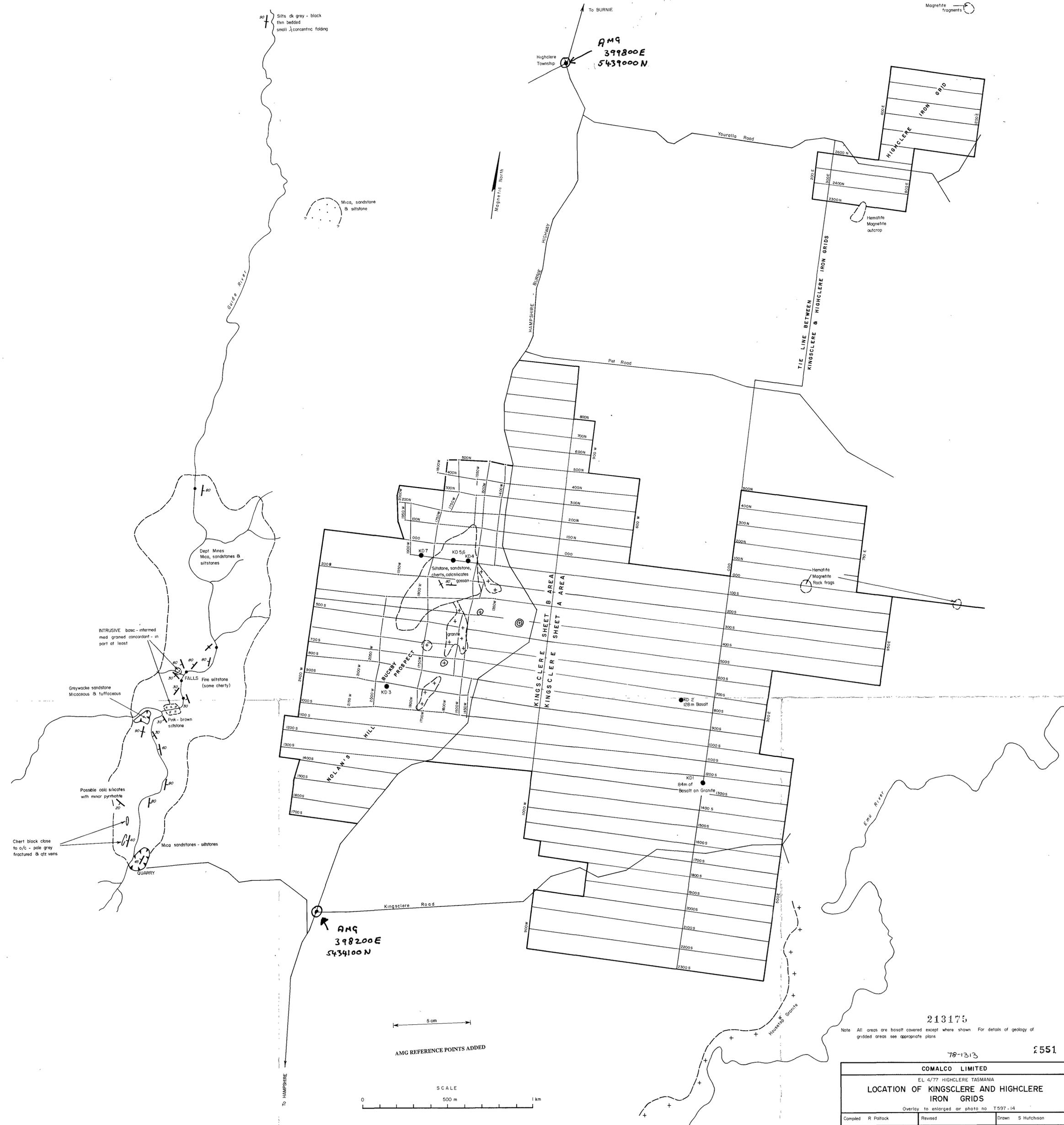
78 - 124	Highclere Iron deposit, gravity survey.
78 - 193	Kingsclere grid sheet A. Stacked Chargeability profiles. Time Domain gradient array E.I.P.
78 - 191	Ditto Sheet B.
78 - 192	Kingsclere grid sheet A. Stacked Resistivity profiles.
78 - 190	Ditto Sheet B.
78 - 231	Highclere Iron Deposit. Stacked Chargeability profiles
78 - 232	Ditto. Stacked Resistivity profiles.

90 Silts dk grey - black
thin bedded
small concentric folding

Mica, sandstone
& siltstone

AMG
399800E
5439000N

Magnetite
fragments



AMG
398200E
5434100N

5 cm

AMG REFERENCE POINTS ADDED

SCALE
0 500 m 1 km

213175

Note All areas are basalt covered except where shown For details of geology of gridded areas see appropriate plans

78-1313

£551

COMALCO LIMITED		
EL 4/77 HIGHCLERE TASMANIA		
LOCATION OF KINGSCLERE AND HIGHCLERE IRON GRIDS		
Overlay to enlarged air photo no T.597-14		
Completed R Paddock	Revised	Drawn S Hutchison
Date October, 1978	Scale	Org No TAS - 78 - 216

COMALCO LIMITED

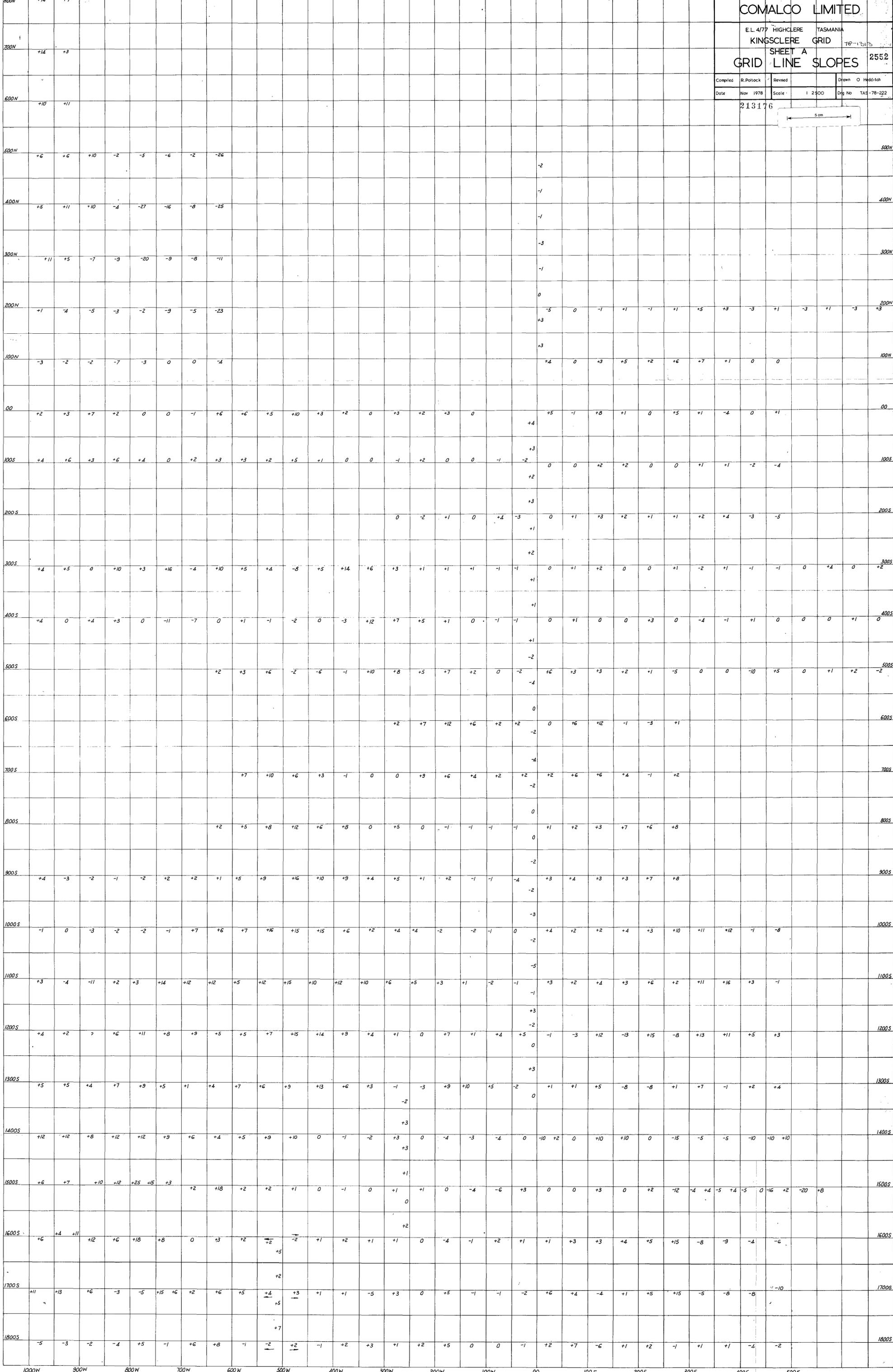
E.L. 477 HIGHCLERE TASMANIA

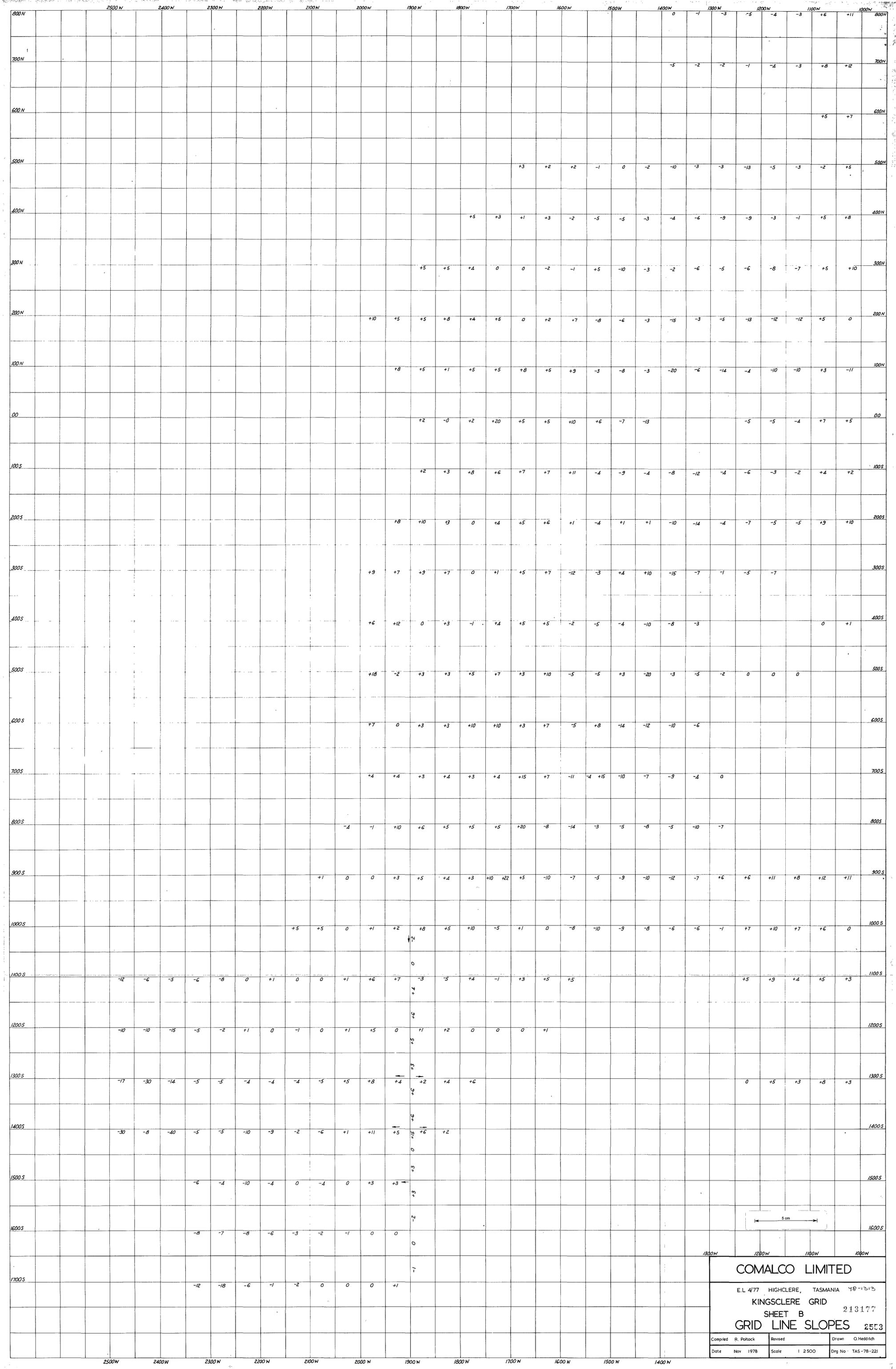
KINGSLERE GRID 78-1313

SHEET A 2552
GRID LINE SLOPES

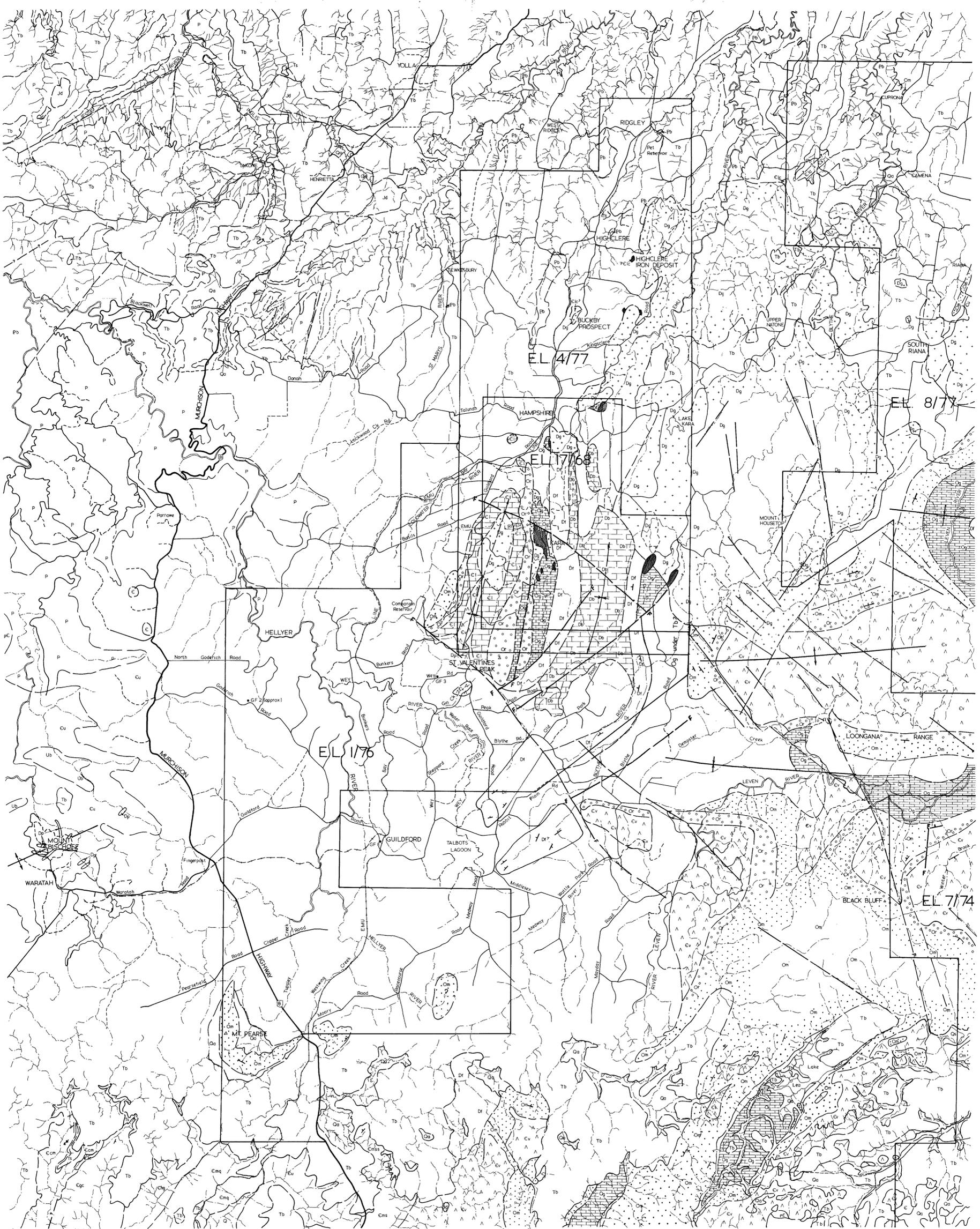
Compiled	R. Pollock	Revised		Drawn	O. Haddich
Date	Nov 1978	Scale	1:2500	Dwg No	1AS-78-222

213176

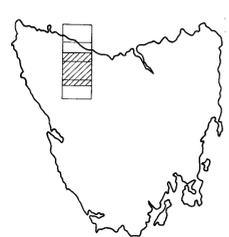




COMALCO LIMITED		
E.L. 4/77 HIGHCLERE, TASMANIA 49-1212		
KINGSLERE GRID 213177		
SHEET B		
GRID LINE SLOPES 2553		
Compiled R. Pollock	Revised	Drawn O. Heddtich
Date Nov 1978	Scale 1:2500	Drng No. TAS-78-221



Area covered by this map showing 1 inch to 1 mile sheet areas



QUATERNARY

Oa Alluvium

Ts Conglomerate & grits

P Sandstone, siltstone, tillite

Uncertainty

DEVONO - SILURIAN

Ds Bell shale

Df Florence sandstone

Magnetite rich skarn

ORDOVICIAN

Os Limestone

Om Sandstone

Omc Conglomerate

CAMBRIAN

Cl Limestone, mudstone

Ac Acid/intermediate volcanics & sediments

Cms Mudstone with slate & sandstone

Cmq Mudstone, quartzite & greywacke sequence

Chg Greywacke & mudstone

Clc Limestone conglomerate

Cgc Greywacke conglomerate - sandstone & mudstone

Ccm Mudstone & greywacke

Cs Siliceous siltstone containing hematite jasper bodies

CAMBRIAN (cont)

Cu Undifferentiated

PRECAMBRIAN

Pb Burnie Beds - slates, siltstones, sandstones

PC Undifferentiated Mostly Tynman Black rocks

IGNEOUS ROCKS

Tb Tertiary basalt

Jd Jurassic dolerite

Dp Devonian porphyry

Dg Devonian granite - Houtstop Granite

Ub Proterozoic? ultrabasic

KEY

- Highways
- Roads
- Tracks
- Creeks
- Rivers
- Railway
- GF2 NP diamond drill hole

213178 5 cm

COMALCO LIMITED

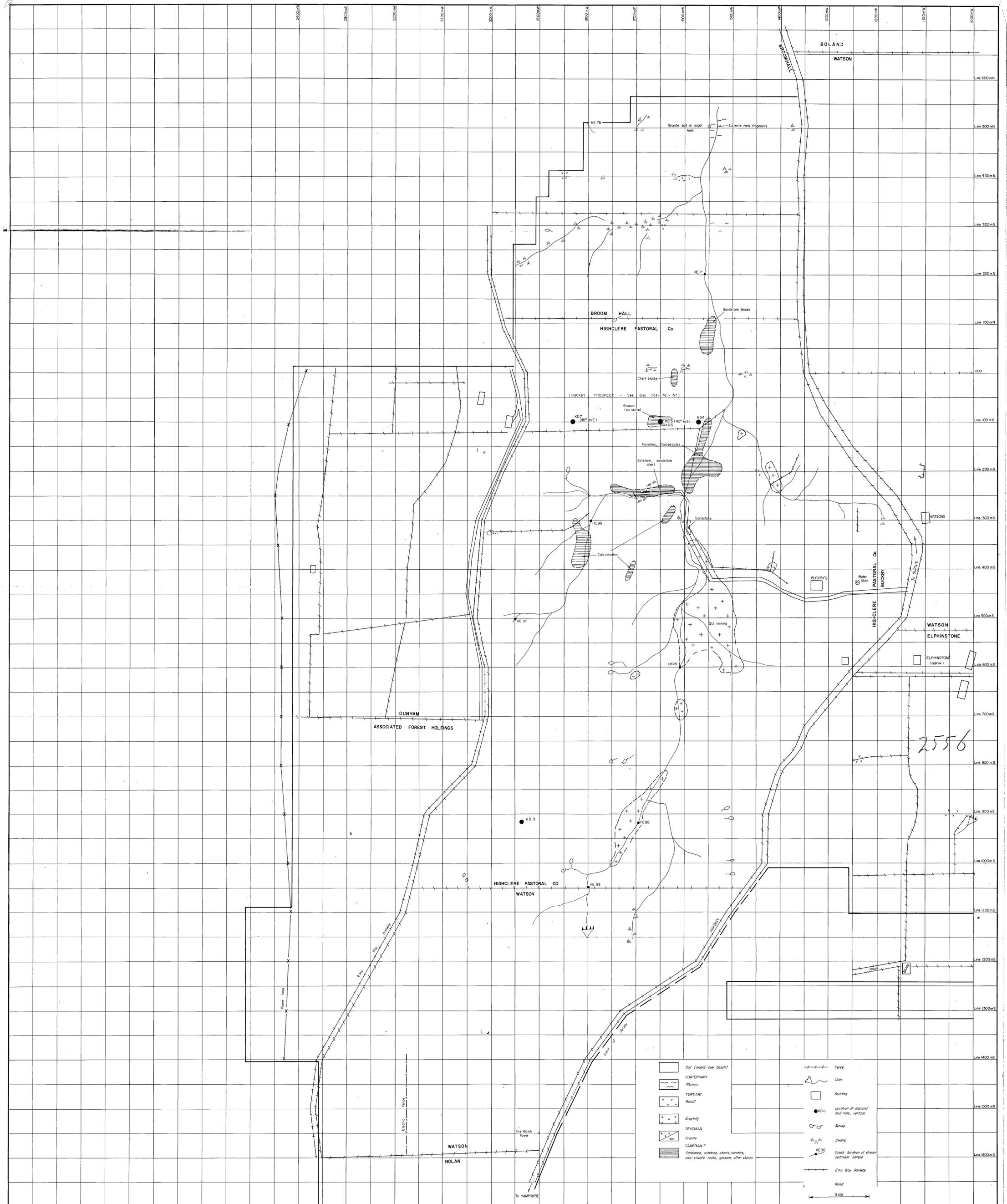
EL 1/76, 4/77, 8/77, TASMANIA

GUILDFORD, HIGHCLERE, RIANA, REGIONS

1983 GEOLOGY

2554 25

Compiled R Pollock, G Wake	Revised October, 1978	Drawn O Heddrich
Date October, 1978	Scale 1:63,360	Dwg No TAS-78-178



	Soil (mostly over basalt)		Fence
	QUATERNARY Alluvium		Dam
	TERTIARY Basalt		Building
	Greywacke		Location of diamond drill hole, vertical
	DEVONIAN Granite		Spring
	CAMBRIAN ? Sandstone, siltstone, cherts, hornfels, calc-silicate rocks, gossans after skarns		Swamp
			Creek location of stream sediment sample
			Emu Bay Railway
			Road
			5 cm

COMALCO LIMITED

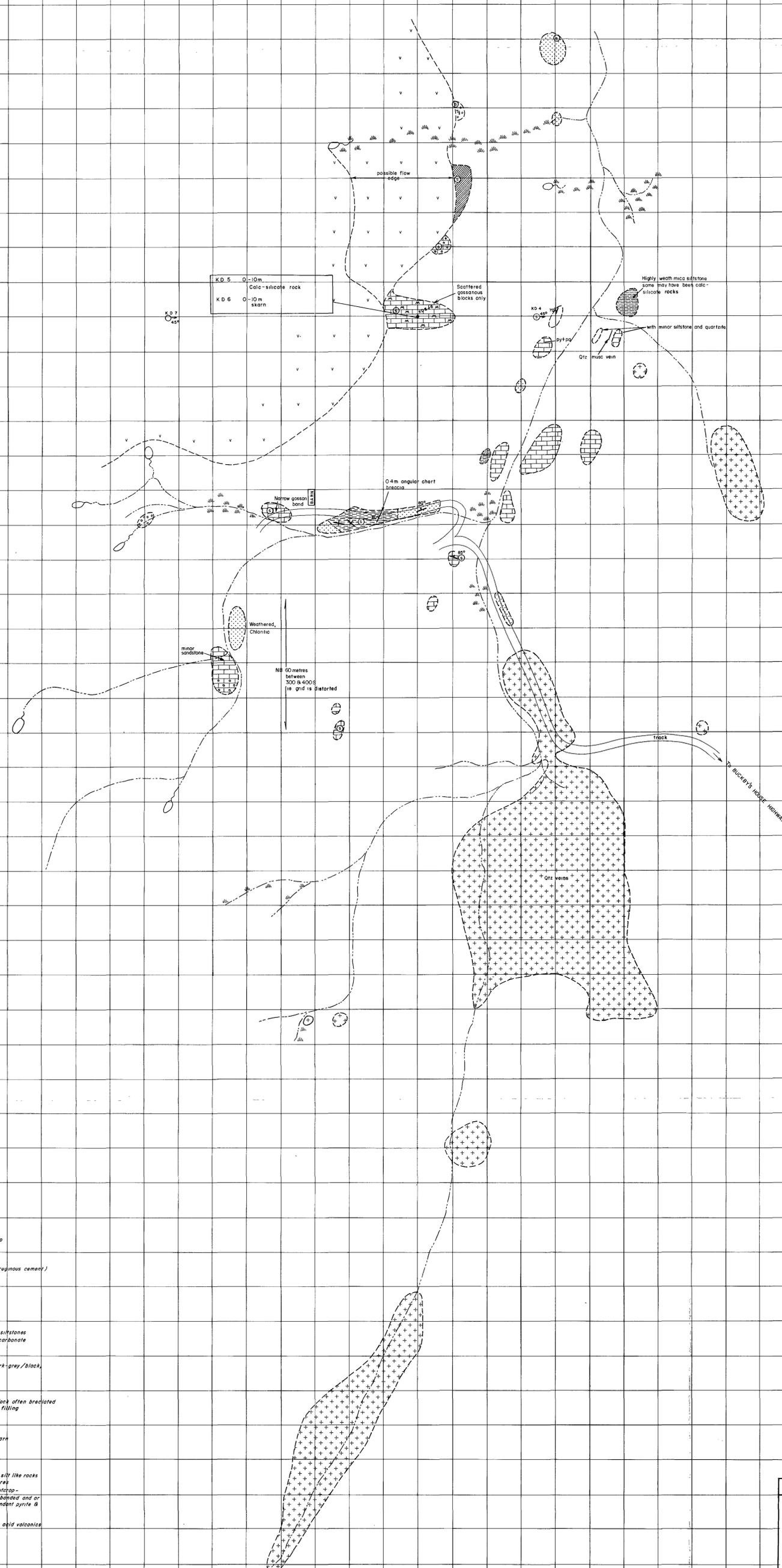
78-1212 E.L. 4/77 "HIGHCLERE" TASMANIA
KINGSLERE GRID SHEET B

213180 GEOLOGY 2556

Compiled R Pollock	Revised	Drawn S Hutchison
Date September, 1978	Scale 2 cm = 50 m	Fig No Tot - 78 - 165

2000mW 1900mW 1800mW 1700mW 1600mW 1500mW 1400mW 1300mW

200mN
100mN
000
100mS
200mS
300mS
400mS
500mS
600mS
700mS
800mS
900mS



K.D. 5 0-10m
Calc-silicate rock

K.D. 6 0-10m
skarn

Scattered gossanous blocks only

Highly weath mica siltstone some may have been calc-silicate rocks

with minor siltstone and quartzite

Qtz musc vein

0.4m angular chert breccia

NB 50 metres between 300S & 400S the grid is distorted

Track

to BUCKBY'S HOUSE HIGHWAY



- LEGEND**
- TERTIARY**
 - Basalt - outcrop
 - Basalt - silt and probable outcrop
 - Sands and greyblly (later & ferruginous cement)
 - DEVONIAN**
 - Houselop granite
 - ? CAMBRIAN?**
 - Sandstone - quartzites with minor siltstones
friable cement may have been carbonate
 - Siltstones - banded, massive dark gray/black,
micro folding faulting
 - Cherts, siltstone - dark gray/black often brecciated
with quartz tourmaline fracture filling
 - Gossan formed on magnetic skarn
 - Calc silicates - occur as
 1. Highly weathered pale yellow silt like rocks with very hard spheroidal cores
 2. Groups of blocks, close to outcrop - hard pits, gray-green, some banded and or pebbly (These rocks with abundant pyrite & pyrrhotite)
 - Pebbly**
 - NB: Some of above may be fine acid volcanics
 - Spring
 - Sample sites

COMALCO LIMITED

TASMANIA
213181 EL 4/77 HIGHCLERE

**BUCKBY PROSPECT
GEOLOGY FACT MAP**

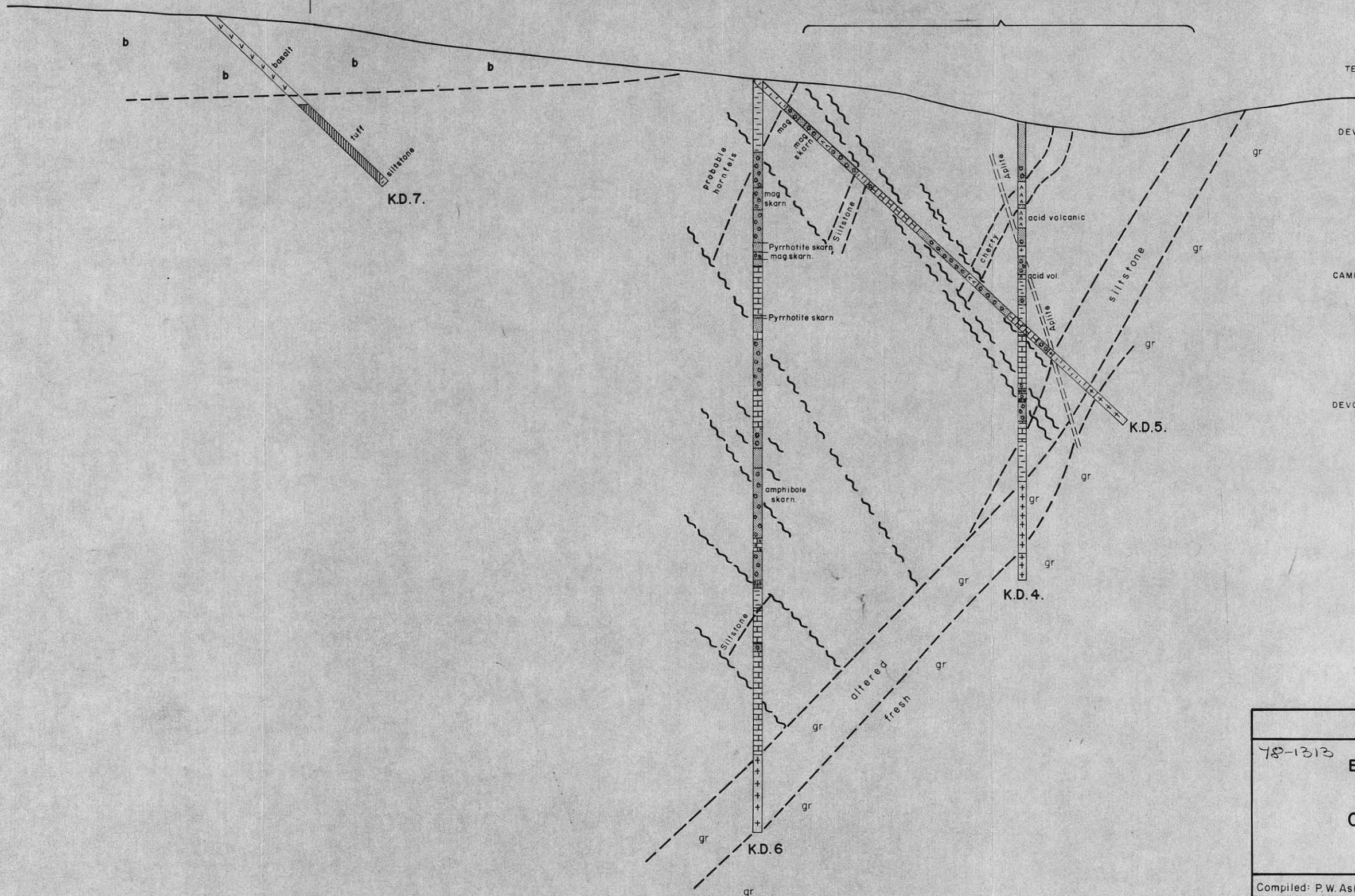
5 cm

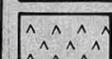
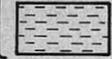
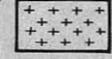
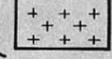
2557

Compiled: R Pollock	Revised:	Drawn: M Attwell
Date: July, 1978	Scale: 1:1250	Org: N° TAS-78-157

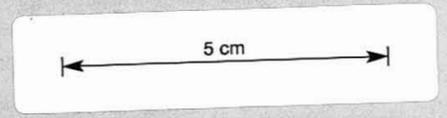
1900 W 1850 W 1800 W 1750 W 1700 W 1650 W 1600 W 1550 W 1500 W 1450 W

Sequence of dolomitic limestone, dolomitic limestone conglomerate, silty dolomites, all variously metasomatized.

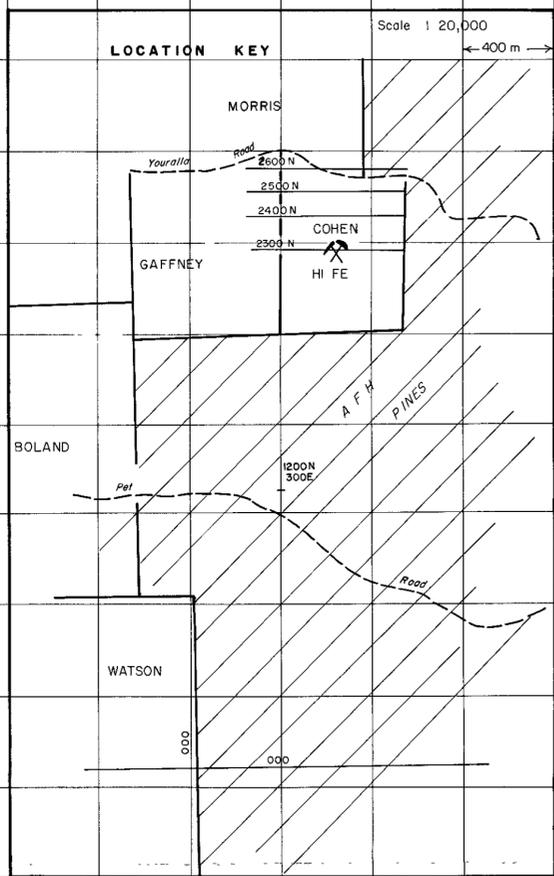


- TERTIARY  Basalt (b)
- DEVONIAN  Skarn of various types after dolomitic limestone, silty dolomites.
- DEVONIAN  Skarn of various types after dolomitic limestone conglomerate.
-  Lithic tuff.
-  Cherts, acid volcanics
- ?  Dolomitic limestone, silty dolomites.
- CAMBRIAN  Dolomitic limestone conglomerate.
-  Siltstone (or hornfels)
- DEVONIAN  Aplite
- DEVONIAN  Housetop granite. (gr)
-  Faults or fractures

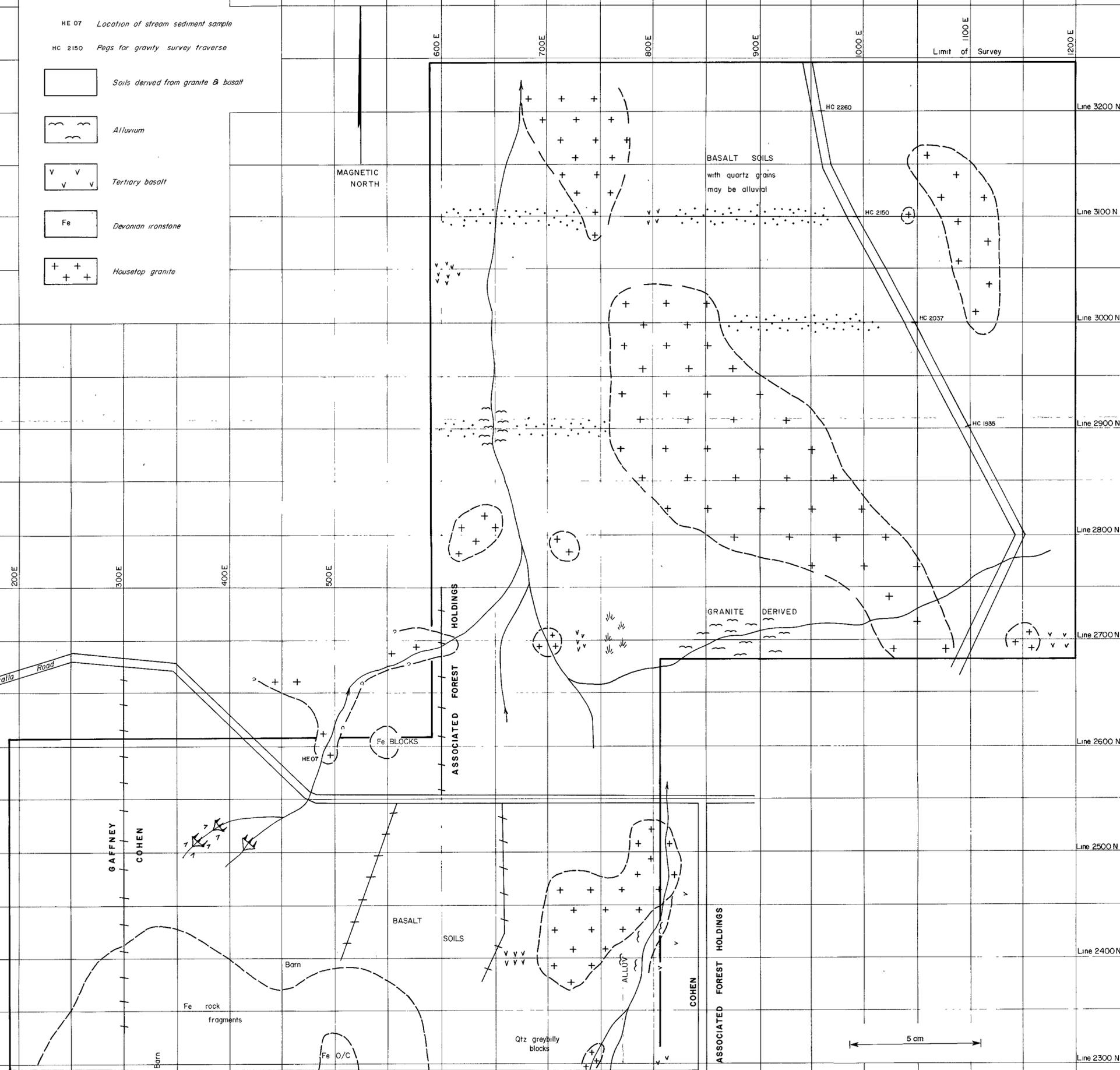
213182



COMALCO LIMITED		
78-1313 E.L. 4/77 HIGHCLERE TASMANIA BUCKBY PROSPECT CROSS SECTION AT 100S		
2558		
Compiled: P.W. Askins.	Revised:	Drawn: M. Attwell
Date: April, 1978	Scale: 1:250 vert. & horiz.	Drg N° TAS-78-430



- Dam
- Fence
- HE 07 Location of stream sediment sample
- HC 2150 Pegs for gravity survey traverse
- Soils derived from granite & basalt
- Alluvium
- Tertiary basalt
- Devonian ironstone
- House-top granite



(for geology of southern part see data of Mines Dept and Anzeco)

5 cm

213183

COMALCO LIMITED		
E L 4/77 HIGHCLERE		
HIGHCLERE IRON DEPOSIT		
(NORTHERN PART)		
GEOLOGY		
2559		
Completed	R Pollock	Revised
Date	October, 1978	Scale
		1:2500
Drawn	S Hutchison	
Date	October, 1978	
Scale	1:2500	
Drg No	Tas - 78 - 209.	

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 28/20/4845). Details of Tenure: G = granted lot, P = purchase grant, P.L. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/3943

Index	Map Ref	Survey Plan	Lot	Area	Name Purpose	Tenure	Index	Map Ref	Survey Plan	Lot	Area	Name Purpose	Tenure
1	A10	60/14	6	0.070ha	Diprose, C.A.	P.G.	1	A10	60/14	6	0.070ha	Diprose, C.A.	P.G.
2	A10	130/2	20	2.48ha	Franka, E.M.	P.G.	2	A10	130/2	20	2.48ha	Franka, E.M.	P.G.
3	A10	76/14	42	96ha	Holloway, L.C.A.	P.G.	3	A10	76/14	42	96ha	Holloway, L.C.A.	P.G.
4	A10	-	4695ha	State Forest	10.7.63	C.L.	4	A10	-	4695ha	State Forest	10.7.63	C.L.
5	A10	39/27	37	89ha	Cross, W.	P.G.	5	A10	39/27	37	89ha	Cross, W.	P.G.
6	A10	78/27	12	82ha	Cross, W.	P.G.	6	A10	78/27	12	82ha	Cross, W.	P.G.
7	A10	102/6	90	60ha	Beamish, S.S.	S.S.	7	A10	102/6	90	60ha	Beamish, S.S.	S.S.
8	C10	78/20	60	20ha	Vacant	C.L.	8	C10	78/20	60	20ha	Vacant	C.L.
9	C10	44/25	58	07ha	Deacon, J.	P.G.	9	C10	44/25	58	07ha	Deacon, J.	P.G.
10	C10	47/25	20	26ha	Deacon, E.A.	P.G.	10	C10	47/25	20	26ha	Deacon, E.A.	P.G.
11	C9	44/23	20	26ha	Deacon, J.	P.G.	11	C9	44/23	20	26ha	Deacon, J.	P.G.
12	C9	39/21	18	69ha	Curator of Inestate Estates	P.G.	12	C9	39/21	18	69ha	Curator of Inestate Estates	P.G.
13	C9	319/9	8	69ha	Falder, E.M. & T.E.	P.G.	13	C9	319/9	8	69ha	Falder, E.M. & T.E.	P.G.
14	C9	36/18	19	53ha	Radford, E.A.	P.G.	14	C9	36/18	19	53ha	Radford, E.A.	P.G.
15	C9	36/18	18	48ha	Radford, E.A.	P.G.	15	C9	36/18	18	48ha	Radford, E.A.	P.G.
16	C9	42/32	10	12ha	Docking, W.T.	P.G.	16	C9	42/32	10	12ha	Docking, W.T.	P.G.
17	C9	39/23	32	03ha	Cross, W.	P.G.	17	C9	39/23	32	03ha	Cross, W.	P.G.
18	A9	47/23	15	58ha	Cross, W.	P.G.	18	A9	47/23	15	58ha	Cross, W.	P.G.
19	A9	39/23	41	55ha	Cross, W.	P.G.	19	A9	39/23	41	55ha	Cross, W.	P.G.
20	A9	43/14	84	43/14	Turshull, A.S.	P.G.	20	A9	43/14	84	43/14	Turshull, A.S.	P.G.
21	C9	36/14	80	77ha	Turshull, M.E.H.	P.G.	21	C9	36/14	80	77ha	Turshull, M.E.H.	P.G.
22	C9	29/17	19	15ha	Deacon, J.	P.G.	22	C9	29/17	19	15ha	Deacon, J.	P.G.
23	C8	36/15	18	47ha	Turshull, M.E.H.	P.G.	23	C8	36/15	18	47ha	Turshull, M.E.H.	P.G.
24	C8	29/17	19	15ha	Duffield, S.	P.G.	24	C8	29/17	19	15ha	Duffield, S.	P.G.
25	C7	16/44	40	47ha	Duffield, S.	P.G.	25	C7	16/44	40	47ha	Duffield, S.	P.G.
26	C7	36/12	61	68ha	Duffield, S.	P.G.	26	C7	36/12	61	68ha	Duffield, S.	P.G.
27	B8	43/16	19	87ha	Vacant	C.L.	27	B8	43/16	19	87ha	Vacant	C.L.
28	A8	78/25	19	83ha	Burnie Board & Timber P/L	P.G.	28	A8	78/25	19	83ha	Burnie Board & Timber P/L	P.G.
29	A8	78/10	64	16ha	Burnie Board & Timber P/L	P.G.	29	A8	78/10	64	16ha	Burnie Board & Timber P/L	P.G.
30	A8	94/14	44	16ha	Vacant	C.L.	30	A8	94/14	44	16ha	Vacant	C.L.
31	A7	39/24	79	96ha	Dodd, J.	P.G.	31	A7	39/24	79	96ha	Dodd, J.	P.G.
32	A7	39/24	73	96ha	Haven, J.R.G.	P.G.	32	A7	39/24	73	96ha	Haven, J.R.G.	P.G.
33	A7	50/20	19	83ha	Atkinson, J.H.T.	P.G.	33	A7	50/20	19	83ha	Atkinson, J.H.T.	P.G.
34	A7	67/20	11	67ha	Dodd, T.E.	P.G.	34	A7	67/20	11	67ha	Dodd, T.E.	P.G.
35	B7	40/30	18	06ha	Dodd, J.	P.G.	35	B7	40/30	18	06ha	Dodd, J.	P.G.
36	B7	61/04	9	902ha	Dodd, A.E. (Town Res. Donah)	F.	36	B7	61/04	9	902ha	Dodd, A.E. (Town Res. Donah)	F.
37	B7	89/18	30	75ha	Townsend, A.E. (Town Res. Donah)	F.	37	B7	89/18	30	75ha	Townsend, A.E. (Town Res. Donah)	F.
38	B7	61/07	2	02ha	Townsend, A.E.	P.G.	38	B7	61/07	2	02ha	Townsend, A.E.	P.G.
39	C6	113/21	60	71ha	Townsend, C.E.	S.S.	39	C6	113/21	60	71ha	Townsend, C.E.	S.S.
40	C6	113/21	61	67ha	Raywood, R.K.	S.S.	40	C6	113/21	61	67ha	Raywood, R.K.	S.S.
41	C6	47/21	15	58ha	Deacon, P.T.	P.G.	41	C6	47/21	15	58ha	Deacon, P.T.	P.G.
42	C6	40/28	19	83ha	Martin, T.G.	P.G.	42	C6	40/28	19	83ha	Martin, T.G.	P.G.
43	C6	40/29	20	07ha	Deacon, P.T.	P.G.	43	C6	40/29	20	07ha	Deacon, P.T.	P.G.
44	B6	40/23	18	83ha	Robotham, R.V., C.B. & M.H.	P.G.	44	B6	40/23	18	83ha	Robotham, R.V., C.B. & M.H.	P.G.
45	B6	39/28	20	17ha	Robotham, R.V.	P.G.	45	B6	39/28	20	17ha	Robotham, R.V.	P.G.
46	B6	42/30	40	39ha	Townsend, T.	P.G.	46	B6	42/30	40	39ha	Townsend, T.	P.G.
47	B6	47/22	19	95ha	Townsend, E.J.	P.G.	47	B6	47/22	19	95ha	Townsend, E.J.	P.G.
48	A6	44/24	81	54ha	Atkinson, R.W.	P.G.	48	A6	44/24	81	54ha	Atkinson, R.W.	P.G.
49	B5	47/13	52	78ha	Crow, P.A.	P.G.	49	B5	47/13	52	78ha	Crow, P.A.	P.G.
50	A4	110/18	257	97ha	Tewkesbury Potato Station	P.G.	50	A4	110/18	257	97ha	Tewkesbury Potato Station	P.G.
51	B4	36/10	80	85ha	Martin, J.	P.G.	51	B4	36/10	80	85ha	Martin, J.	P.G.
52	B4	36/10	111	11ha	Smalley, J.E.W.	P.G.	52	B4	36/10	111	11ha	Smalley, J.E.W.	P.G.
53	C4	40/24	39	78ha	Martin, T.G.	P.G.	53	C4	40/24	39	78ha	Martin, T.G.	P.G.
54	C4	54/24	58	68ha	Norris, A.H.	P.G.	54	C4	54/24	58	68ha	Norris, A.H.	P.G.
55	D3	54/25	60	89ha	Townsend, J.	P.G.	55	D3	54/25	60	89ha	Townsend, J.	P.G.
56	C3	50/15	60	68ha	Smalley, J.E.W.	P.G.	56	C3	50/15	60	68ha	Smalley, J.E.W.	P.G.
57	B3	47/24	20	22ha	Reid, W.	P.G.	57	B3	47/24	20	22ha	Reid, W.	P.G.
58	B3	43/18	62	29ha	Atkinson, C.E.	P.G.	58	B3	43/18	62	29ha	Atkinson, C.E.	P.G.
59	A3	47/13	62	52ha	Tewkesbury Additional Land	C.L.	59	A3	47/13	62	52ha	Tewkesbury Additional Land	C.L.
60	A3	47/24	8	162ha	Reid, W.	P.G.	60	A3	47/24	8	162ha	Reid, W.	P.G.
61	A2	27/14	20	19ha	Tewkesbury Potato Station	P.G.	61	A2	27/14	20	19ha	Tewkesbury Potato Station	P.G.
62	A2	40/21	81	07ha	Assoc. Forest Holdings Pty. Ltd.	P.G.	62	A2	40/21	81	07ha	Assoc. Forest Holdings Pty. Ltd.	P.G.
63	A2	78/27	Part of	Atkinson, C.E.	P.G.	63	A2	78/27	Part of	Atkinson, C.E.	P.G.		
64	C2	44/28	97	81ha	Reid, W.	P.G.	64	C2	44/28	97	81ha	Reid, W.	P.G.
65	B2	47/26	10	11ha	Reid, W.	P.G.	65	B2	47/26	10	11ha	Reid, W.	P.G.
66	B2	40/9	24	02ha	Reid, W.	P.G.	66	B2	40/9	24	02ha	Reid, W.	P.G.
67	E3	42/29	128	8ha	Cumming, R.A.	P.G.	67	E3	42/29	128	8ha	Cumming, R.A.	P.G.
68	F3	42/28	80	97ha	Rarker, P.	P.G.	68	F3	42/28	80	97ha	Rarker, P.	P.G.
69	F3	47/19	80	85ha	Cumming, T.S.	P.G.	69	F3	47/19	80	85ha	Cumming, T.S.	P.G.
70	E2	71/25	79	45ha	Owen, M.	P.G.	70	E2	71/25	79	45ha	Owen, M.	P.G.
71	E2	47/16	60	64ha	Cumming, L.S.	P.G.	71	E2	47/16	60	64ha	Cumming, L.S.	P.G.
72	D2	54/24	109	7ha	Robotham, R.V.	P.G.	72	D2	54/24	109	7ha	Robotham, R.V.	P.G.
73	B2	44/28	40	39ha	Reid, W.	P.G.	73	B2	44/28	40	39ha	Reid, W.	P.G.
74	F10	105/18	36	39ha	Burnie Board Timber Pty. Ltd.	P.G.	74	F10	105/18	36	39ha	Burnie Board Timber Pty. Ltd.	P.G.
75	C9	106/33	35	32ha	Bligh, R.N.	P.G.	75	C9	106/33	35	32ha	Bligh, R.N.	P.G.
76	J6	99/23	62	78ha	Radford, E.C.	S.S.	76	J6	99/23	62	78ha	Radford, E.C.	S.S.
77	B3	P.2	4046ha	V.D.L. Co. Hampshire Hills	P.G.	77	B3	P.2	4046ha	V.D.L. Co. Hampshire Hills	P.G.		
78	B1	15/28	4047ha	Burnie, Varden etc.	S.S.	78	B1	15/28	4047ha	Burnie, Varden etc.	S.S.		
79	B1	-	37	28ha	Vacant	C.L.	79	B1	-	37	28ha	Vacant	C.L.
80	C1	-	37	28ha	Vacant	C.L.	80	C1	-	37	28ha	Vacant	C.L.
81	C1	11/2455	4199ha	V.D.L. Co. Surrey Hills	P.G.	81	C1	11/2455	4199ha	V.D.L. Co. Surrey Hills	P.G.		
82	B6	40/22	20	29ha	The Varden Rec. Mny. of Burnie	P.G.	82	B6	40/22	20	29ha	The Varden Rec. Mny. of Burnie	P.G.
83	B2	67/18	20	15ha	Townsend, C.	P.G.	83	B2	67/18	20	15ha	Townsend, C.	P.G.

	Upper Background	Possibly Anomalous
Cu	30ppm	≥ 75ppm
Pb	30ppm	≥ 35ppm
Bi	30ppm	≥ 35ppm

F Anomalous >0.06ppm ✕
Scheelite in panned concentrate ✕

KEY:

Sample No.	Cu	Pb	Zn	Bi	F in water
1	2	3	4	5	6

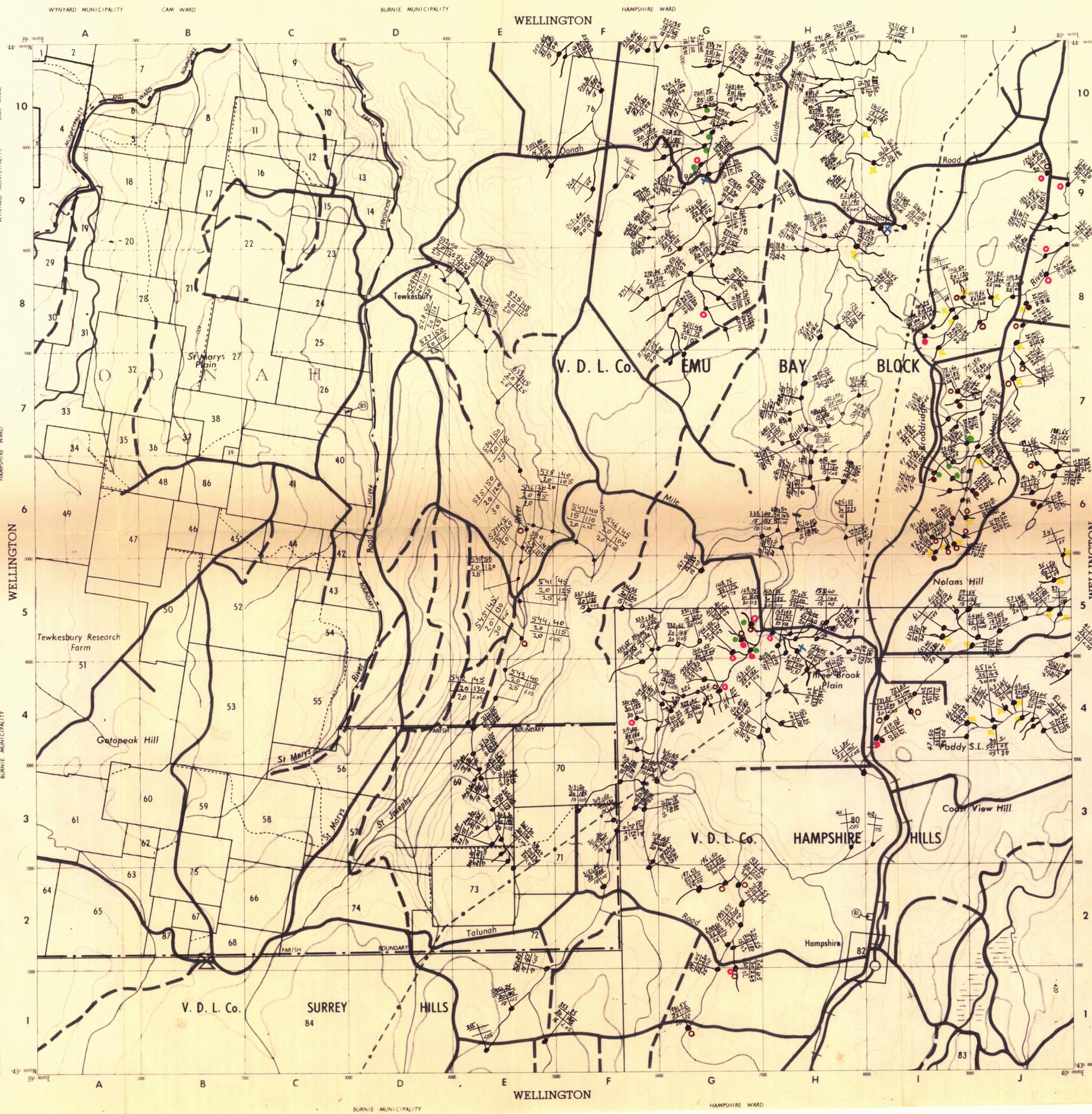
ppm in -80 mesh stream sediment sieved dry.
Analyses for Cu Pb Zn Bi, by AAS after hot acid digestion by Comalco Research Centre.
Fluorine in stream water in ppm by S.I.E.

COMALCO LIMITED

E.L. 4/77 HIGHCLERE, TASMANIA

ANALYSES OF 213184
-80 MESH STREAM SEDIMENT
AND
FLUORINE IN STREAM WATER

Compiled: R Duraj, R Potlock
Scale: 1:20,000
Drg No.: TAS-78-199



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PRODUCTION: Lands Dept 1975
PROJECTION: Transverse Mercator
HORIZONTAL DATUM: Australian Geodetic Datum 1966
VERTICAL DATUM: Mean Sea Level
COMPILED: Based on 1:50,000 Topographical Series and Land District Charts.

SCALE 1:20 000

Line Scale Factor K for this sheet = 0.99974
CONTOUR INTERVAL 20 METRES

CONVERSION TABLES

METRES	FEET
100	328
200	656
300	984
400	1312
500	1640
600	1968
700	2296
800	2624
900	2952
1000	3280
1100	3608
1200	3936
1300	4264
1400	4592
1500	4920
1600	5248
1700	5576
1800	5904
1900	6232
2000	6560

THIS IS A METRIC MAP

CONVERSION TABLES

METRES	KILOMETRES	MILES
1000	1	0.621
2000	2	1.242
3000	3	1.863
4000	4	2.484
5000	5	3.105
6000	6	3.726
7000	7	4.347
8000	8	4.968
9000	9	5.589
10000	10	6.210

GRAND CONVERGENCE CENTRE OF SHEET = 0.0°

MAGNETIC VARIATION 1970 APPROX 13.0°
RATE OF CHANGE APPROX -0.1° EVERY 2 YEARS

MAP REFERENCE SYSTEM

20/3943

① Fractional scale in thousands is 1:20 000
② South-West co-ordinates of this map sheet as represented by 10,000 metre grid intervals of the Australian Map Grid is 420,000m East and 590,000m North

BOUNDARY LEGEND

- Land District
- Municipality
- Parish
- Ward
- Town
- Lease
- Licence
- State Forest
- Survey
- Miscellaneous

ROAD CLASSIFICATIONS

- Principal road and highway
- Secondary road
- Minor road
- Vehicular track
- Reserved road

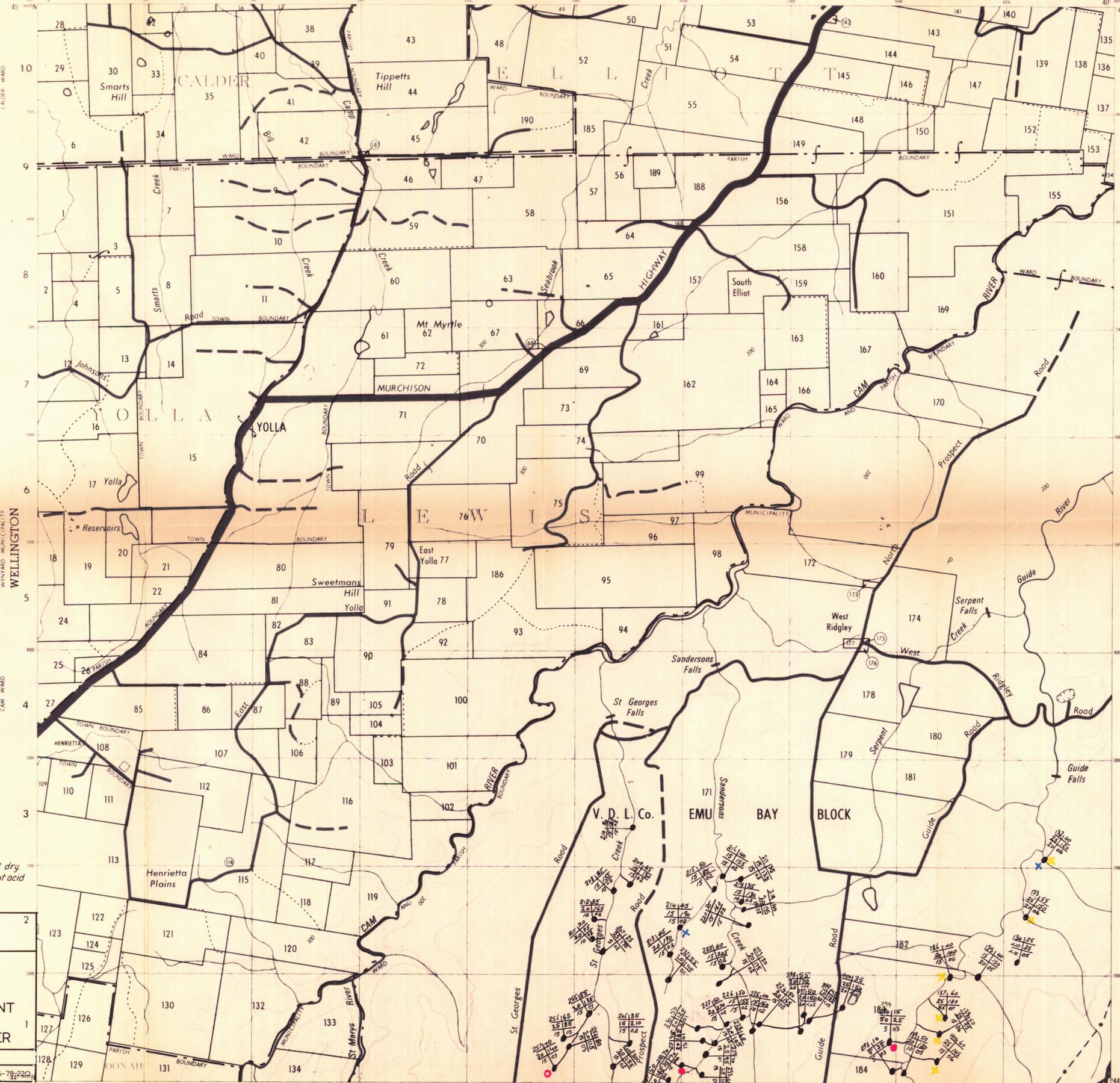
The representation of a road or track on this map is no evidence of the existence of a right of way

INDEX TO ADJOINING SHEETS

3844	3944	4044
3843	3943	4043
3842	3942	4042

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 28/20/4845). Details of Tenure: G = granted lot, P.G. = purchase grant, P. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L. = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 444 G.P.O. Hobart.

Index	Map Ref	Survey Plan	Lot	Area	Name Purpose	Tenure	Index	Map Ref	Survey Plan	Lot	Area	Name Purpose	Tenure
1	AB	20/34	129.3ha	Diprose, J.C.	P.G.	169	18	15/2	Part of	Cooper, F.	P.G.		
2	AB	41/24	78.74ha	Beamish, J.W. & S.	P.G.	170	17	104/32	109.3ha	Bromhall, M.R.	S.S.		
3	AB	19/32	33.3ha	Beamish, J.W.	P.G.	171	17	P.25	53.6ha	Bromhall, M.R.	S.S.		
4	AB	29/36	20.0ha	Diprose, A.A.E.	P.G.	172	16	105/16A	61.1ha	Bromhall, M.T.	P.G.		
5	AB	24/4	40.8ha	Neal, M.	P.G.	173	15	99/21	202.8ha	Bromhall, T.S.	P.G.		
6	AB	25/40	40.8ha	Neal, M.	P.G.	174	15	99/21	58.8ha	Laksey, L.B.	S.S.		
7	AB	31/42	42.5ha	Diprose, J.C.	P.G.	175	16	127/2	101.2ha	Hall Site	P.G.		
8	CB	15/49	65.3ha	Diprose, A.A.E.	P.G.	176	16	117/19	80.9ha	Hornie, Municipality of	P.G.		
9	AT	20/31	127.5ha	Ruffin, J.	P.G.	177	16	117/19	38.3ha	Armstrong, L.K.	S.S.		
10	AT	30/38	19.0ha	Pegau, J.S.W.	P.G.	178	14	129/7	31.3ha	McKibb, H.S.	S.S.		
11	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	181	13	104/28	33.0ha	Whitford, C.J.	S.S.		
12	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	182	12	105/14	41.0ha	Metzger, H.	S.S.		
13	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	183	11	104/36	77.1ha	Charles, H.P.	S.S.		
14	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	184	11	P.25	202.3ha	V.D.L. Co. (Emu Bay)	P.G.		
15	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	185	10	104/27	25.9ha	Smith, J.D.	P.G.		
16	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	187	09	14/22	202.8ha	Diprose, J.C.	P.G.		
17	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	188	09	14/22	42.8ha	Sheppard, L.H.	P.G.		
18	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	189	09	12/24	12.1ha	Sheppard, L.H.	P.G.		
19	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.	190	08	21/23	43.1ha	Beamish, T.J.	P.G.		
20	AT	30/38	15.4ha	Pegau, J.S.W.	P.G.								



Upper Background Possibly Anomalous
 Cu 30ppm ● ≥ 75ppm ●
 Pb 30ppm ● ≥ 35ppm ●
 Bi 30ppm ● ≥ 35ppm ●
 F Anomalous > 0.06ppm ✕
 Scheelite in panned concentrate ✕

KEY: Sample No. Cu Zn Bi F in water

ppm in -80 mesh sediment sieved dry
 Analyses for Cu, Pb, Zn, Bi by MAS after hot acid digestion by Comalco Research Centre.
 Fluorine in stream water in ppm by S.I.E.
 213185

COMALCO LIMITED
 E.L. 4/77 HIGHCLERE, TASMANIA
**ANALYSES OF
 -80 MESH STREAM SEDIMENT
 AND
 FLUORINE IN STREAM WATER**

Compiled: R. Duraj, R. Pollock
 Scale: 1:20,000 Drg. No. TAS-78-220

This is a Preliminary Edition prepared to provide advance information on areas in which mapping is in progress. The map is Crown Copyright and may only be reproduced upon written authority from the Surveyor General.

PRODUCTION: Lands Dept 1975
 PROJECTION: Transverse Mercator
 HORIZONTAL DATUM: Australian Geodetic Datum 1966
 VERTICAL DATUM: Mean Sea Level
 BASED ON: 1:50,000 Topographical Series and Land District Charts

SCALE 1:20 000
 Line Scale Factor for this sheet = 0.99974
 CONTOUR INTERVAL 20 METRES

CONVERSION TABLES
 METRES TO FEET
 FEET TO METRES

MAGNETIC VARIATION 1970 APPROX 12° 0'
 RATE OF CHANGE APPROX -0.11° EVERY 7 YEARS

MAP REFERENCE SYSTEM
 20/3944

BOUNDARY LEGEND
 Land District
 Municipality
 Parish
 Ward
 Town
 Licence
 State Forest
 Survey
 Miscellaneous

ROAD CLASSIFICATIONS
 Principal road and highway
 Secondary road
 Minor road
 Vehicular track
 Reserved road

The representation of a road or track on this map is no evidence of the existence of a right of way

INDEX TO ADJOINING SHEETS
 3845 3945 4045
 3844 3944 4044
 3843 3943 4043

LOCATION DIAGRAM

Users are requested to notify any error to the Surveyor General, Box 444, G.P.O. Hobart

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 78/20/4845). Details of Tenure: G = granted lot, P = purchase grant, P = purchase lot, L.O = location order, C.I = certificate issued, S.S = soldier settlement, S.S.I = soldier settlement lease, R.A = residence area, L = lease lot, T.L = temporary licence, C.L = crown land, G.R.P = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/4043

Table with columns: Index, Map Ref, Survey Plan, Lot, Area, Name / Purpose, Tenure. Includes a legend for anomalies: Cu (30ppm), Pb (30ppm), Bi (30ppm), F (Anomalous >0.06ppm), Scheelite in panned concentrate. Includes a key for sample locations: Cu, Pb, Zn, Bi in water.

COMALCO LIMITED

E.L. 4/77 HIGHCLERE TASMANIA
ANALYSES OF
-80 MESH STREAM SEDIMENT
AND
FLUORINE IN STREAM WATER

Table with columns: Compiled, Scale, Drg. No. Includes: R. Duroj, R. Pollock, Scale: 1:20,000, Drg. No.: TAS-78-200.



Production information including: Scale 1:20 000, Contour Interval 20 Metres, Conversion Tables (Metres to Feet, Miles to Metres), Magnetic Variation 1970 Approx 12.07, Map Reference System 20/4043, Boundary Legend, Road Classifications, Index to Adjoining Sheets, and Location Diagram.

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot (e.g. 28/20/4845). Details of Tenure: G = granted lot, P.G. = purchase grant, P. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L. = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/4044

Index	Map Ref	Survey Plan	Lot	Area	Name / Purpose	Tenure	Index	Map Ref	Survey Plan	Lot	Area	Name / Purpose	Tenure
1	A10	14/2	-	20.41ha	Hobbs, E. & Vicevich, M.	P.G.	1	A10	14/2	-	20.41ha	Hobbs, E. & Vicevich, M.	P.G.
2	A10	39/8	-	34.75ha	Vicevich, M.	P.G.	2	A10	39/8	-	34.75ha	Vicevich, M.	P.G.
3	A10	39/3	-	8.435ha	Dayton, M.	P.G.	3	A10	39/3	-	8.435ha	Dayton, M.	P.G.
4	A10	137/4	-	14.00ha	Vacant	C.L.	4	A10	137/4	-	14.00ha	Vacant	C.L.
5	A10	31/4	-	17.84ha	Munday, W.	P.G.	5	A10	31/4	-	17.84ha	Munday, W.	P.G.
6	A9	76/4	-	21.25ha	Vacant	C.L.	6	A9	76/4	-	21.25ha	Vacant	C.L.
7	B9	104/34	-	43.06	Kedden, A.J.	P.G.	7	B9	104/34	-	43.06	Kedden, A.J.	P.G.
8	B9	104/34	-	30.89ha	White, J.E.	P.G.	8	B9	104/34	-	30.89ha	White, J.E.	P.G.
9	B9	114/36	-	24.68ha	Stewart, A.S.	S.S.	9	B9	114/36	-	24.68ha	Stewart, A.S.	S.S.
10	B9	104/31	-	60.24ha	How, J.	S.S.	10	B9	104/31	-	60.24ha	How, J.	S.S.
11	B7	104/30	-	22.47ha	Clarke, A.B.	S.S.	11	B7	104/30	-	22.47ha	Clarke, A.B.	S.S.
12	B7	104/30	-	202.3ha	V.D.L. Co. (Emu Bay)	P.G.	12	B7	104/30	-	202.3ha	V.D.L. Co. (Emu Bay)	P.G.
13	B10	105/15	-	25.79ha	McKenna, W.R.	S.S.	13	B10	105/15	-	25.79ha	McKenna, W.R.	S.S.
14	B10	105/15	-	49.35ha	Porte, E.	S.S.	14	B10	105/15	-	49.35ha	Porte, E.	S.S.
15	B10	105/15	-	59.83ha	Vincent, C.	S.S.	15	B10	105/15	-	59.83ha	Vincent, C.	S.S.
16	B10	105/15	-	39.44ha	Shepherd, J.T.	S.S.	16	B10	105/15	-	39.44ha	Shepherd, J.T.	S.S.
17	B10	105/15	-	42.05ha	Vincent, C.	S.S.	17	B10	105/15	-	42.05ha	Vincent, C.	S.S.
18	C5	-	-	-	Town of Ridgley Gaz. 25.12.57	-	18	C5	-	-	-	-	-
19	D6	109/35	-	42.78ha	Morris, J.W.	S.S.	19	D6	109/35	-	42.78ha	Morris, J.W.	S.S.
20	C3	243/24	-	67.01ha	Vacant	C.L.	20	C3	243/24	-	67.01ha	Vacant	C.L.
21	A1	143/8/20	-	1.35ha	Gardner, J.L.	P.G.	21	A1	143/8/20	-	1.35ha	Gardner, J.L.	P.G.
22	A1	57/29	-	6.773ha	Eastwood, C.W.	P.G.	22	A1	57/29	-	6.773ha	Eastwood, C.W.	P.G.
23	B10	-	-	-	Crown Reservation	C.L.	23	B10	-	-	-	-	-
24	B10	63/18	-	4.04ha	Lynch, J.	P.G.	24	B10	63/18	-	4.04ha	Lynch, J.	P.G.
25	B10	63/18	-	20.70ha	Atkinson, T.	P.G.	25	B10	63/18	-	20.70ha	Atkinson, T.	P.G.
26	B10	31/37	-	42.39ha	Lynch, J.	P.G.	26	B10	31/37	-	42.39ha	Lynch, J.	P.G.
27	B10	54/8	-	6.808ha	Davis, J.	P.G.	27	B10	54/8	-	6.808ha	Davis, J.	P.G.
28	B10	101/52	-	20.23ha	Davis, J.	P.G.	28	B10	101/52	-	20.23ha	Davis, J.	P.G.
29	B10	101/52	-	20.23ha	Lynch, J.	P.G.	29	B10	101/52	-	20.23ha	Lynch, J.	P.G.
30	B10	101/52	-	41.28ha	Rutherford, T.S.	P.G.	30	B10	101/52	-	41.28ha	Rutherford, T.S.	P.G.
31	B10	143/13	-	17.57ha	Rutherford, E.E.	P.G.	31	B10	143/13	-	17.57ha	Rutherford, E.E.	P.G.
32	B10	143/13	-	76.89ha	Recreation Res. Gaz. R.3.30	C.L.	32	B10	143/13	-	76.89ha	Recreation Res. Gaz. R.3.30	C.L.
33	B10	143/13	-	216.5ha	Recreation Res. Gaz. R.3.30	C.L.	33	B10	143/13	-	216.5ha	Recreation Res. Gaz. R.3.30	C.L.
34	B10	65/25	-	20.03ha	Rutherford, W.	P.G.	34	B10	65/25	-	20.03ha	Rutherford, W.	P.G.
35	B10	40/5	-	37.23ha	Rutherford, W.	P.G.	35	B10	40/5	-	37.23ha	Rutherford, W.	P.G.
36	B10	25/33	-	40.87ha	Rutherford, W.	P.G.	36	B10	25/33	-	40.87ha	Rutherford, W.	P.G.
37	B10	15/12/88	-	404.7ha	School Site	C.L.	37	B10	15/12/88	-	404.7ha	School Site	C.L.
38	B10	22/35	-	40.47ha	Rutherford, R.	P.G.	38	B10	22/35	-	40.47ha	Rutherford, R.	P.G.
39	B10	143/14	-	52.00ha	Dodd, F.	S.S.	39	B10	143/14	-	52.00ha	Dodd, F.	S.S.
40	B10	22/19	-	39.66ha	Rutherford, R.	P.G.	40	B10	22/19	-	39.66ha	Rutherford, R.	P.G.
41	B10	22/19	-	36.42ha	Hill, H.	P.G.	41	B10	22/19	-	36.42ha	Hill, H.	P.G.
42	B10	22/19	-	11.43ha	Peart, M.A.	P.G.	42	B10	22/19	-	11.43ha	Peart, M.A.	P.G.
43	B10	22/19	-	39.66ha	Jamson, D.N.	P.G.	43	B10	22/19	-	39.66ha	Jamson, D.N.	P.G.
44	B10	40/6	-	39.28ha	Boose, J.E.	P.G.	44	B10	40/6	-	39.28ha	Boose, J.E.	P.G.
45	B10	40/1	-	23.53ha	Armitage, J.	P.G.	45	B10	40/1	-	23.53ha	Armitage, J.	P.G.
46	B10	44/33	-	125.4ha	Atkinson, W.H.	P.G.	46	B10	44/33	-	125.4ha	Atkinson, W.H.	P.G.
47	B10	40/12	-	19.87ha	Keatinge, J.	P.G.	47	B10	40/12	-	19.87ha	Keatinge, J.	P.G.
48	B10	94/11	-	16.27ha	Woodward, C.	P.G.	48	B10	94/11	-	16.27ha	Woodward, C.	P.G.
49	B10	92/33	-	20.23ha	Murray, F.J.	P.G.	49	B10	92/33	-	20.23ha	Murray, F.J.	P.G.
50	B10	92/33	-	6.199ha	Kilburn, H.R.	P.G.	50	B10	92/33	-	6.199ha	Kilburn, H.R.	P.G.
51	B10	15/30	-	12.34ha	Robertson, A.A.	P.G.	51	B10	15/30	-	12.34ha	Robertson, A.A.	P.G.
52	B10	139/35	-	50.97ha	Robertson, A.A.	P.G.	52	B10	139/35	-	50.97ha	Robertson, A.A.	P.G.
53	B10	139/36	-	38.98ha	Young, A.	S.S.	53	B10	139/36	-	38.98ha	Young, A.	S.S.
54	B10	14/35	-	20.23ha	Young, A.T.	S.S.	54	B10	14/35	-	20.23ha	Young, A.T.	S.S.
55	B10	40/17	-	125.1ha	Madden, J.J. & H.M.	P.G.	55	B10	40/17	-	125.1ha	Madden, J.J. & H.M.	P.G.
56	B10	40/10	-	20.23ha	Murdillon, B.K.	P.G.	56	B10	40/10	-	20.23ha	Murdillon, B.K.	P.G.
57	B10	88/22	-	7.600ha	McDonald, J.	P.G.	57	B10	88/22	-	7.600ha	McDonald, J.	P.G.
58	B10	65/31	-	20.19ha	Bowe, F.	P.G.	58	B10	65/31	-	20.19ha	Bowe, F.	P.G.
59	B10	40/15	-	32.37ha	Smith, W.	P.G.	59	B10	40/15	-	32.37ha	Smith, W.	P.G.
60	B10	40/16	-	30.65ha	Smith, W.	P.G.	60	B10	40/16	-	30.65ha	Smith, W.	P.G.
61	B10	35/23	-	41.68ha	Deppeler, F.	P.G.	61	B10	35/23	-	41.68ha	Deppeler, F.	P.G.
62	B10	44/32	-	17.92ha	Talbot, J.	P.G.	62	B10	44/32	-	17.92ha	Talbot, J.	P.G.
63	B10	88/22	-	31.81ha	Sturzaker, J.	P.G.	63	B10	88/22	-	31.81ha	Sturzaker, J.	P.G.
64	B10	63/11	-	20.23ha	Currow, S.	P.G.	64	B10	63/11	-	20.23ha	Currow, S.	P.G.
65	B10	79/32	-	20.23ha	Sturzaker, J.	P.G.	65	B10	79/32	-	20.23ha	Sturzaker, J.	P.G.
66	B10	15/30	-	20.15ha	Sturzaker, M.	P.G.	66	B10	15/30	-	20.15ha	Sturzaker, M.	P.G.
67	B10	40/14	-	62.02ha	Driscoll, R.	P.G.	67	B10	40/14	-	62.02ha	Driscoll, R.	P.G.
68	B10	139/32	-	15.69ha	Ansell, G.C.	S.S.	68	B10	139/32	-	15.69ha	Ansell, G.C.	S.S.
69	B10	160/32	-	4.507ha	Cooper, J.W.	P.G.	69	B10	160/32	-	4.507ha	Cooper, J.W.	P.G.
70	B10	40/2	-	82.56ha	Morris, A.	P.G.	70	B10	40/2	-	82.56ha	Morris, A.	P.G.
71	B10	144/20	-	48.44ha	Bryan, E.R.	P.G.	71	B10	144/20	-	48.44ha	Bryan, E.R.	P.G.
72	B10	44/30	-	Part of	Morris, A.	P.G.	72	B10	44/30	-	Part of	Morris, A.	P.G.
73	B10	57/26	-	131.5ha	Hall, W.	P.G.	73	B10	57/26	-	131.5ha	Hall, W.	P.G.
74	B10	139/34	-	41.62ha	Dunham, R.W.	S.S.	74	B10	139/34	-	41.62ha	Dunham, R.W.	S.S.
75	B10	60/21	-	36.27ha	Deer, F.F.	P.G.	75	B10	60/21	-	36.27ha	Deer, F.F.	P.G.
76	B10	63/7	-	Part of	Quinn, C.F.	P.G.	76	B10	63/7	-	Part of	Quinn, C.F.	P.G.
77	B10	54/9	-	Part of	Morris, A.J.	P.G.	77	B10	54/9	-	Part of	Morris, A.J.	P.G.
78	B10	54/9	-	128.8ha	Vacant In C. Settlement	-	78	B10	54/9	-	128.8ha	Vacant In C. Settlement	-
79	B10	54/13	-	48.90ha	Groom, F.C.	P.G.	79	B10	54/13	-	48.90ha	Groom, F.C.	P.G.
80	B10	153/37	-	16.58ha	Smith, R.T.	P.G.	80	B10	153/37	-	16.58ha	Smith, R.T.	P.G.
81	B10	273/27	-	96.1md	Johnston, R.	P.G.	81	B10	273/27	-	96.1md	Johnston, R.	P.G.
82	B10	163/4	-	Part of	School Site	C.L.	82	B10	163/4	-	Part of	School Site	C.L.
83	B10	40/18	-	40.06ha	Carr, W.H.	P.G.	83	B10	40/18	-	40.06ha	Carr, W.H.	P.G.
84	B10	65/32	-	128.3ha	Rutherford, T.S.	P.G.	84	B10	65/32	-	128.3ha	Rutherford, T.S.	P.G.
85	B10	44/29	-	40.82ha	Rouse, E.	P.G.	85	B10	44/29	-	40.82ha	Rouse, E.	P.G.
86	B10	91/33	-	8.872ha	Dickson, G.	P.G.	86	B10	91/33	-	8.872ha	Dickson, G.	P.G.
87	B10	79/31	-	19.53ha	Tighe, T.	P.G.	87	B10	79/31	-	19.53ha	Tighe, T.	P.G.
88	B10	P.1908	-	7.671ha	Taylor, F.	P.	88	B10	P.1908	-	7.671ha	Taylor, F.	P.
89	B10	136/28	-	Vacant	Vacant	C.L.	89	B10	136/28	-	Vacant	Vacant	C.L.
90	B10	40/8	-	121.2ha	Tighe, J.	P.G.	90	B10	40/8	-	121.2ha	Tighe, J.	P.G.
91	B10	40/7	-	60.63ha	Rouse, G.	P.G.	91	B10	40/7	-	60.63ha	Rouse, G.	P.G.
92	B10	139/37	-	119.8ha	Elphinstone, C.N.	S.S.	92	B10	139/37	-	119.8ha	Elphinstone, C.N.	S.S.
93	B10	161/21	-	26.7md	Smith, A.C.	P.G.	93	B10	161/21	-	26.7md	Smith, A.C.	P.G.
94	B10	57/25	-	19.02ha	Burnie, R.	P.G.	94	B10	57/25	-	19.02ha	Burnie, R.	P.G.
95	B10	161/11	-	47.57ha	Smith, A.C.	P.G.	95	B10	161/11	-	47.57ha	Smith, A.C.	P.G.
96	B10	161/11	-	61.92ha	Clear Settlement Board	P.G.	96	B10	161/11	-	61.92ha	Clear Settlement Board	P.G.
97	B10	54/14	-	10.30ha	Atkinson, W.H.	P.G.	97	B10	54/14	-	10.30ha	Atkinson, W.H.	P.G.
98	B10	63/13	-	4.042ha	Griffith, G.	P.G.	98	B10	63/13	-	4.042ha	Griffith, G.	P.G.
99	B10	104/31	-	16.90ha	Hare, J.A.	P.G.	99	B10	104/31	-	16.90ha	Hare, J.A.	P.G.
100	B10	153/36	-	10.39ha	Joyce, A.	P.G.	100	B10	153/36	-	10.39ha	Joyce, A.	P.G.
101	B10	153/36	-	5.780ha	Hill, G.E.	P.G.	101	B10	153/36	-	5.780ha	Hill, G.E.	P.G.
102	B10	148/31	-	11.285ha	Church Site	C.L.	102	B10	148/31	-	11.285ha	Church Site	C.L.
103	B10	134/28	-	1.110ha	Quarry Site	C.L.	103	B10	134/28	-	1.110ha	Quarry Site	C.L.
104													

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 20/4845). Details of Tenure: G = granted lot, P.G. = purchase grant, P. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L. = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/3943

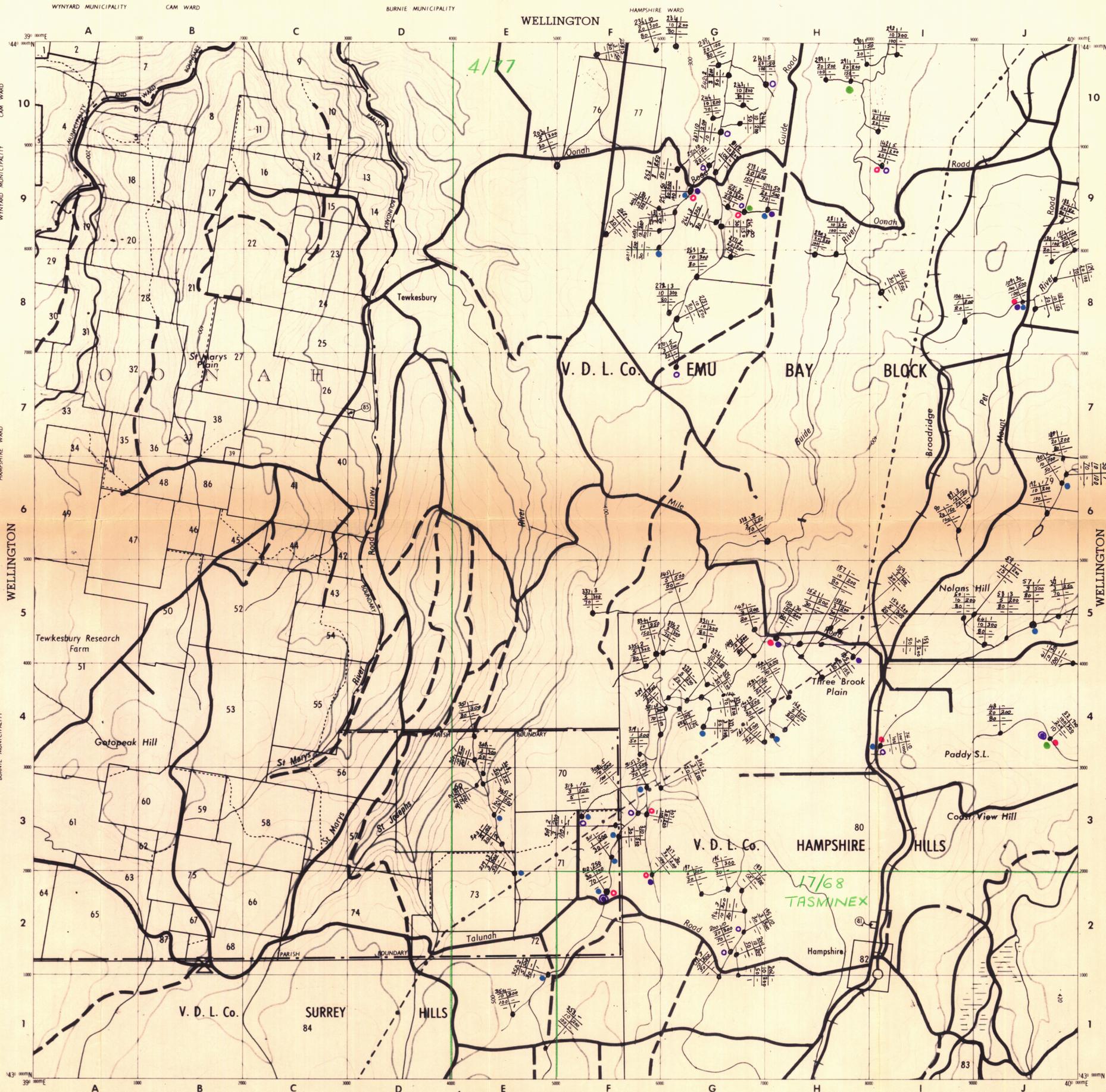
Table with columns: Index, Map Ref, Survey Plan, Lot, Area, Name / Purpose, Tenure. Lists various land parcels and their details.

Table for magnetic fraction analysis: Sn, Cu, Pb, Zn. Includes 'Possibly Anomalous' and 'Anomalous' categories with corresponding ppm values.

Table for sample analysis: Sample No., Sn, Pb, Cu, Mo, Zn, Bi, Be.

ppm, in magnetic fraction of stream sediment. Analyses by Amdel, semi-quantitative spectrographic, codes A1, A2.

COMALCO LIMITED
EL. 4/77 HIGHCLERE, TASMANIA
ANALYSES OF
MAGNETIC FRACTIONS OF
STREAM SEDIMENT
Compiled: R. Duraj, R. Pollock
Scale: 1:20 000 Drg. No.: TAS-78-197

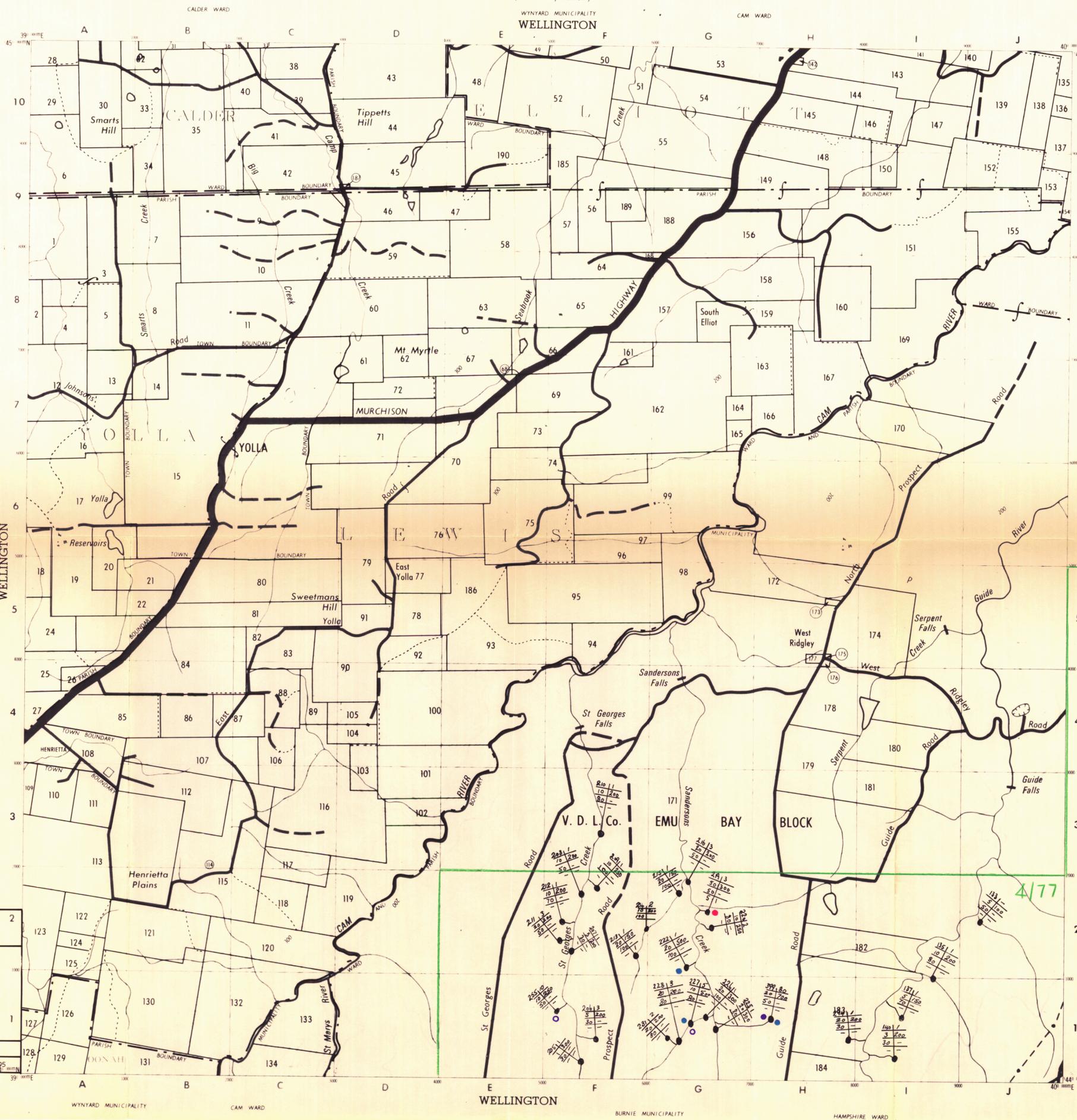


Scale 1:20 000
CONTOUR INTERVAL 20 METRES
CONVERSION TABLES
MAGNETIC VARIATION 1970 APPROX 12.0°
MAP REFERENCE SYSTEM
BOUNDARY LEGEND
ROAD CLASSIFICATIONS
INDEX TO ADJOINING SHEETS
LOCATION DIAGRAM

Index numbers shown on this tenure map when used in conjunction with the sheet number provide a unique reference to any lot (e.g. 20/3944/45). Details of Tenure, G.P. = granted lot, P.C. = purchase grant, P.L. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L. = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 444 G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/3944

Table with columns: Index, Map Ref, Survey Plan, Lot, Area, Name/Purpose, Tenure, Index, Map Ref, Survey Plan, Lot, Area, Name/Purpose, Tenure. Includes a 'KEY' section for magnetic fraction analyses and a 'COMALCO LIMITED' section for E.L. 477 Highclere, Tasmania.



Map information block containing: Scale 1:20 000, Contour Interval 20 Metres, Conversion Tables, Magnetic Variation 1970 Approx 12.07, Map Reference System 20/3944, Boundary Legend, Road Classifications, Index to Adjoining Sheets, and Location Diagram.

Scale: 1:20,000 Drg No. TAS-78-195

2565

Users are requested to notify any error to the Surveyor-General, Box 444, G.P.O. Hobart.

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 20/4043/10). Details of Tenure: G = granted lot, P.G. = purchase grant, P. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/4043

Index	Map Ref	Survey Plan	Lot	Area	Name / Purpose	Tenure	Index	Map Ref	Survey Plan	Lot	Area	Name / Purpose	Tenure
1	J10	65/3	-	40.73ha	Aitken, A.	P.G.	101	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
2	J10	65/4	-	19.72ha	Freer, E.	P.G.	102	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
3	J10	80/25	-	40.02ha	Groom, T.A.	P.G.	103	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
4	J10	80/27	-	10.87ha	Groom, T.A.	P.G.	104	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
5	J10	111/24	-	37.94ha	Austral Timber Co. Ltd.	P.G.	105	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
6	J10	128/11	-	14.42ha	Murfer, R.A.	P.G.	106	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
7	J10	127/24	-	10.1172ha	Aitken, R.W.	P.G.	107	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
8	J10	62/16	-	20.32ha	Aitken, R.W.	P.G.	108	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
9	J9	65/2	-	48.54ha	Lynch, T.J.	P.G.	109	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
10	J9	150/13	-	90.26ha	French, W.B. & Miller, G.H.	S.S.	110	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
11	J9	119/22	-	31.36ha	Aitken, A.	P.G.	111	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
12	A6	99/23	-	62.73ha	Beveridge, S.H.	P.G.	112	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
13	J9	62/16	-	40.51ha	Atkinson, W.H.	P.G.	113	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
14	J9	129/23	-	75.99ha	Atkinson, E.H.	P.G.	114	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
15	J8	66/35	-	20.20ha	Atkinson, W.H.	P.G.	115	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
16	J9	66/35	-	12.15ha	Atkinson, E.H.	P.G.	116	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
17	J9	66/35	-	19.7037ha	Mylan, H.F.	P.G.	117	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
18	J9	70/37	-	9.697ha	Mylan, H.F.	P.G.	118	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
19	J9	127/22	-	19.906ha	Reidling, D.H.	P.G.	119	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
20	J9	154/21	-	59.03ha	Sturaker, R.	S.S.	120	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
21	J9	90/6	-	9.72ha	Clark, L.J.	P.G.	121	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
22	J8	117/23	-	26.76ha	Clark, L.J.	P.G.	122	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
23	J8	117/19	-	41.03ha	Clark, L.J.	P.G.	123	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
24	J8	117/22	-	10.423ha	Atkinson, W.H.	P.G.	124	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
25	J8	87/25	-	18.13ha	Atkinson, G.F.	P.G.	125	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
26	J8	68/36	-	20.13ha	Atkinson, W.H.	P.G.	126	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
27	J7	113/9	-	10.55ha	Atkinson, G.F.	P.G.	127	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
28	J7	113/9	-	10.87ha	Maraden, T.H.	P.G.	128	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
29	J7	86/16	-	10.11ha	Atkinson, G.F.	P.G.	129	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
30	J7	86/19	-	20.23ha	Atkinson, W.H.	P.G.	130	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
31	J7	127/20	-	40.47ha	Carr, F.W.	P.G.	131	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
32	J7	127/20	-	20.14ha	Carr, F.W.	P.G.	132	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
33	J7	142/19	-	67.73ha	Carr, J.	S.S.	133	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
34	J7	142/19	-	52.372ha	Hayes, G.C.	S.S.	134	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
35	J7	90/5	-	10.14ha	Atkinson, G.F.	P.G.	135	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
36	J7	102/5	-	6.880ha	Atkinson, A.P.	P.G.	136	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
37	J7	117/18	-	162.3ha	Groom, M.	P.G.	137	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
38	J6	117/22	-	19.86ha	Clark, L.P.	P.G.	138	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
39	J6	117/22	-	162.3ha	Groom, M.	P.G.	139	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
40	J6	66/37	-	66.87ha	Maraden, T.H. & J.F.	P.G.	140	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
41	J6	93/22	-	9.22ha	Maraden, J.F.	P.G.	141	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
42	J6	87/20	-	41.36ha	Miles, A.	P.G.	142	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
43	J6	142/19	-	20.23ha	Carr, J.	S.S.	143	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
44	J6	93/23	-	19.78ha	Groom, F.A.	P.G.	144	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
45	J6	145/22	-	40.41ha	Carr, R.	P.G.	145	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
46	J6	111/23	-	25.32ha	Ellis, J.H.	P.G.	146	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
47	J6	145/23	-	67.70ha	Applebee, L.A.	P.G.	147	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
48	J6	145/23	-	44.21ha	Weller, G.W. 86595/35	T.L.	148	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
49	J6	145/23	-	28.80ha	Johnston, J.R.	S.S.	149	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
50	J6	102/10	-	6.753ha	Groom, T.A.	P.G.	150	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
51	J6	86/17	-	59.79ha	Hurst, J.A.	P.G.	151	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
52	J6	12/885	-	12.885ha	School Site	C.L.	152	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
53	J6	103/12	-	22.83ha	Groom, T.A.	P.G.	153	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
54	J6	87/21	-	20.26ha	Groom, T.A.	P.G.	154	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
55	J6	87/23	-	81.44ha	Clark, H.G.	P.G.	155	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
56	J6	87/23	-	40.46ha	Groom, T.A.	P.G.	156	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
57	J6	79/19	-	40.10ha	Riley, P.J.	P.G.	157	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
58	J6	79/17	-	20.14ha	Hewitt	P.G.	158	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
59	J6	103/13	-	9.15ha	Clark, L.J.	P.G.	159	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
60	J6	117/21	-	20.25ha	Lade, W.	P.G.	160	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
61	J6	102/11	-	20.50ha	Elphinstone, E. & O.S.	P.G.	161	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
62	J6	109/4	-	20.50ha	National Bank & Trustees	P.G.	162	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
63	J6	109/3	-	6.101ha	Elphinstone, E. & O.S.	P.G.	163	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
64	J6	127/21	-	9.462ha	William, M.	P.G.	164	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
65	J6	95/33	-	20.34ha	Lade, W.	P.G.	165	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
66	J6	109/5	-	5.192ha	Hayes, T.H.	P.G.	166	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
67	J6	P4212	-	Part of Groom, F.A.	P.G.	167	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.		
68	J6	95/32	-	44.21ha	Elphinstone, E. & O.S.	P.G.	168	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
69	J6	86/18	-	3.831ha	Hills, S.	P.G.	169	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
70	J6	157/24	-	36.76ha	Hayes, A.M.G.H.	P.G.	170	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
71	J6	200/13	-	15.28ha	Nicholls, C.H.	P.G.	171	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
72	J6	117/20	-	40.47ha	Vacant	C.L.	172	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
73	J6	90/7	-	20.22ha	Vacant	C.L.	173	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
74	J6	79/18	-	80.32ha	Clark, L.J.	P.G.	174	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
75	J6	155/29	-	6.295ha	Mariden, R. & Amr.	P.G.	175	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
76	J6	139/3	-	20.22ha	Clark, L.J.	P.G.	176	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
77	J6	139/3	-	20.22ha	Clark, L.J.	P.G.	177	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
78	J6	97/25	-	20.22ha	Clark, L.J.	P.G.	178	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
79	J6	87/19	-	77.95ha	Clark, L.J.	P.G.	179	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
80	J6	87/19	-	8.852ha	William, E.O.	P.G.	180	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
81	J6	93/24	-	81.07ha	William, E.O.	P.G.	181	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
82	J6	87/23	-	19.44ha	Clark, L.J.	P.G.	182	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
83	J6	124/3	-	41.01ha	Clark, L.J.	P.G.	183	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
84	J6	87/22	-	49.04ha	Clark, L.J.	P.G.	184	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
85	J6	87/22	-	51.33ha	Clark, L.J.	P.G.	185	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
86	J6	87/19	-	9.79ha	Clark, L.J.	P.G.	186	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
87	J6	122/34	-	20.29ha	Clark, L.J.	P.G.	187	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
88	J6	148/12	-	40.35ha	Clark, A.N.	P.G.	188	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
89	J6	87/18	-	20.39ha	Vacant	C.L.	189	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
90	J6	128/10	-	20.39ha	Acquired for Forestry Purposes	C.L.	190	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
91	J6	428/10	-	10.12ha	Groom, T.A.	P.G.	191	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
92	J6	122/31	-	40.39ha	Groom, V.B.	P.G.	192	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
93	J6	96/1	-	40.80ha	Groom, T.A.	P.G.	193	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
94	J6	142/18	-	60.49ha	Groom, P.G.	P.G.	194	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
95	J6	87/18	-	Vacant	C.L.	195	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.		
96	J6	139/1	-	39.85ha	Thomas, J.L. & Parsons E.L.	P.G.	196	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	
97	J6	124/1	-	41.02ha	Lane, W.H.	P.G.	197	C1	122/16	97.81ha	Part of Timber Reserve Gaz. 27.11.06	C.L.	

Index numbers shown on this tenure map when used in conjunction with the sheet number provides a unique reference to any lot. (e.g. 28/20/4845). Details of Tenure, G = granted lot, P.G. = purchase grant, P. = purchase lot, L.O. = location order, C.I. = certificate issued, S.S. = soldier settlement, S.S.L. = soldier settlement lease, R.A. = residence area, L. = lease lot, T.L. = temporary licence, C.L. = crown land, G.R.P. = granted under Real Property Act. Copies of this plan may be obtained from the Lands Dept. or Box 44a G.P.O. Hobart.

CADASTRAL REFERENCE SHEET 20/4044

Table with columns: Index, Map Ref, Survey Plan, Lot, Area, Name/Purpose, Tenure, Index, Map Ref, Survey Plan, Lot, Area, Name/Purpose, Tenure. Lists various land parcels and their details.

COMALCO LIMITED
E.L. 4/77 HIGHCLERE, TASMANIA
ANALYSES OF MAGNETIC FRACTION OF STREAM SEDIMENT
Compiled: R. Dura, R. Pollock
Scale: 1:20,000
Org. No. TAS-78-194

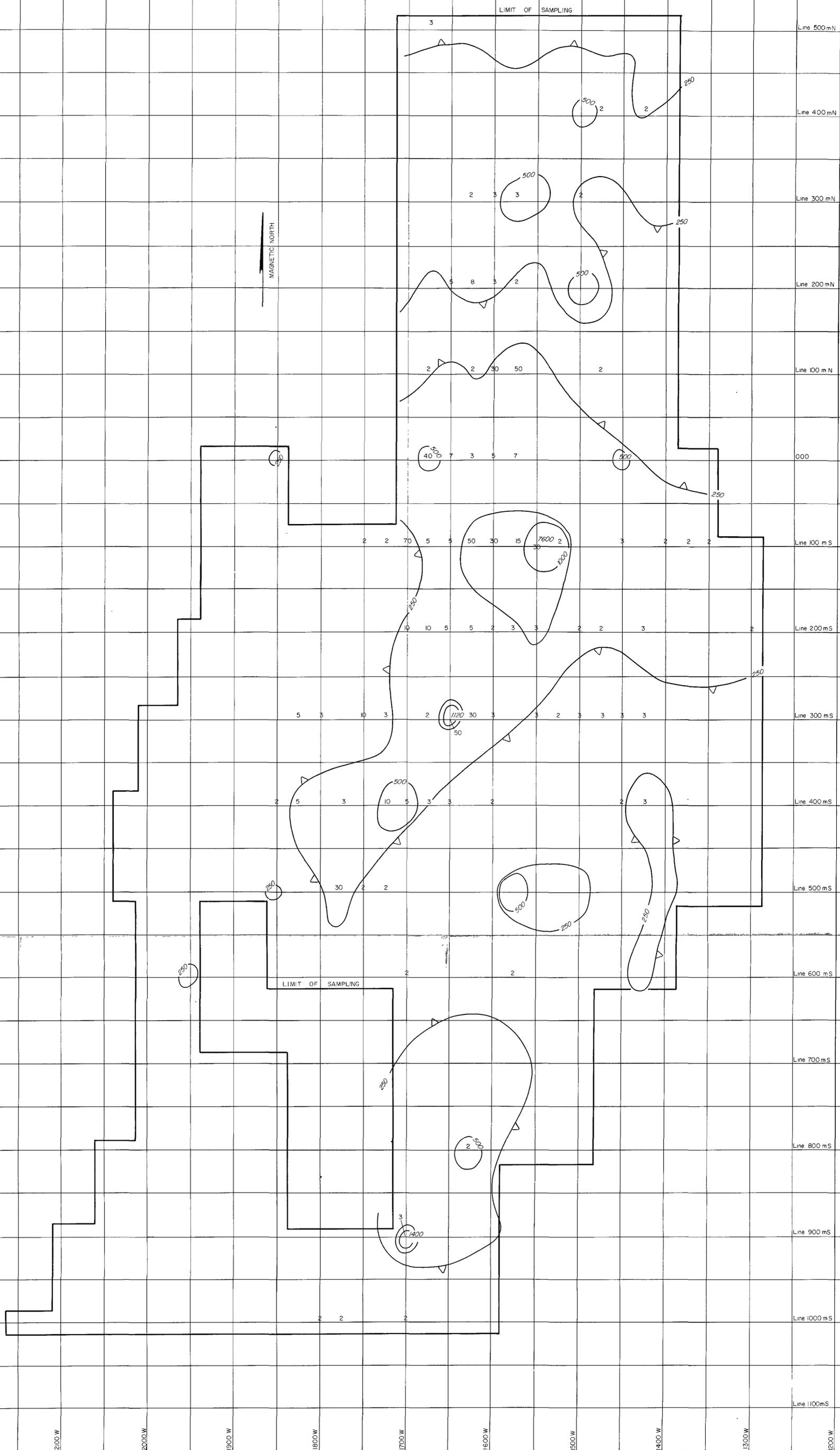
Table with columns: Element, Concentration Range, Anomalous Status. Lists Sn, Cu, Pb, Zn concentrations and their classification.

Table with columns: Element, Sample No. Lists Sn, Pb, Cu, Zn, Mo samples.

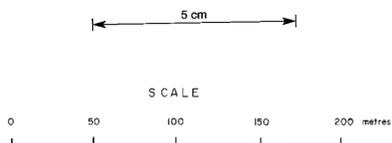
ppm, in magnetic fraction of stream sediment. Analyses by Amdel, semi-quantitative spectrographic, codes A1, A2.



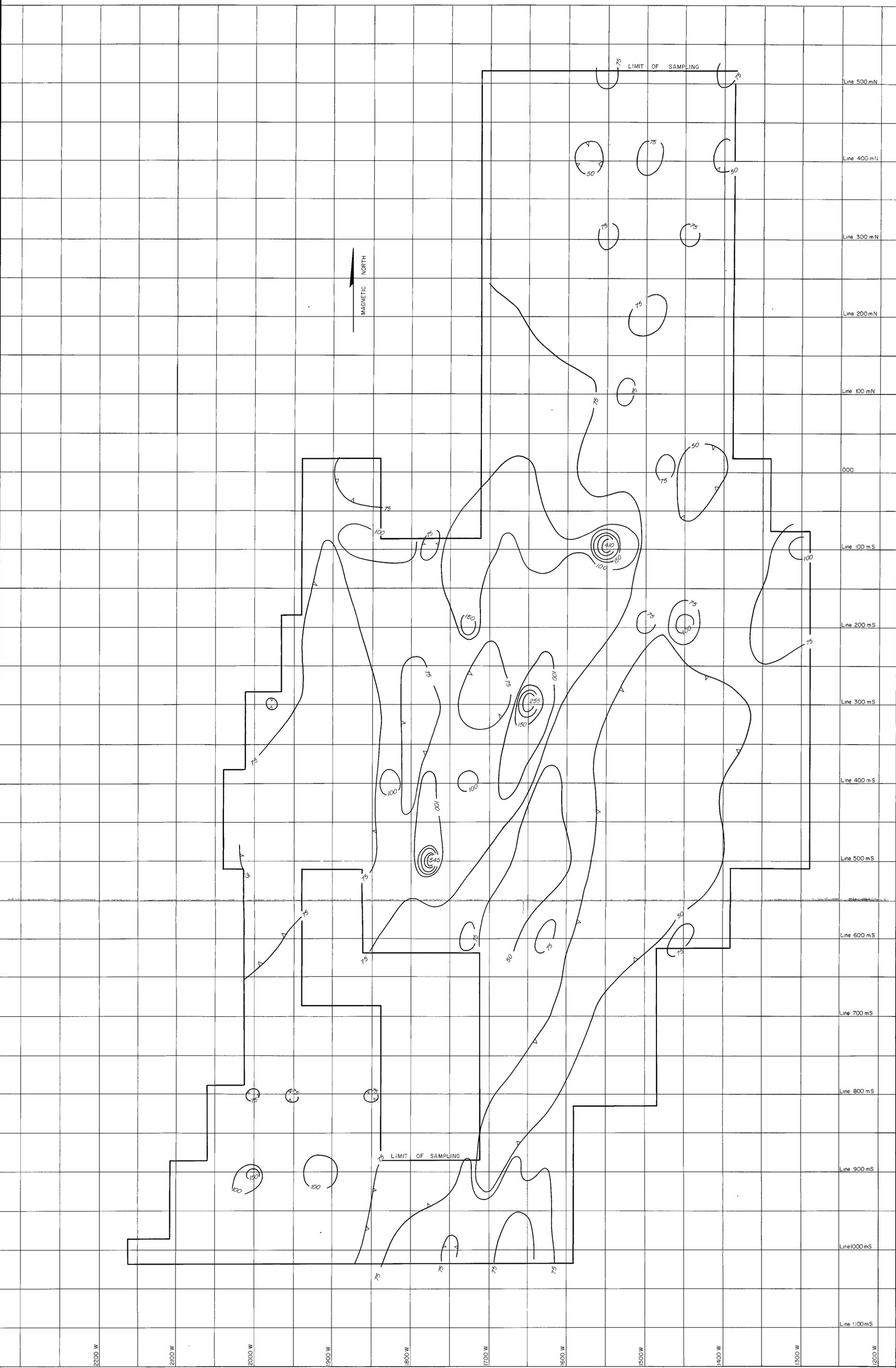
Scale 1:20 000
Contour Interval 20 Metres
Magnetic Variation 1970 Approx 12.0'
Map Reference System 20/4044
Boundary Legend
Road Classifications
Index to Adjacent Sheets
Location Diagram



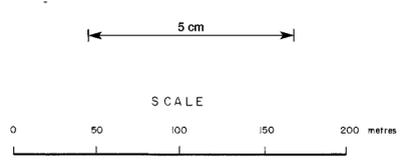
- Overlay to data sheet Tas - 78 - 218
- Arbitrary contours at 250, 500, 1000 ppm copper
- Tin only values exceeding 1 ppm plotted



COMALCO LIMITED		78-1313
E.L. 4/77 HIGHCLERE		
PART OF KINGSCLERE SHEET B AREA BUCKBY PROSPECT		
FLUORINE IN SOIL - (CONTOURS)		
213194		2569
Compiled R Pollock	Revised	Drawn S Hutchison
Date November, 1978	Scale 1:2500	Drng No Tas - 78 - 282



- Overlay to data sheet Tas - 78 - 218
- Arbitrary contours at 50,75,100,150,200 etc ppm



COMALCO LIMITED		78-1313
EL 4/77 HIGHCLERE		
PART OF KINGSLERE SHEET B AREA BUCKBY PROSPECT		
213195		COPPER IN SOIL
2571		
Complied	R Pollock	Revised
Date	November, 1978	Scale
		1:2500
Drawn		S Hutchison
Drg No		Tas - 78 - 219

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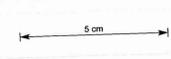
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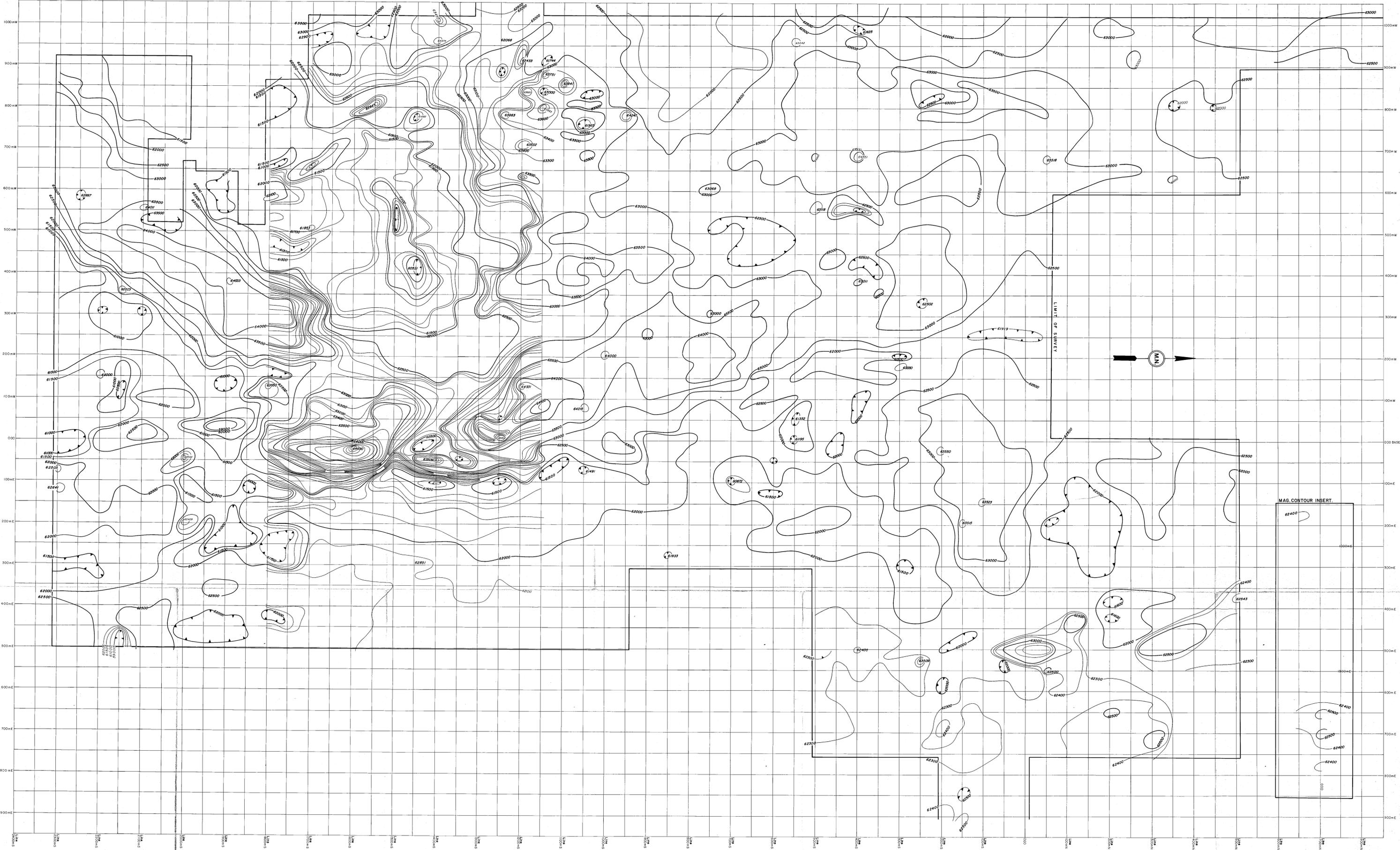


E.L. 17/68
(TASMINEX NL)



Note: Overlay to 1:20,000 Cadastral sheets

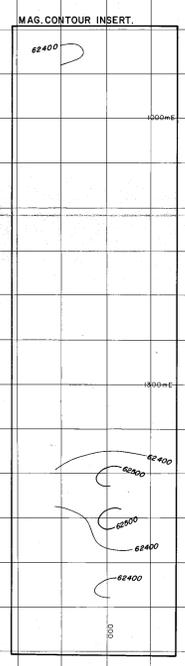
213196 COMALCO LIMITED 78-1313		
E.L. 4/77 HIGHCLERE TASMANIA GROUND TRAVERSES PROTON PRECESSION MAGNETOMETER 2572		
Compiled: R. Pollock	Revised:	Drawn: R. Pollock
Date: Oct. 1978	Scale: 1:20,000	Dwg. No: TAS-78-189

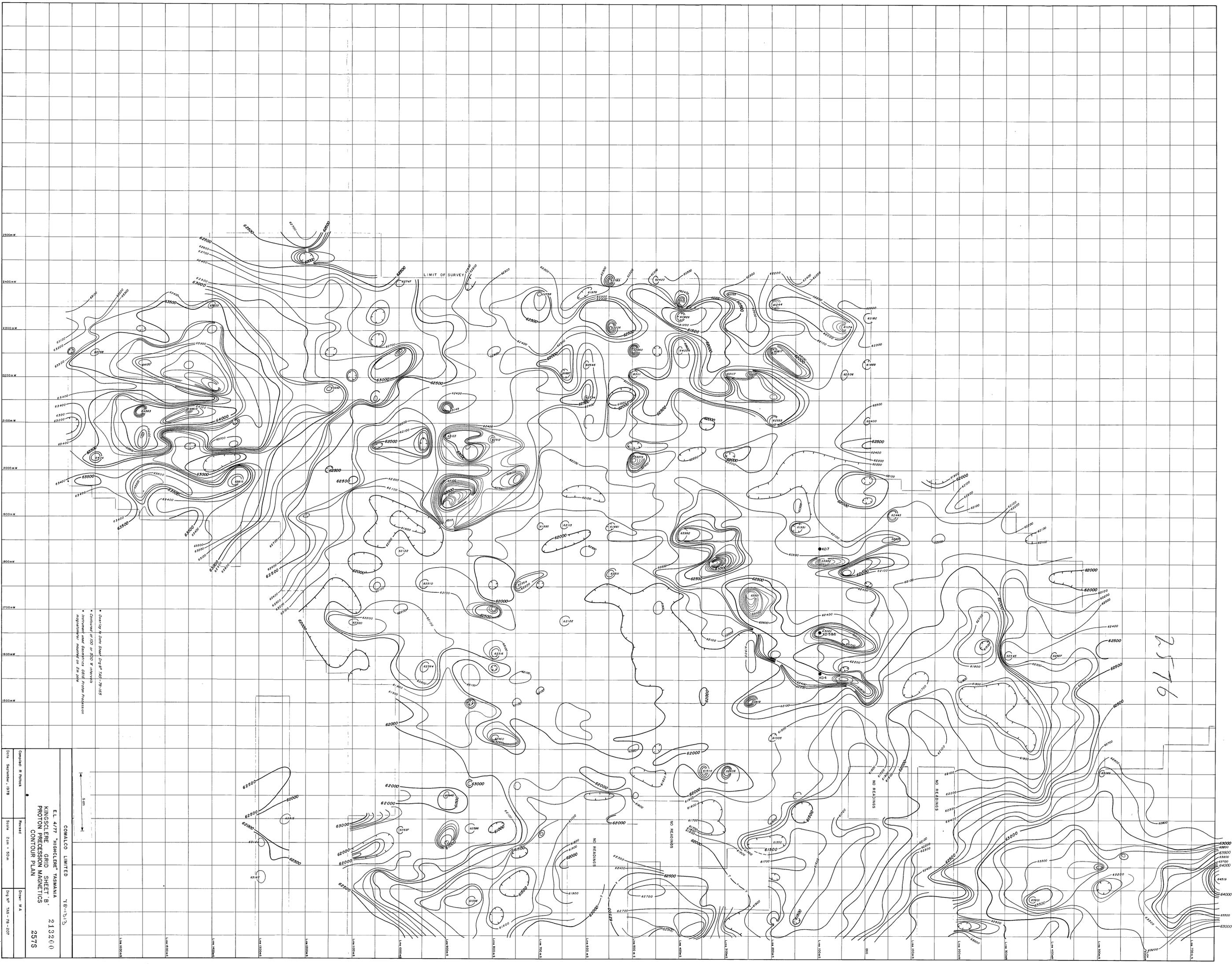


2574

Instrument used Geometrics GB18 Proton precession Magnetometer mounted on 2m pole
 Overlay to data sheet Drg N° TAS-78-129
 Contoured at 100 or 500 ft intervals

50m
 Scale





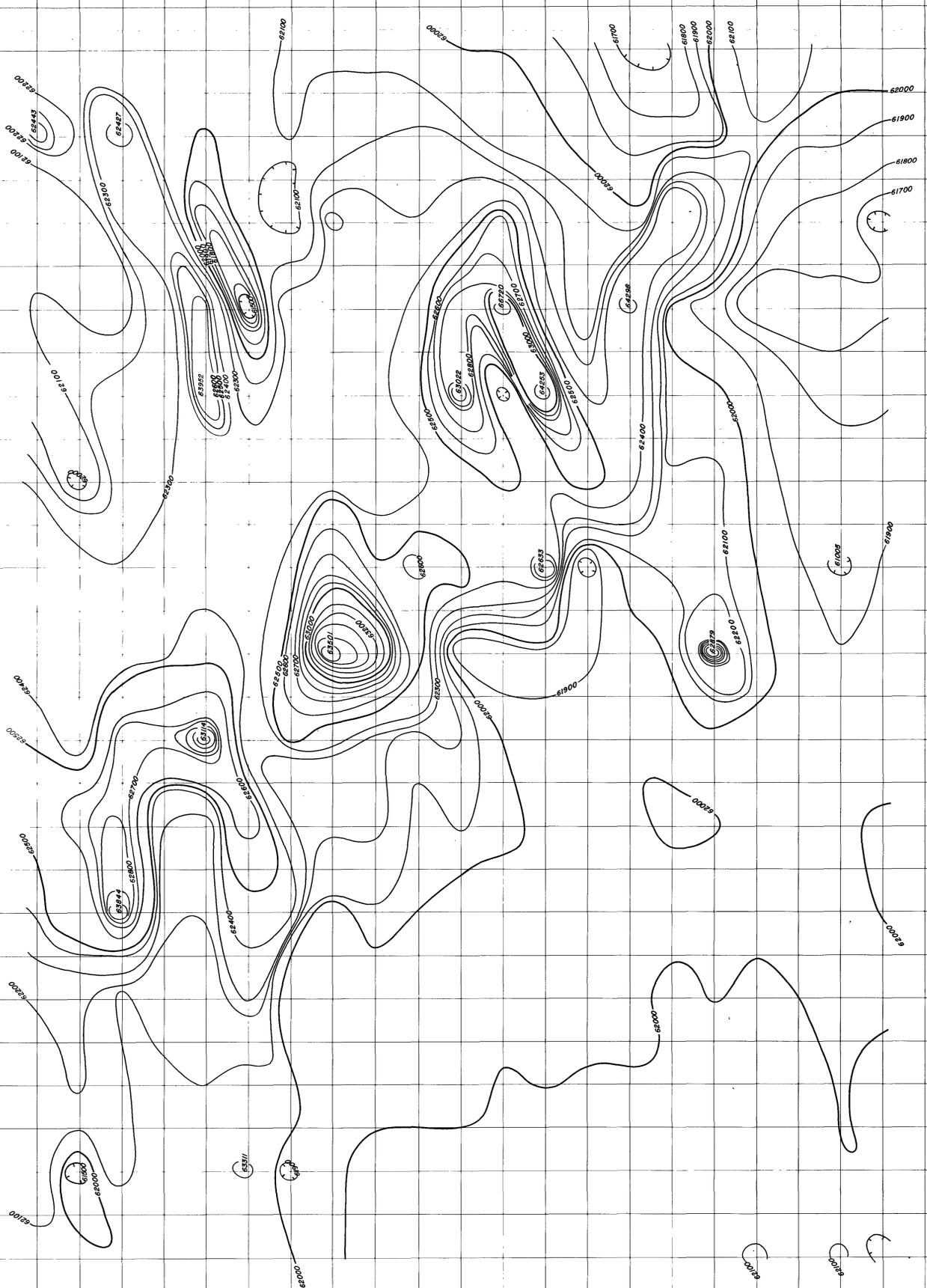
2576

• Contour interval 100 or 500 m intervals
 • Spot heights rounded on the top

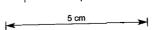
COMALCO LIMITED 75-1113	
EL 4/77 "HIGHCLERE" TASMANIA KINGCLERE GRID SHEET 'B' PROTON PRECISION MAGNETICS CONTOUR PLAN 2575	
Compiled: R. P. POOL Date: September, 1978	Drawn: M. A. Date: 12/1/78
Scale: 2cm = 50m	Date: 12/1/78

2000mW 1900mW 1800mW 1700mW 1600mW 1500mW 1400mW 1300mW

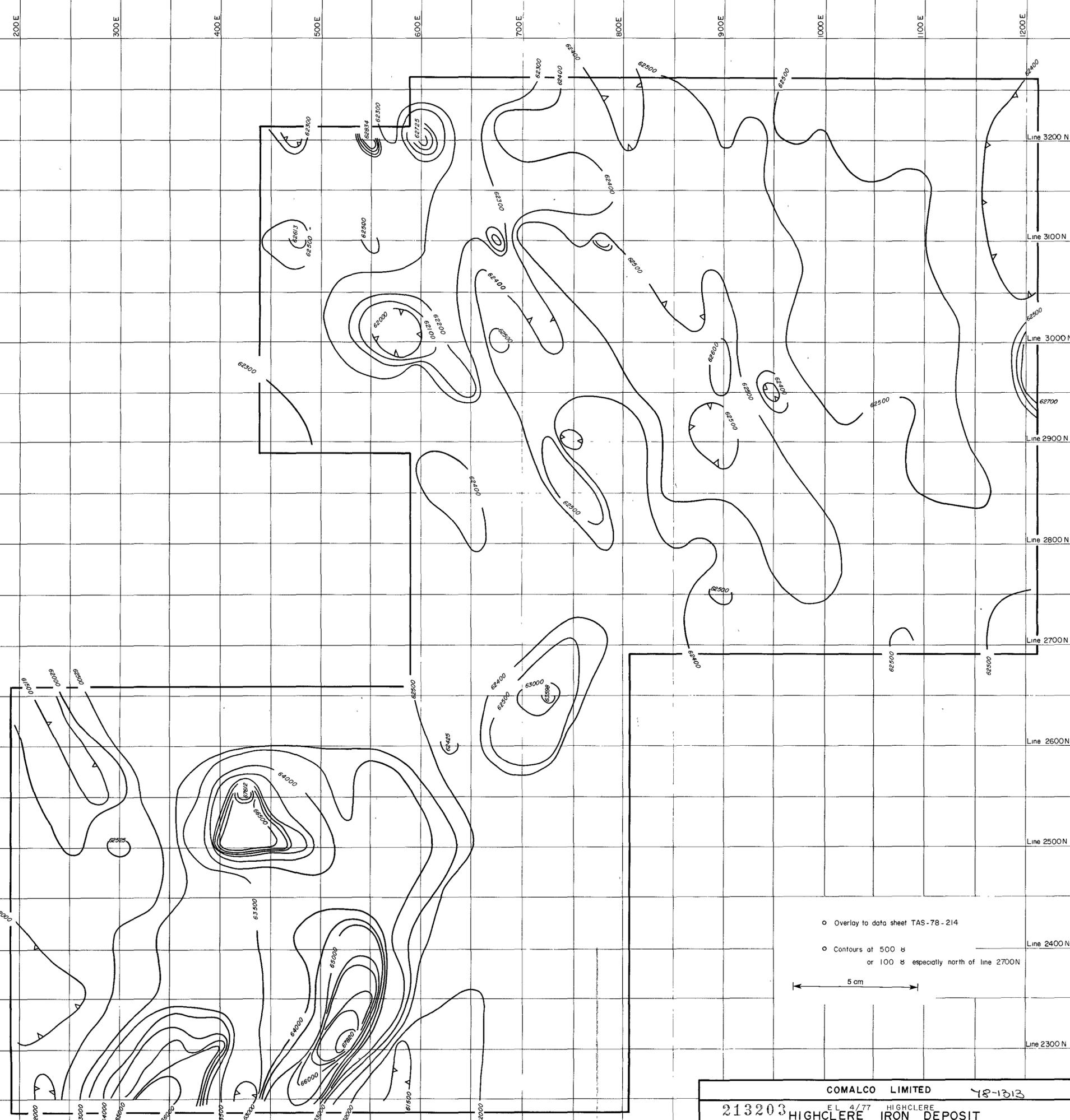
200mE
100mE
000
100mS
200mS
300mS
400mS
500mS
600mS
700mS
800mS
900mS



- Contour interval 100 gammas
- Instrument used Geometrics G816 Proton Precession Magnetometer mounted on 2 m pole
- Overlay to Geology plan



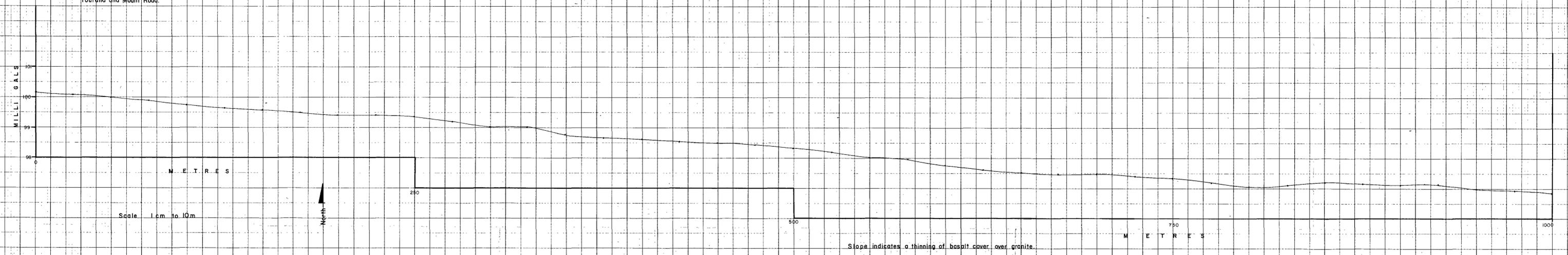
COMALCO LIMITED		
213201 TASMANIA EL 7/74 HIGHCLERE		
BUCKBY PROSPECT		
PROTON PRECESSION MAGNETICS		
2577		
Compiled R Pollock	Revised	Drawn M Atwell
Date September, 1978	Scale 1:1250	Drq No TAS-78-206



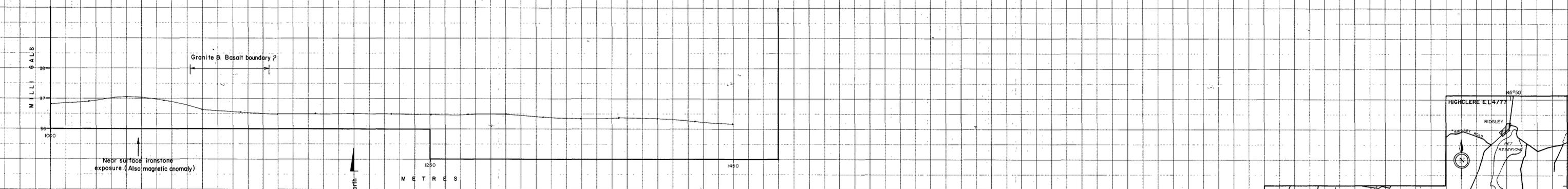
○ Overlay to data sheet TAS-78-214
 ○ Contours at 500 γ
 or 100 γ especially north of line 2700N
 5 cm

COMALCO LIMITED 48-1313		
213203 HIGHCLERE ^{EL. 4/77} HIGHCLERE IRON DEPOSIT (NORTHERN PART) PROTON PRECESSION MAGNETICS CONTOURS 2579		
Compiled R Pollock	Revised	Drawn S Hutchison
Date October, 1978	Scale 1:2500	Drg No Tas - 78 - 217

Gravity traverse along Yourella Road
 Base station '0' is 923.5m from junction of
 Yourella and Mount Road.

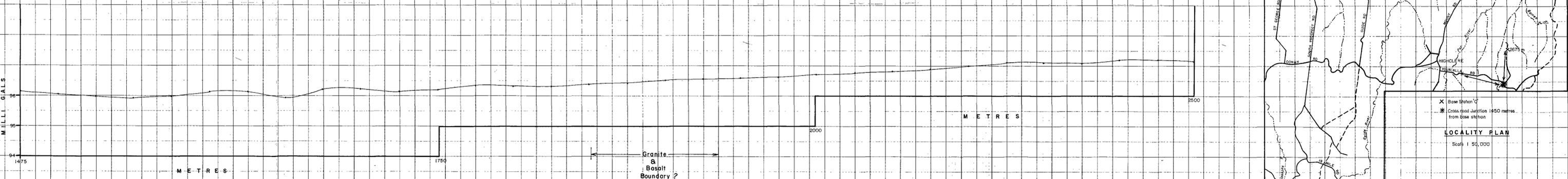


Slope indicates a thinning of basalt cover over granite.

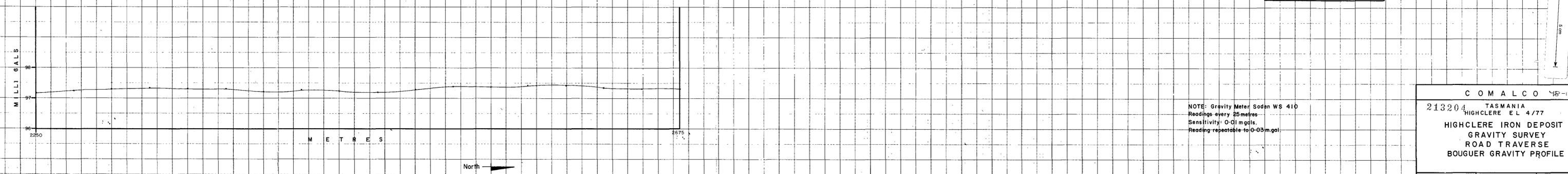


Near surface ironstone exposure (Also magnetic anomaly)

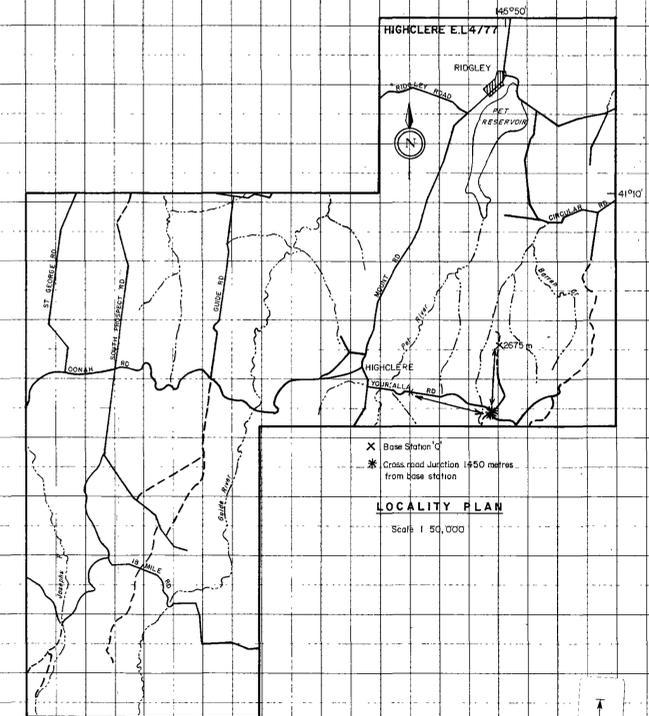
Granite & Basalt boundary?



Near surface ironstone (same body) discontinuous Connected to anomaly between 1000 - 1250 metres



NOTE: Gravity Meter Soden WS 410
 Readings every 25 metres
 Sensitivity: 0.01 mgals.
 Reading repeatable to 0.03 m.gal.

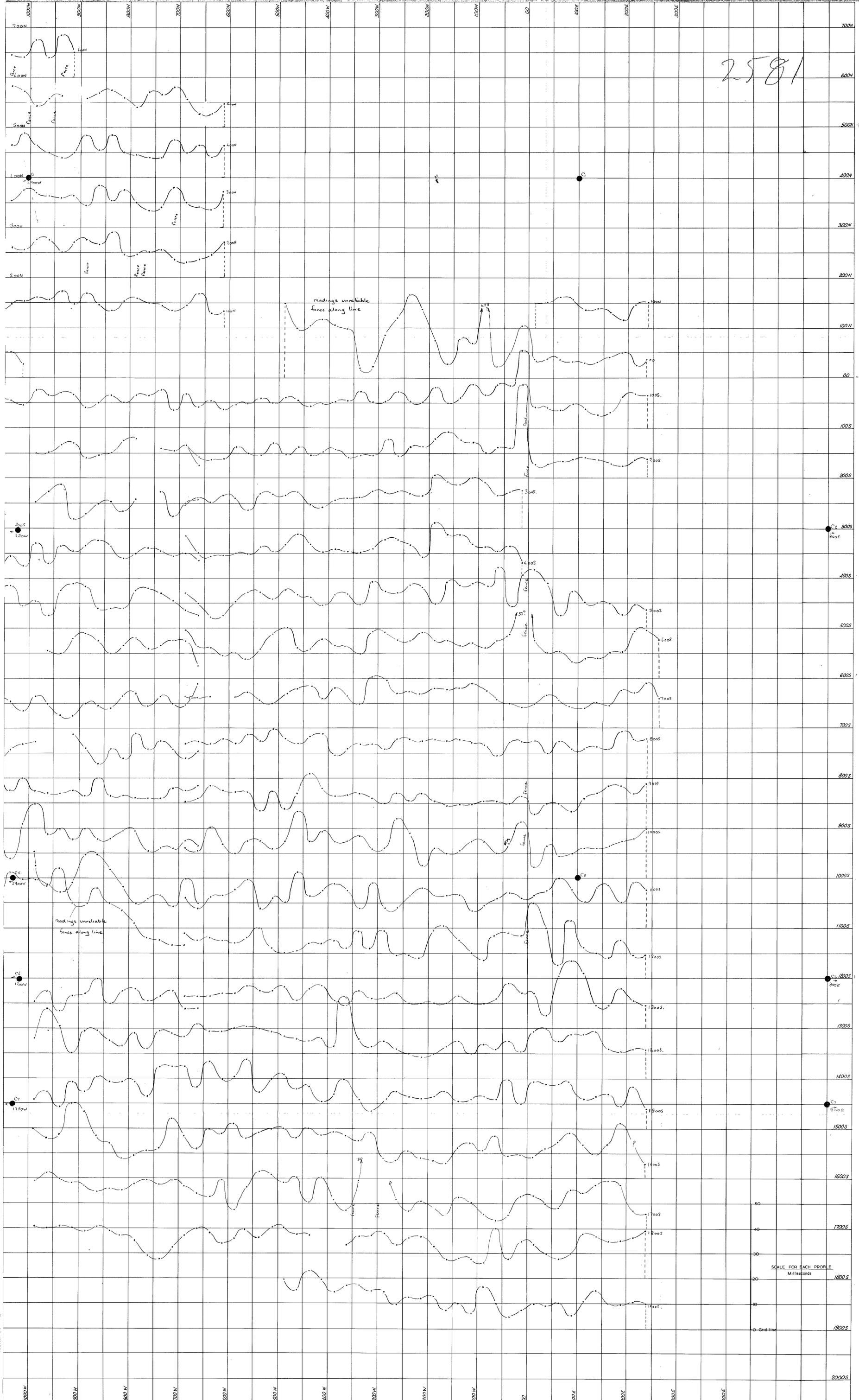


COMALCO 48-1310
 213204 TASMANIA
 HIGHCLERE E L 4/77
 HIGHCLERE IRON DEPOSIT
 GRAVITY SURVEY
 ROAD TRAVERSE
 BOUGUER GRAVITY PROFILE

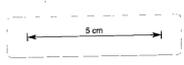
Compiled: H.C.Lou Revised: Drawn: M. Attwell
 Date: February, 1978 Scale 1:1000 Drg No TAS-78-124

2550

2581



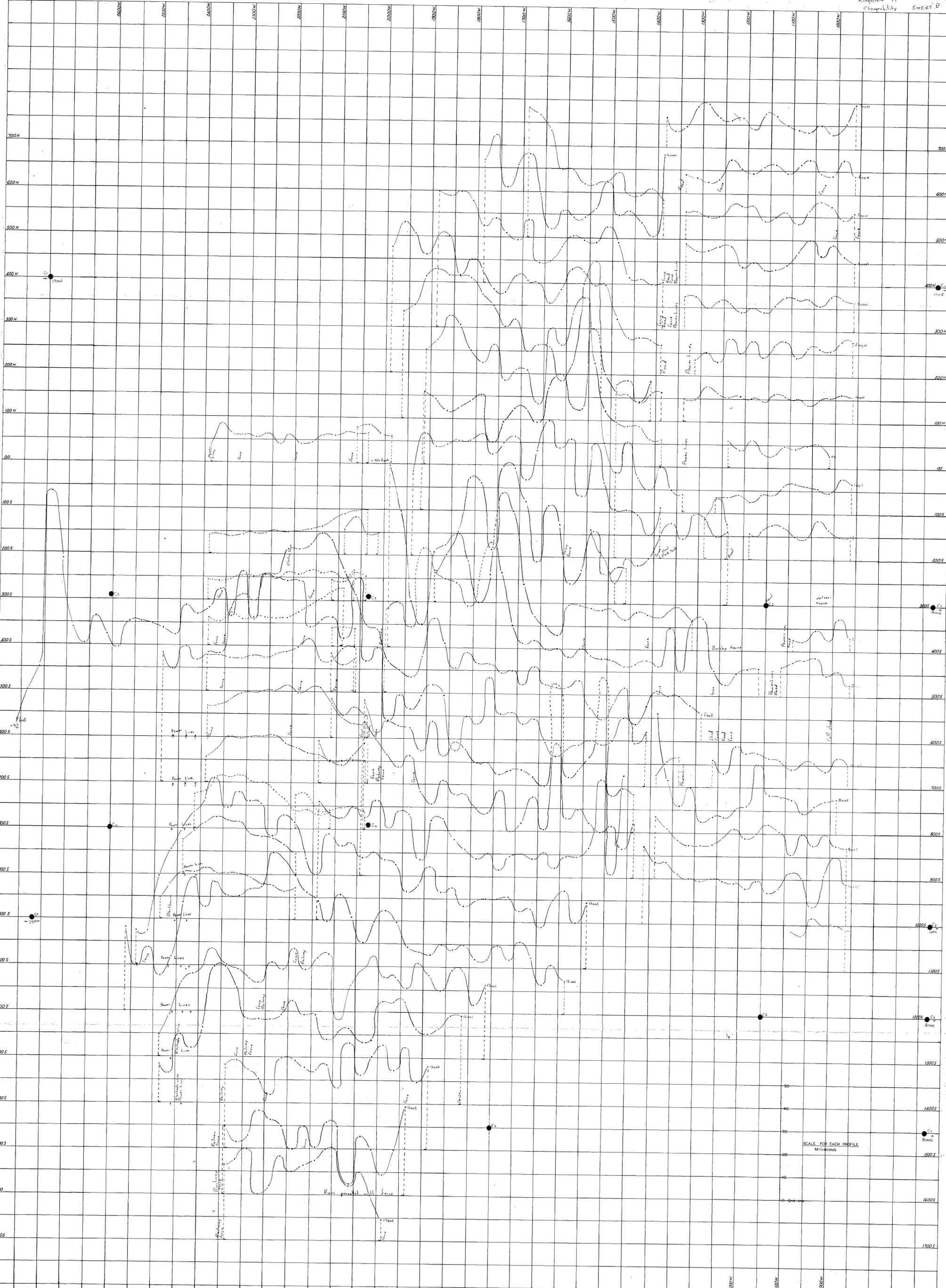
SCALE FOR EACH PROFILE
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 17000S
 18000S
 19000S
 20000S



213205 COMALCO LIMITED 78-1312

E.L. 4/77 HIGHCLERE, TASMANIA
 STACKED CHARGEABILITY GRID SHEET A
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION

Compiled G Shovelton Revised Drawn G Shovelton
 Date: Oct 1978 Scale: 1:2500 Drg No: TAS-78-193



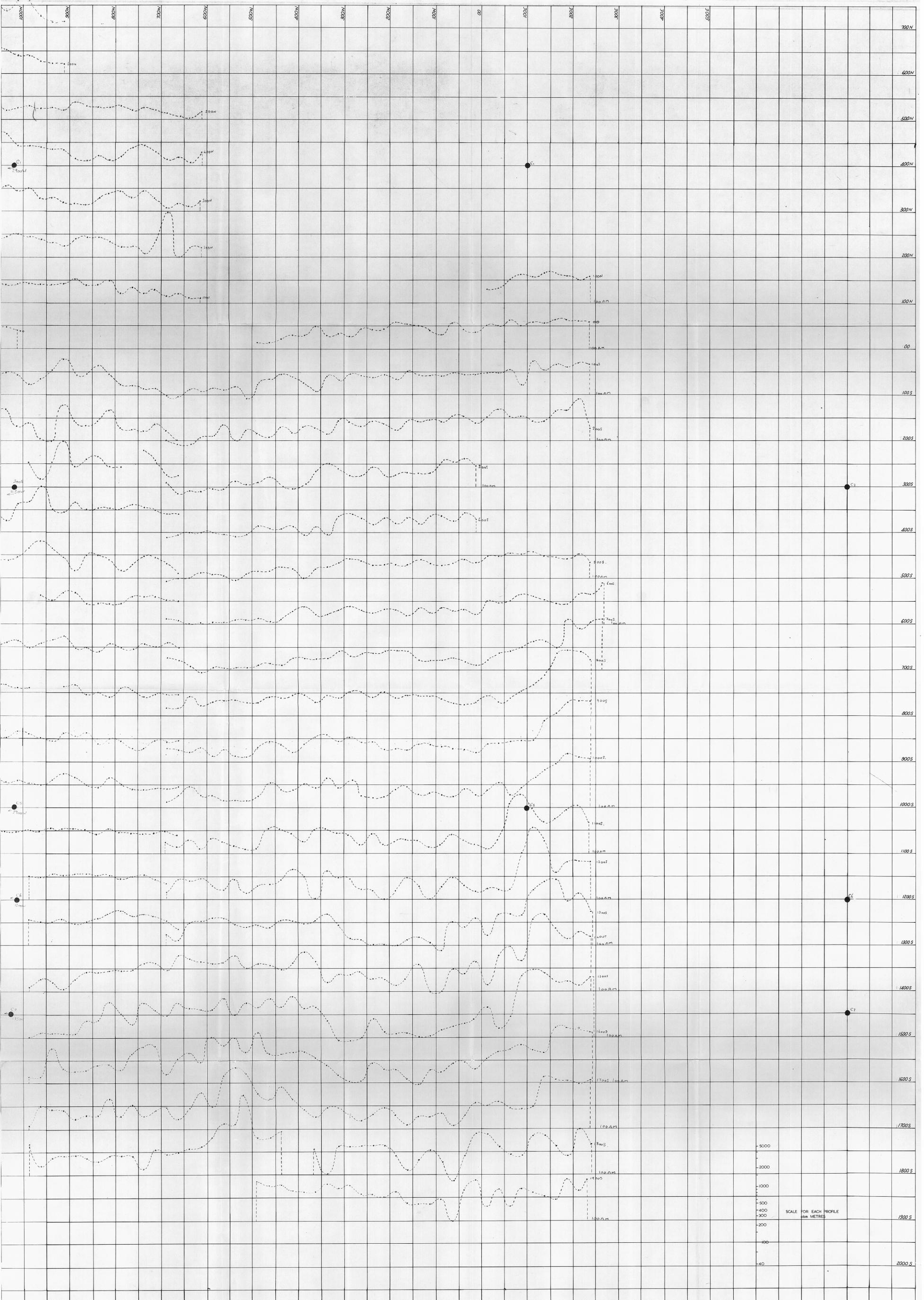
213206

5cm

COMALCO LIMITED 48-13-65

EL. 4/77 HIGHCLERE, TASMANIA
 KINGSCLERE GRID, SHEET B
 STACKED CHARGEABILITY PROFILES
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION 2532

Compiled G. Showiton	Revised	Drawn G. Showiton
Date Oct. 1978	Scale 1:2500	Drp No. TAS-78-191

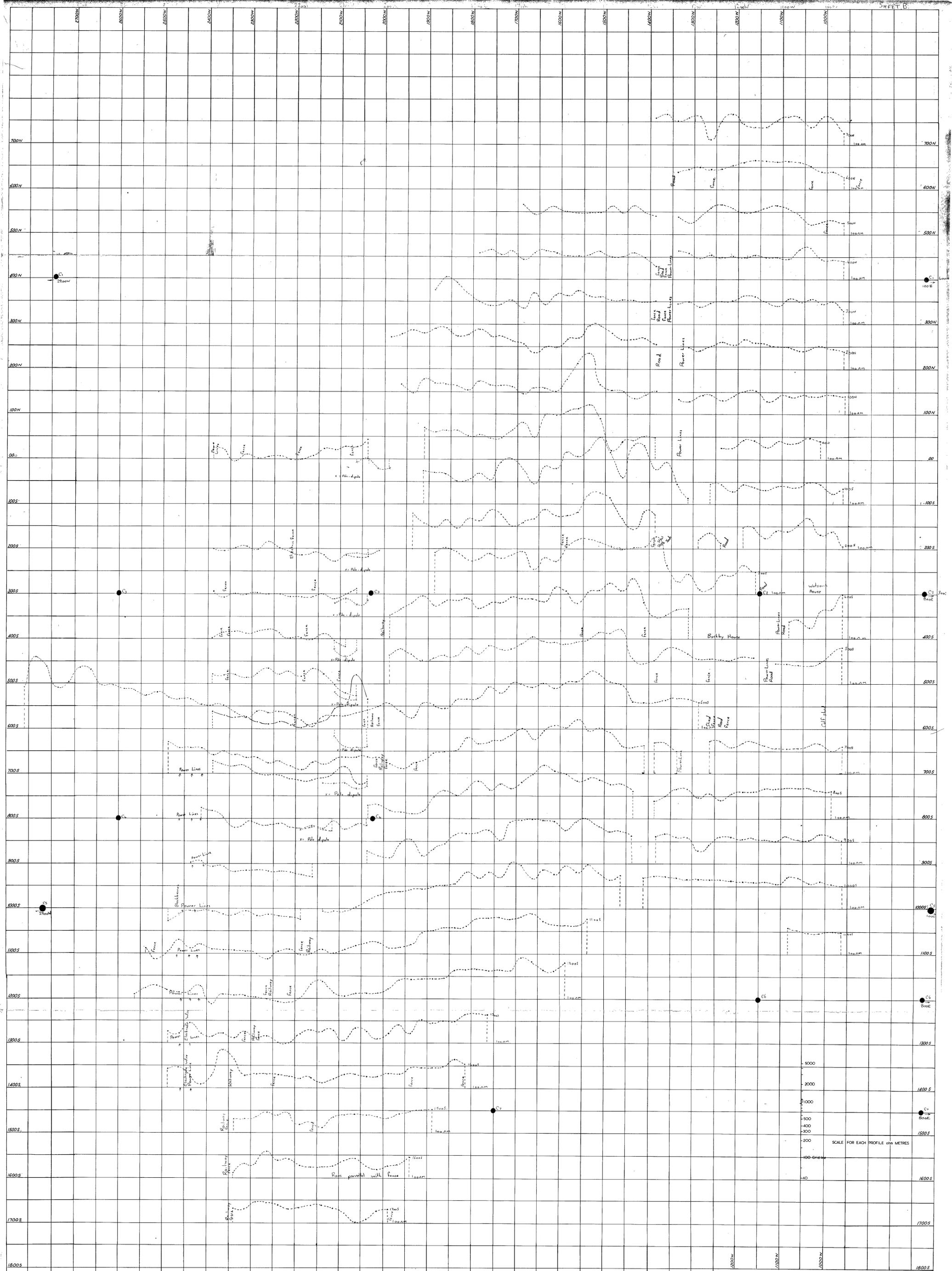


213207

COMALCO LIMITED - 45-1213

EL 4/77 HIGHCLERE, TASMANIA
 KINGSLERE GRID, SHEET A
 STACKED RESISTIVITY PROFILES
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION 2500

Compiled: G Shovelton	Revised:	Drawn: G Shovelton
Date: Oct. 1978	Scale: 1:2500	Org No: TAS-78-02

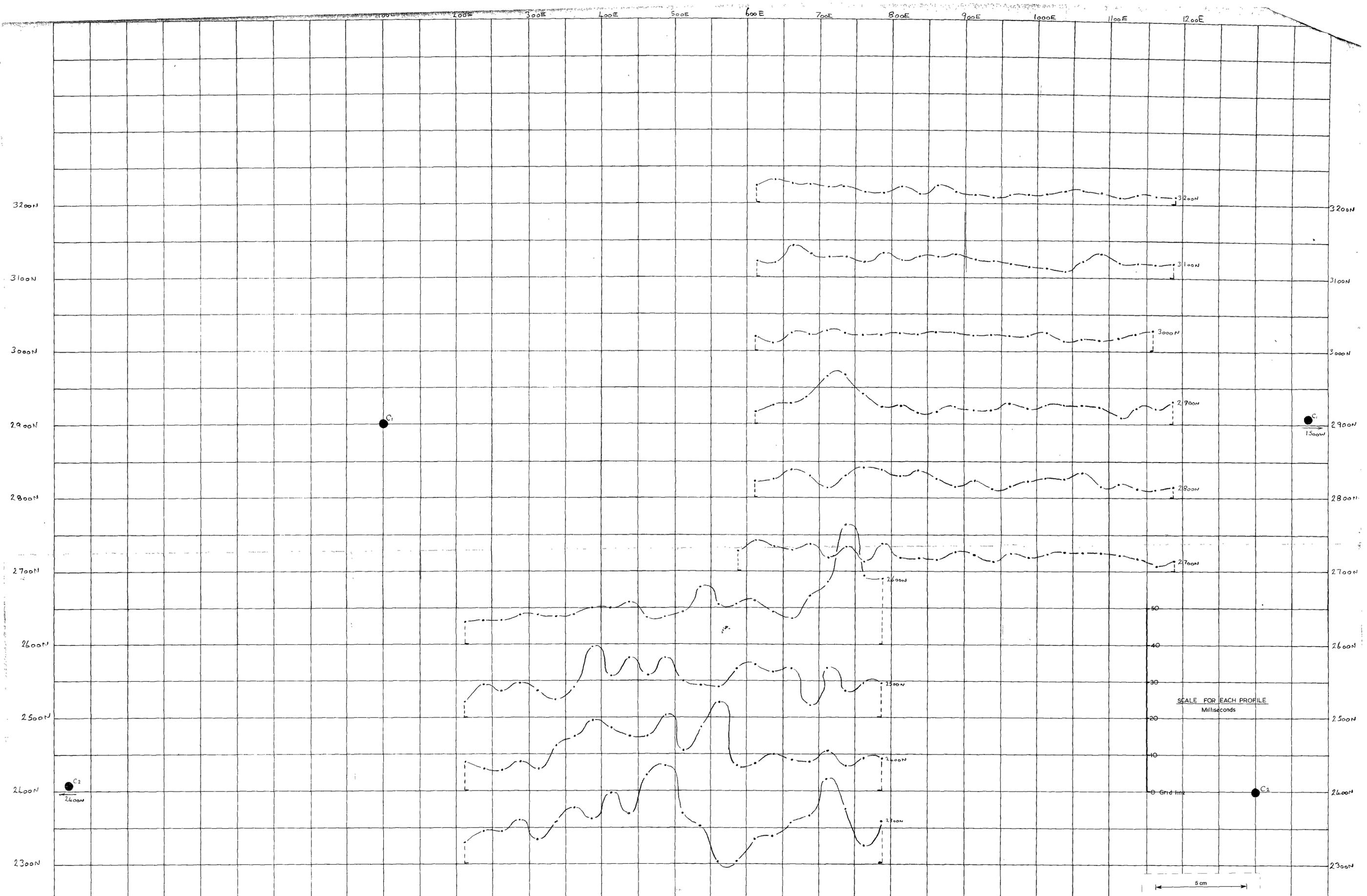


213208

COMALCO LIMITED

E.L. 4/77 HIGHCLERE TASMANIA
 KINGSCLERE GRID SHEET B
 STACKED RESISTIVITY PROFILES
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION 25C

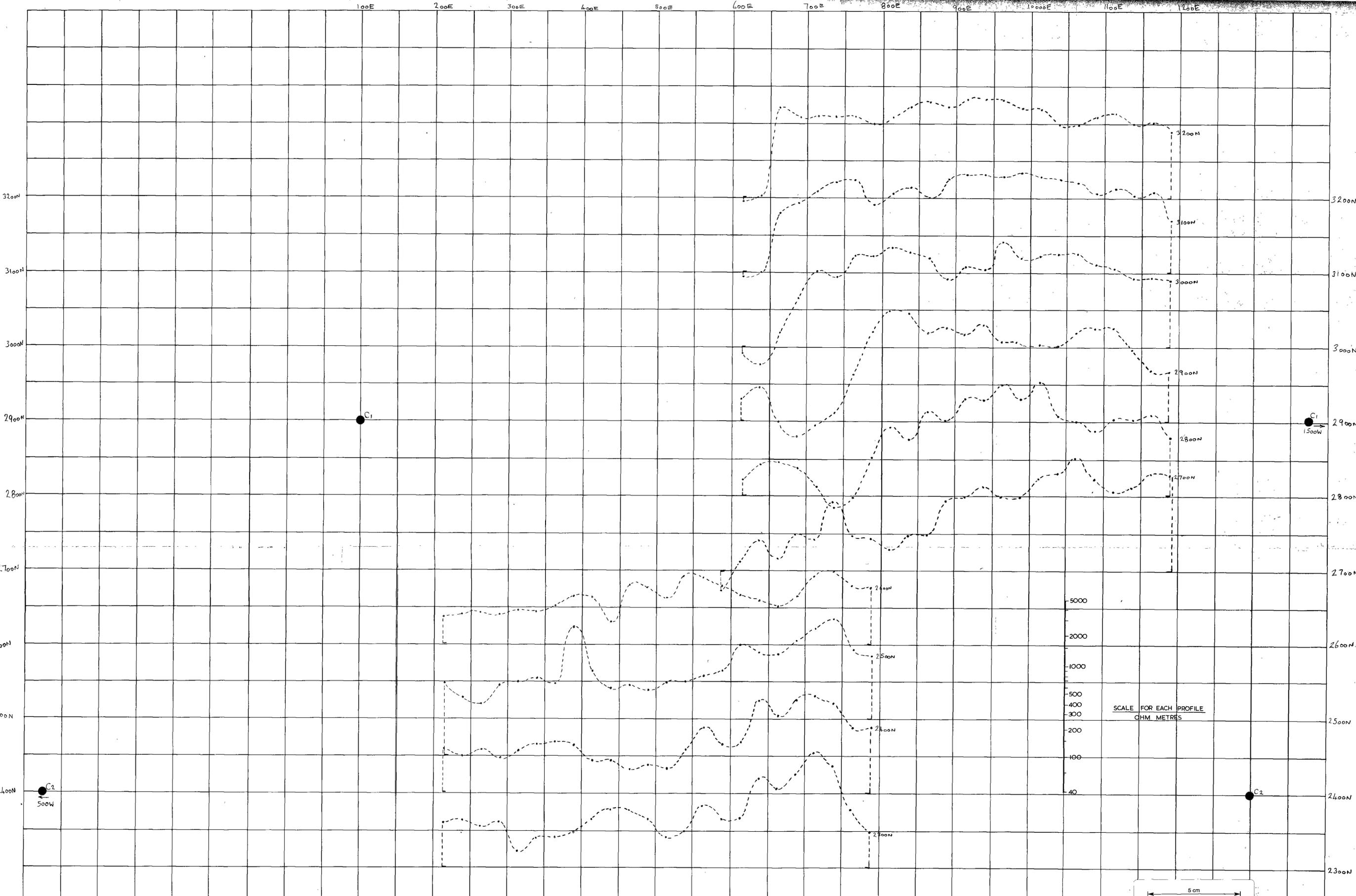
Compiled G. Showell
 Date Oct 1978
 Revised
 Scale 1:2500
 Drawn G. Showell
 Dwg No TAS 78 190



213209 COMALCO LIMITED 78-231

E.L. 4/77 HIGHCLERE TASMANIA
HIGHCLERE IRON DEPOSIT
 STACKED CHARGEABILITY PROFILES
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION

Compiled: G Shovelton	Revised	Drawn: G Shovelton
Date: Oct. 1978	Scale: 1:2,500	Dwg No: TAS-78-231



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500
400
300
200
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SCALE FOR EACH PROFILE
OHM METRES

50m

213210 COMALCO LIMITED 78-1313

E L 4/77 HIGHCLERE, TASMANIA
HIGHCLERE IRON DEPOSIT
 STACKED RESISTIVITY PROFILES
 TIME DOMAIN GRADIENT ARRAY
 ELECTRICAL INDUCED POLARISATION

Compiled: G Shovelton	Revised	Drawn: G Shovelton
Date: Oct. 1978	Scale: 1:2500	Drg No: TAS-78-232