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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

MINERAL RESOURCES DIVISION

E.L. 6/85 — JUKES DARWIN

REPORT ON EXPLORATION ACTIVITY AUGUST, 1986 TO AUGUST, 1987

E.Z. Report No. T226

I.J. Mathison,
D. Gardner,
September, 1987

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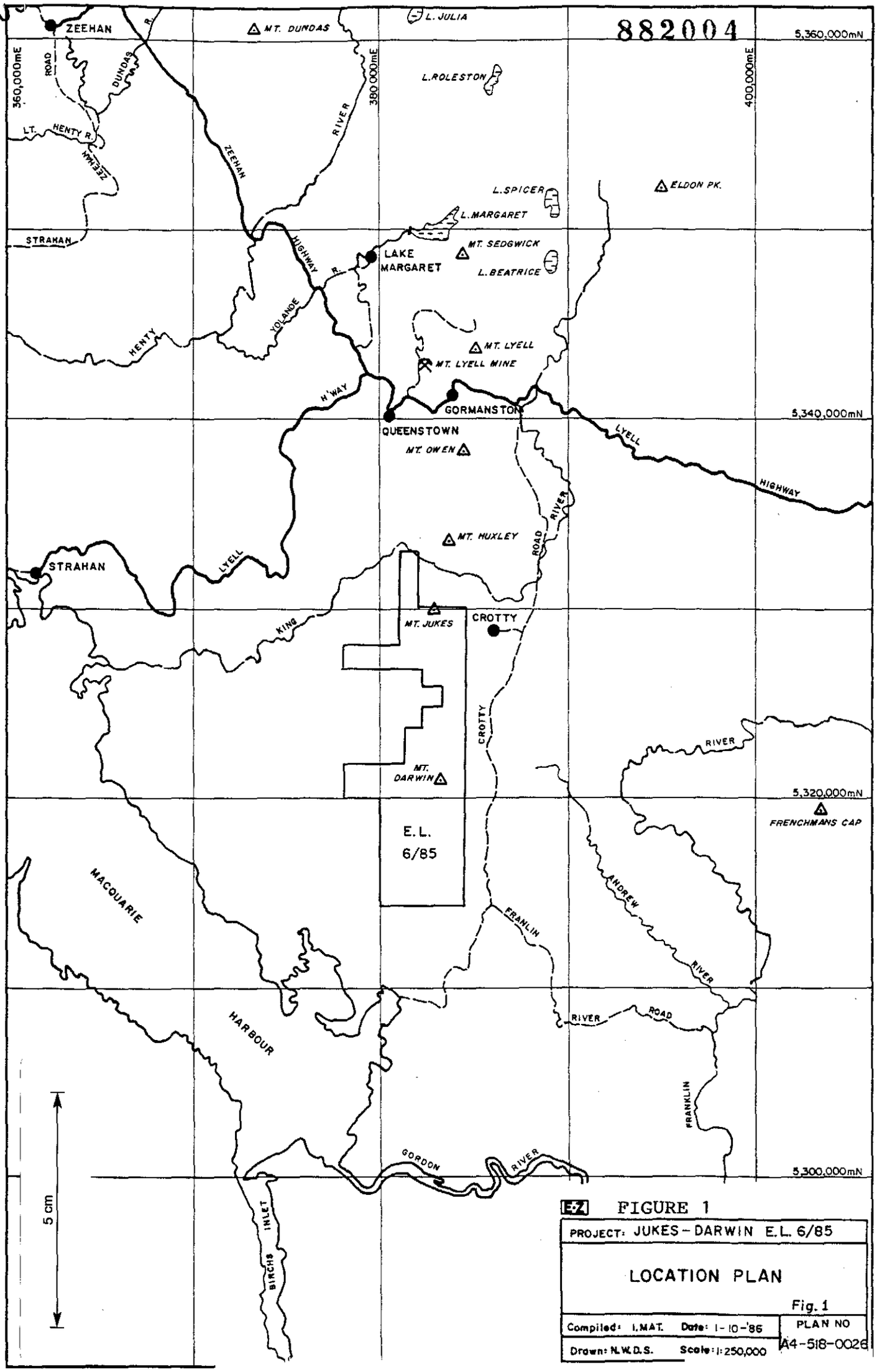

E-Z FIGURE 1

PROJECT: JUKES – DARWIN E.L. 6/85	
LOCATION PLAN	Fig. 1
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SUMMARY

In 1987 field work in the Jukes-Darwin E.L. followed up possibly anomalous areas identified from previous exploration and literature research. Four areas, Mt. Lyell Consols-Allans Creek, Intercolonial Spur, Upper Lake Jukes and the South Darwin Plateau, were subject to detail mapping and sampling in the search for bulk low grade gold deposits.

The Mount Read Volcanics in this area consist of a feldspar phyric Central Sequence (mainly rhyolite lavas), a quartz feldspar phyric Eastern Sequence (mainly volcaniclastics) and a volcanosedimentary Western Sequence. The volcanics are uniformly altered with a strong silica sericite alteration phase followed by a weaker chloritic phase.

Little potential seems to exist for bulk low grade gold deposits in the Central Sequence, which is only sporadically mineralized at grades in the order of 0.1 g/t Au. Economic potential however, may exist in the discovery of a number of small, high grade, quartz-chlorite (sericite) lodes. Bodies of this type seem to trend north to north-east and possible examples are the Jukes Pty, East Darwin, Lake Jukes and Mt. Lyell Consols bodies. Mineralisation associated with magnetite veining does not appear to be potentially economic.

Exploration for blind targets such as those described would be difficult and may require speculative drilling of areas such as "Adit Knob" and Mt. Lyell Consols-Mt. Lyell Extended. Several easy and far less expensive steps can be taken first however to greatly increase our knowledge of the area.

1. INTRODUCTION

1.1. Location

E.L. 6/85, the Jukes-Darwin E.L., covers an areas of 70 sq.km. situated 20km south of Queenstown in Western Tasmania (Fig. 1). The E.L. includes the West Coast Range, between Mt. Jukes and South Darwin Peak, and parts of the valleys to the west containing the Clarke and Garfield Rivers.

The West Coast Range is a north-south trending, monodnock mountain chain, the peaks being separated by lower ridges and east-west trending valleys. Within the E.L. the highest point is Mt. Jukes (1,168m) and the lowest point on the range is at 480m. To the east of the range the Kelly Basin Road runs along at 240m, while to the west the Clarke and Garfield valleys descend below 200m. Within the average E.L. width of 5km this altitude variation represents a very rugged topography.

The top of the West Coast Range has a sub alpine vegetation and is relatively open, however the steep flanks to the east and west are covered with dense regrowth vegetation, with small pockets of rain forest along some creeks.

1.2. Access

Access to the E.L. is via the Kelly Basin Road. This sealed H.E.C. road leads south from the Lyell Highway, 10km east of Queenstown. The H.E.C. camp at Crotty is situated 20km down the road and was used as a base for the major part of the 1987 field season.

The Kelly Basin Road (now unsealed) continues south from Crotty. 6km south of Crotty a 4WD track heads west with one branch going to East Darwin and the other up to Intercolonial Spur (see Fig. 2). This route was used to access the Intercolonial Spur to Upper Lake Jukes section of the E.L..

Another 4WD track heads west from the Kelly Basin Road, 5km further south, giving access to the South Darwin Plateau.

Helicopter access was used to some degree for all areas of the E.L., mainly to establish and/or support camps at Allans Creek and Upper Lake Jukes. The Clarke River valley to the west of Mt. Darwin was also accessed via helicopter.

A walking track was cut from Intercolonial Spur to Upper Lake Jukes. The Lake is 1.5 hours walk from where vehicles must be left.

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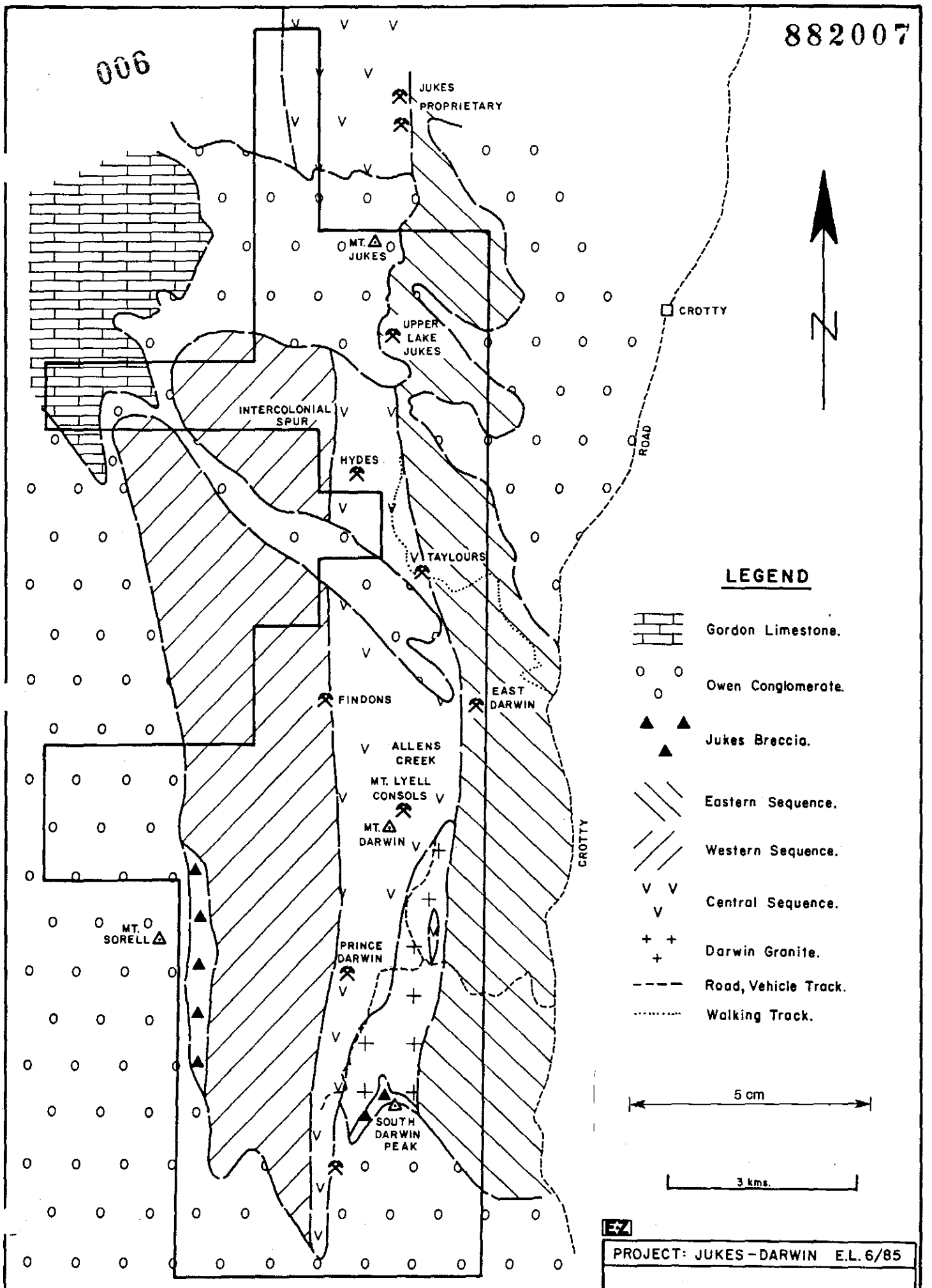

N.B. - Modified after N. White-1975 and K. Corbett - 1979.

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PROJECT: JUKES-DARWIN E.L. 6/85

REGIONAL GEOLOGY

Compiled: P.A.R. Date: FEB. 1987

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PLAN NO Fig. 2

1.3. Regional Geology

The E.L. is situated within the Cambrian Mount Read Volcanics. The volcanics (and correlates) extend in a belt from Elliot Bay in south west Tasmania to just north of Que River, where they are covered by Tertiary basalts. The belt is ~210km long and between 5 and 15km wide.

Major mineral deposits in the Mt. Read Volcanics include Mt. Lyell, Rosebery, Que River and Hellyer, all volcanogenic massive sulphide deposits, with significant gold, as well as base metal, contents.

Corbett (1979) divides the Mount Read Volcanics in the E.L. into three sequences (see Fig. 2). The Western Sequence is a volcanosedimentary sequence. The Central Sequence contains feldspar phyric acid volcanics, including lavas, ashflows, agglomerates, ashfall tuffs, and intrusives. The Eastern Sequence is a quartz-feldspar phyric assemblage of volcaniclastics, tuffs and some porphyries.

Corbett interprets the Western Sequence to be the oldest based on evidence from other areas in the Mount Read Volcanics. Within the E.L. the Western Sequence - Central Sequence contact is poorly exposed, but where seen it is faulted. The Eastern Sequence overlies the Central Sequence on steeply dipping unconformities or faults.

The Cambrian Darwin Granite (see Fig. 2) intrudes the Central Sequence, outcropping south of Mt. Darwin, and may underlie the whole of the West Coast Range (Ross Large pers. comm.). Corbett (1979) states that the granite-Eastern Sequence contact is faulted, with clasts of reworked granite occurring within Eastern Sequence lithologies.

The Cambrian rocks in the area are unconformably overlain by Cambro-Ordovician Owen Conglomerate.

The major Cambrian lithological tend is north south (see Fig. 2). The Devonian Tabberabberan Orogeny has produced a ubiquitous, doubly dipping, north west striking cleavage that dips steeply east and west. The intersections of this cleavage develop elongate rhombic patterns on practically all exposed surfaces.

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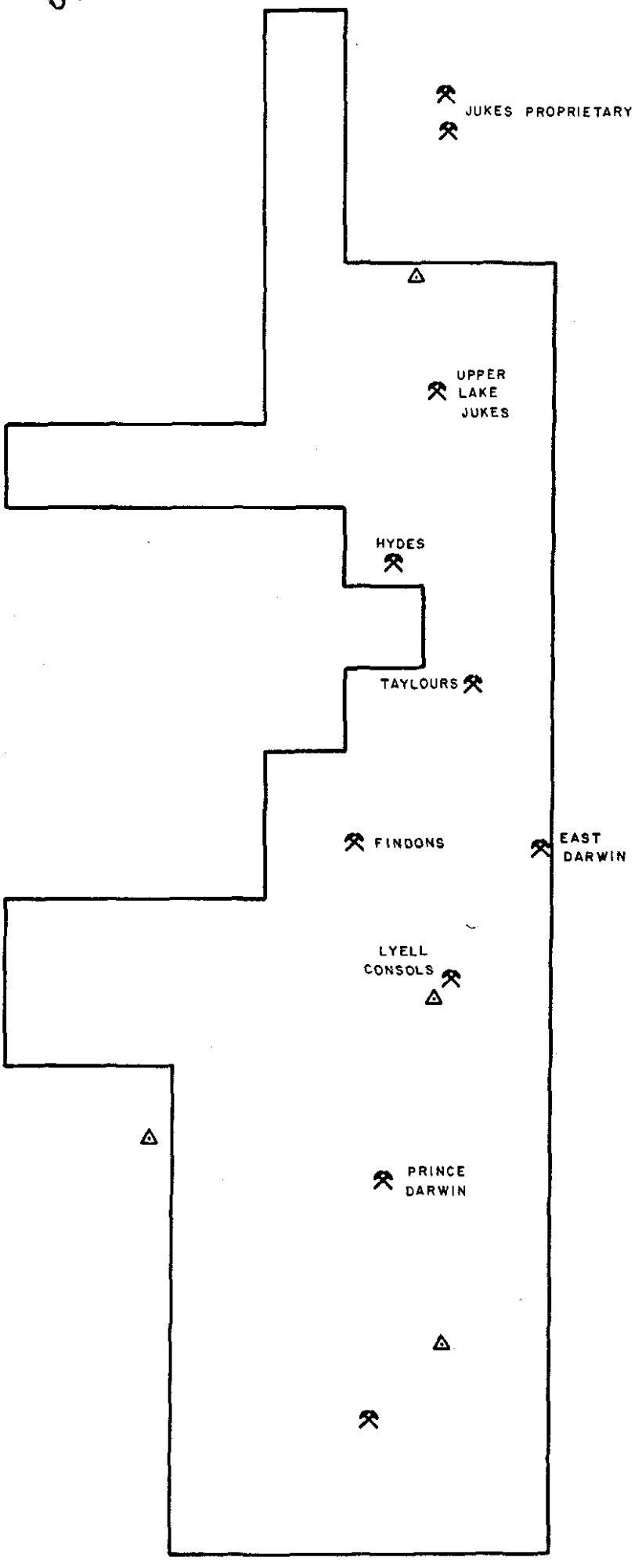

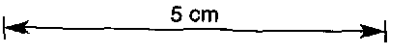

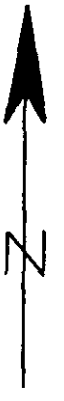

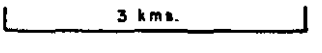

E-Z Figure 3

PROJECT: JUKES – DARWIN E.L. 6/85	
MAJOR PROSPECTS	
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1.4. Previous Work

The Jukes-Darwin area has been prospected since the late 1800's and a large number of old workings are scattered over the E.L. (Fig. 3). Visits by government geologists produced the first major documentation of the area, the most notable being Loftus Hills (1914). Loftus Hills described over 20 sections worked in the Jukes Darwin field. Most old workings prospected magnetite-haematite veins or quartz-chlorite veins and lodes, for copper minerals and gold.

Modern exploration programmes have been carried out by several major companies including Lyell-E.Z. Exploration, B.H.P., I.N.A.L. and Goldfields. Most of this work was designed to look for sulphide deposits of Rosebery or Mt. Lyell type. Old workings were the focus of substantial geochemical and geophysical exploration programmes. Diamond drill holes have been drilled at Upper Lake Jukes (Lyell-E.Z. Exploration 1956-58) and at East Darwin (I.N.A.L. 1972-74). Electromagnetic and induced polarization surveys have defined several large areas of chlorite alteration (with magnetite-haematite veining) on Intercolonial Spur and at Allans Creek.

Geochemistry focussed on base metals. Although old workings yielded some significant values no major anomalies were found. Gold was rarely assayed for, and where this did occur bulk assays over many metres were taken.

E.Z. took up the ground in October, 1985 after it was relinquished by Mt.Lyell in 1984. Mt. Lyell kept control of the Jukes Pty. area north of Mt. Jukes (Fig. 3).

1.5. Exploration Philosophy

The Jukes-Darwin area has been known to be altered and mineralized, since the late 1800's. Consistent exploration by a number of major exploration companies since 1950 has employed a variety of modern techniques, without discovery of a major orebody.

The decision by E.Z. to take up ground that they had previously held, and which has been explored by other, was in order to determine the potential for bulk low grade gold deposits.

The area is relatively copper rich suggesting that it may be low in the volcanic pile (based on a classical sequence of metal elements in massive sulphides) and thus have the potential for epithermal mineralization.

As was stated previously, very few gold assays have been performed on samples from the area. Of these however, a number would be attractive in todays economic climate.

In 1905 a selected crushing of 143 tons of ore from the Lake Jukes Mine produced 14oz of Au i.e. 3 g/t Au. A sample collected from the Lake Jukes Mine battery in 1907 assayed 2.4 g/t Au.

The I.N.A.L. exploration programme (Ruddock, 1974) sampled float from Intercolonial Spur assaying 3.9 g/t Au. In 1983/84 Goldfields (Roberts and Cartwright, 1984) collected samples from near the summit of Mt. Darwin assaying up to 3.8 g/t Au. E.Z's own reconnaissance rockchip and stream sediment sampling programme produced a number of interesting results (Mathison and Taylor, 1986).

Thus the thrust of E.Z's exploration this summer has been to detail prospective areas (located from previous work) by mapping and sampling, with the target being bulk low grade epithermal gold deposits.

The areas selected for detailed investigation were Mt. Lyell Consols-Allans Creek, Intercolonial Spur and Upper lake Jukes, all having mineralization in the Central Sequence. In addition detailed reconnaissance mapping and sampling was undertaken over the South Darwin Plateau and its flanks.

2. WORK COMPLETED

Work completed on the Jukes-Darwin E.L. in 1987 is summarized in Figure 4.

FIGURE 4 - Summary of Work Carried Out on Jukes-Darwin in 1987

	Mt. Lyell Consols-Allans Creek	Inter-colonial Spur	Upper Lake Jukes	South Darwin Plateau
Track Cutting Lkm	-	-	3	-
Grid Cutting Lkm	-	2	1.6	-
Pegging Lkm	12.3	2	1.6	-
Mapping Lkm	12.3	1.2	1.6	5km²
Sampling Lkm	12.3	1.2	1.6	5km²
Adit Mapping km	0.1	-	0.2	-
No. of Samples				
Rock Chip	308	38	132	131
Stream Sediment	5	0	0	66
Panned Concentrates	4	0	0	64

Assays:

Rock Chip - Cu, Pb, Zn, Mn, Fe by A.A.S.
- Au by Fire assay

Stream Sediments - Cu, Pb, Zn, Fe, Mn, Ag by A.A.S.
- Au by Fire Assay

Panned Concentrate - heavy mineral separation
- Au by Fire Assay

All rock chip samples assaying >0.1 g/t Au were resubmitted for analysis for Ag, Cr, Mo, Bi, Co, As, Se, Te, Sb, Hg, Ba, W, Ti, Sn, S.

All sample location and geochemistry data were digitized for computer draughting.

2.1. Mt. Lyell Consols-Allans Creek

(See Ruxton, 1987 - Appendix 4)

The grid shown in Figure 5 was pegged, mapped and sampled (continuous rock chips over 40-50m). Sample locations are given in Plan 1. A team of 5 worked out of a helicopter supported camp.

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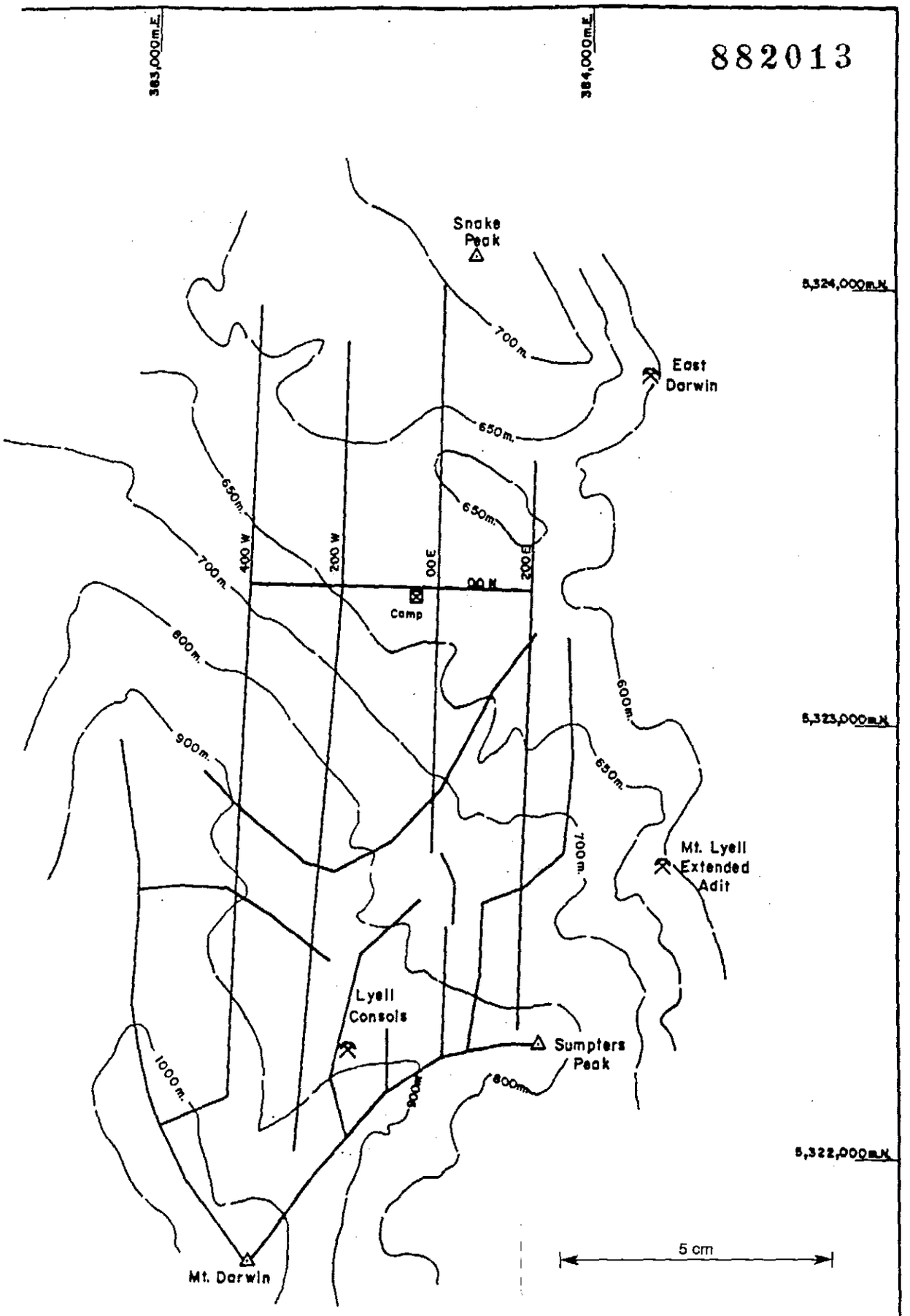

Figure 5

N.B.- Grid, ridge and spur sampling

by

P.A. Ruxton, N. Ferguson, J. Read, I. Matheson.

PROJECT: JUKES-DARWIN E.L. 6/85	
ALLENS CREEK GRID	
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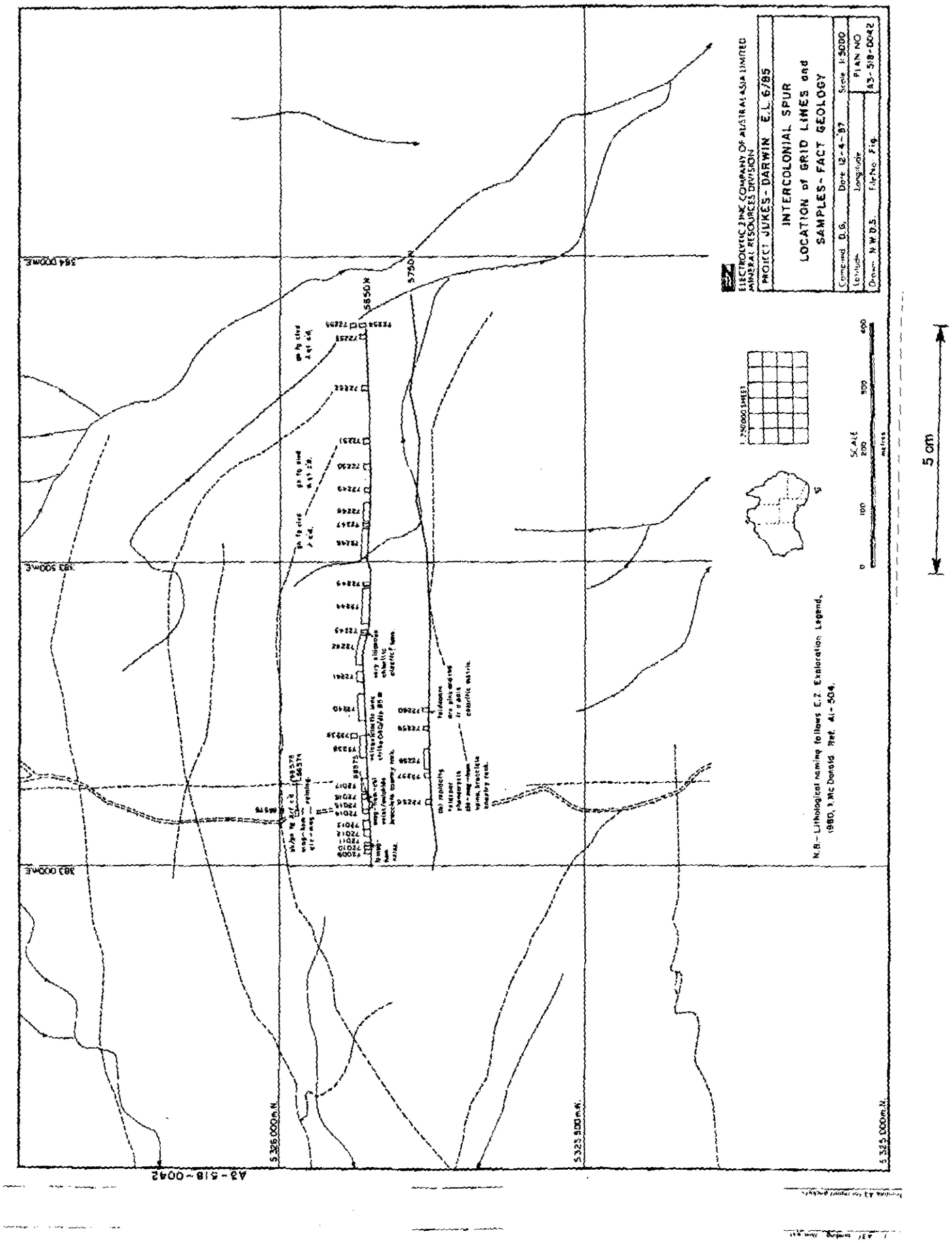
Figure 6



The Mt. Lyell Consols adit was mapped and sampled. Two reconnaissance ground magnetics lines were read.

All samples have been assayed and a suite of representative rocks examined in thin section.

2.2. Intercolonial Spur

The two grid lines shown in Figure 6 (Plan 12) were cut and pegged. All but the eastern end of the southern line has been mapped and sampled. Spot samples have been taken from elsewhere on the spur. All samples have been assayed and five examined in thin section.

Work in this area was carried out while based at Crotty H.E.C. camp, using 4WD access.

2.3. Upper Lake Jukes

A 3km walking track has been cut into Upper Lake Jukes from Intercolonial Spur, and the 5 grid lines shown in Figure 7 (Plan 7) have been cut, pegged, mapped and sampled.

The 4 adits of the Lake Jukes Mine (see Figs. 15-18) have been sampled over 5m intervals. Several trenches around the mine, and the nearby Bean and Thow Workings, have been sampled.

A suite of rocks has been examined in thin section.

This area was accessed partly by 4WD, from Crotty H.E.C. camp, and partly from a helicopter supported fly camp at the Lake Jukes Mine.

2.4. South Darwin Plateau

The outcrop of Central Sequence immediately south of Mt. Darwin (Fig. 2) was mapped and sampled, together with the adjacent Darwin Granite and flanking Eastern and Western Sequences, a total area of approx. 5km^2. Sample locations are marked on Plan 17.

The programme was 4WD and helicopter supported, a team of 4 being based at Crotty H.E.C. camp.

A3-518-0038

Figure 7

5 cm

2.5 East Darwin Drill Core (N. Ferguson)

I.N.A.L. drilled three holes in October of 1973 on the East Darwin plateau in an attempt to test mineralization and induced polarization anomalies near old workings. All significant mineralization was sampled and assayed for Cu-Pb-Zn and also limited assaying for Au was completed by I.N.A.L.

Drill core from these holes is stored in the Mines Dept. core library at Mornington. Permission was obtained to resample this drill core. The use of this valuable facility is gratefully acknowledged.

Emphasis was placed on sampling and logging DDH Z142001 and as a result, it has been more completely sampled than DDH Z142002. Both holes were drilled through crystal tuffs and crystal-lithic tuffs of the Flanking Pyroclastics into the rhyolite lavas of the Central Core sequence.

Weak pyrite mineralization, mainly as thin stringers and disseminations together with traces of chalcopyrite and galena mineralization were observed in DDH Z142001. The best assay for the hole, sampled by I.N.A.L., is 0.06% Cu between 191-193 metres.

DDH Z142002 contains sparse mineralization with a slight increase in mineralization occurring in the chloritized zone between 103.9 and 162.4 metres. I.N.A.L's best assays are 0.12% to 0.17% Cu between 103.9-109.9 metres and 0.52% Pb and 0.3% Zn between 19.3-21.3 metres.

Sampling was totally biased towards any significant mineralization in both holes which resulted in 68 sampled being collected. 51 samples from DDH Z142001 and 17 from DDH Z142002. Samples were analysed primarily for Au mineralization.

Core samples selected depended on the core available, the visible mineralization and on the length of the sample intervals. In mineralized zones which had been sampled previously, quarter core samples were taken. From unsampled mineralized areas half core samples were selected. From less obviously mineralized sections, samples were collected by sawing and sampling 10cm of half core every 60cm.

Brief drill logs with sample results were prepared. Results were compared with I.N.A.L. results

2.6. Geochemical Scan

26 samples were selected from residues of rock chip samples which had reported anomalous gold. These samples were analysed for Ag, Cr, Mo, Bi and Co by A.A.S. after mixed acid digestion (A.A.S.103); for As, Sb. Te, Sb and Hg by special A.A.S. techniques, and for Ba, W, Tl, Sn and S by X.R.F. All geochemical results were entered on a data base and examined. Results were sorted into two groups of elements - those that appeared significant and those which appeared to have only an insignificant or an inconsistent correlation with the gold values.

3. RESULTS

3.1. Mt. Lyell Consols-Allans Creek

GEOLOGY (See also Ruxton, 1987 - Appendix 4)

A geological map of the Mt. Lyell Consols-Allans Creek grid compiled by P. Ruxton (1987) is given in Figure 8 (Plan 2). The whole area occurs within the Central Sequence Volcanics, with the eastern edge being the contact with the Eastern Sequence.

The basic rock type is a fine grained feldspar phyric volcanic, probably a rhyolitic to rhyodacitic lava (e.g. sample 69056 Appendix 1). A lens of agglomerate (sample 72231) occurs in the west of the area and in the south is a band of 'true' impure chert (sample 72233). These two lithologies strike north-east. The overall lithological trend for the E.L. being north-south. One sample sent for petrology (66894) has been described as an altered basalt. This is so far unexplained.

The main rock type is strongly altered. Initial mapping suggested 3 types of alteration; a pink K-feldspar alteration giving the rock its dominant colour, chloritic alteration, with some chlorite +magnetite veins brecciating the rock, and silicification.

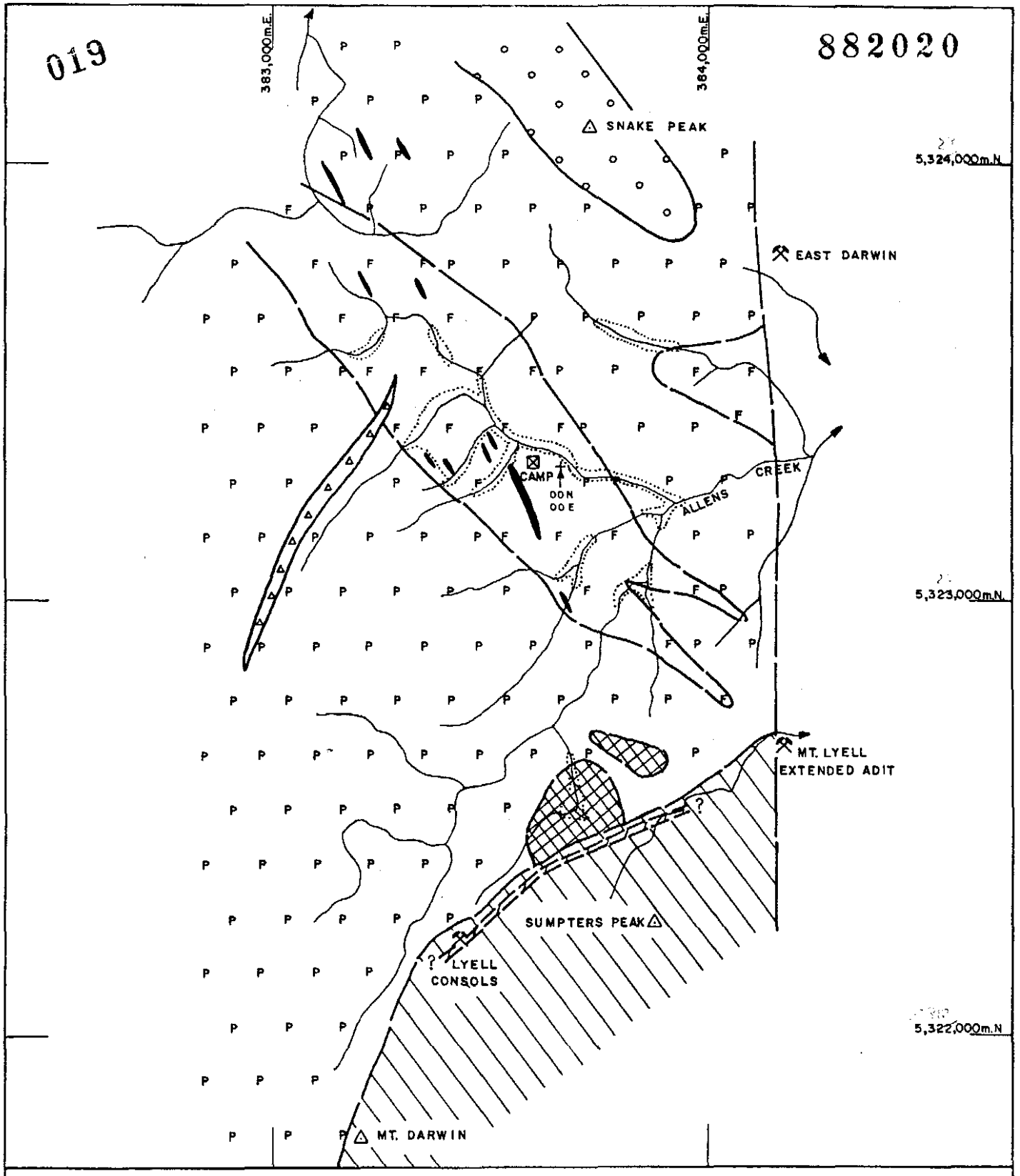
Thin section examination of selected samples however (see Appendix 1) suggests two main phases of alteration: Early pervasive silica sericite alteration is overprinted by chlorite (and/or dark biotite). Magnetite and some sulphides may be associated with the former, the latter being weakly mineralized with local concentrates of pyrite and haematite.

The rock cleavage in the area invariably strikes north-west, dipping steeply both north-east and south-west.

MINERALIZATION

Ruxton (1987) describes two major styles of mineralization seen in the area.

1. North-east trending silicified rocks - the Mt. Lyell Consols adit being driven into silicified volcanics with disseminated pyrite (Fig. 9). A major drive follows a highly chloritized fault zone, with up to 40% pyrite in the footwall.



LEGEND

- Owen Conglomerate.
- Agglomerate.
- Feldspar-Phyric Lava.

ALTERATION

- F.G. Pink Alteration.
- Intense Chloritization.
- Silicification.
- "Chert" Band.
- Chloritic Lodes.
- Hardrock Workings.
- Alluvial Workings.
- Mountains.
- Camp Site.
- Creeks.

5 cm

E.Z

Figure 8

PROJECT: JUKES - DARWIN E.L.6/85	
ALLANS CREEK GEOLOGY	
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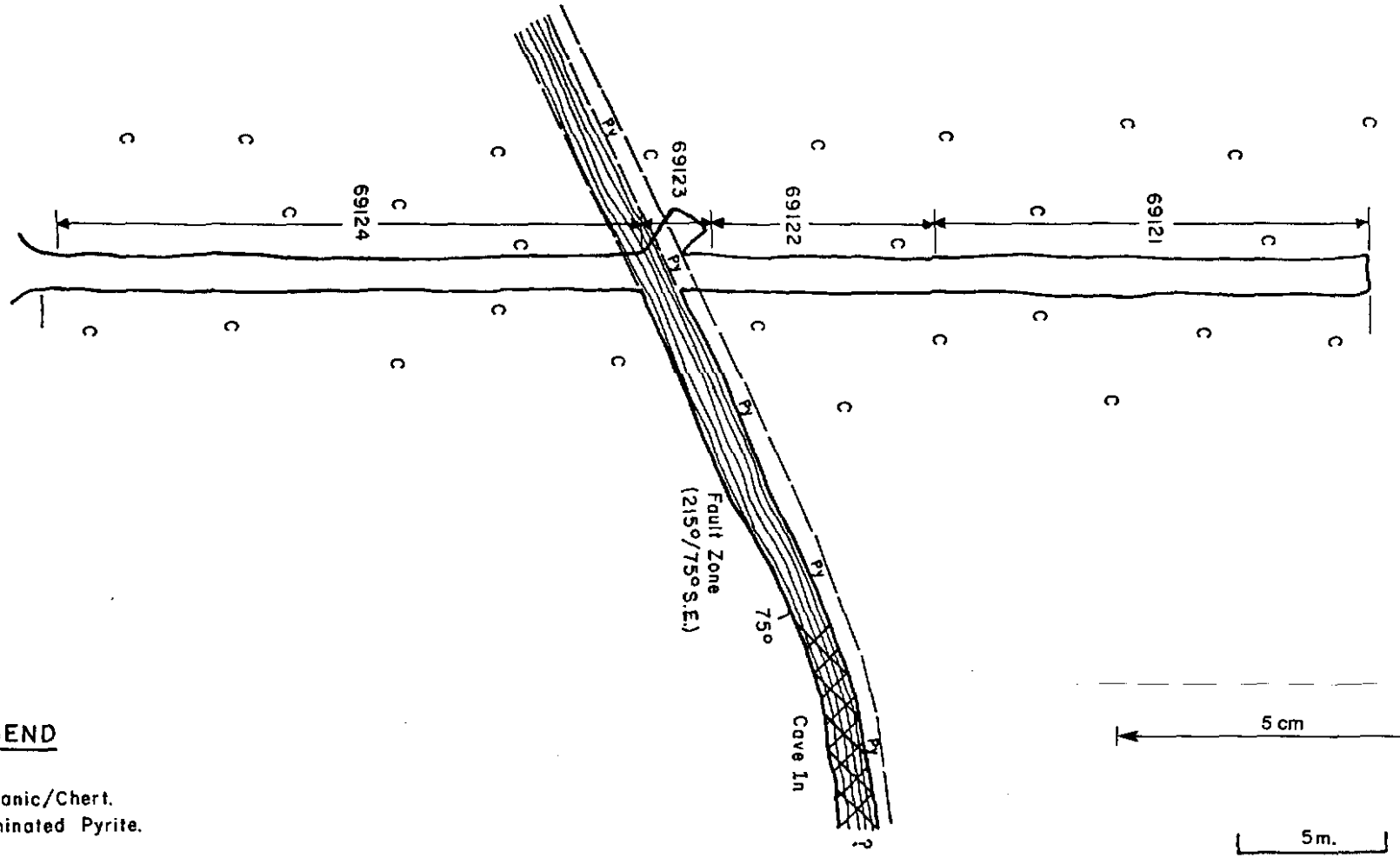

LEGEND

C = Silicified Volcanic/Chert.
2-5% Disseminated Pyrite.

= Chloritic Fault Gangue.

Py = Chloritic/Siliceous Volcanic.
20-40% Pyrite.

5 cm

5m.

NW

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PROJECT JUKES-DARWIN.-E.L. 6/85.

ALLANS CREEK GRID

LYELL CONSOLS ADIT

Compiled P.A.R. Date Jan. 1987	PLAN NO Fig.
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Figure 9

2. North-west trending chloritic lodes - highly chloritized volcanics with associated disseminated pyrite and magnetite/haematite veins (Fig. 8).

Alluvial workings were found to be far more extensive than previously mapped.

GEOCHEMISTRY:

The assay results from the Allans Creek grid (Plans 3, 4, 5, 6) show a strong correlation with the geology (Plan 2). A breakdown of assay results is given in Figure 10.

Two major associations are apparent for both gold and base metals. In the northern part of the grid most anomalous samples occur within a unit of feldspar-phyric lava trending north-west. This unit has many chloritic 'lodes', also trending north-west associated with minor silicification, magnetite-haematite veining, and disseminated pyrite. The lava unit is distinguished from surrounding rocks (of similar origin) by the lack of fine grained pink (K-feldspar) alteration, that dominates the Central Sequence here. The high Au and base metal values are not obviously associated with the chloritic lodes.

This anomaly trend is extended tentatively south-east to the Mt. Lyell Extended workings.

In the Southern area many of the anomalous samples are associated with highly siliceous 'cherty' rocks in, or south-east of, the 'Cherty Band' in Fig. 8. This association also extends north-east to the Mt. Lyell Extended workings.

It is worth noting that Mt. Lyell Extended is one of the few workings in the E.L. not subjected to detailed study by previous explorers.

There are a number of anomalous samples on the northern ridge of Mt. Darwin that do not appear to follow any trend. The ridge consists of pink altered silicified feldspar-phyric volcanics. Other anomalous samples, in the middle of the grid, may be associated with magnetite-chlorite 'lodes'.

FIGURE 10 - Allans Creek Grid

310 rock chip assay results were returned

Element	Range ppm	Mean ppm	No. of Samples >100ppm	No. of Samples >200ppm	No.of Samples >400ppm
Cu	<5-12500	80(i)	85	31	10
Pb	<5-11500	45(ii)	33	15	7
Zn	5- 2050	60(iii)	31	6	3
			>0.02 ppm	>0.05 ppm	>0.1 ppm
Au	<0.008-5.68	- (iv)	69	24	14

(i) Mean excludes samples 69201 - 1600ppm Cu
69235 - 2500ppm Cu
69259 - 12500ppm Cu

(ii) Mean excludes samples 69105 - 3350ppm Pb
69259 - 11500ppm Pb

(iii) Mean excludes samples 69105 - 2000ppm Zn
69228 - 1350ppm Zn
69259 - 2050ppm Zn

(iv) Too many samples <detection for a mean values to be significant.

3.2. Intercolonial Spur

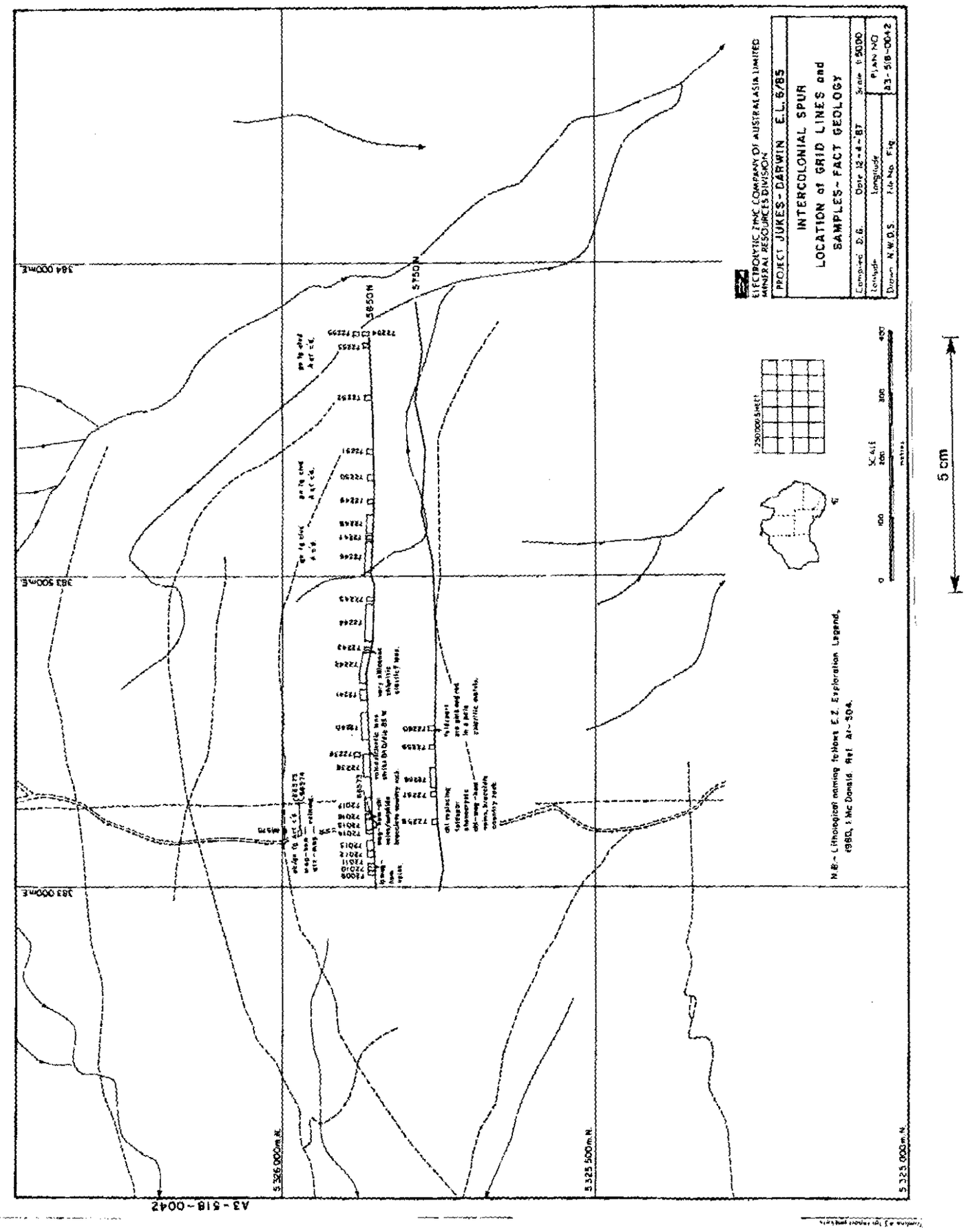
GEOLOGY

Mapping of the northern grid line on Intercolonial Spur (Fig. 11) has established the contact between the Central and Eastern Sequences. This agrees with previous mapping by I.N.A.L. (Ruddock, 1974).

The Central Sequence is similar to that of Allans Creek, being typified by pink and green fine grained feldspar phyric rhyolite lavas. A small volcaniclastic lens 1.5m wide with a visible strike length of 15m, dipping at 80° to 310° was found within the massive lava. Angular to sub round clasts (2mm-2cm) of what appear to be the typical Central Sequence lavas sit in a chloritic matrix. This unit has roughly the same trend as the agglomerate and chert band at Allans Creek.

Again initial examination suggests 3 alteration types within the Central Sequence; pink K-feldspar

Figure 11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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION
PROJECT JUKES-DARWIN E.L. 6/85
INTERCOLONIAL SPUR
LOCATION of GRID LINES and
SAMPLES- FACT GEOLOGY
Compiled D.B. Date 12-8-87 Scale 1:5000
Longitude Plan No
Drawn N.W.D.S. Title No. Fig 23-518-0042
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1980, I. Mc Donald. Ref Ar-504.
A3-518-0042

alteration, chloritization and silicification. Chlorite occurs disseminated and in veins the latter sometimes brecciating the massive rocks. As with the Allans Creek rocks, thin section petrology (Appendix 1) suggests that chlorite is a secondary (and less important) phase compared with sericite and biotite. Tourmaline was identified in sample 66576.

The contact between the Central and Eastern Sequences was not observed. It occurs on a steep (50-60°) slope dropping off the edge of Intercolonial Spur reflecting the less resistant nature of the Eastern Sequence rocks. The contact may be a steeply dipping fault or unconformity.

The Eastern Sequence is characterized by chlorite schists after felsic volcanics. Relict small feldspar phenocrysts (possibly replaced by sericite) are generally visible and quartz grains (phenocrysts?) up to 5mm are common. It is the quartz-feldspar phyric nature of these rocks that contrasts them to the feldspar phyric Central Sequence, and this is one of the major criteria used by Corbett, 1979,for establishing the different associations. The Eastern Sequence rocks are thought to represent generally volcaniclastic lithologies in contract to the Central Sequence that is mainly lavas.

The well developed cleavage in these rocks strikes north-west and dips steeply both north-east and south-west.

MINERALIZATION

The only mineralization seen on Intercolonial Spur occurred in association with some of the larger chlorite veins that brecciated patches of the Central Sequence. Magnetite, haematite and minor pyrite are accessories to these veins, and in some places massive magnetite float is found (presumably from larger veins still).

The Hydes/Hal Jukes prospects were not examined in 1987.

GEOCHEMISTRY

38 rock chip samples have been collected from the Intercolonial Spur area, a breakdown of the assay results is given in Fig. 12.

Only 3 values could be termed interesting. These all came from spot samples of Central Sequence rocks, collected along the 4WD track. Samples 66574, 76 and 78 assayed 0.16, 0.10 and 0.417 g/t Au respectively

(see Plans 8, 13). the samples were picked because of magnetite chlorite veining and/or iron staining.

All other samples showed disappointing gold assays with only two >0.008 ppm Au (limit of detection), both being 0.025 ppm Au. Base metal values were similarly disappointing.

FIGURE 12 - Intercolonial Spur Assay Results

38 rock chip samples.

Element	Range ppm	Mean ppm	No. of Samples >100ppm	No. of Samples >200ppm	No. of Samples >400ppm
Cu	<5-650	90	6	4	4
Pb	<5-530	45	5	3	1
Zn	2-440	85	8	4	1
			>0.02 ppm	>0.05 ppm	>0.1 ppm
Au	<0.008-0.417	-*	5	3	3

* Not enough samples above detection to give a meaningful figure.

3.3. Upper Lake Jukes

GEOLOGY

Mapping has detailed the outcrop of 'Adit Knob', the monadnock of Central Sequence containing the Lake Jukes Mine (Corbett, 1979)(Fig. 13). The 'Adit Knob' rocks are pink and green fine grained feldspar phyric volcanics, probably rhyolitic lavas. Alteration was considered to be K-feldspar, chlorite and silica, but as for the other areas studied, thin section examination of a suite of representative rocks indicates a strong quartz sericite alteration overprinted by later Fe-chlorite (Appendix 1).

Besides the main rock type (e.g. 72057 Appendix 1), the Adit knob contains minor volcaniclastics, including a pelitic vitric ash (72407). This ash unit includes minor barite and carbonate in quartz veins.

The Adit Knob is surrounded by rocks that have been assigned to the Eastern Sequence. These are typically chloritic quartz-feldspar phyric schists and distinctly

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Figure 13

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A3-518-0039

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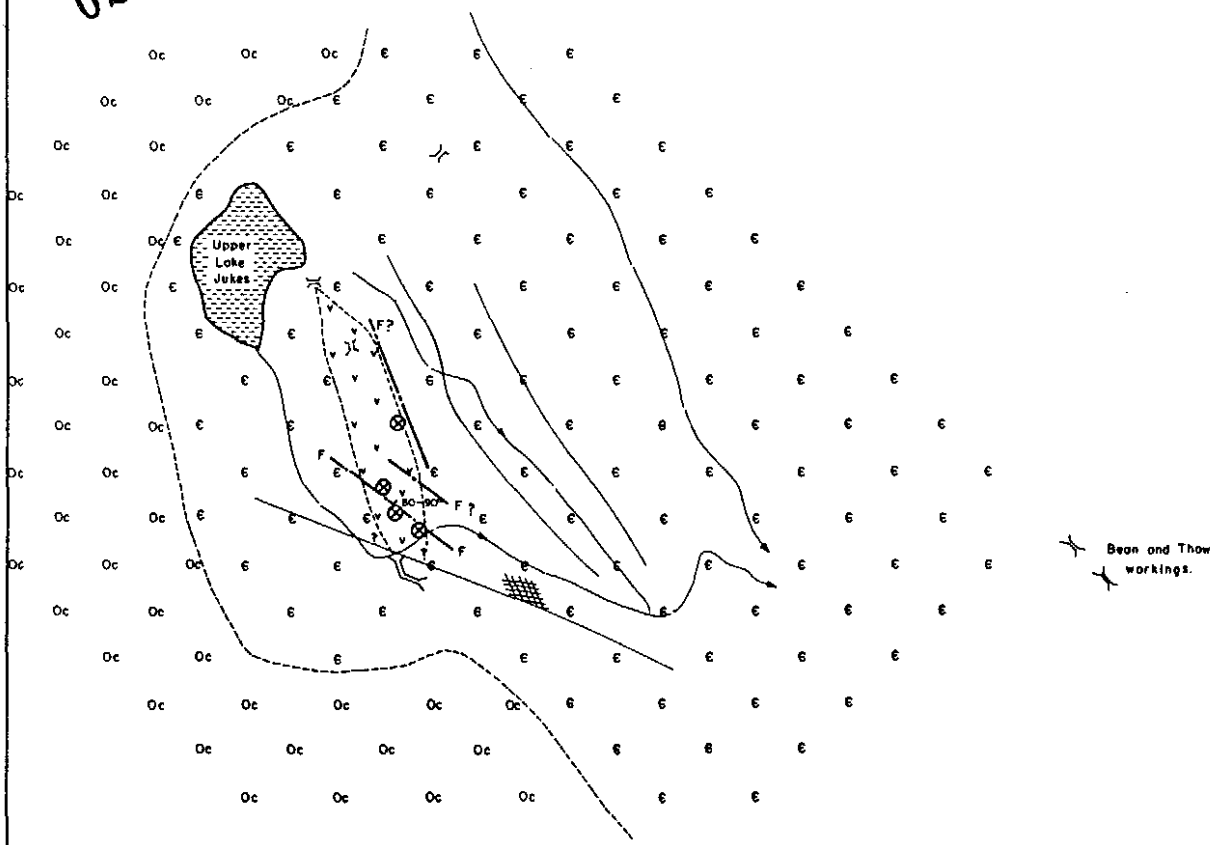
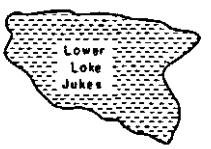




LEGEND

v v v v **Central Sequence:** Massive feldspar phyric rhyolite lavas, with rare volcaniclast lenses, containing qtz.-magnetite, qtz.-chlorite, magnetite-chlorite veining.

€ € € **Eastern Sequence:** Quartz feldspar phyric volcanics, mainly volcaniclastics, including tuffs and agglomerate lenses.

Oc Oc **Owen Conglomerate:**

Very siliceous 'cherty' rocks.

Trenches.

Adits.

F Faults. ? inferred.

Geological Contact.

Linears: Inferred from ground mapping and aerial photograph studies. (nature of linear unknown).

Creeks, rivers.

N

1:250000 SHEET

SCALE

0 100 200 300 400

metres

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85		
UPPER LAKE JUKES GEOLOGICAL INTERPRETATION		
Compiled: D.G.	Date: 10-4-87	Scale 1:5000
Latitude:	Longitude:	PLAN NO A3-518-0039
Drawn: N.W.D.S.	File No. Fig.	

5 cm

different in colour and texture from the rocks on Adit Knob. Thin section petrology however, indicates that the whole area consists of rhyolitic volcanics (with minor derived volcaniclastics)(Appendix 1) which may be categorized as biotite rhyolites. Cowan (Appendix 1) states that the petrology suggests the rocks may be treated as a single unit and the topographic prominence of Adit Knob attributed to a "relative incidence of the overprinting chlorite-haematite-magnetite assemblage".

The rocks assigned to the Eastern Sequence are thought to contain mainly clastic lithologies (some obvious conglomerates occur, but many textures are obscured by alteration). This may have led to the chlorite-magnetite-haematite alteration being pervasive here rather than the vein style seen in the Adit Knob rocks (representing less permeable lavas). Some very siliceous, almost cherty areas occur within the Eastern Sequence rocks (Fig. 13). Interestingly thin section study has reported basalt clasts in a sample from the Eastern Sequence (72060, see Appendix 1). It will be noted that a sample from the Central Sequence at Allans Creek was thought to be a basalt.

The ubiquitous steep north-west striking cleavage is much more pronounced in the Eastern Sequence than the Central Sequence.

MINERALIZATION

Mineralisation is generally confined to the Adit Knob. Here chlorite-magnetite veins are found. Few if any sulphides are present yet abundant copper staining occurs around the adits of the Lake Jukes Mine (see below). No chlorite-magnetite veins were found in the Eastern Sequence. Quartz-magnetite veins are common but appear to have no relationship to mineralization.

The Bean and Thow Workings contain the only mineralization seen in the Eastern Sequence, being minor pyrite (chalcopyrite?) in chloritic schist.

GEOCHEMISTRY

A break down of 75 rock chip assay results from Upper Lake Jukes is given in Fig. 14. Sample locations and assay results are given in Plans 7-11 (and Fig. 7). All Cu values >1000 ppm and all Au >0.1 ppm were from samples taken around the Lake Jukes Mine Workings or the Bean and Thow Workings. The sample assaying 1.5 g/t Au was a picked sample (72004) from the dump of the middle adit.

It would thus seem that anomalous results are confined to areas known to be mineralized. No strong trend is seen within anomalous samples from Adit Knob however.

FIGURE 14 - Upper Lake Jukes - Surface Assay Results

75 rock chip samples.

Element	Range ppm	Mean ppm	No. of Samples >100ppm	No. of Samples >200ppm	No. of Samples >400ppm
Cu	<5-170000	100*	21	16	10
Pb	<5-530	60	10	3	1
Zn	2-440	160	48	22	3
			>0.02 ppm	>0.05 ppm	>0.1 ppm
Au	<0.008-1.5	-**	21	8	4

* Mean excludes samples 72008 - 1,150 ppm Cu
72004 - 34,500 ppm Cu
72005 - 1,800 ppm Cu
72047 - 170,000 ppm Cu

** Too many samples below detection for a mean to be significant.

LAKE JUKES MINE

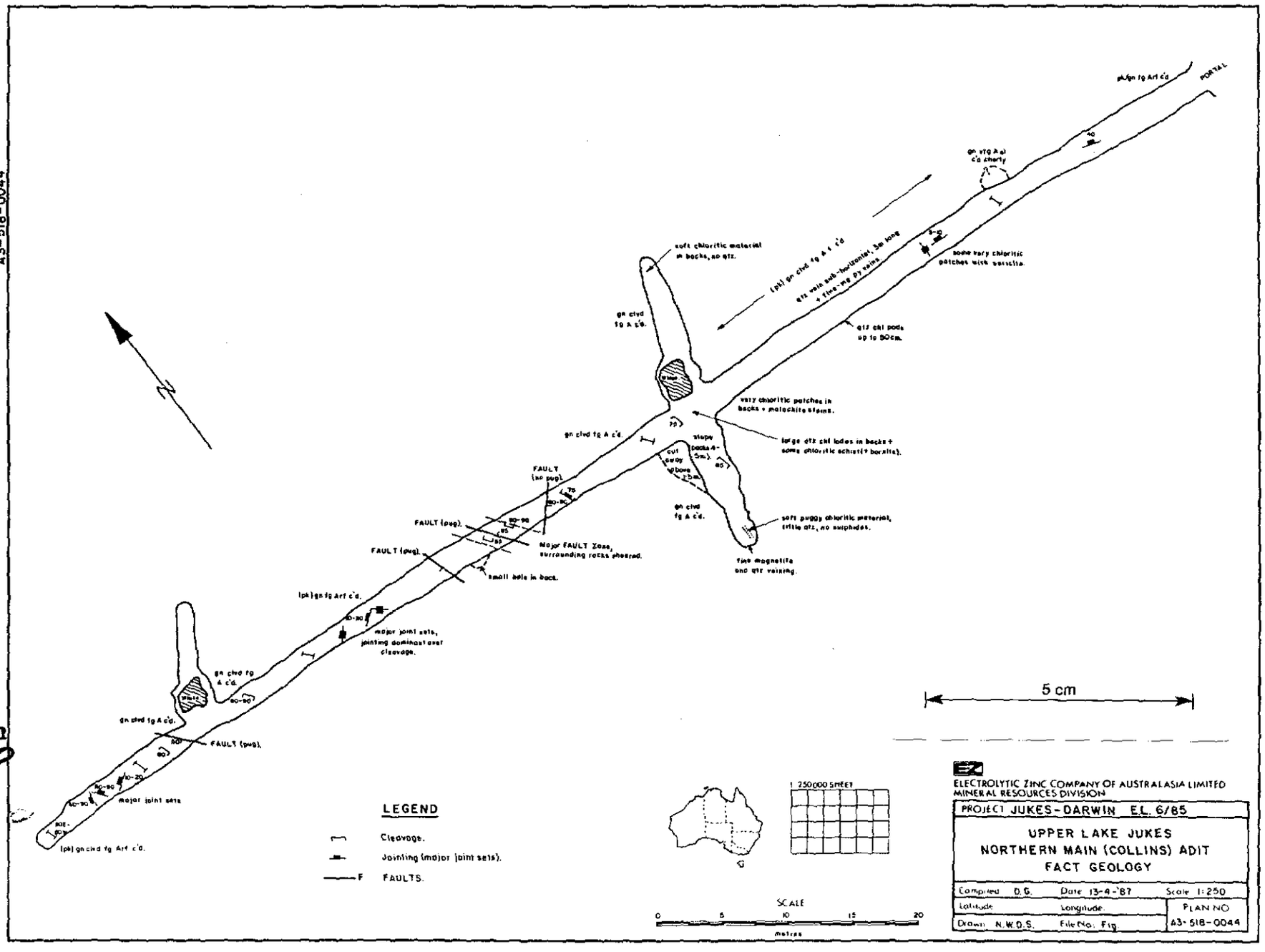
The 4 adits of the Lake Jukes Mine were mapped and sampled in detail (Figs 15-18). Loftus-Hills (1914) states that the prospectors were initially attracted to the area because of the irregular haematite-bornite veins outcropping on Adit Knob and that initially the adits were designed to intersect the downward continuation of these. The only significant mineralization encountered however, was a quartz-delessite(chlorite) fissure lodes, in the Northern Adit where the major drive, stope and winze are situated (Fig. 15). The early production of 14 ozs gold from 143 tons of ore probably came from the Northern Adit.

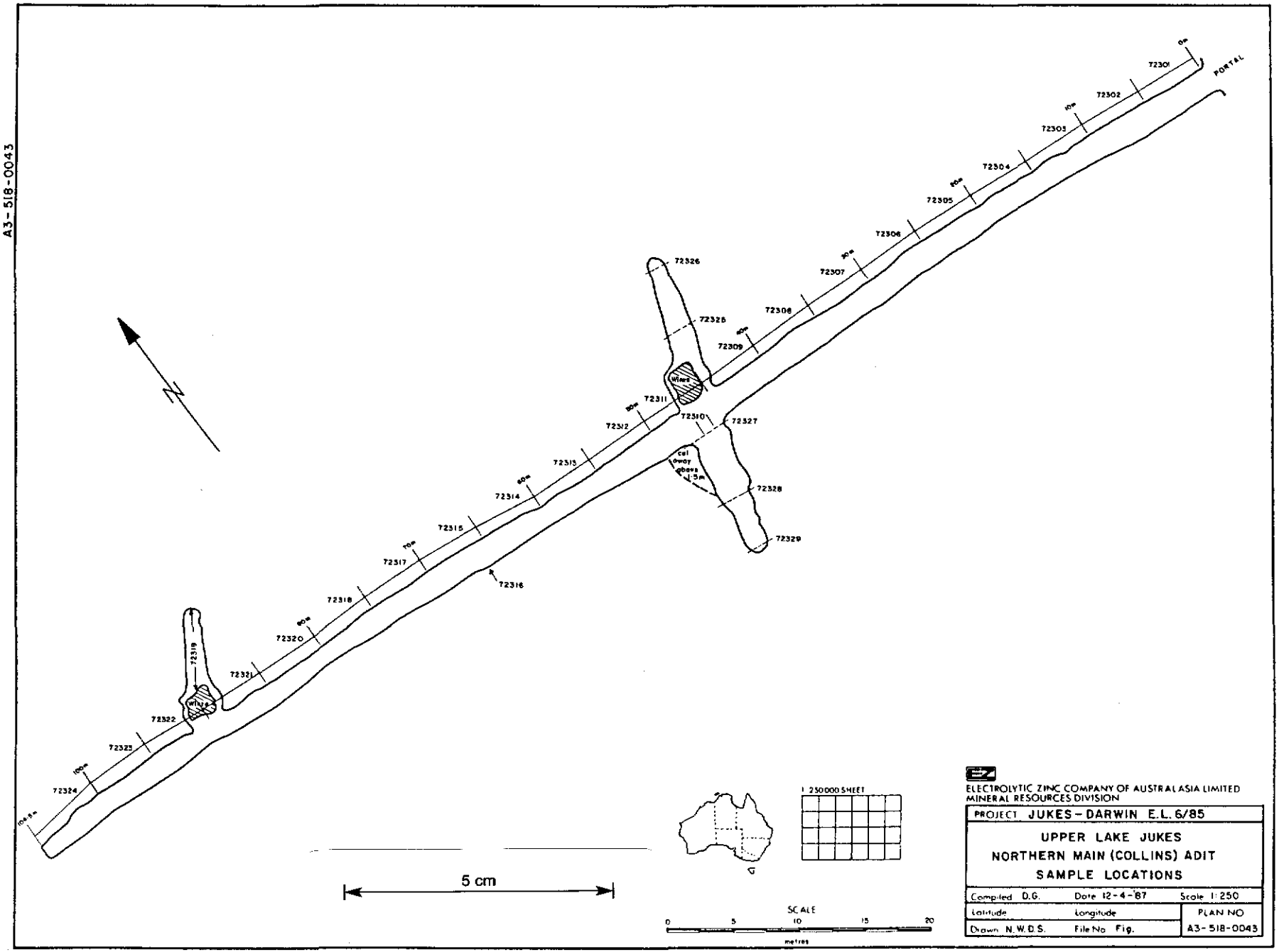
The material remaining in the backs of the main drive is quartz in a soft chloritic (sericitic) matrix, contrasting to the host rock and other veins of quartz and magnetite. This main drive trends just east of north and does not seem to follow a fault structure.

A breakdown of assay results from the adits is given in Fig. 19. Because of the small sample lengths higher assay results are needed for a sample to be considered

Figure 15 882030

A3-518-0044





ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT JUKES – DARWIN E.L. 6/85		
UPPER LAKE JUKES NORTHERN MAIN (COLLINS) ADIT SAMPLE LOCATIONS		
Compiled D.G.	Date 12-4-87	Scale 1:250
Latitude	Longitude	PLAN NO
Drawn N.W.D.S.	File No Fig.	A3-518-0043

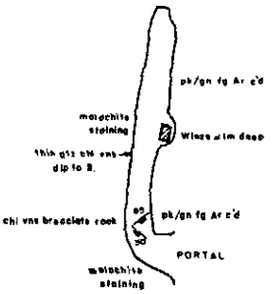
Figure 16

031

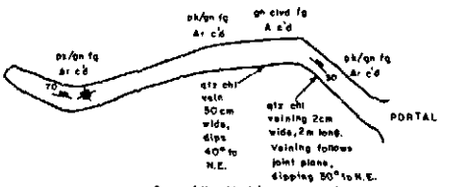
Figure 17

882032

A3-518-0040

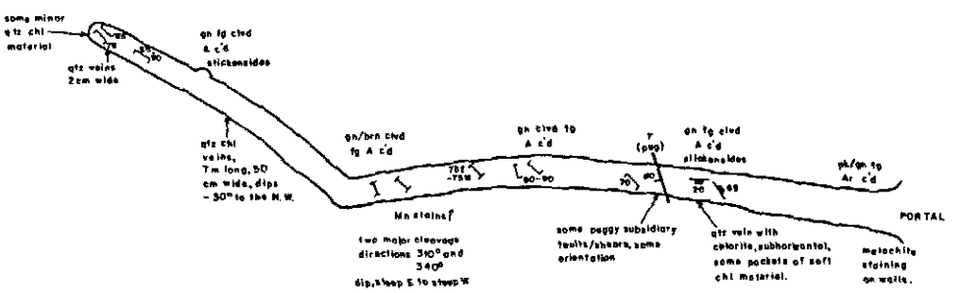


TOP ADIT



Some of the chloritic material in these veins is quite soft.

MIDDLE ADIT



SOUTHERN ADIT

LEGEND

- cleavage.
- jointing, major joint sets.
- Fault.

N.B. – Lithological mapping as E.Z. exploration legend, 1980
I. Mc Donald. Ref. No. A1–504.

1:250000 SHEET

SCALE

0 5 10 15 20

metres

EZ

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85		
LAKE JUKES MINE FACT GEOLOGY		
Compiled: D.G.	Date: 11-4-'87	Scale: 1:250
Latitude:	Longitude:	PLAN NO A3-518-0040
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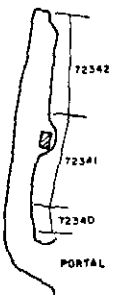
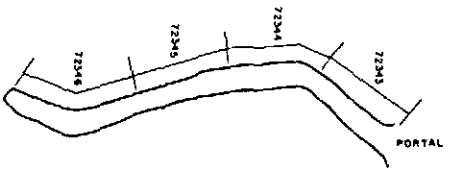
Figure 18 882033

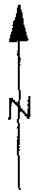
A3-518-0041

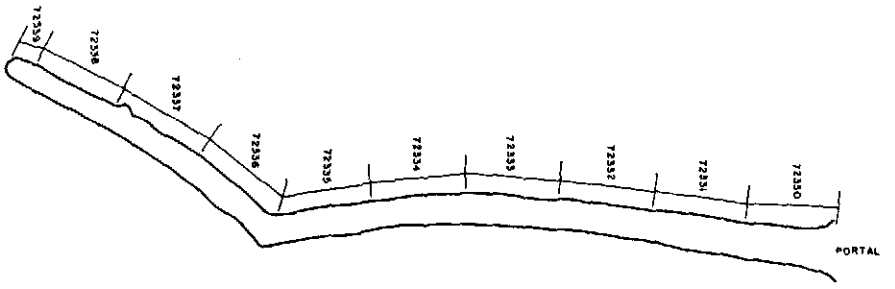


TOP ADIT



MIDDLE ADIT

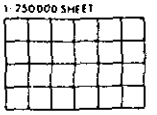




SOUTHERN ADIT

N.B.-All samples collected by continuous chipping along the right hand wall of all adits.

1:250000 SHEET



SCALE

0 5 10 15 20

metres

EZ

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85		
LAKE JUKES MINE ADIT SAMPLE LOCATIONS		
Compiled: D.G.	Date: 12-4-87	Scale: 1:250
Latitude:	Longitude:	PLAN NO A3-518-0041
Drawn: N.W.D.S.	File No: Fig.	

5 cm

anomalous. The three assay results >1.0 g/t (72310 - 1.76 g/t Au; 72311 - 1.15 g/t Au; 72327 - 7.35 g/t Au) all came from the area around the main drive in the Northern Adit, containing the soft chloritic material. The rock immediately surrounding this material are darker green and more cleaved than the massive pink surface exposures on Adit Knob, resembling some of the more siliceous Eastern Sequence rocks. Cleavages strike north-west dipping steeply to the north-east and south-west, leading to the rock shattering into rhomboids.

Similar cleaved chloritic (but still very siliceous) rocks occur elsewhere in the Northern, Middle and Southern Adits, and some contain small pockets of soft quartz-chlorite material. No assay values similar to the ones in the main drive are found, however the next highest value 0.246 g/t Au comes from cleaved chloritic rocks around a major puggy fault zone.

FIGURE 15 - Assay Results from Lake Jukes Mine

46 rock chip samples.

Element	Range ppm	Mean ppm	No. of Samples >100ppm	No. of Samples >200ppm	No. of Samples >400ppm
Cu	35-18000	1360*	44	42	36
Pb	<5-530	40**	9	4	2
Zn	2-440	280	45	41	6
			>0.02 ppm	>0.05 ppm	>0.1 ppm
Au	<0.008-7.350	0.045***	29	17	9

* 16 samples are >1,000 ppm Cu

** Not including samples 72308 - 1,400 ppm Pb
72314 - 1,850 ppm Pb

*** Not including samples 72310 - 1.760 ppm Au
72311 - 1.150 ppm Au
72327 - 7.350 ppm Au

STRUCTURE

The structural setting at Upper Lake Jukes is quite problematic. Adit Knob (Central Sequence) outcrops totally surrounded by Eastern Sequence lithologies. It may be postulated that the rocks to the west of Adit Knob are in fact Western Sequence rocks, however no difference can be seen between many of these

lithologies and lithologies to the east, and no contact can be seen.

The eastern and western contacts of the knob are easily identifiable and the eastern contact, at least, is possibly faulted (Fig. 13). The northern and southern ends of the knob are difficult to interpret. At the northern end of the knob very siliceous massive feldspar phyric lavas occur adjacent to equally siliceous volcanic conglomerates with sub angular to sub rounded clasts of the lavas (up to 2cm) in a chloritic matrix. This unit becomes less siliceous to the north, east and west, until it resembles a typically Eastern Sequence lithology, a cleaved chloritic volcaniclastic conglomerate. Thus the contact here may be unconformable. However lack of outcrop in several places makes this interpretation inconclusive.

To the south, Adit knob terminates abruptly. At the Southern Adit the width of the knob is several tens of metres, but on the south side of the creek (see Fig. 13) Central Sequences outcrops cannot be found in the dense vegetation.

A brief aerial photograph interpretation of the area was completed (Fig. 20) which shows that the southern termination of Adit Knob coincides with a major east-west trending linear (shown in Fig. 20 and Fig. 13). How this linear is related to the geology is not yet clear.

Although many aerial photograph linears trend north-west, and the regional cleavage strikes north-west dipping steeply east and west, the main drive in the northern adit trends slightly east of north. This is more consistent with lihtological trends at Allans Creek and in the overall trend of the Mt. Read Volcanics.

It has already been suggested (Ruxton, 1987) that Adit Knob may be the core of an anticline. Study of aerial photographs suggests that such a structure may plunge to the north, the Central Sequence, extending from Mt. Darwin - Intercolonial Spur - Upper Lake Jukes decreasing in width of outcrop as it plunges to the North. A north plunging Central Sequence in this area has been suggested by Bradley (1957). However there are obvious inconsistencies, as just north of Mt. Jukes a wide expanse of Central Sequence is seen again.

035

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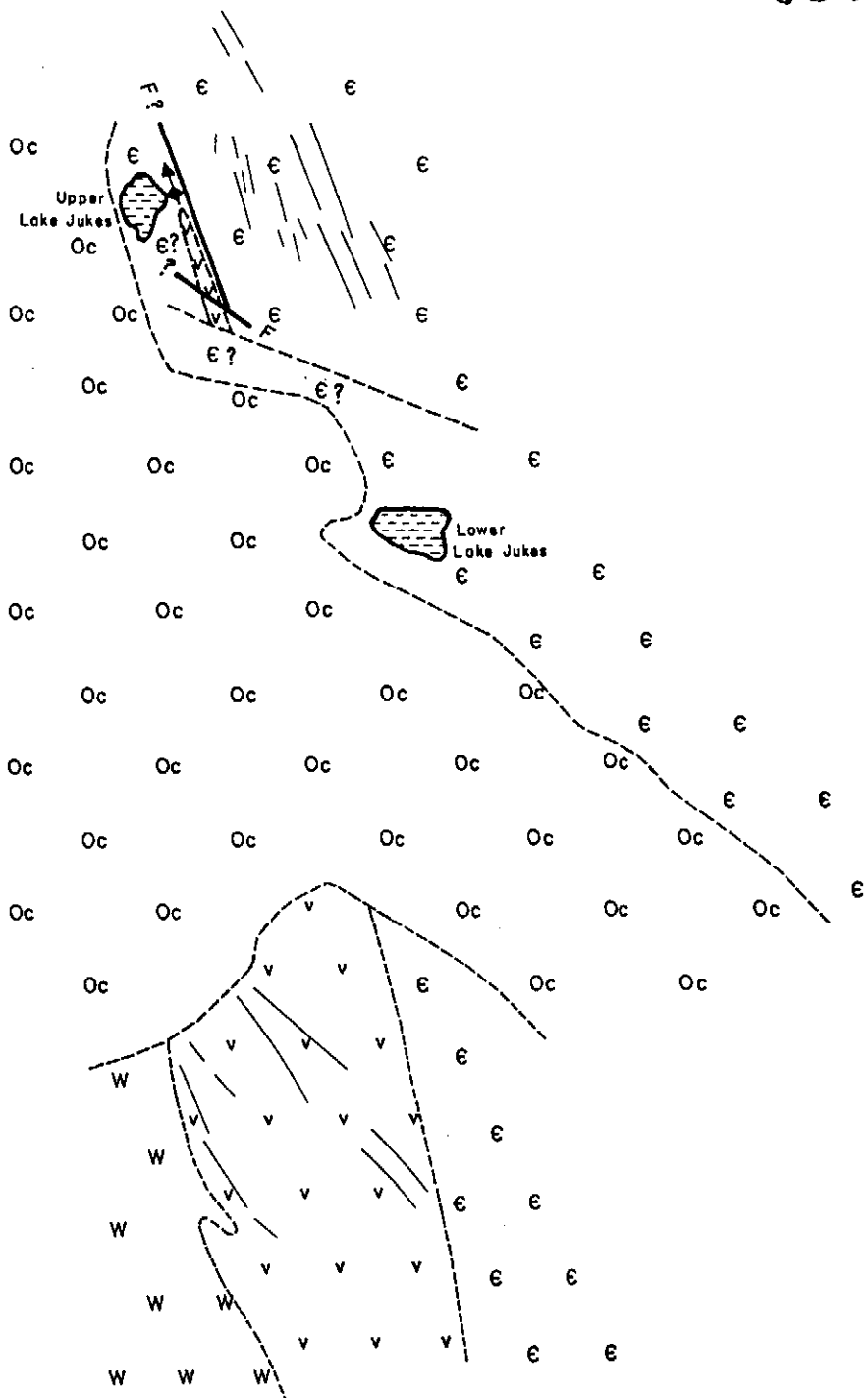

LEGEND

——— F	Fault, inferred from aerial photograph.
- - - - - - -	Geological contacts.
———	Linears, from aerial photographs.
v v v v	Central sequence - feldspar phyric, mainly lavas.
Є Є	Eastern sequence - mainly cleaved chloritic volcaniclastic.
W W	Western sequence - mainly cleaved chloritic volcaniclastic.
Oc Oc	Owen Conglomerate.
←◆→	Possible anticline.

N

EZ Figure 20

PROJECT: JUKES - DARWIN E.L. 6/85		
UPPER LAKE JUKES TO INTERCOLONIAL SPUR AREA		
Compiled: D. G.	Date: APR. 1987	PLAN NO Fig.
Drawn: N W D S	Scale: N.T.S.	

Aerial Photograph Interpretation

3.4. South Darwin Plateau

GEOLOGY

Geologic mapping and sampling of the ridges and creeks on the south, east and west flanks of Mt. Darwin detailed the major rock units, contacts, alteration styles and mineralization (see Plan 18).

The Central Sequence volcanics outcrop on the south ridge of Mt. Darwin. These feldspar-phyric lavas(?) are strongly K-feldspar (pink) altered and silicified. Chlorite is sometimes seen pervasively, but mainly occurs with magnetite-haematite veins. These vary from <1cm to 2m in width with a visible strike length of up to 5m. The veins are abundant immediately south of the Mt. Darwin summit, with pyrite and chalcopyrite being common accessories in these veins.

Magnetite-haematite veins are more numerous than quartz-magnetite veins here, unlike at Upper Lake Jukes.

The contact between the Central and Western Sequences was observed in several creeks on the steep western flanks of Mt. Darwin. Outcrops generally form waterfalls up to 50m high. The contact is thought to be a steeply dipping unconformity or fault.

The Western Sequence consists of chloritic schists after quartz-feldspathic volcanics.

Some clastic units are present. The rocks are variably silicified. Immediately west of the Central Sequence contact a horizon of very siliceous chloritic rocks outcrops in several creeks, and abundant pyrite is visible on some surfaces of these rocks.

The eastern contact of the Central Sequence is with the Darwin Granite and the volcanics are hornfelsed at the contact. This contact too appears to be nearly vertical.

The granite outcrops more extensively than has been previously mapped, occupying the relatively flat Darwin Plateau. A small outcrop of Central Sequence rocks on top of the granite in the middle of the plateau indicates that this is the original roof of the granite. Pink (K-feldspar?) and chlorite alteration can be seen in the upper most outcrops of granite along with strong magnetite-haematite veining (+pyrite, +chalcopyrite). Outcrops 10-20m below this, however, show very little alteration being entirely quartz, plagioclase feldspar, and minor opaques (magnetite?).

The eastern contact of the granite is with Eastern Sequence volcanics, that outcrop as chloritic schists,

The eastern contact of the granite is with Eastern Sequence volcanics, that outcrop as chloritic schists, on the east flanks of the Darwin massif. The contact was crossed during one creek traverse and again is thought to be steep and possibly faulted.

MINERALIZATION

The most obvious style of mineralization in the South Darwin Plateau area consists of large magnetite-haematite veins that occur in the Central Sequence and the top of the granite. These contain some pyrite and possibly chalcopyrite, and are very similar to veins seen on Intercolonial Spur.

Outside the Central Sequence, some pyrite occurs in silicified areas of the Eastern and Western Sequences, possibly paralleling occurrences at the Bean and Thow deposit.

The most interesting occurrence of mineralization, a style that has not been seen before, was abundant chalcopyrite and pyrite in a piece of quartz float. This sample (72103) from the south ridge of Mt. Darwin (see Plan 19) assayed 21 g/t Au (see next section).

GEOCHEMISTRY

A breakdown of assay results from the South Darwin Plateau is given in Fig. 21. As can be seen rock chip values are generally lower than for the other areas examined. Sample locations are given in Plan 17 and assay results in Plans 19-22.

The highest reading of 30.04 g/t for a panned concentrate sample sounds impressive, until it is realised that the result is from a sample of 0.92g (the sink weight reported after heavy mineral separation). Thus this value equates to one grain of Au (in the pan) with a volume of 1.8 x
10^{-6} cm^3 i.e. a sphere of diameter 0.15mm.

Assay results indicate that most streams draining the South Darwin Plateau do contain gold. Rock chip sampling has highlighted two possible source areas on the South Darwin Ridge.

The first area (see Plan 19) has 21 g/t gold in a sample of quartz float with abundant pyrite and chalcopyrite. Significant stream sediment (0.492, 0.231, 0.250, 0.800 g/t) and panned concentrate (0.64 g/t) readings occur at the head of several streams draining this area. Some of the streams have gold tails running for 500m.

magnetite haematite veins (+pyrite, chalcopyrite), assayed 0.032 g/t gold.

The second area of interest (Plan 19) occurs 300m south of the Mt. Darwin summit in pink fine grained feldspar phyric volcanics (lava) with abundant magnetite-haematite veining (+pyrite, chalcopyrite). Five rock chip samples in the space of 300m assayed 0.017, 0.017, 0.017, 0.040, 0.150 g/t Au, the last sample being of a large magnetite haematite vein.

Stream sediments from streams draining this area have values of 0.075, 0.036 and 0.13 g/t Au while panned concentrate values include 0.34, 0.020, 0.070, 0.640, 2.74, 0.03 and 0.19 g/t Au.

FIGURE 21 - Assay Results from South Darwin Plateau

131 rock samples.

Element	Range ppm	Mean ppm	No. of Samples >100ppm	No. of Samples >200ppm	No. of Samples >400ppm
Cu	5-6000	60*	17	7	3
Pb	<5-545	40	7	1	1
Zn	25-443	80	31	7	2
			>0.02 ppm	**>0.05 ppm**	**>0.1 ppm**
Au	<0.008-21.67	-	14	4	2

* Not including sample 69178 assaying 6000 ppm Cu.

STREAM SEDIMENTS - 66 Samples

Cu, Pb, Zn values were all very low with only 5 samples assaying >100 ppm (all for Zn).
Au values ranged from <0.008-0.800 ppm.

Samples >0.02 ppm Au	0.04 ppm Au	>0.1 ppm Au
25	12	8

PANNED CONCENTRATE - 64 Sample

Range <0.008 - 30.04 g/t Au

Samples >0.05 Au	>0.1 Au	>1.0 ppm Au
19	17	7

3.5 East Darwin Drill Core (See Appendix 3)

Au results were disappointing. The best result was only 0.05 g/t from 3.6m of weakly pyritic crystal tuff. This was associated with 17.5 g/t Ag and 0.2% Cu. Most samples reported gold below the limit of detection (<0.008 g/t).

In general, base metal and silver values compared well with I.N.A.L. results. However, the earlier results were frequently 2 to 3 times higher for Cu. Nevertheless, results compared well enough to demonstrate that the same mineralized sections had been sampled.

Even though sampling of hole Z142002 was not complete, sufficient samples were collected to adequately test for undetected gold mineralization.

The East Darwin holes were drilled to intersect mineralization directly down dip from sulphide mineralization exposed by adits. Re-interpretation of the data is necessary to determine whether these drill holes, 500m apart, were an adequate test of the area.

3.6. Geochemical Scan (See Tables 1 and 2)

The 26 samples analysed were selected from rock chip samples which had previously reported anomalous gold. The aim of the scan was to determine what type(s) of gold mineralization were likely at Jukes Darwin and included samples from the Eastern Sequence (3 samples), Central Sequence (22) and Western Sequence (1).

The results of the scan are quite interesting. The high Cr and Mo values indicate high temperature mineralization - possibly related to the Darwin Granite.

Elevated W and Sn values were restricted to the cherty ironstone and magnetite samples. These rocks occur in late stage NW trending fractures of Devonian Age.

The Eastern Sequence rock samples cannot be distinguished geochemically from the Central Sequence rocks. This supports Peter Ruxton's hypothesis that the granite is younger than the Eastern Sequence.

Results of the scan will be forwarded to an experienced geochemist for a more detailed evaluation.

TABLE 1

JUKES-DARWIN GEOCHEMICAL ASSOCIATIONS

SAMPLE NUMBER	Au	Cu	Ag	Pb	Zn	As	Sn	W	Mo	Cr	Rock Type and Location
72228	0.058	50	<0.1	35	65	5	85	85	85	110	Magnetite float MD
72024	0.083	90	<0.1	65	165	7	40	45	15	15	clv'd VSbx c'd ULJ
69235	0.088	2500	2.5	30	100	210	<3	30	130	550	gn Ar c'd py mag vng LC Adit
69160	0.094	75	<0.1	20	50	6	<3	<10	10	80	pk Ar hte vng LC
69103	0.099	40	<0.1	30	25	67	5	30	130	500	cherty Ar si'd py LC
66576	0.100	625	3.5	50	25	5	50	85	50	225	cherty ironstone py IS
69122	0.100	540	0.5	95	85	170	7	20	60	320	cherty Ar si'd LC Adit.
69201	0.109	1600	<0.1	10	200	20	25	20	10	85	mag + chl LC
69143	0.110	20	<0.1	35	30	6	4	10	40	190	pk/gn Ar Fe stn LC
69527	0.117	50	0.5	410	50	420	<3	20	25	130	Arf hte+chlorite LC
69114	0.131	65	1.5	240	80	90	3	<10	20	145	cherty Ar si'd LC
69236	0.135	475	0.5	20	30	520	6	<10	15	80	cherty Ar si'd gos LC Adit
72062	0.150	310	3.0	760	820	140	<3	<10	20	30	chlorite schist py B&T
72083	0.150	210	0.5	130	85	38	470	240	20	15	Magnetite py cp MD
69108	0.158	230	2.0	215	45	250	<3	20	90	315	bx cherty Ar py LC
66574	0.160	650	1.0	150	<25	1	55	490	60	120	cherty Ar gos IS
69001	0.160	95	<0.1	30	55	160	<3	<10	15	60	Ar LC
69273	0.243	50	<0.1	15	55	7	<3	30	30	120	pk/gn Ar q vng LC
72047	0.317	170000	121.0	35	120	2	6	<10	10	55	rd bn Ar min'd ULJ
72005	0.333	1800	1.5	160	270	4	7	35	20	35	Ar min'd ULJ Adit
69594	0.347	40	<0.1	25	55	7	<3	15	35	130	dk gnAqc near gr MD
66578	0.417	650	<0.1	275	225	7	<3	15	65	375	gn gy Ar Fe stn IS
69104	0.502	255	0.5	220	65	260	3	<10	120	445	bx Ar tm LC
72004	1.520	34500	38.0	75	180	5	20	30	10	235	Ar min'd ULJ Adit
69259	5.680	12500	11.5	11500	2050	41	<3	40	210	950	gnA si'd c'd py gn cp NLE Adit
72103	21.67	955	9.5	165	25	7	3	<10	15	150	Qz py cp MD

KEY

Locations

IS	Intercolonial Spur
LC	Lyell Consols
B & T	Bean & Thow
MD	Mount Darwin
ULJ	Upper Lake Jukes
NLE	North Lyell Extended

Rock Types etc.

--A-	Acid volcanic
--Ar	rhyolite
VS	Volcanogene sediment
bx	breccia/brecciated
c'd	chloritized
si'd	silicified
tm	tourmaline
py	pyrite
gn	galena
cp	chalcopyrite
mag	magnetite
hte	haematite

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TABLE 2

JUKES-DARWIN SCAN - MISCELLANEOUS GEOCHEMISTRY

SAMPLE NUMBER	Au	Bi	Co	Se	Te	Sb	Hg	Ba	Tl	S	Fe	Mn	Rock Type and Location
72228	0.058	10	40	0.05	0.8	1.0	0.015	390	<0.5	0.05	41.50%	155	Magnetite float MD
72024	0.083	10	20	<0.05	0.3	0.4	0.005	1050	<0.5	0.01	6.85%	465	clv'd VSbx c'd ULJ
69235	0.088	35	20	<0.05	<0.1	0.4	0.015	1850	1.0	1.85	2.35%	195	gn Ar c'd py mag vng LC Adit
69160	0.094	<5	15	<0.05	<0.1	0.4	0.020	1400	0.5	<0.01	1.90%	60	pk Ar hte vng LC
69103	0.099	10	10	0.45	<0.1	0.2	0.005	630	0.5	1.35	2.40%	90	cherty Ar si'd py LC
66576	0.100	10	140	0.10	0.5	1.0	0.015	390	<0.5	1.90	16.23%	100	cherty ironstone py IS
69122	0.100	15	20	0.10	0.3	0.4	1.750	1350	1.0	3.20	6.00%	320	cherty Ar si'd LC Adit
69201	0.109	5	20	<0.05	<0.1	0.4	0.015	750	<0.5	0.44	6.80%	260	mag + chl LC
69143	0.110	5	15	<0.05	<0.1	0.4	0.015	2200	<0.5	<0.01	1.10%	100	pk/gn Ar Fe stn LC
69527	0.117	415	15	0.15	<0.1	1.0	0.015	1450	<0.5	0.01	2.60%	110	Arf hte+chlorite LC
69114	0.131	<5	10	<0.05	<0.1	1.0	0.020	640	<0.5	0.07	2.40%	190	cherty Ar si'd LC
69236	0.135	30	15	0.10	<0.1	1.0	0.020	2350	1.0	0.41	6.75%	140	cherty Ar si'd gos LC Adit
72062	0.150	10	15	<0.05	<0.1	1.0	0.075	580	<0.5	1.75	6.11%	2200	chlorite schist py B&T
72083	0.150	15	135	<0.05	0.6	1.2	0.005	110	<0.5	0.10	51.00%	60	Magnetite py cp MD
69108	0.158	<5	10	0.10	<0.1	0.4	<0.005	1150	<0.5	0.17	3.25%	125	bx cherty Ar py LC
66574	0.160	40	20	0.15	0.1	1.0	0.005	510	<0.5	0.02	13.44%	25	cherty Ar gos IS
69001	0.160	10	15	0.10	<0.1	0.4	0.015	680	1.0	0.01	2.15%	80	Ar LC
69273	0.243	5	15	0.05	<0.1	0.4	0.005	1550	0.5	0.01	2.55%	160	pk/gn Ar q vng LC
72047	0.317	10	15	<0.05	<0.1	0.4	0.450	1100	<0.5	4.40	7.90%	220	rd bn Ar min'd ULJ
72005	0.333	10	20	<0.05	0.1	1.0	0.035	770	<0.5	0.03	4.90%	1850	Ar min'd ULJ Adit
69594	0.347	10	15	<0.05	<0.1	0.4	0.035	1750	0.5	0.02	3.15%	220	dk gnAqc near gr MD
66578	0.417	<5	<5	0.05	<0.1	0.4	0.005	25	<0.5	<0.01	8.94%	225	gn gy Ar Fe stn IS
69104	0.502	20	35	0.25	0.5	0.8	0.005	1150	<0.5	4.95	6.55%	195	bx Ar tm LC
72004	1.520	25	30	<0.05	0.1	0.8	4.200	4050	<0.5	1.05	18.00%	440	Ar min'd ULJ Adit
69259	5.680	25	30	<0.05	<0.1	0.4	0.055	470	0.5	3.55	5.6%	21000	gnA si'd c'd py gn cp NLE Adit
72103	21.67	55	15	0.05	<0.1	0.4	0.015	1900	<0.5	11.30	7.80%	25	Qz py cp MD

KEY

Locations

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LC	Lyell Consols
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bx	breccia/brecciated
c'd	chloritized
si'd	silicified
tm	tourmaline

py	pyrite
gn	galena
cp	chalcopyrite
mag	magnetite
hte	haematite

4. DISCUSSION

The aim of this years work was to determine the potential for bulk low grade gold deposits within the areas selected. This style of mineralization at economic grades cannot be envisaged based, on the results received. The Central Sequence rocks are sporadically mineralized with gold grades of ~0.1 g/t. No bulk concentration of gold has been found even at these low grades. The adjacent Eastern and Western Sequences are even less mineralized than this.

In order to look for the possibility of economic gold mineralization it is necessary to look to the smaller but hopefully richer styles of mineralization that have been prospected in the area in the past. On examination of past literature, notably Loftus-Hills, 1914, it would seem that two distinct major gold bearing styles occur. The first is characterized by quartz-chlorite(sericite?) veins and lodes containing pyrite, chalcopyrite and gold. As examples of these Loftus-Hills cites Jukes Pty, East Darwin. The second, and less important, style is haematite magnetite bodies(veins?) with associated pyrite, chalcopyrite and sometimes chlorite and quartz.

Loftus-Hills categorizes the body mined at Upper Lake Jukes differently because it contains free gold whereas the quartz chlorite lodes have gold in pyrite and chalcopyrite. However many other characteristics of the Lake Jukes Mine fit in with the quartz-chlorite lode style.

Jukes Pty. and East Darwin Workings

The two examples of quartz-chlorite type bodies given by Loftus-Hills are the Jukes Pty. body and the East Darwin body.

Hutton (1982) states that the Jukes Pty. No. 1 and 3 adits worked chalcopyrite and pyrite mineralization in sheared pods of intensely chloritized basal quartz grit of the Eastern Sequence, right at the contact with the Central Sequence. Roberts and Cartwright (1984) state that drilling at Jukes Pty. intersected 9m (true thickness) of 0.65% Cu, 0.1 g/t Au, 9m (true thickness) of 1.56 g/t Au, 1.55% Cu, 12m of 0.65% Cu 0.08 g/t Au (the latter associated with sericite, silica material from the Jukes Pty. Fault). Surface sampling have assayed 5m at 1.6 g/t Au, 1.7% Cu and 16m at 1.4 g/t Au, 1.7% Cu. Drill holes and surface samples are from around the Jukes Pty. adits. Bulk assays reported by Loftus-Hills (1914) have been up to 9 g/t. From the plans available it would appear that the mineralization at Jukes Pty. trends north-east with a strike length of over 100m.

The East Darwin body was the subject of considerable exploration for base metals by Mt. Lyell 1953-56, B.M.R. 1956-62 and I.N.A.L. 1972-74 (see Mathison and

Taylor, 1986). Two drill holes 500m apart were drilled by I.N.A.L. but the Cu mineralization was not found at depth. Loftus-Hills (1914) cites as high as 15 dwt/ton (22.5 g/t) from this area. The mineralization occurs in a belt of quartz(?) schist (without chlorite) immediately east of the Central-Eastern Sequence contact. The mineralized belt strikes nearly due north-south, and Loftus-Hills considers that the mineralized belt may extend over several hundred metres, between the various workings at East Darwin. The I.N.A.L. drilling may not have been an adequate test of the mineralization.

The Mt. Lyell Consols, Lake Jukes and Mt. Lyell Extended Workings

The two workings described previously have not been studied this year. Jukes Pty. is on ground held by Mt. Lyell and East Darwin was considered already well explored. the Mt. Lyell Consols, Lake Jukes and Mt. Lyell Extended Workings were studied, however.

At Mt. Lyell Consols the host rocks are very siliceous Central Sequence lavas, the major drive,however, is an intense chloritic fault zone with up to 40% pyrite in the footwall. This drive heads north-east.

The main drive in the Northern Adit at Upper Lake Jukes also heads just east of north following a quartz-chlorite(sericite) lode with minor sulphides. Assays from this body have been up to 7.3 g/t Au and 143 tons bulked 3 g/t Au.

The Mt. Lyell Extended adit was driven in chloritic schists at the Central Sequence-Eastern Sequence contact. A grab sample from here assayed 5.8 g/t Au.

The assay results from these workings are an order of magnitude higher than for any samples taken from the Central Sequence lavas, or from the magnetite-haematite-chlorite veins.

In contrast to the northwest cleavage, and northwest trends of the chlorite-haematite-magnetite bodies and Allans Creek, these quartz chlorite lodes trend north to north-east following the regional and local lithological trends.

It is possible that the quartz chlorite lodes are associated with the initial quartz-sericite alteration phase (see Appendix 1) while the chlorite-magnetite-haematite veins are associated with the later weaker phase. Thin section petrology has shown that sericite alteration has regularly been labelled as chloritic in the field.

If the pattern of mineralization suggested here is correct, then major targets are, so far undiscovered quartz chlorite lodes, or the extensions of known ones. These may be in Central or Eastern Sequence rocks and will probably trend north to north-east.

It is not possible at this stage to suggest a genesis for this 'style' of deposit (which may be many different styles), but some modification of the alteration and mineralization styles suggested by Ruxton (1987) would be required if the Darwin Granite (which possibly underlies the whole West Coast Range (Ruxton, 1987)) is involved. It is again noted that Corbett (1979) states that clasts of granite occur in the Eastern Sequence, which would rule out the granite as the heat source for the East Darwin deposit. However E.Z. geochemistry suggests that gold mineralization in both the Eastern and Central Sequences is granite related.

It is likely that all outcropping bodies of the quartz chlorite type have been found by old prospectors. Thus exploration needs to be directed to blind deposits. This is problematical as no geophysical technique would appear to be applicable and no strong geochemical anomalies have been found with the extensive sampling carried out this summer.

The other alternative is speculative drilling of mildly prospective areas such as sections of Adit Knob along strike from the lode.

There are however, a number of much less expensive actions that can be undertaken to detail our knowledge of the mineralization and potentially produce other targets. These are outlined in the following section.

5. CONCLUSIONS AND RECOMMENDATIONS

Bulk low grade epithermal gold deposits do not appear to be economic targets in the Mt. Read volcanics at Jukes Darwin. The Central Sequence is only sporadically mineralized with values ~0.1 g/t and the Eastern and Western Sequences are less mineralized than this.

Two major styles of mineralization are seen. Quartz chlorite(sericite) lodes and veins trend generally north to northeast and can contain economic gold grades. Magnetite-haematite-chlorite veins contain some gold but do not appear to be economic.

From these conclusions the following recommendations can be made.

Allans Creek - Mt. Lyell Consols

The siliceous zone containing the Mt. Lyell Consols and Mt. Lyell Extended adits is the most prospective zone. The Mt. Lyell Extended Adit is not well described and with an assay of 5.8 g/t Au surely deserves some follow-up work. The northwest trending chlorite lodes are a very minor target.

Intercolonial Spur

No prospects worthy of follow-up have been located. However, the grid line mapping and sampling should be completed and reconnaissance mapping completed over the rest of the area (as has been done at South Darwin Plateau this summer). Attention should be paid to the Hydes-Hal Jukes area.

Upper Lake Jukes

The possibility of economic mineralization appears limited to other quartz chlorite(sericite) lodes similar to the one mined. A follow-up technique, other than drilling, cannot be suggested, and drilling to test the extensions of the mineralization at depth or along strike must be considered speculative. Steps should be taken to examine and re-assay the drill core from two holes already drilled (Scott, 1958). It should be noted that these drill holes were located well over 100m apart and can hardly be considered to have tested the possibility of economic mineralization given current gold prices (two bulk assays of 80' and 150' of core assayed 0.06 and 0.12 g/t respectively).

South Darwin Plateau

The quartz float sample assaying 21 g/t Au should be traced back to it's source. As the sample was taken from the south ridge of Mt. Darwin this should not prove difficult.

Magnetite-haematite veining +pyrite, chalcopyrite does not appear to be prospective, although it is most abundant in the South Darwin area. Some follow-up may be considered here.

The workings around Prince Darwin have not been studied, some reconnaissance work at least should be undertaken here.

Stream sediment and panned concentrate sampling although erratic has proved that there is significant gold draining from the South Darwin Plateau. Re-sampling of some streams to check results, prior to follow-up work, may be warranted.

It was hoped that this years work would produce a number of targets for drilling. This has not been the case. Although E.Z's exploration for gold has been far more persistent and achieved better results than previous efforts, the same problem that other companies encountered is still faced. The area is mineralized, there are encouraging gold values in a number of areas, but no major anomaly or consistently anomalous zone. This suggests patchy sporadic bodies of mineralization such as quartz chlorite bodies, a number of which close together may prove economic.

E.Z's 1987 programme was directed towards large, low grade gold deposits. For this reason, the main sampling technique applied was rock chip sampling. Pieces of rock, each 30-60g, were chipped from outcrop at intervals along a 40-60m traverse section until a composite sample weighing 3-4kg had been collected. While this method is very reliable for large disseminated deposits where distinct high value anomalies should be detected, it is not necessarily definitive for smaller but higher grade vein or lode deposits. Rock chip sampling anomalies across concealed lode deposits should be expected to be in the 'geochemically anomalous' class. In this context the gold anomaly in the Lyell Consols area with scattered rock and rock chip samples reporting >0.1 g/t Au within a wider zone of elevated gold geochemistry along a geologically distinct horizon is considered the most significant target defined by the 1987 programme. This target extends eastwards to the Mt. Lyell Extended workings.

6. PROPOSED EXPLORATION PROGRAMME OCTOBER, 1987-MAY, 1988

Lyell Consols Area

Detailed grid based rock chip sampling, geological mapping and deep bedrock (Wacker) sampling of the siliceous contact zone.

Geophysical test survey of this grid - I.P., V.L.F. and ground magnetics.

Drilling of targets generated by surface work.

Ground check of anomalous rock chip sample 66594 (an altered basalt).

South Darwin Area

Follow-up of anomalous stream geochemistry by rock chip sampling and geological mapping.

Intercolonial Spur

Complete mapping and rock chip sampling of gird lines.

Other Areas

Reconnaissance geological mapping, stream sediment sampling and rock chip sampling of all parts of the Central Volcanic Sequence and the Eastern Sequence not covered by earlier programmes.

REFERENCES

BRADLEY, J., 1954
The Geology of the West Coast Range of Tasmania Part 1: Stratigraphy and metasomatism.
Papers and Proceedings of the Royal Society of Tasmania Vol. 88 pp 193-244.

CORBETT, K.D., 1979
Stratigraphy, correlation and evolutions of the Mt. Read Volcanics in the Queenstown Jukes-Darwin and Mt. Sedgwick areas.
Bull. Geol. Surv. Tas. 58

GARDNER, D.N., 1987
E.L. 6/85 Jukes-Darwin, Monthly report February, 1987.
Unpub. E.Z. Monthly Report

HUTTON, M.J., 1982
Mt. Lyell Annual Report on E.L. 9/66
Unpub. report Mt. Lyell Mining & Railway Company.

LOFTUS-HILLS, C., 1914
The Jukes Darwin Mining Field
Tas. Dept. of Mines Geol. Surv. Bull. 16

MATHISON, I.J. and TAYLOR, S., 1986
E.L. 6/85 Jukes-Darwin Progress Report on Exploration Activity, October, 1985 to 19th September, 1986.
E.Z. Report No. T219

ROBERTS, P.A. and CARTWRIGHT, A.J., 1984
E.L. 9/66 Annual Report
Goldfields Unpub. Report.

RUDDOCK, I., 1974
Final Report to B.H.P. on the Jukes Darwin area and E.L. 13/65 S.W. Tasmania
I.N.A.L. unpub. Report

RUXTON, P.A., 1987
Jukes-Darwin E.L. 6/85 Summary of Work Done 1st Quarter, 1987.
Unpub. report to E.Z. See Appendix

SCOTT, B., 1958
Letter to Mr. G.F. Hudspeth of the Mt. Lyell Mining & Railway Company.

APPENDIX 1 – PETROLOGICAL DESCRIPTIONS OF SELECTED ROCKS.

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Central Mineralogical Services

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12th February, 1987

REPORT CMS 87/1/11

YOUR REFERENCE:	Order No. 900818
DATE RECEIVED:	15th January, 1987
SAMPLE NOS.:	Samples
SUBMITTED BY:	N. Ferguson
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

ample o.	Classification - Composition	Fabric	Accessories	Comments
6572	Sericitic Felsite. Pervasively sericite-stained felsic devitrified glass with minor intergrown quartz, thinly disseminated quartz and sericitised feldspar phenocrysts. Minor quartz veinlets.	Weakly porphyritic, incipiently banded, felsitic, with sparse sericitic foliae.	Minor chlorite, rare phenocrystal sanidine. Sparse leucoxenised opaques, rare oxidised fine pyrite.	Devitrified, moderately sericitised and incipiently sheared "rhyodacitic" glassy acid volcanic. Quartz veinlets stained with ferruginised carbonate.
6574	Sericitic Felsite. Sericitic, quartzofeld-spathic, devitrified glass with disseminated biotite-sericite-chlorite-pseudomorphed feld-spar phenocrysts, minor corroded quartz micro phenocrysts. Minor veinlets of adularia.	Analogous to 66572, relatively porphyritic.	Pervasive fine magnetite, minor leucoxenised opaques.	Similarities with 66572, but with dacitic characteristics, conspicuous fine accessory magnetite and a "K-metasomatic" alteration pattern.
6575	Sheared Felsite. Sericitic/pervasively Fe-pigmented, quartzofeldspathic, devitrified glass with a pervasive network of intersecting/ mildly displacive quartz veinlets. Sporadic late sericitic microfractures.	Similar to 66572 and 66574, but non-porphyritic and stressed/semi-mylonitised.	Fine, partly degraded primary magnetite. Films of degraded ?jarosite in quartz veinlets.	Affinities with 66572 and particularly 66574. Fe-oxide apparently biotite-derived in part.
6576	Mineralised "Breccia". Sericitic/extensively ferruginised, felsitic, quartzofeldspathic material with disseminated to semi-massive, partly oxidised pyrite, clots of green schorl and secondary quartz.	Felsitic, with irregular zones of tourmaline-quartz alteration. Stressed to brecciated/ crudely mylonitic.	Partly degraded magnetite.	Finer detail obscured by weathering and ferruginisation. Evidently a sericite-quartz-tourmaline-pyrite-altered variant of 66572, 66574, with late stress effects.
6578	Sericitic Felsite. Pervasively sericitic/ variably biotite-stained felsic devitrified glass with sparse Fe-stained clay pseudomorphs after phenocrystal feldspar and irregular ferruginous clay veinlets.	Felsitic/locally perlitic. Irregularly veined, variably stressed to locally semi-mylonitic.	Sparse leucoxenic semi-opaques; minor clots of chlorite.	Sericite is pale green(hydromuscovite?) in part. Affinities with 66572, etc.; relatively micaceous alteration pattern. Unmineralised.

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Central Mineralogical Services

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ROSEBERY / TAS. 7470

1st April, 1987

REPORT CMS 87/3/4

YOUR REFERENCE:	Order No. 900828
DATE RECEIVED:	4th March, 1987
SAMPLE NOS.:	13 Samples
SUBMITTED BY:	D. Gardner
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

REPORT CMS 87/3/4

Thirteen rock chip samples from the Mount Lyell Consols and Extended areas were received for brief petrological description. Representative thin-sections were prepared and examined with related cobaltinitrite-stained offcuts, with opaques determined in oblique incident light. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

The bulk of this suite comprises altered acid volcanics, typically felsitic-devitrified and lava-like, although interpretation will be dependent on field evidence. Compositional detail is obscured by alteration effects, although relict features are consistent with a complex of sodi-potassic rhyodacitic to rhyolitic volcanics and/or minor intrusives. Variants include agglomeratic and inferred welded tuffaceous facies.

These rocks exhibit a rather uniform alteration sequence of quartz and sericite, complexed by subsequent development of chlorite and/or dark colour-variable biotite. Magnetite and locally sulphides, typically pyrite, are associated with the sericitic assemblage, and appear replacive of primary accessory opaques, at least in part. The chlorite-biotite assemblage is relatively weakly mineralised with local concentrations of hematite and pyrite.

One rock (69022) exhibits silicification followed by tourmalinisation, with magnetite associated with both phases. A few rocks exhibit variably pyritic carbonate-chlorite-quartz assemblages, complexed by subsequent quartz-chlorite and/or carbonate-quartz veining and replacement. In sample 72230, the carbonate-chlorite-quartz assemblage appears secondary after metasomatic calc-silicates which together with the schorl in 69022 may be interpreted as marginal contact assemblages.

Individual rocks may warrant mineragraphic examination on the basis of assay data.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

054

Sample No.	Classification - Composition	Fabric	Accessories	Comments
69022 (T.S. 57510)	Tourmalinised Breccia. Clasts of fine-grained quartz rock with minor silicified feldspar phenocrysts, conspicuous fine martitised magnetite. Matrix and veinlets/marginal replacements of fine dark green schorl, martitised magnetite.	Breccia-like with vaguely felsite-textured angular clasts (<1 mm to >1 cm); schorl matrix, veinlets, replacements.	Discontinuous microscale quartz veinlets in clasts, minor matrix quartz. Secondary limonitic stainings, films.	Primarily a "rhyolitic" felsite/devitrified glass. Reflects quartz-magnetite followed by schorl-quartz-magnetite alteration; late martitisation of magnetite.
69056	Altered Felsite. Sericitised albite, minor sericite-stained sanidine phenocrysts, corroded quartz microphenocrysts in a weakly sericitic K-feldspar/minor quartz groundmass with disseminated clots of vermiculite, minor late quartz veinlets.	Porphyritic, weakly banded felsitic/trend microspherulitic, weakly perlitic.	Conspicuous fine to ultrafine partly martitised magnetite, minor leucoxenised opaques, sparse quartz-mica veinlets.	Sodi-potassic rhyolitic felsite (devitrified pitchstone); moderately sericitised, with subsequent clots of (degraded) biotite, minor quartz-mica veinlets.
69087	Altered Felsite. Oligoclase, subordinate corroded quartz, minor chloritised ferromagnesian phenocrysts, minor quartz amygdales in a K-feldspar/minor quartz, albite groundmass with sporadic clots/minor films of vermiculite, biotite and quartz.	Porphyritic/weakly flow-structured/weakly amygdaloidal; semi-felsitic to weakly micrographic.	Conspicuous fine to ultrafine magnetite, minor leucoxenic semi-opaques.	Exhibits rhyodacitic compositional characteristics. Alteration analogous to 69056, but with accessory chlorite. Magnetite apparently primary opaque-replacive in part.
69205	Altered Felsite. Fine to microcrystalline K-feldspar, quartz and albite in varying proportions with pervasive chlorite, sporadic late clots and discontinuous microscopic films of sericite.	Weakly (albitised feldspar) porphyritic, felsitic, with a semi-mylonitic shearing overprint.	Minor martite, magnetite, leucoxenised opaques. Rare films of vermiculitic biotite, with traces of quartz and barite.	"Rhyodacitic" felsitic pitchstone reflecting albite-quartz(-biotite-barite) alteration with subsequent chloritisation and late sericitic shearing phases.
69214	Altered Felsite. Sericite-pseudomorphed feldspar phenocrysts, corroded quartz microphenocrysts in a matrix of sericitised feldspar and subordinate quartz. Minor sericitic quartz veinlets, late sericitic microfractures.	Analogous to 69056, slightly coarser-grained. Incipiently stressed.	Minor partly degraded magnetite, sparse leucoxenic opaques. Traces of chlorite in sericitic veinlets, aggregates.	Relict features similar to 69056. In comparison, this rock exhibits marked and pervasive sericite-quartz alteration.
69581	Altered Felsite. Sericite- and minor quartz-pseudomorphed feldspar phenocrysts, minor corroded quartz microphenocrysts in a groundmass of weakly sericitic K-feldspar, subordinate quartz, minor albite laths.	Similar to 69056 and 69214.	Conspicuous fine magnetite, minor leucoxenised opaques. Minor microscale discontinuous quartz and sericite veinlets.	Exhibits affinities with 69056, 69214. Massive sericite aggregates are pale green. Alteration similar to 69214, but less advanced.
66594	Altered Basalt. Cloudy microcrystalline albite (± chlorite) pseudomorphed feldspar, subordinate chloritised ferromagnesian phenocrysts in a chlorite-mesostasised albitised, chlorite-stained, feldspar-microlathic groundmass.	Coarsely porphyritic/trend glomero-porphyritic, flow-structured, basaltic.	Minor clots of sericite. Fine primary Cr-spinel and leucoxenised opaques.	Interpreted as basalt on relict textural grounds, but possibly strictly andesitic. Exhibits lava-type characteristics, marked/pervasive chlorite-albite alteration.
72230	Carbonate-Chlorite-Quartz Rock. Cloudy microcrystalline ankeritic carbonate with subordinate to minor chlorite and microgranular quartz. Disseminated clots of magnetite. Sporadic carbonate and chlorite-quartz veinlets.	Variable, massive to breccia-like, with irregular displacive veinlets, minor late chloritic microfractures.	Disseminations of fine-grained, variably chloritised colourless garnet ("grossular-andradite").	Exhibits carbonate-chlorite-quartz-altered calc-silicate characteristics; primarily a garnetiferous ?actinolite rock, possibly a metasomatised volcanic.

88205

Sample No.	Classification - Composition	Fabric	Accessories	Comments
72231	Altered Agglomerate. Clasts of quartz-sericite-altered to semi-selectively sericitised "rhyolitic" felsite, minor quartz grains, crystals/crystal fragments, minor chert clasts. Sericite matrix. Semi-pervasive Fe-stainings.	Randomly sorted, angular to subangular, sericite-matrixed clastic. Incipiently sheared.	Oxidised/leucoxenised opaques. Minor traces oxidised pyrite, traces degraded/ferruginised carbonate.	Thoroughly sericite-quartz-altered rhyolitic agglomerate with minor xenolithic clasts of chert. Clasts are texturally variable, but compositionally uniform.
72232	Altered Breccia. Clasts of microcrystalline carbonate-quartz ± chlorite rock with disseminated pyrite. Variably chloritic, fine to micorcrystalline quartz matrix. Sporadic siderite-quartz veinlets.	Random, angular, sub-millimetric to centimetric clasts; corrosive/replacive quartz matrix.	Traces galena, magnetite, rare ?gold in pyritic clasts, traces hematite in late siderite-quartz veinlets.	Clasts largely featureless/indeterminate, but include lithic-tuffaceous types. Alteration sequence is ankerite-quartz-sulphide/quartz-chlorite/siderite-quartz.
72233	Impure Chert. Ultrafine microgranular quartz with minor but pervasive sericite; minor fine silt-sized clastic quartz grains. Disseminations, crude lenses, and minor quartz veinlet-marginal concentrations of fine oxidised pyrite.	Massive to crudely lenticularly banded (pyrite distribution). Incipiently sheared.	Rare clastic white mica flakes. Late secondary limonitic microfractures.	Primarily an impure (argillaceous) chert with disseminated syngenetic pyrite and minor pyritic cherty quartz veinlets ("diagenetic"). Incipiently sheared; unaltered.
72234	Altered Tuff. Sericite and quartz in varying proportions, with disseminated relics of phenocrystal albite and sanidine-anorthoclase. Sporadic veinlets and replacive clots of chlorite. Disseminated pyrite.	Felsitic, flow-brecciated, lava-like, with sporadic eutaxite, fiamme-structured clasts; displacive chlorite veinlets.	Leucoxenised opaques; irregular quartz replacements with clots of sericite, minor pyrite.	Flow-brecciated, rhyodacitic, welded tuffaceous characteristics partly obscured by pervasive quartz-sericite(-pyrite) alteration and late chloritic fractures.
72235 (T.S. 57522)	Altered Felsite. Sericite and variably sericite-stained quartz with thinly disseminated sericite-pseudomorphed feldspar phenocrysts, corroded quartz microphenocrysts. Minor veinlets of quartz, green biotite, hematite and pyrite.	Analogous to 69056, 69214, 69581.	Conspicuous partly degraded magnetite, minor leucoxenised opaques. Minor replacive clots of dark biotite.	Affinities with 69056 etc. Quartz-sericite-altered with late clots of biotite, veinlet of quartz, biotite, hematite and disseminated pyrite.

056

882057

Central Mineralogical Services

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

FAX. 08-363 1820

Mr. I. Mathison
Senior Geologist
Mineral Resources Division
Electrolytic Zinc Co. of
Australasia Ltd.
P.O. Box 21
ROSEBERY / TAS. 7470

15th April, 1987

REPORT CMS 87/3/22

YOUR REFERENCE:	Order No. 900830
DATE RECEIVED:	24th March, 1987
SAMPLE NOS.:	10 Samples
SUBMITTED BY:	D. Gardner
WORK REQUESTED:	Petrology

H.W. Fander, M.Sc.

057

882058

REPORT CMS 87/3/22

Ten rock chip samples from the vicinity of Adit Knob in the Upper Lake Jukes area were received for petrological examination. Representative thin-sections were prepared, examined in transmitted light and together with respective offcuts in oblique incident light, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises mainly altered rhyolitic volcanics supplemented by a rhyolite-derived conglomeratic sediment (72002) and a relatively altered, vaguely silty vitroclastic sediment (72047) interpreted as a pelitic ash.

Acid volcanics are dominantly lavas, but include subordinate tuffs, particularly ignimbritic types, and possibly, dependent on field evidence, minor intrusives (notably sample 72057). The bulk of these rocks may be categorised as biotite rhyolites and thus represent a semi-distinctive facies within the more typically intermediate to acid Mt. Read Volcanics.

Biotite rhyolites occur both east and west of, in addition to within the Adit Knob area, and there is thus no petrological evidence in support of subdivision of the volcanic sequence in this area, at least as sampled and examined.

Alteration features are rather consistent. Rhyolites invariably exhibit marked and pervasive sericitic alteration with development of secondary sericite ± quartz assemblates, locally enhanced by mild regional metamorphic effects. Overprinted on the sericitic phase is a partly vein-controlled Fe-chlorite (locally biotite)/Fe-oxide (hematite ± magnetite) assemblage analogous to that in the Lyell Consols/Extended area (CMS 87/3/4), which is relatively marked in the Adit Knob samples. This phase may include accessory quartz and at least locally barite (72047), but is sulphide-deficient, at least in the samples examined. A similar but relatively siliceous and Fe-oxide deficient vein assemblage may be developed elsewhere (72002), and rocks carrying accessory carbonate and epidote may represent a marginal variant (72060).

Given the geological similarity and similarly pervasive sericitic alteration on Adit Knob and in flanking areas, the prominence of Adit Knob presumably reflects a relative incidence of the overprinting chlorite-hematite-magnetite assemblage, possibly enhanced by secondary ferruginisation.

Relatively massive sericite aggregates (e.g. pseudomorphs after feldspar phenocrysts) tend to greenish colourations mesoscopically. Pinkish mottlings in sericitised volcanics are largely due to conspicuous very fine primary opaques. These combined colour effects may be confused with chlorite-altered facies which, in detail, appear to exhibit a rather limited distribution.

Stereobinocular examination of thin-sections and offcuts revealed no detectable Au- or sulphide mineralisation. Individual samples may warrant mineragraphic examination on the basis of assay data.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

058

Sample No.	Classification - Composition	Fabric	Accessories	Comments
72001 (T.S. 57640)	Altered Biotite Rhyolite. Sericite with subordinate variably sericite-stained, fine to microcrystalline quartz. Frequent sericite-pseudomorphed feldspar-, subordinate relict corroded quartz-, and sericitised biotite phenocrysts.	Weakly sheared/slightly phyllitic. Relict strongly porphyritic/weakly flow-structured felsic (devitrified).	Conspicuous fine to ultrafine oxidised/leucoxenised primary opaques. Minor sericitised xenoliths (cognate).	Primarily a rhyolitic pitchstone (porphyritic glass), flow-structured and weakly flow-brecciated. Thoroughly sericitised/mildly silicified and weakly sheared.
72002	Altered Volcanomict Grit. Clasts of sericitised/locally chlorite-stained rhyolitic lava, minor impure chert clasts and mildly abraded volcanic quartz grains. Sericite-quartz cement. Irregular veins/veinlets of quartz and Fe-chlorite (partly ferruginised).	Poorly sorted, subangular to subround, gritty to plebbly clastic. Irregularly stressed veins, veinlets.	Partly degraded primary magnetite and leucoxenised opaques in altered lava clasts. Minor clastic magnetite.	Rhyolite-derived conglomeratic sediment. Exhibits sericitic and subsequent vein-related quartz-chlorite alteration. Fe-staining reflects weathering of chlorite aggregates.
72020	Altered Rhyolitic "Tuff". Clasts of sericite (-quartz)-altered, quartz-porphyritic rhyolitic lava, disseminated to conspicuous quartz crystal fragments. Sparse sericite matrix. Irregular clots and films of Mg-chlorite, degraded fine to ultrafine hematite.	Poorly sorted (psammite to agglomerate grade), partly moulded lithoclastic. Variably finely fractured/ veined.	Partly degraded primary and secondary (chloritic-hematitic veinlet-related) magnetite. Minor leucoxenised opaques.	Rhyolitic agglomeratic fragmental, possibly a mass flow breccia. Finer detail obscured by pervasive sericitic alteration, with subsequent chlorite-hematite-magnetite veinlets, impregnations.
72033	Altered Rhyolite. Abundant variably corroded quartz, extensively sericitised albite and K-feldspar, minor sericitised biotite phenocrysts, sporadic sericitic, rhyolitic and pelitic xenoliths. Sericite matrix.	Phyllitic/crudely banded. Relict strongly porphyritic/weakly xenolithic with a vaguely eutaxite-microtextured	Conspicuous leucoxenised opaques. Sparse very fine zircons. Minor sericite matrix. veinlets.	Extensively sericitised, weakly quartzose-sericitic siltstone/silty shale-xenolithic rhyolite. Lava-like, but vague relict microtextural features consistent with a welded vitric-crystal tuff.
72034	Altered Biotite Rhyolite. Frequent corroded quartz, sericitised feldspar and hematite-stained sericite pseudomorphs after biotite phenocrysts in a matrix of sericite and sericitic microcrystalline quartz. Sporadic sericite veinlets.	Strongly porphyritic/microfelsitic (devitrified). Irregular veinlets; mildly sheared sericite veinlets, aggregates.	Conspicuous very fine partly degraded primary opaques. Minor leucoxenised opaques.	Thoroughly sericitised biotite-rhyolitic lava. Compositional affinities with 72001 and 72033. Primarily relatively ("oxy"-)biotitic in comparison.
72045	Altered Rhyolite. Disseminated variably quartz-pseudomorphed to clay (?vermiculite)-stained sanidine phenocrysts, minor quartz microphenocrysts in a sericite/microcrystalline quartz matrix. Irregular veinlets/aggregates of degraded ?chlorite, very fine	Weakly/finely porphyritic; weakly microspherulitic. Incipiently sheared.	Partly degraded fine primary opaques, minor leucoxenised opaques. Minor relics of sanidine. hematite.	Primarily a potassic, biotite-free subvitric rhyolite. Alteration pattern closely analogous to that developed in 72020.
72047	Sericite-Quartz-Magnetite Rock. Sericite and ultrafinely intergrown quartz with pervasively disseminated partly degraded fine-grained magnetite. Crosscutting vein of hematite, minor degraded ?biotite and quartz with films of barite.	Featureless to weakly banded, vaguely silty vitroclastic host rock (incipiently phyllitic). Microfractured/barite-healed vein.	Minor microscale, high discontinuous quartz veinlets. Traces carbonate (inclusions in vein-quartz).	Apparently primarily a pelitic vitric ash. Sericite-quartz-altered. Subsequently hematite-quartz-biotite-veined/extensively impregnated with magnetite. Weakly fractured/barite-healed.
72055	Rhyolitic Tuff. Crypto- to microcrystalline quartz and partly degraded (kaolinised) sericite in varying proportions with frequent relict quartz phenocrysts and crystal fragments. Irregular zones of ultrafine Fe-pigmentation.	Randomly sorted/structured psammite-grade, lithic-vitric-crystal tuffaceous. Crosscutting displacive sericitic microfractures.	Fine to ultrafine leucoxenised opaques. Minor sericitised biotite flakes.	Thoroughly quartz-sericite-altered biotite-rhyolitic lithic-vitric-crystal tuff. Exhibits ignimbritic characteristics partly obscured by displacive microfractures.

882059

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
72057	Altered Biotite Rhyolite. Sericite-pseudomorphed feldspar-, hematitic sericitised biotite-, minor corroded quartz phenocrysts. Groundmass of sericitised feldspar microlaths in poikilitic/anhedral quartz. Sporadic sericite veinlets.	Porphyritic, semi-micrographic. Weakly sheared with phyllitic-microtextured veinlets.	Conspicuous fine, partly degraded primary opaques, minor leucoxenised opaques.	Thoroughly sericitised biotite-rhyolitic lava or minor intrusive. Phenocrystal biotite was a high Fe ("oxy"-) variety. Similarities with 72034; similarly altered.
72060 (T.S. 57649)	Altered Rhyolite. Abundant quartz-, extensively sericitised albite-, minor sericitic K-feldspar phenocrysts, sparse sericite-calcite-altered basaltic-andesitic lava clasts. Sericite/crypto- to microcrystalline quartz matrix.	Very similar to 72033. Similarly vaguely relict eutaxitic matrix.	Conspicuous leucoxenised opaques. Sparse sericitised/carbonated biotite flakes. Minor clots of chlorite, epidote.	Close affinities with 72033. Main contrast is presence of sparse basaltic-andesitic xenolithic lava clasts. Similarly altered, but with accessory carbonate, chlorite, epidote.

APPENDIX 2 — GEOCHEMICAL RESULTS

ANALABS

882062

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 27.1.08.04568

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900849	Jokes/DARWIN.

DATE RECEIVED	RESULTS REQUIRED
30/06/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	14/07/87	1	68

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SC Prep: 006,010,011,012,013,016							Cu,Pb,Zn,Ag/103		
	Various	SC							Au/309		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

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882063

062

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04588	14/07/87	900849	1 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au
1	66808	20	5	100	<0.5	<0.008
2	66809	15	20	120	<0.5	<0.008
3	66810	25	30	130	<0.5	<0.008
4	66811	25	10	140	<0.5	<0.008
5	66812	20	10	110	<0.5	<0.008
6	66813	15	<5	60	<0.5	<0.008
7	66814	15	20	360	<0.5	<0.008
8	66815	10	<5	75	<0.5	<0.008
9	66816	20	175	640	0.5	<0.008
10	66817	10	75	140	0.5	<0.008
11	66818	15	10	140	1.5	<0.008
12	66819	45	450	840	1.5	<0.008
13	66820	115	60	360	1.0	<0.008
14	66821	20	40	170	0.5	<0.008
15	66822	35	15	160	<0.5	<0.008
16	66823	205	60	190	1.5	<0.008
17	66824	300	<5	230	1.0	<0.008
18	66825	295	<5	270	0.5	<0.008
19	66826	105	5	220	0.5	<0.008
20	66827	45	190	230	0.5	<0.008
21	66828	20	10	140	0.5	<0.008
22	66829	30	5	140	<0.5	<0.008
23	66830	20	25	80	0.5	<0.008
24	66831	35	5	100	0.5	<0.008
25	66832	100	5	180	1.0	<0.008

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

AUTHORISED OFFICER

063

ANALABS

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882064

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04588	14/07/87	900849	2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au				
1	66833	110	10	200	0.5	<0.008				
2	66834	35	10	170	1.5	<0.008				
3	66835	30	5	185	0.5	<0.008				
4	66836	45	10	175	1.0	<0.008				
5	66837	170	10	90	1.0	<0.008				
6	66838	370	85	150	2.0	0.008				
7	66839	330	95	130	1.5	0.008				
8	66840	110	215	145	1.0	0.008				
9	66841	100	10	105	0.5	<0.008				
10	66842A	67	5	145	0.5	<0.008				
11	66842B	85	20	200	0.5	<0.008				
12	66843	90	10	135	1.0	0.008				
13	66844	190	10	80	1.0	0.025				
14	66845	110	10	150	1.0	<0.008				
15	66846	50	10	155	0.5	<0.008				
16	66847	200	15	165	1.0	0.008				
17	66848	155	70	140	0.5	0.008				
18	66849	90	5	70	<0.5	<0.008				
19	66850	25	5	55	0.5	0.008				
20	66851	30	10	65	1.0	<0.008				
21	66852	55	10	90	0.5	0.008				
22	66853	15	10	55	1.0	0.008				
23	66854	15	5	70	0.5	<0.008				
24	66855	20	10	60	<0.5	<0.008				
25	66856	60	5	65	0.5	<0.008				

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

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064

ANALABS

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882065

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04588	14/07/87	900849	3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au
1	66857	50	5	60	0.5	<0.008
2	66858	50	530	475	1.5	<0.008
3	66859	55	75	350	1.5	0.008
4	66860	25	120	385	1.5	<0.008
5	66861	20	210	740	2.0	0.008
6	66862	70	395	800	9.0	<0.008
7	66863	2200	535	285	17.5	0.050
8	66864	40	210	650	1.0	<0.008
9	66865	310	<5	65	1.0	0.008
10	66866	140	30	95	0.5	0.008
11	66867	190	5	50	1.0	<0.008
12	66868	1250	10	50	0.5	<0.008
13	66869	190	10	60	0.5	<0.008
14	66870	1550	30	60	1.0	0.032
15	66871	1550	10	55	1.0	0.017
16	66872	280	<5	70	1.0	0.008
17	66873	720	5	65	0.5	<0.008
18	66874	1450	100	260	1.0	<0.008
19						
20						
21						
22						
23	DETECTION	5	5	5	0.5	0.008
24	UNITS	PPM	PPM	PPM	PPM	PPM
25	METHOD	103	103	103	103	309

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

AUTHORISED OFFICER

065

ANALABS

882066

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 27.1.08.04399

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900834	Jukes-Darwin

DATE RECEIVED	RESULTS REQUIRED
09/04/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	08/05/87	1	26

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	PU							Ag,Cr,Mo,Bi,Co/103,As/114		
	Various	PU							Se/115,Te/116,Sb/117,Hg/121,Ba,W/401,Tl,Sn,S/40		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

066

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

882067

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04399	08/05/87	900834	1 OF 4

TUBE No.	SAMPLE No.	S	Cr	Co	As	Se	Mo	Ag	Sn	Sb
1	66574	0.02	120	20	1	0.15	60	1.0	55	1.0
2	66576	1.90	225	140	5	0.10	50	3.5	50	1.0
3	66578	<0.01	375	<5	7	0.05	65	<0.1	<3	0.4
4	69001	0.01	60	15	160	0.10	15	<0.1	<3	0.4
5	69103	1.35	500	10	67	0.45	130	<0.1	5	0.2
6	69104	4.95	445	35	260	0.25	120	0.5	3	0.8
7	69108	0.17	315	10	250	0.10	90	2.0	<3	0.4
8	69114	0.07	145	10	90	<0.05	20	1.5	3	1.0
9	69122	3.20	320	20	170	0.10	60	0.5	7	0.4
10	69143	<0.01	190	15	6	<0.05	40	<0.1	4	0.4
11	69160	<0.01	80	15	6	<0.05	10	<0.1	<3	0.4
12	69201	0.44	85	20	20	<0.05	10	<0.1	25	0.4
13	69235	1.85	550	20	210	<0.05	130	2.5	<3	0.4
14	69236	0.41	80	15	520	0.10	15	0.5	6	1.0
15	69259	3.55	950	30	41	<0.05	210	11.5	<3	0.4
16	69273	0.01	120	15	7	0.05	30	<0.1	<3	0.4
17	69527	0.01	130	15	420	0.15	25	0.5	<3	1.0
18	69594	0.02	130	15	7	<0.05	35	<0.1	<3	0.4
19	72004	1.05	235	30	5	<0.05	10	38.0	20	0.8
20	72005	0.03	35	20	4	<0.05	20	1.5	7	1.0
21	72024	0.01	15	20	7	<0.05	15	<0.1	40	0.4
22	72047	4.40	55	15	2	<0.05	10	121.0	6	0.4
23	72062	1.75	30	15	140	<0.05	20	3.0	<3	1.0
24	72083	0.10	15	135	38	<0.05	20	0.5	470	1.2
25	72103	11.30	150	15	7	0.05	15	9.5	3	0.4

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

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

882068

067

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04399	08/05/87	900834	2 OF 4

TUBE No.	SAMPLE No.	S	Cr	Co	As	Se	Mo	Ag	Sn	Sb
1	72228	0.05	110	40	5	0.05	85	<0.1	85	1.0
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.01	5	5	1	0.05	5	0.1	3	0.2
24	UNITS	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	603	103	103	114	115	103	103	402	117

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

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

882069

ANALYTICAL DATA

068 SAMPLE PREFIX | REPORT NUMBER: 27.1.08.04399 | REPORT DATE: 08/05/87 | CLIENT ORDER No.: 900834 | PAGE: 3 OF 4

TUBE No.	SAMPLE No.	Te	Ba	W	Hg	Tl	Bi			
1	66574	0.1	510	490	0.005	<0.5	40			
2	66576	0.5	390	85	0.015	<0.5	10			
3	66578	<0.1	25	15	0.005	<0.5	<5			
4	69001	<0.1	680	<10	0.015	1.0	10			
5	69103	<0.1	630	30	0.005	0.5	10			
6	69104	0.5	1150	<10	0.005	<0.5	20			
7	69108	<0.1	1150	20	<0.005	<0.5	<5			
8	69114	<0.1	640	<10	0.020	<0.5	<5			
9	69122	0.3	1350	20	1.750	1.0	15			
10	69143	<0.1	2200	10	0.015	<0.5	5			
11	69160	<0.1	1400	<10	0.020	0.5	<5			
12	69201	<0.1	750	20	0.015	<0.5	5			
13	69235	<0.1	1850	30	0.015	1.0	35			
14	69236	<0.1	2350	<10	0.020	1.0	30			
15	69259	<0.1	470	40	0.055	0.5	25			
16	69273	<0.1	1550	30	0.005	0.5	5			
17	69527	<0.1	1450	20	0.015	<0.5	415			
18	69594	<0.1	1750	15	0.035	0.5	10			
19	72004	0.1	4050	30	4.200	<0.5	25			
20	72005	0.1	770	35	0.035	<0.5	10			
21	72024	0.3	1050	45	0.005	<0.5	10			
22	72047	<0.1	1100	<10	0.450	<0.5	10			
23	72062	<0.1	580	<10	0.075	<0.5	10			
24	72083	0.6	110	240	0.005	<0.5	15			
25	72103	<0.1	1900	<10	0.015	<0.5	55			

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

AUTHORISED OFFICER

069

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

882070

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04399	08/05/87	900834	4 OF 4

TUBE No.	SAMPLE No.	Te	Ba	W	Hg	Tl	Bi			
1	72228	0.8	390	85	0.015	<0.5	10			
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.1	10	10	0.005	0.5	5			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM			
25	METHOD	116	401	401	122	135	103			

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

AUTHORISED OFFICER

070

ANALABS

882071

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 27.1.08.04354

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900832	J-Darwin

DATE RECEIVED	RESULTS REQUIRED
26/03/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	13/04/87	1	90

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REJECTS RETAINED	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RD	Prep: 006,010,011,012,013,018						Cu,Pb,Zn,Fe,Mn/103		
	Various	RD							Au/309		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

071

882072

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04354	13/04/87	900832	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72194	40	90	210	2.05	670	<0.008			
2	72195	10	110	285	1.95	750	<0.008			
3	72196	20	90	320	1.85	970	<0.008			
4	72197	10	25	205	1.80	660	<0.008			
5	72236	5	<5	30	1.05	80	0.040			
6	72237	10	275	155	2.20	590	<0.008			
7	72238	5	<5	55	2.30	65	<0.008			
8	72239	40	<5	45	2.40	50	0.008			
9	72240	65	35	90	9.10	70	0.008			
10	72241	50	15	115	6.85	155	<0.008			
11	72242	25	<5	80	3.90	130	<0.008			
12	72243	25	<5	85	4.15	140	<0.008			
13	72244	20	10	160	5.50	320	<0.008			
14	72245	10	45	95	2.70	150	<0.008			
15	72246	5	130	110	2.90	205	<0.008			
	72247	5	225	440	7.65	375	<0.008			
17	72248	5	530	350	5.55	760	<0.008			
18	72249	20	<5	95	3.40	65	<0.008			
19	72250	5	<5	150	3.70	160	<0.008			
20	72251	10	<5	65	6.80	180	0.008			
21	72252	5	<5	45	1.85	255	<0.008			
22	72253	25	<5	80	2.70	295	<0.008			
23	72254	5	<5	75	2.50	255	<0.008			
24	72255	<5	<5	50	1.50	80	<0.008			
25	72256	5	<5	30	1.80	145	<0.008			

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

AUTHORISED OFFICER

072

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882073

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04354	13/04/87	900832	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72257	5	<5	50	2.20	110	<0.008			
2	72258	5	<5	25	1.15	45	<0.008			
3	72259	30	<5	50	3.40	125	<0.008			
4	72260	15	<5	45	2.25	110	<0.008			
5	72261	5	<5	30	1.80	110	<0.008			
6	72262	<5	<5	20	1.80	90	0.008			
7	72263	30	35	225	2.45	790	<0.008			
8	72264	10	<5	105	2.80	700	<0.008			
9	72265	60	20	85	2.40	780	<0.008			
10	72266	15	<5	115	3.15	525	<0.008			
11	72267	65	<5	130	5.40	895	0.017			
12	72268	5	<5	70	2.15	520	<0.008			
13	72269	10	95	235	1.95	675	<0.008			
14	72270	5	<5	80	1.75	445	<0.008			
15	72271	5	<5	55	2.25	740	<0.008			
	72272	40	<5	110	3.15	885	0.008			
17	72273	20	25	65	1.60	530	<0.008			
18	72274	10	25	80	1.60	355	<0.008			
19	72276	400	30	215	3.50	915	0.017			
20	72301	55	115	225	2.70	795	<0.008			
21	72302	110	20	220	3.45	1450	<0.008			
22	72303	185	235	200	3.35	1600	0.008			
23	72304	420	30	180	3.60	1000	0.008			
24	72305	1010	20	210	5.35	1030	0.017			
25	72306	855	95	235	3.95	1045	0.032			

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

AUTHORISED OFFICER

073

882074

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04354	13/04/87	900832	3 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72307	375	25	220	2.80	930	0.008			
2	72308	845	1400	255	2.75	1550	0.092			
3	72309	970	20	240	3.05	1950	0.100			
4	72310	18000	20	440	5.05	2650	1.760			
5	72311	1250	15	440	6.30	2300	1.150			
6	72312	790	15	330	4.60	1950	0.083			
7	72313	855	40	375	5.60	2200	0.032			
8	72314	840	1850	350	6.40	3950	0.032			
9	72315	400	50	210	3.15	1850	0.246			
10	72316	1450	115	265	4.80	2750	0.025			
11	72317	255	10	195	3.00	745	<0.008			
12	72318	740	25	230	3.65	615	0.017			
13	72319	1650	10	310	2.95	13000	<0.008			
14	72320	955	15	30	3.65	780	0.158			
15	72321	695	15	270	3.00	2050	0.008			
	72322	305	15	260	2.25	2250	0.008			
17	72323	40	10	155	1.85	1400	<0.008			
18	72324	35	20	150	1.85	1650	<0.008			
19	72325	390	10	205	3.15	1700	0.025			
20	72326	365	5	210	3.80	1550	0.008			
21	72327	4200	10	765	9.85	6600	7.350			
22	72328	870	230	250	4.50	1200	0.167			
23	72329	230	20	220	2.85	1030	0.050			
24	72330	935	5	275	4.30	1600	0.040			
25	72331	710	20	270	4.55	1200	0.100			

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

AUTHORISED OFFICER

882075

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04354	13/04/87	900832	4 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72332	1450	80	300	5.90	1950	0.050			
2	72333	1025	115	405	7.20	5450	0.058			
3	72334	1350	100	370	4.90	2800	0.032			
4	72335	830	10	325	5.25	1650	0.040			
5	72336	1200	15	400	5.60	1350	0.075			
6	72337	1800	10	610	5.95	4750	0.017			
7	72338	565	10	250	2.90	1150	0.008			
8	72339	780	40	240	2.60	850	<0.008			
9	72340	2450	15	230	3.90	595	0.083			
10	72341	5700	<5	300	5.55	580	0.167			
11	72342	1150	<5	255	3.45	850	0.008			
12	72343	1010	10	285	3.05	805	0.025			
13	72344	1950	10	320	3.45	5350	0.017			
14	72345	580	<5	225	3.85	870	0.017			
15	72346	1300	135	240	3.35	4000	0.050			
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.05	5	0.008			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM			
25	METHOD	103	103	103	103	103	309			

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

AUTHORISED OFFICER

075

882076

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 27.1.08.04276

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900827	J-Darwin

DATE RECEIVED	RESULTS REQUIRED
26/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	16/03/87	1	46

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RO Prep: 008,010,012,014,017							Cu,Pb,Zn,Fe,Mn/103		
	Various	RO							Au/309		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

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882077

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04276	16/03/87	900827	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72001	5	30	25	2.10	65	<0.008			
2	72002	30	95	130	3.90	360	<0.008			
3	72003	165	20	145	3.50	530	<0.008			
4	72004	34500	75	180	18.00	440	1.520			
5	72005	1800	160	270	4.90	1850	0.333			
6	72006	475	140	125	2.60	1300	0.032			
7	72007	545	45	230	5.35	1250	0.017			
8	72009	45	20	30	1.45	70	<0.008			
9	72010	10	5	50	2.05	95	<0.008			
10	72011	185	<5	20	12.50	30	0.025			
11	72012	85	10	35	1.80	105	<0.008			
12	72013	50	20	40	2.20	65	0.008			
13	72014	25	15	65	3.70	60	<0.008			
14	72015	55	20	50	2.55	35	<0.008			
15	72016	50	15	50	6.40	65	0.008			
16	72017	40	20	45	1.90	50	<0.008			
17	72019	20	<5	50	1.65	15	0.032			
18	72020	160	45	130	3.45	710	0.017			
19	72023	30	80	115	2.05	800	<0.008			
20	72024	90	65	165	6.85	465	0.083			
21	72025	20	45	115	2.00	790	<0.008			
22	72026	10	125	190	2.05	795	<0.008			
23	72030	10	70	120	1.95	660	0.008			
24	72033	20	85	205	1.70	600	<0.008			
25	72034	70	<5	10	1.50	20	<0.008			

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

AUTHORISED OFFICER

882078

077

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04276	16/03/87	900827	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72036	40	<5	45	2.05	80	<0.008			
2	72037	<5	<5	30	1.45	330	<0.008			
3	72039	5	<5	55	1.40	95	<0.008			
4	72040	5	20	45	1.40	190	<0.008			
5	72041	10	40	80	1.85	325	<0.008			
6	72043	10	35	160	2.00	585	<0.008			
7	72044	255	35	590	8.60	2400	0.008			
8	72045	195	60	205	5.40	810	0.032			
9	72046	180	40	240	6.00	895	0.017			
10	72047	170000	35	120	7.90	220	0.317			
11	72050	740	<5	65	1.90	360	<0.008			
12	72051	165	130	225	1.85	750	<0.008			
13	72052	35	90	195	2.00	745	<0.008			
14	72053	50	10	140	2.80	410	0.008			
15	72054	15	15	105	1.90	275	<0.008			
16	72055	5	<5	25	1.35	95	<0.008			
17	72056	25	<5	145	2.10	235	<0.008			
18	72057	350	<5	150	3.45	560	0.040			
19	72058	545	10	210	4.50	960	0.017			
20	72059	25	65	165	2.10	725	0.008			
21	72060	15	70	90	1.85	815	0.008			
22										
23	DETECTION	5	5	5	0.05	5	0.008			
24	UNITS	PPM	PPM	PPM	%	PPM	PPM			
25	METHOD	103	103	103	103	103	309			

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

AUTHORISED OFFICER

078

882079

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 27.1.08.04265

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900826	J-Darwin

DATE RECEIVED	RESULTS REQUIRED
25/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	19/03/87	1	64

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	PC Prep: 004							Au/309,Wgh,Sink,TBE/199		
	Various	PC Prep: 004							Au/309,Wgh,Sink,TBE/199		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER A. J. Scott

C 079

882080

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04265	19/03/87	900826	1 OF 3

TUBE No.	SAMPLE No.	Au	IntWt	Sink%	SinkW					
1	69172 + >	1.620	16.42	10.35	1.70					
2	69177	<0.008	16.08	7.34	2.19					
3	69180	10.330	19.75	2.04	2.04					
4	69184	<0.008	23.11	3.55	0.82					
5	69186	<0.008	21.20	4.67	0.99					
6	69190	<0.008	15.38	2.80	0.43					
7	69192	<0.008	23.91	3.47	0.83					
8	69195	<0.008	23.62	3.01	0.71					
9	69198 + >	5.310	53.03	3.73	1.98					
10	69529	<0.008	18.49	0.76	0.14					
11	69532	0.640	39.20	1.99	0.78					
12	69534	<0.008	46.10	0.98	0.45					
13	69538	<0.008	21.15	1.89	0.40					
14	69540	30.040	25.54	3.60	0.92					
15	69544	0.190	19.14	7.00	1.34					
16	69546	<0.008	30.82	0.91	0.28					
17	69549	0.300	41.53	21.98	9.13					
18	69554	0.160	39.29	24.33	9.56					
19	69557	0.180	44.58	47.78	21.30					
20	69560	0.340	36.59	5.99	2.19					
21	69565	0.020	35.62	60.16	21.43					
22	69570	<0.008	29.22	3.18	0.93					
23	69573	1.690	27.50	4.29	1.18					
24	69577	0.230	15.26	14.29	2.18					
25	69580	<0.008	29.64	4.39	1.30					

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

AUTHORISED OFFICER

030

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882081

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04265	19/03/87	900826	2 OF 3

TUBE No.	SAMPLE No.	Au	IntWt	Sink%	SinkW					
1	69583	<0.008	32.47	2.37	0.77					
2	69586	0.640	30.01	5.20	1.56					
3	69590	<0.008	1.08	2.78	0.03					
4	69593	2.740	31.30	4.66	1.46					
5	69596	<0.008	4.83	3.73	0.18					
6	72068 +b	1.360	59.89	9.52	5.70					
7	72074	<0.008	46.00	2.70	1.24					
8	72076	<0.008	59.47	0.82	0.49					
9	72106	<0.008	92.08	1.68	1.55					
10	72111	0.140	146.38	2.40	3.52					
11	72117	0.050	79.51	5.92	4.71					
12	72119	<0.008	125.95	8.03	10.11					
13	72124	<0.008	69.65	2.46	1.71					
14	72126	0.480	64.43	13.80	8.89					
	72130	0.070	78.10	4.25	3.32					
16	72134	<0.008	113.33	0.79	0.89					
17	72136	<0.008	73.50	0.68	0.50					
18	72141	<0.008	23.30	1.93	0.45					
19	72149	<0.008	164.72	0.35	0.58					
20	72152	<0.008	138.37	0.59	0.82					
21	72162	<0.008	113.86	0.42	0.48					
22	72165	<0.008	145.31	0.83	1.20					
23	72168	<0.008	183.67	1.68	3.08					
24	72171	<0.008	104.72	1.70	1.78					
25	72173	<0.008	149.80	0.34	0.51					

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

AUTHORISED OFFICER

081

882082

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04265	19/03/87	900826	3 OF 3

TUBE No.	SAMPLE No.	Au	IntWt	Sink%	SinkW					
1	72177	<0.008	195.23	0.83	1.62					
2	72180	<0.008	110.73	1.72	1.90					
3	72184	<0.008	40.47	6.97	2.82					
4	72185	0.910	64.40	0.84	0.54					
5	72189	<0.008	36.99	6.73	2.49					
6	72191	<0.008	36.19	7.57	2.74					
7	72193	<0.008	60.62	5.13	3.11					
8	72206	4.340	41.94	13.56	5.69					
9	72209	<0.008	18.84	3.08	0.58					
10	72212	<0.008	6.91	3.91	0.27					
11	72215	2.890	14.24	26.05	3.71					
12	72219	<0.008	2.59	1.54	0.04					
13	72221	<0.008	21.36	3.84	0.82					
14	72225	<0.008	28.38	10.32	2.93					
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.008	0.01	0.01	0.01					
24	UNITS	PPM	–	–	–					
25	METHOD	309	1830	1830	1830					

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

AUTHORISED OFFICER

082

ANALABS

882083

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 27.1.08.04264

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900825	J-Darwin

DATE RECEIVED	RESULTS REQUIRED
25/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	17/03/87	1	66

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SS	Prep: 006,007,013						Cu,Pb,Zn,Fe,Mn,Ag/103,Cu,Pb,Zn,Fe,Mn,Ag/102		
	Various	SS							Au/309		
	Various	SS	Prep: 006,007,013						Cu,Pb,Zn,Fe,Mn,Ag/103,Cu,Pb,Zn,Fe,Mn,Ag/102		
	Various	SS							Au/309		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

Inv. $1316.85

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
Heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

083

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882084

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04264	17/03/87	900825	1 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Ag	Au		
1	69171	56	48	168	2.79	46	0.6	0.008		
2	69176	40	47	63	3.14	63	0.3	0.017		
3	69179	35	32	60	3.31	85	0.2	0.018		
4	69183	34	33	55	2.84	149	0.5	<0.008		
5	69185	9	25	35	1.15	220	1.0	0.129		
6	69189	7	23	36	0.77	63	0.4	0.008		
7	69191	9	24	36	0.70	111	0.3	0.492		
8	69194	8	39	50	0.68	54	0.5	0.017		
9	69197	6	18	21	0.15	35	0.3	0.032		
10	69528	19	33	48	1.54	110	0.4	0.017		
11	69531	17	20	29	1.21	63	0.4	0.008		
12	69535	7	20	20	0.53	42	0.3	0.800		
13	69537	5	22	18	0.19	39	0.3	0.050		
14	69539	9	16	21	0.33	123	0.2	0.683		
15	69543	71	44	82	3.42	170	0.2	0.036		
16	69545	9	28	29	0.93	44	0.4	0.008		
17	69548	53	35	52	3.20	75	0.2	0.017		
18	69553	24	27	53	3.63	123	0.2	0.008		
19	69556	23	26	50	3.82	80	0.7	0.008		
20	69559	44	39	104	4.65	214	<0.1	0.130		
21	69564	27	30	52	4.86	102	0.3	0.008		
22	69569	SNR	SNR	SNR	SNR	SNR	SNR	SNR		
23	69572	32	43	47	1.62	640	0.3	0.008		
24	69576	36	41	63	1.80	590	0.2	0.025		
25	69579	26	60	55	1.55	1280	0.3	<0.008		

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

AUTHORISED OFFICER

084

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882085

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04264	17/03/87	900825	2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Ag	Au		
1	69582	40	34	54	1.90	309	0.4	0.008		
2	69585	36	25	42	1.55	300	0.2	0.075		
3	69589	29	41	63	1.68	510	0.3	0.017		
4	69592	10	46	28	0.76	56	0.1	<0.008		
5	69595	10	27	30	1.03	45	0.5	0.008		
6	72067	39	31	79	2.78	20	0.2	<0.008		
7	72073	20	35	67	2.42	47	0.3	<0.008		
8	72075	7	25	41	1.42	48	0.1	<0.008		
9	72107	17	23	41	1.65	53	0.9	<0.008		
10	72112	22	30	57	2.18	98	0.6	0.008		
11	72116	24	28	51	2.27	100	0.6	0.008		
12	72118	21	25	47	1.96	80	0.5	<0.008		
13	72120	8	21	27	0.92	153	0.5	<0.008		
14	72123	11	20	39	1.18	111	0.6	0.008		
15	72127	22	33	54	1.49	45	0.5	0.083		
16	72129	24	26	60	1.45	36	<0.1	0.008		
17	72133	10	45	36	0.98	154	0.4	0.083		
18	72135	10	95	190	0.88	50	0.2	<0.008		
19	72140	20	53	188	0.89	130	0.4	<0.008		
20	72150	15	25	34	0.92	301	0.8	0.008		
21	72151	21	52	120	0.99	308	0.5	0.250		
22	72161	10	47	72	1.32	690	0.4	0.030		
23	72164	10	36	51	1.02	830	0.5	<0.008		
24	72167	9	40	46	1.25	511	0.4	<0.008		
25	72170	18	60	70	1.87	690	0.6	0.052		

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

AUTHORISED OFFICER

085

882086

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04264	17/03/87	900825	3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Ag	Au		
1	72172	9	24	54	0.99	173	0.2	0.133		
2	72176	9	23	33	0.86	127	0.1	0.008		
3	72179	7	20	48	0.85	154	0.4	<0.008		
4	72181	7	22	33	0.80	86	0.2	<0.008		
5	72183	9	30	53	0.64	286	0.1	<0.008		
6	72185	10	31	50	0.92	236	0.2	<0.008		
7	72188	10	55	72	0.58	394	<0.1	<0.008		
8	72190	11	33	89	0.81	540	<0.1	<0.008		
9	72192	25	48	113	0.82	630	0.2	0.040		
10	72205	7	31	39	0.84	363	0.1	0.040		
11	72208	9	50	60	1.23	940	0.3	0.044		
12	72211	8	25	41	0.92	225	0.3	0.008		
13	72214	10	23	36	0.99	192	<0.1	0.008		
14	72215	6	21	51	0.61	96	<0.1	<0.008		
15	72220	6	25	32	0.78	110	<0.1	0.008		
16	72224	8	26	32	1.21	168	0.1	<0.008		
17										
18										
19										
20										
21										
22										
23	DETECTION	1	1	1	0.01	1	0.1	0.008		
24	UNITS	PPM	PPM	PPM	%	PPM	PPM	PPM		
25	METHOD	103	103	103	103	103	103	309		

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

AUTHORISED OFFICER

086

ANALABS

882087

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 93224

ANALYTICAL REPORT No. 27.1.08.04263

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900824	Jukes-Darwin

DATE RECEIVED	RESULTS REQUIRED
25/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
7	11/03/87	1	149

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RC Prep: 006,010,012,014,017							Cu,Pb,Zn,Fe,Mn/103		
	Various	RC							Au/309		
	Various	RC Prep: 006,010,012,014,017							Cu,Pb,Zn,Fe,Mn/103		
	Various	RC							Au/309		
	Various	RC Prep: 006,010,012,014,017							Cu,Pb,Zn,Fe,Mn/103		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

Inv. $4040.29 16/4/87

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

C 087

882088

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	1 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69169	105	50	120	6.18	55	0.050			
2	69170	40	35	85	7.10	165	<0.008			
3	69173	45	35	75	27.50	90	<0.008			
4	69174	45	30	90	5.18	140	<0.008			
5	69175	35	30	55	14.50	50	<0.008			
6	69178	6000	25	75	12.00	450	0.017			
7	69181	55	15	55	3.40	75	<0.008			
8	69182	35	20	50	2.57	65	<0.008			
9	69187	15	35	40	2.73	155	<0.008			
10	69188	25	40	70	3.99	165	<0.008			
11	69193	15	45	210	3.84	1700	<0.008			
12	69196	70	70	175	6.58	550	<0.008			
13	69199	35	185	140	4.95	160	0.008			
14	69200	55	180	45	5.10	105	<0.008			
15	69530	20	40	30	0.60	80	<0.008			
1	69533	20	10	25	1.20	90	0.008			
17	69536	15	25	30	1.06	75	<0.008			
18	69541	15	<5	20	1.07	90	<0.008			
19	69542	35	45	65	68.00	120	0.032			
20	69547	195	75	35	1.80	45	<0.008			
21	69550	20	25	40	2.26	85	<0.008			
22	69551	35	85	90	3.10	70	<0.008			
23	69552	50	35	90	20.50	160	<0.008			
24	69555	20	15	55	2.63	420	<0.008			
25	69558	10	10	50	1.85	130	<0.008			

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

AUTHORISED OFFICER

C 088

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882089

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	2 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69561	15	10	55	2.00	170	<0.008			
2	69562	15	110	75	2.65	670	<0.008			
3	69563	25	30	90	3.40	240	<0.008			
4	69566	35	30	95	5.81	700	<0.008			
5	69567	15	15	40	1.86	110	<0.008			
6	69568	10	5	35	1.93	130	<0.008			
7	69571	10	15	30	2.19	50	<0.008			
8	69574	55	15	30	2.06	310	<0.008			
9	69575	15	10	40	2.60	80	<0.008			
10	69578	85	20	135	5.47	615	<0.008			
11	69581	30	<5	45	2.29	175	<0.008			
12	69584	20	5	45	2.46	110	<0.008			
13	69587	105	75	205	7.63	1620	0.008			
14	69588	10	<5	45	1.90	315	<0.008			
15	69591	110	15	85	6.62	175	<0.008			
1	69594	20	10	75	3.34	110	<0.008			
17	69597	10	15	60	6.36	70	<0.008			
18	69598	10	30	430	6.68	505	<0.008			
19	69599	160	40	65	4.59	125	0.017			
20	69600	80	100	125	4.47	165	0.017			
21	72008	1150	35	345	8.42	1600	0.067			
22	72018	15	30	75	2.00	350	<0.008			
23	72021	75	40	115	2.40	550	<0.008			
24	72022	25	95	130	2.30	865	<0.008			
25	72027	20	45	220	2.20	695	0.017			

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

AUTHORISED OFFICER

089

882090

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	3 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72028	25	130	205	2.15	935	<0.008			
2	72029	20	85	360	2.25	860	<0.008			
3	72031	20	60	95	2.44	535	<0.008			
4	72032	15	105	180	2.17	735	<0.008			
5	72035	10	15	45	1.99	40	<0.008			
6	72038	10	5	55	1.78	75	<0.008			
7	72042	15	35	130	2.47	545	<0.008			
8	72048	345	45	230	6.68	5952	0.017			
9	72049	165	40	145	5.41	615	0.067			
10	72061	225	35	150	3.02	540	0.008			
11	72062	310	760	820	6.11	2200	0.150			
12	72063	805	365	540	7.19	2950	0.067			
13	72064	145	45	65	16.50	115	0.008			
14	72065	35	10	65	9.13	30	<0.008			
15	72066	100	15	35	1.77	25	<0.008			
1	72069	15	5	45	3.22	40	<0.008			
17	72070	15	<5	50	2.82	210	<0.008			
18	72072	20	10	65	4.16	115	<0.008			
19	72077	5	50	80	5.40	315	<0.008			
20	72078	55	45	45	9.42	45	<0.008			
21	72079	45	65	75	46.50	45	<0.008			
22	72080	70	45	30	2.44	70	<0.008			
23	72081	345	50	60	4.10	120	0.008			
24	72082	310	65	155	6.33	450	0.040			
25	72083	210	130	85	51.00	60	0.150			

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

AUTHORISED OFFICER

090

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882091

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	4 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72084	50	45	70	6.70	70	0.017			
2	72085	135	65	130	4.80	405	0.017			
3	72086	105	35	115	7.58	250	<0.008			
4	72087	40	105	60	38.00	130	0.017			
5	72088	20	95	85	6.52	140	0.008			
6	72089	25	70	119	41.00	240	<0.008			
7	72090	20	50	55	61.00	70	<0.008			
8	72091	20	80	120	8.02	150	<0.008			
9	72092	20	65	60	59.50	80	0.008			
10	72093	260	50	190	6.40	215	<0.008			
11	72094	290	20	130	6.65	100	<0.008			
12	72095	25	55	135	6.10	240	<0.008			
13	72096	35	25	85	4.40	155	<0.008			
14	72097	25	40	60	38.00	70	0.017			
15	72098	40	35	55	2.55	55	<0.008			
1	72099	85	15	35	3.05	60	<0.008			
17	72100	70	15	35	3.20	60	<0.008			
18	72101	15	30	50	3.55	65	<0.008			
19	72102	10	<5	30	19.00	30	0.008			
20	72103	955	165	25	7.80	25	21.670			
21	72104	15	95	75	10.50	40	0.032			
22	72108	5	<5	40	2.00	75	<0.008			
23	72109	15	10	40	2.70	235	<0.008			
24	72110	10	10	30	1.75	105	<0.008			
25	72113	10	5	40	2.00	165	0.008			

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	5 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72114	15	<5	60	2.75	175	<0.008			
2	72115	15	10	55	3.25	265	<0.008			
3	72121	20	5	145	8.25	465	<0.008			
4	72122	10	30	35	1.80	520	<0.008			
5	72125	20	10	60	3.00	105	<0.008			
6	72128	15	10	40	3.15	360	<0.008			
7	72131	10	5	25	3.10	70	<0.008			
8	72132	10	20	50	28.50	180	<0.008			
9	72137	80	20	45	2.75	140	<0.008			
10	72138	45	70	70	1.70	45	<0.008			
11	72139	30	65	100	9.95	70	<0.008			
12	72142	10	25	50	0.55	95	<0.008			
13	72143	20	30	65	2.55	90	<0.008			
14	72144	15	30	75	4.15	120	<0.008			
15	72145	30	25	225	7.50	425	<0.008			
1	72146	205	545	420	6.35	315	<0.008			
17	72147	60	5	50	2.90	125	<0.008			
18	72148	35	15	35	5.35	200	<0.008			
19	72153	20	<5	45	1.30	180	<0.008			
20	72154	10	10	25	1.40	20	<0.008			
21	72155	5	10	25	1.00	20	<0.008			
22	72156	10	<5	35	2.05	45	<0.008			
23	72157	5	5	55	4.25	185	<0.008			
24	72158	20	15	45	5.75	60	<0.008			
25	72159	15	15	215	12.50	590	<0.008			

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

AUTHORISED OFFICER

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882093

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	6 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	72160	15	25	85	7.10	170	<0.008			
2	72163	15	20	105	3.50	655	<0.008			
3	72166	5	10	110	3.15	425	<0.008			
4	72169	10	<5	75	2.40	730	<0.008			
5	72171	10	<5	50	3.70	240	<0.008			
6	72174	10	10	115	2.15	150	<0.008			
7	72175	20	15	30	8.65	115	0.008			
8	72178	30	45	130	1.70	2000	<0.008			
9	72187	30	15	95	4.40	380	<0.008			
10	72201	20	15	60	2.60	50	<0.008			
11	72202	205	50	140	3.20	130	<0.008			
12	72203	130	35	160	4.60	280	<0.008			
13	72204	655	90	350	13.50	360	<0.008			
14	72207	15	<5	95	3.15	370	<0.008			
15	72210	15	<5	70	3.25	2800	<0.008			
1	72213	15	25	100	2.15	640	<0.008			
17	72216	15	20	50	1.70	155	<0.008			
18	72217	15	20	60	2.25	200	<0.008			
19	72222	15	15	110	2.10	100	<0.008			
20	72223	20	30	120	2.10	190	<0.008			
21	72226	65	10	50	1.40	215	0.008			
22	72227	15	20	75	2.30	160	<0.008			
23	72228	50	35	65	41.50	155	0.058			
24	72229	65	15	55	4.20	190	<0.008			
25										

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

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882094

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04263	11/03/87	900824	7 OF 7

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
1										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.05	5	0.008			
23	UNITS	PPM	PPM	PPM	%	PPM	PPM			
24	METHOD	103	103	103	103	103	309			
25										

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

AUTHORISED OFFICER

Phone (09) 458 7999

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLA: AA 97224

Telex AA92560

S82095

ANALYTICAL REPORT No. 27.1.08.04203

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900822	J. Darwin

DATE RECEIVED	RESULTS REQUIRED
04/02/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
13	26/02/87	1	310

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
RUN REF.	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RO Prep: 008,010,012,014,017							Cu,Pb,In,Fe,Mn/103		
	Various	RO							Au/309		

RESULTS TO

Electrolytic Zinc Co. of Aust.
P.O. Box 21
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

310 Rocks
Allans Ck

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

095

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882096

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	1 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69001	95	30	55	2.15	80	0.160			
2	69002	50	20	110	2.20	170	0.015			
3	69003	25	45	50	2.05	140	0.050			
4	69004	35	20	40	1.50	80	0.031			
5	69005	35	20	55	1.65	110	0.028			
6	69006	110	15	60	6.90	250	0.023			
7	69007	30	20	35	1.90	50	0.011			
8	69008	60	15	30	1.75	65	0.014			
9	69009	30	30	40	1.75	40	0.016			
10	69010	50	15	40	1.75	60	0.018			
11	69011	50	20	35	1.70	20	0.011			
12	69012	35	10	80	1.85	30	0.022			
13	69013	30	20	50	1.90	70	0.013			
14	69014	35	80	45	1.45	50	0.008			
15	69015	35	30	85	3.55	200	0.016			
16	69016	240	20	80	3.75	145	0.015			
17	69017	210	50	45	3.85	130	0.022			
18	69018	85	20	60	7.19	95	0.023			
19	69019	165	90	85	11.50	40	0.080			
20	69020	190	65	30	2.65	60	0.021			
21	69021	40	100	55	1.75	95	0.008			
22	69022	55	75	55	4.55	40	0.008			
23	69023	15	30	45	2.00	50	<0.008			
24	69024	50	15	35	2.30	85	<0.008			
25	69025	175	50	90	5.45	120	<0.008			

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

AUTHORISED OFFICER

096

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882097

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	2 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69026	35	75	50	2.05	50	<0.008			
2	69027	40	25	50	2.05	70	<0.008			
3	69028	170	120	65	2.35	50	0.030			
4	69029	375	15	65	3.15	50	<0.008			
5	69030	200	25	55	2.55	50	<0.008			
6	69031	175	20	75	2.30	65	<0.008			
7	69032	15	<5	5	0.66	5	0.010			
8	69033	165	25	75	3.60	55	<0.008			
9	69034	310	15	80	14.50	50	<0.008			
10	69035	300	10	70	14.70	60	0.025			
11	69036	85	10	50	4.75	40	<0.008			
12	69037	330	10	50	2.05	85	<0.008			
13	69038	425	10	50	1.80	45	<0.008			
14	69039	230	<5	60	1.75	90	<0.008			
15	69040	110	30	60	6.95	75	<0.008			
	69041	50	5	60	1.80	35	0.019			
17	69042	275	70	85	1.90	85	0.021			
18	69043	170	10	50	1.60	50	0.008			
19	69044	90	5	65	4.35	70	<0.008			
20	69045	60	5	45	1.85	25	<0.008			
21	69046	15	10	55	1.80	55	<0.008			
22	69047	55	30	45	1.50	50	0.025			
23	69048	80	30	65	1.80	85	0.029			
24	69049	95	15	55	1.70	40	0.008			
25	69050	50	15	65	1.70	75	<0.008			

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

097

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882098

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	3 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69051	100	10	60	2.05	40	0.008			
2	69052	35	30	80	3.05	95	<0.008			
3	69053	45	65	45	4.60	45	0.050			
4	69054	105	40	60	2.80	65	0.009			
5	69055	70	10	45	2.45	85	<0.008			
6	69056	35	5	55	2.05	105	<0.008			
7	69057	100	10	45	2.10	35	<0.008			
8	69058	115	20	45	2.60	65	0.013			
9	69059	135	20	40	3.15	85	0.040			
10	69060	60	15	65	6.15	80	<0.008			
11	69061	80	35	35	1.70	25	<0.008			
12	69062	70	20	40	1.70	45	<0.008			
13	69063	145	15	40	1.85	40	0.010			
14	69064	120	10	40	1.80	35	0.016			
15	69065	35	20	30	1.80	45	<0.008			
,	69066	85	50	45	1.75	65	<0.008			
17	69067	50	25	45	1.85	30	0.012			
18	69068	20	30	35	1.85	30	0.013			
19	69069	10	25	30	1.60	25	0.024			
20	69070	50	65	40	1.80	50	0.016			
21	69071	30	445	70	2.80	70	0.009			
22	69072	30	55	40	1.40	35	0.018			
23	69073	75	270	90	1.90	70	<0.008			
24	69074	30	55	140	2.35	120	<0.008			
25	69075	25	75	45	1.75	70	0.011			

Results in ppm unless otherwise specified
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— = element not determined

AUTHORISED OFFICER

098

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882099

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	4 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69076	25	150	35	1.90	35	0.010			
2	69077	135	65	55	1.90	60	0.013			
3	69078	80	170	55	2.00	60	0.015			
4	69079	55	530	70	1.70	45	0.010			
5	69080	185	30	90	2.15	90	<0.008			
6	69081	90	125	80	2.30	70	0.020			
7	69082	30	15	70	2.25	75	<0.008			
8	69083	85	15	55	2.05	55	<0.008			
9	69084	400	20	65	2.45	1050	<0.008			
10	69085	50	20	70	1.95	85	<0.008			
11	69086	65	25	75	2.05	70	<0.008			
12	69087	75	20	55	1.65	45	<0.008			
13	69088	125	20	55	1.95	50	0.010			
14	69089	75	20	50	3.30	120	<0.008			
15	69090	265	20	70	7.75	115	<0.008			
	69091	265	15	55	4.05	70	0.009			
17	69092	160	10	45	2.60	85	<0.008			
18	69093	30	130	45	1.75	65	<0.008			
19	69094	25	25	60	1.80	60	<0.008			
20	69095	25	10	30	1.95	40	<0.008			
21	69096	25	10	35	1.90	45	<0.008			
22	69097	20	15	30	5.15	85	<0.008			
23	69098	30	25	60	1.35	35	<0.008			
24	69099	20	35	50	1.25	25	<0.008			
25	69100	45	25	100	3.75	120	<0.008			

Results in ppm unless otherwise specified
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— = element not determined

AUTHORISED OFFICER

882100

C 099

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	5 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69101	10	20	40	1.80	25	0.033			
2	69102	15	40	55	1.40	40	<0.008			
3	69103	40	30	25	2.40	90	0.099			
4	69104	255	220	65	6.55	195	0.502			
5	69105	155	3350	2000	5.70	30500	0.024			
6	69106	105	595	65	2.50	175	0.025			
7	69107	65	35	60	1.65	75	0.025			
8	69108	230	215	45	3.25	125	0.158			
9	69109	330	120	65	3.45	205	0.060			
10	69110	215	75	40	2.70	110	0.062			
11	69111	610	315	90	6.40	205	0.042			
12	69112	170	30	40	2.05	60	<0.008			
13	69113	75	640	220	2.25	565	0.026			
14	69114	65	240	80	2.40	190	0.131			
15	69115	95	185	90	3.05	80	0.021			
16	69116	45	20	90	1.30	215	0.020			
17	69117	50	30	60	1.55	95	<0.008			
18	69118	35	20	40	1.60	110	0.014			
19	69119	55	100	55	3.05	125	0.018			
20	69120	90	100	30	2.85	110	0.033			
21	69121	120	200	60	3.35	290	0.037			
22	69122	540	95	85	6.00	320	0.100			
23	69123	495	80	220	7.35	3650	0.056			
24	69124	45	85	70	4.30	150	0.015			
25	69125	50	85	25	2.05	115	0.030			

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

AUTHORISED OFFICER

100

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882101

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	6 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69126	45	95	70	1.90	115	<0.008			
2	69127	70	65	75	2.10	100	<0.008			
3	69128	110	85	110	2.00	205	<0.008			
4	69129	30	25	40	1.75	105	<0.008			
5	69130	15	20	45	2.25	95	<0.008			
6	69131	30	30	45	1.10	55	<0.008			
7	69132	10	20	35	0.60	25	<0.008			
8	69133	10	20	50	1.00	55	<0.008			
9	69134	15	20	40	1.00	40	<0.008			
10	69135	15	20	50	1.10	50	<0.008			
11	69136	20	20	45	1.20	85	<0.008			
12	69137	15	35	50	1.35	70	<0.008			
13	69138	20	20	55	1.60	70	<0.008			
14	69139	20	10	85	1.65	105	<0.008			
15	69140	50	30	100	1.75	300	<0.008			
,	69141	45	45	95	2.85	370	0.025			
17	69142	65	20	100	2.05	90	<0.008			
18	69143	20	35	30	1.10	100	0.110			
19	69144	100	45	85	2.45	90	<0.008			
20	69145	55	30	115	2.85	130	<0.008			
21	69146	105	45	180	4.10	155	<0.008			
22	69147	90	15	165	3.55	285	<0.008			
23	69148	280	15	185	5.45	330	<0.008			
24	69149	90	10	80	2.20	170	0.022			
25	69150	70	20	75	2.70	285	0.085			

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

AUTHORISED OFFICER

101

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882102

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	7 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69151	90	120	100	3.05	360	0.011			
2	69152	55	15	100	4.75	140	<0.008			
3	69153	15	15	55	2.50	90	<0.008			
4	69154	15	20	35	0.62	40	<0.008			
5	69155	30	20	50	2.05	80	<0.008			
6	69156	30	15	90	3.40	140	<0.008			
7	69157	<5	<5	5	0.15	10	<0.008			
8	69158	170	70	55	2.00	100	<0.008			
9	69159	60	20	50	2.30	75	0.009			
10	69160	75	20	50	1.90	60	0.094			
11	69161	30	15	50	1.70	55	0.008			
12	69162	20	15	55	1.70	55	<0.008			
13	69163	25	15	60	2.15	90	<0.008			
14	69164	20	15	45	1.90	55	<0.008			
15	69165	50	10	90	3.30	120	0.019			
	69166	20	10	80	3.60	240	<0.008			
17	69167	295	15	145	9.70	345	0.015			
18	69168	65	10	60	3.90	85	<0.008			
19	69201	1600	10	200	6.80	260	0.109			
20	69202	105	10	75	2.20	80	<0.008			
21	69203	30	10	55	1.65	60	<0.008			
22	69204	40	20	45	1.25	60	<0.008			
23	69205	25	15	60	1.70	90	<0.008			
24	69206	30	110	55	1.85	100	<0.008			
25	69207	30	25	165	2.55	180	<0.008			

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882103

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	8 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69208	20	25	70	1.40	85	<0.008			
2	69209	20	25	115	2.10	175	<0.008			
3	69210	50	20	175	7.35	310	<0.008			
4	69211	20	15	75	1.90	140	0.013			
5	69212	20	20	60	2.15	110	0.025			
6	69213	60	35	45	0.95	70	<0.008			
7	69214	20	20	70	2.35	115	0.015			
8	69215	20	35	65	2.40	145	<0.008			
9	69216	30	20	60	1.95	120	<0.008			
10	69217	30	20	55	1.85	95	<0.008			
11	69218	60	15	70	1.75	60	<0.008			
12	69219	20	20	70	1.65	50	<0.008			
13	69220	20	15	45	1.50	80	0.020			
14	69221	65	15	40	2.20	90	0.019			
15	69222	30	15	55	1.80	130	<0.008			
	69223	25	15	25	1.50	90	0.011			
17	69224	20	15	70	1.85	140	<0.008			
18	69225	40	20	40	2.30	135	<0.008			
19	69226	65	20	75	2.75	140	0.016			
20	69227	70	15	55	1.95	160	0.029			
21	69228	90	20	1350	4.85	3150	0.022			
22	69229	205	25	75	3.40	410	0.012			
23	69230	160	70	60	2.75	180	<0.008			
24	69231	65	25	50	2.55	95	<0.008			
25	69232	155	20	70	3.30	90	<0.008			

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	9 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69233	480	20	115	3.60	235	0.008			
2	69234	140	40	35	3.30	110	0.020			
3	69235	2500	30	100	2.35	195	0.088			
4	69236	475	20	30	6.75	140	0.135			
5	69237	315	15	190	3.15	1150	0.039			
6	69238	125	15	90	1.90	60	0.016			
7	69239	50	35	35	3.50	290	<0.008			
8	69240	190	20	30	4.60	100	<0.008			
9	69241	180	120	110	3.65	140	<0.008			
10	69242	160	10	45	3.50	85	0.015			
11	69243	210	120	40	2.85	120	0.010			
12	69244	35	5	55	1.60	90	<0.008			
13	69245	20	5	35	1.20	55	0.010			
14	69246	20	25	50	1.85	65	<0.008			
15	69247	30	15	45	1.60	95	0.011			
,	69248	30	15	50	2.30	70	0.008			
17	69249	25	<5	45	1.80	80	<0.008			
18	69250	20	10	30	2.15	85	<0.008			
19	69251	165	10	40	2.55	85	0.014			
20	69252	15	10	40	1.65	55	<0.008			
21	69253	25	5	30	1.30	35	0.018			
22	69254	30	10	35	2.35	70	<0.008			
23	69255	25	30	50	2.30	70	0.010			
24	69256	20	10	95	3.20	495	<0.008			
25	69257	205	20	135	3.80	650	0.021			

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

882105

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	10 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69258	60	15	30	1.75	85	0.009			
2	69259	12500	11500	2050	5.65	21000	5.680			
3	69260	55	55	45	2.40	630	0.030			
4	69261	100	60	55	2.05	385	0.022			
5	69262	30	55	75	2.55	130	0.008			
6	69263	30	35	55	2.50	130	0.009			
7	69264	30	45	60	2.45	120	0.009			
8	69265	20	15	45	2.45	135	0.009			
9	69266	20	15	40	2.05	70	<0.008			
10	69267	25	15	40	1.85	65	<0.008			
11	69268	80	15	70	3.50	135	0.011			
12	69269	25	10	40	2.00	160	<0.008			
13	69270	30	10	35	3.60	90	<0.008			
14	69271	110	20	70	3.00	100	<0.008			
15	69272	50	50	95	2.70	170	<0.008			
,	69273	50	15	55	2.55	160	0.243			
17	69274	35	30	45	2.90	135	<0.008			
18	69275	20	<5	35	2.10	125	<0.008			
19	69276	30	100	35	2.60	105	0.044			
20	69277	20	160	70	2.50	110	0.033			
21	69278	20	205	90	2.20	75	<0.008			
22	69279	20	25	45	2.60	100	<0.008			
23	69280	20	5	45	2.45	140	<0.008			
24	69281	15	50	35	2.30	80	<0.008			
25	69282	120	35	35	5.50	155	0.013			

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

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	11 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69283	30	20	30	4.80	70	0.008			
2	69284	65	15	30	3.30	100	<0.008			
3	69285	65	100	55	2.05	370	0.014			
4	69286	35	70	30	1.75	110	0.010			
5	69287	30	60	50	2.25	105	<0.008			
6	69288	50	35	25	3.05	100	0.021			
7	69289	25	55	40	3.60	110	0.017			
8	69290	45	30	60	3.85	115	<0.008			
9	69291	40	55	135	4.10	195	0.008			
10	69292	110	50	145	6.50	135	0.015			
11	69293	95	45	65	3.75	85	0.015			
12	69294	40	45	55	5.35	55	0.010			
13	69295	115	30	55	3.90	120	0.015			
14	69296	85	20	70	4.30	125	0.030			
15	69297	20	10	50	3.80	90	0.014			
	69298	20	25	55	4.75	150	<0.008			
17	69299	20	20	30	1.95	45	<0.008			
18	69300	10	15	25	2.30	35	0.009			
19	69501	30	15	35	1.95	40	0.019			
20	69502	30	25	45	1.85	100	<0.008			
21	69503	50	20	60	2.35	110	<0.008			
22	69504	25	10	45	2.15	85	<0.008			
23	69505	15	20	50	2.30	90	0.009			
24	69506	10	25	60	2.05	135	<0.008			
25	69507	10	25	80	2.75	225	<0.008			

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

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	12 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	69508	15	20	40	0.63	25	<0.008			
2	69509	55	15	50	1.30	20	<0.008			
3	69510	55	20	40	2.85	80	0.010			
4	69511	40	15	50	3.45	100	<0.008			
5	69512	20	15	40	4.20	75	<0.008			
6	69513	25	20	40	4.35	80	0.016			
7	69514	110	25	70	4.05	65	0.010			
8	69515	50	35	55	3.95	65	0.008			
9	69516	140	20	55	4.25	120	0.008			
10	69517	70	20	40	2.65	100	<0.008			
11	69518	60	25	55	2.90	90	<0.008			
12	69519	75	40	55	2.75	65	0.009			
13	69520	30	25	60	6.10	80	0.023			
14	69521	90	30	30	2.80	85	0.011			
15	69522	175	50	80	7.10	920	0.018			
	69523	35	25	50	5.85	155	0.012			
17	69524	40	25	35	3.10	90	<0.008			
18	69525	45	40	45	2.65	175	0.008			
19	69526	110	25	60	4.20	240	0.033			
20	69527	30	410	50	2.60	110	0.117			
21	66579	35	60	45	1.45	90	<0.008			
22	66580	25	20	20	1.50	30	<0.008			
23	66581	40	20	30	1.55	35	<0.008			
24	66582	45	20	30	1.55	40	<0.008			
25	66583	40	25	35	1.85	45	<0.008			

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

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04203	26/02/87	900822	13 OF 13

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	66584	30	35	45	1.65	70	<0.008			
2	66585	60	135	70	2.45	135	<0.008			
3	66586	70	50	115	3.50	175	0.011			
4	66587	35	25	60	2.50	80	0.066			
5	66588	30	25	70	3.25	140	0.025			
6	66589	35	20	55	2.90	110	<0.008			
7	66590	185	70	70	24.00	115	0.030			
8	66591	175	295	175	13.00	245	0.059			
9	66594	40	25	55	3.15	220	0.347			
10	66597	45	30	80	3.80	115	<0.008			
11										
12										
13										
14										
15										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.05	5	0.008			
24	UNITS	PPM	PPM	PPM	%	PPM	PPM			
25	METHOD	103	103	103	103	103	309			

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	27.1.08.04145	27/02/87	900817	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Cr	Ni	Au	
1	58185	50	25	75	5.88	875	200	75	0.008	
2	58188	50	<25	50	3.96	300	150	50	<0.008	
3	58189	25	<25	25	2.92	225	200	50	<0.008	
4	64377	25	<25	<25	0.59	<25	150	25	<0.008	
5	64378	25	<25	50	2.06	75	100	50	<0.008	
6	64379	125	<25	275	14.63	600	200	75	0.025	
7	64380	175	<25	75	9.68	125	175	50	<0.008	
8	64381	50	<25	50	8.31	950	75	25	<0.008	
9	64382	1025	25	25	49.60	225	150	225	0.008	
10	64383	75	<25	25	7.30	12500	50	50	<0.008	
11	64384	450	50	25	10.99	1775	175	150	0.008	
12	64385	50	50	<25	2.25	25	125	25	<0.008	
13	64386	25	25	<25	0.78	<25	75	<25	<0.008	
14	66573	50	25	<25	19.67	25	75	25	0.025	Jukes-
15	66574	650	150	<25	13.44	25	125	25	0.160	Darwin
16	66575	500	50	200	13.36	300	100	50	<0.008	I.C.S.
17	66576	625	50	25	16.23	100	250	50	0.100	
18	66578	650	275	225	8.94	225	50	25	0.417	
19	68137	25	<25	<25	1.10	25	350	50	<0.008	
20	68138	25	25	<25	0.70	<25	100	<25	<0.008	
21	68139	<25	25	<25	1.28	25	125	<25	<0.008	
22	68140	50	50	75	3.63	125	350	50	0.180	
23	68223	100	<25	25	6.47	1325	200	75	<0.008	
24	68224	50	<25	<25	1.70	<25	175	25	<0.008	
25	68225	50	25	<25	1.75	<25	175	25	<0.008	

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

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APPENDIX 3 — EAST DARWIN DRILL LOGS

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ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY — TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) Z 14200 1

LOCATION EAST DARWIN
OBJECTIVE TEST Au POTENTIAL
RESULT

TOTAL DEPTH 329·8m
HOLE SIZE HQ, BQ, NQ
COMMENCED 1973
COMPLETED 1973 (INAC)
LOGGED BY NMF 1987

03

8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.

02
ORE DIP. (8-11) —
COLLAR DIP. (12-15) 60°
DIRECTION (16-19) 253°
R.L. (20-23)
CO-ORDS. 467E 403N.
LOCATION

DEPTH FROM m	DEPTH TO m	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA Sample Length	Cu	Pb	Zn	Ag	Au	CORE REC'D RUN	CORE REC'D SHORT
0	38·1	No Core Available (HQ)													
44	45·9	plan chloritic LITHIC TUFF, clasts 1-8cm mmr fe staining (BQ)	1-2% dissem pyrite	66808			½ core	1·9m	20	5	100	<0·5	<0·008		
46	48·1	plan XTAL LITHIC TUFF, clasts 1-3cm foliated, granular texture	mmr py min^{s} <2%	66809			½ core	2·1m	15	20	120	x	x		
48·1	50	LITHIC XTAL TUFF, foliated, chl, feldic clasts = foliat^{n} Fe staining	ht and py min^{s} over 15cm	66810			½ core	1·9m	25	30	130	x	x		
50	52·1	XTAL LITHIC TUFF ht ic and chl: lmg ht clasts assoc c py	echelon py ? pseudomorphs 2-5% ht and py min^{s} 2-3%	66811			½ core	2·1m	25	10	140	x	x		
57·8	59·3	LITHIC XTAL TUFF plan calcite veining foliated	trace py <1%	66812			½ core	1·5m	20	10	110	x	x		
75·2	77·4	XTAL LITHIC TUFF cherty clastic zones' foliated, ht veinlets	trace py & ht veinlets <1%	66813			½ core	2·2m	15	<5	60	x	x		
84·5	86·5	LITHIC XTAL TUFF cherty clasts, mmr qz and calcite veins.	—	66814			½ core	2·0m	15	20	360	x	x		
86·5	89·2	XTAL TUFF. more pp in colour, pumice flags	py min^{s} 2-5%	66815				2·7m	10	x	75	x	x		
101	107·2	XTAL TUFF pumaceous = foliation dk clasts of ? ht	ht veinlets	66816			½ core ¼ core	6·2m	20	175	640	0·5	x		
118·4	120·7	XTAL TUFF: coarser grained than above	mmr py & cpy assoc c qz ? clasts ~2%	66817			¼ core chips	2·3m	10	75	140	0·5	x		
120·7	123·7	XTAL TUFF more lithic than above.	patchy py min^{s} ~2%	66818			½ core + chips	3·0m	15	10	140	1·5	x		
123·7	125·7	XTAL TUFF contact with chloritic alteration zone below. ie 127·8	py 2-3%	66819			"	2·0m	45	450	840	1·5	x		

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ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY – TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) Z14200 1

LOCATION EAST DARWIN
OBJECTIVE
RESULT

TOTAL DEPTH 329·8m
HOLE SIZE
COMMENCED
COMPLETED 1973. (INAL)
LOGGED BY NMF. 1987

03

8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.

02
ORE DIP. (8-11)
COLLAR DIP. (12-15)
DIRECTION (16-19)
R.L. (20-23)
CO-ORDS.
LOCATION

DEPTH FROM m	DEPTH TO m	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA Sample Length	Cu	Pb	Zn	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	CORE REC'D RUN	CORE REC'D SHORT
127·8	129·7	XTAL LITHIC TUFF pervasively chloritised highly sheared and chld clasts 1-2cm.	fg dissem py 2-3%	66820			¼ core + chips	1·9m	115	60	360	1·0	<0.003			
129·7	131·7	AS ABOVE less chloritic, same fg staining	fg diss py. 1-2%	66821			"	2m	20	40	170	0·5	x			
131·7	133·7	AS ABOVE chld and sheared.	fg diss py. 1-3%	66822			"	2m	35	15	160	x	x			
133·7	135·7	AS ABOVE foliated	fg mnr py ± cpy ≈1-2%	66823			"	2·0m	205	60	190	1·5	x			
135·7	136·8	XTAL LITHIC TUFF chloritic, foliated chld and altered.	mnr py ± cpy	66824			"	1·1m	300	<5	230	1·0	x			
136·8	138	LITHIC TUFF chloric fg banded ?ash	Py 1-3%	66825			"	1·2m	295	<5	270	0·5	x			
140	143·2	LITHIC TUFF chloritic	Py 1-3%	66826			"	3·2m	105	5	220	0·5	x			
144·6	149	AS ABOVE chloritic foliated	Py 1-3%	66827			"	4·4m	45	190	230	0·5	x			
150	154·6	AS ABOVE chloritic foliated	Py 1-3% fg dissem.	66828			"	4·6m	20	10	140	0·5	x			
154·6	160·8	XTAL TUFF mg chlor	Py 1-3%	66829			"	6·2m	30	5	140	x	x			
160·8	165·2	CHERTY TUFFACEOUS ASH chert frags sericitic material chlor	Py 3% dissem	66830			"	4·4m	20	25	80	0·5	x			
165·2	168	AS ABOVE	Py 1-3% dissem. fg.	66831			"	2·8m	35	5	100	0·5	x			
176	177·4	XTAL LITHIC TUFF carb veinlets chlor.	Py 5-10%, Tr: Cpy Sph in qz carb veinlets	66832			"	1·4m	100	5	180	1·0	x			

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ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY – TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) Z 142001

LOCATION EAST DARWIN
OBJECTIVE
RESULT

TOTAL DEPTH 329.8m
HOLE SIZE
COMMENCED
COMPLETED 1973. (INAL)
LOGGED BY NMF 1987

03 — 8-12 Depth | 13-16 Direction | 17-18-21 Dip. | 8-12 Depth | 13-16 Direction | 17-18-21 Dip.

02 — ORE DIP. (8-11) COLLAR DIP. (12-15) DIRECTION (16-19) R.L. (20-23) CO-ORDS. LOCATION

DEPTH FROM	DEPTH TO	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA: Sample Length	Cu	Pb	Zn	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	CORE REC'D: RUN	SHORT
177.4	181.4	AS ABOVE chlor	Py 1-3%.	66833			¼ core + chips	4m	110	10	200	0.5	<0.008			
181.4	183.4	AS ABOVE chlor	Py 1-3% Tr: Cpy, Ga.	66834			"	2m	35	10	170	1.5	x			
183.4	187	AS ABOVE chlor	Py 1-3%, Tr: Cpy, Ga.	66835			"	3.6m	30	5	185	0.5	x			
187	191	AS ABOVE chlor	Py 10-15%, Tr: Cpy, Ga.	66836			"	4m	45	10	175	1.0	x			
191	192	XTAL TUFF, XTAL LITHIC TUFF chlor large % ash material.	Py 1-3%, Tr: Cpy Ga.	66837			"	1m	170	10	90	1.0	x			
192	194.9	AS ABOVE chlor	Py 5% Tr: Cpy Ga.	66838			"	2.9m	370	85	150	2.0	0.008			
194.9	196.5	QUARTZ VEIN & XTAL TUFF chlor	Py 10-15% often as stringers in xtal Toff.	66839			"	1.6m	330	95	130	1.5	0.008			
196.5	200.5	XTAL TUFF flow textured chlor mottled appearance	Py 1-3% Tr: Cpy, Ga.	66840			"	4m	110	215	145	1.0	0.008			
200.5	204.5	AS ABOVE chlor	Py 1-3% Tr: Cpy, Ga.	66841			"	4m	100	10	105	0.5	x			
204.5	216.4	AS ABOVE chlor	Py 1-3%	66842			Rep Sample	11.9m	67	5	145	0.5	x			
									85	20	200	0.5	x			
227.2	231.2	AS ABOVE chlor	Py 1-3%	66843			"	4m	90	10	135	1.0	0.008			
231.2	235.7	AS ABOVE foliated chlor contact with below. C.C.	Py 3-5%	66844			"	4.5m	190	10	80	1.0	0.025			8821113
235.7	240	LAVA MASSIVE dk grey/gn (R440) C. chloritised felds phenocrysts, with veinlets C.	Py 3% disseminated.	66845			"	4.3m	110	10	150	1.0	x			

A 22076

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY – TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) DDH Z 142001

LOCATION EAST DARWIN
OBJECTIVE
RESULT

TOTAL DEPTH 329.8
HOLE SIZE
COMMENCED
COMPLETED 1973 (INAU)
LOGGED BY NMF 1987.

03

8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.

02
ORE DIP. (8-11)
COLLAR DIP. (12-15)
DIRECTION (16-19)
R.L. (20-23)
CO-ORDS.
LOCATION

DEPTH FROM	DEPTH TO	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA: Sample Length	Cu	Pb	Zn	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	CORE REC'D RUN	CORE REC'D SHORT
240	250	AS ABOVE gypp. Δ'ed	Py 5% (pods)	66846			Rep Sample	10m	50	10	155	0.5	<0.008			
250	254	AS ABOVE chlorite	Py 2-5%	66847			"	4m	200	15	165	1.0	0.008			
254	260	AS ABOVE pinkish colour, felsic ists	Py 2-5% Tr: Cpy	66848			"	6m	155	70	140	0.5	0.008			
270	274	AS ABOVE qtz carb veinlets	Py 3-5%	66849			"	4m	90	5	70	x	x			
274	282	AS ABOVE Δ'ed	Py 3-10% Tr: Cpy	66850			"	8m	25	5	55	0.5	0.008			
282	294	AS ABOVE massive	Py 3-10% Tr: Cpy	66851			½ core +chips	12m	30	10	65	1.0	x			
294	296.5	LITHIC TUFF clasts 2-4cm in ht mt rich matrix sheared	Py 10-15%	66852			"	2.5m	55	10	90	0.5	0.008			
296.5	303.5	MASSIVE LAVA ht py veining	Py 20-25% Tr: Cpy	66853			"	6m	15	10	55	1.0	0.008			
303.5	313.5	AS ABOVE ht-py veins abundant Δ'ed	Py 2-5%	66854			Rep Sample	10m	15	5	70	0.5	x			
313.5	319.5	AS ABOVE & Δ'ed texture	Py 1% Tr: Sp, Cpy	66855			½ core +chips	6m	20	10	40	x	x			
319.5	322.5	AS ABOVE	Py 2% – 1%	66856			Rep. Sample	3m	60	5	65	0.5	x			
322.5	326.5	AS ABOVE ht-py veining.	Py 5% – 1%	66857			"	4m	50	5	60	0.5	x			8
		END OF SAMPLING OF HOLE														8211

A 22076

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY – TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) DDH Z 142002

LOCATION EAST DARWIN PLATEAU.
OBJECTIVE TEST Au POTENTIAL

RESULT

TOTAL DEPTH 331·3m.
HOLE SIZE HQ, BQ, NQ.
COMMENCED 1973
COMPLETED 1973 (FINAL)
LOGGED BY NHF 1987. (RJD 1973)

03

8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.

02
ORE DIP. (8-11)
COLLAR DIP. (12-15) 60°
DIRECTION (16-19) 253°
R.L. (20-23)
CO-ORDS. 125N 188E
LOCATION EAST DARWIN.

DEPTH m/ft FROM m	TO m	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA Sample Length	Cu	Pb	Zn	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	CORE REC'D RUN	SHORT
0	63·9	No Core Available HQ														
64	67	XTAL LITHIC TUFF rdsh brn ht staining, clasts 3x10cm & chloritic	Py 5-15% Cpy <1%	66858			¼ core	3m	50	530	475	1·5	<0·008			
67	70	AS ABOVE	Py 1%	66859			"	3m	55	75	350	1·5	0·008			
72·1	74·1	AS ABOVE	Cpy <1%, Py = Tr.	66860			"	2m	25	120	385	1·5	x			
98·9	102·1	XTAL TUFF chloritic mottled gn qz phenocrysts	Py 0-1%, Cpy <1-3%, Tr: Ga, Sph.	66861			"	3·2m	20	210	740	2·0	0·008			
102·1	105	XTAL LITHIC TUFF cherty frags, fg chloritic groundmass foliated	Py 0-20%, Cpy <1% (fg)	66862			"	2·9m	70	395	800	9·0	x			
105·4	109	AS ABOVE more chloritic	Py 0-3%, Tr: Cpy	66863			"	3·6m	2200	535	285	17·5	0·050			
117·9	119·9	AS ABOVE banded. fg.	Py 0-3%	66864			"	2m	40	210	650	1·0	x			
141	144	XTAL LITHIC TUFF qz veining sheared chloritic	Py 0-10%, Cpy <1%	66865			"	3m	310	<5	65	1·0	0·008			
151·2	153·2	AS ABOVE ?ash bands foliated	Py 0-3% Cpy <1%	66866			"	2m	140	30	95	0·5	0·008			
266	269	RHYOLITE (C.C.) ht mgt veinlets gn mottled	Py <1%, Cpy 0-20%	66867			"	3m	190	5	50	1·0	x			
269	274·8	AS ABOVE rare ht mt veinlets	Py 1% Cpy <1%	66868			"	5·8m	1250	10	50	0·5	x			
274·8	277·8	AS ABOVE		66869			"	3m	190	10	60	0·5	x			

A 22076

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ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
ROSEBERY – TASMANIA

DIAMOND DRILL CORE RECORD

01 HOLE No. (3-7) Z142002

LOCATION
OBJECTIVE
RESULT

TOTAL DEPTH 331·8 m
HOLE SIZE HQ BQ NQ
COMMENCED 1973
COMPLETED 1973/1974
LOGGED BY NMF 1987. (RJD 1973)

03

8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.

02
ORE DIP. (8-11)
COLLAR DIP. (12-15) 60°
DIRECTION (16-19) 253°
R.L. (20-23)
CO-ORDS. 125°N 188E
LOCATION EAST DARWIN

DEPTH FROM	DEPTH TO	ROCK DESCRIPTION	MINERALISATION	04 SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA Sample Length	Cu	Pb	Zn	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%		CORE REC'D RUN	CORE REC'D SHORT
277·8	280·6	AS ABOVE ↑ brecciat°, ht mgt veining	Py 1% Cpy 1-3%	66870			½ core	3·4m	1550	30	60	1·0	0·032				
280·6	283·6	AS ABOVE	Py 1-3% Cpy <1%.	66871			"	3m	1550	10	55	1·0	0·017				
283·6	287·6	AS ABOVE. less ht mgt rich, gn pp	Py 1%	66872			"	4m	280	<5	70	1·0	0·008				
287·6	292·4	AS ABOVE. but now gn pp. mnr ht mt veinlets	Py + Cpy <1%	66873			"	4·8m	720	5	65	0·5	x				
322·3	326·4	AS ABOVE. gn pp tending pink ht rich in areas @ 323·8m.)	Py + Cpy <1%	66874			"	2·1m	1450	100	260	1·0	x				

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APPENDIX 4 — REPORT BY P. RUXTON

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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

Mineral Resources Division

JUKES-DARWIN - E.L. 6/85

SUMMARY OF WORK DONE 1ST QUARTER, 1987

P.A. Ruxton,
February, 1987.

SUMMARY

Work Completed

Exploration in the Jukes-Darwin E.L. 6/85 during the period 1986/87 has concentrated on the gold potential of the Central Sequence of the Mt. Read Volcanics.

Three areas were investigated in detail:-

1. Mt. Lyell Consols/Allan's Creek

308 rock chip and 9 stream sediment samples were collected over a reconnaissance grid from Mt. Darwin north to Allan's Creek/Snakes Peak.

Extensive alluvial gold workings were found in the gridded area.

2. Upper Lake Jukes

51 rock chips were collected over 5 reconnaissance lines.

Historical production at Upper lake Jukes indicates a recoverable gold grade of 3 g/t in a N.W. trending magnetite breccia/fault zone. A strike length between 150 to 350m is inferred.

3. Intercolonial Spur

Two reconnaissance grid lines and some rock chip sampling has been done.

Rock chip values up to 3.9 g/t Au have been recorded.

Regional stream and rock chip sampling was completed over the northern half of the Darwin Plateau (up to 2km south of Mt. Darwin). A total of 126 rock chips, 67 80 mesh stream and 65 panned concentrate samples were collected.

Alluvial gold workings were found in the Clarke River and on the Darwin Plateau.

Geochemical results are awaited from all areas.

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GEOLOGY/MINERALISATION

Mineralisation and alteration in the Central Sequence are Cambrian in age, related to the intrusion of the Darwin Granite.

Potassic, chloritic, sulphide and silicic alteration suggests a model similar to the porphyry-copper style. Gold mineralisation is probably related to magnetite/chlorite veins and lodes which generally trend NW.

The mineralisation/alteration pattern is similar to the Lake Selina - Murchison Granite area close to Tullah, West Tasmania.

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3.	1: 12,500	Allan's Creek Grid
4.	1: 12,500	Allan's Creek Grid - Geology
5.	As shown	Allan's Creek Grid Mt. Lyell Adit
6.	As shown	Ground Magnetic traverse perpendicular to chlorite-magnetite lode
7.	As shown	Ground Magnetic traverse along 200N across chlorite-magnetite lode
8.	As shown	Upper Lake Jukes - Geology
9.	As shown	Jukes-Darwin E.L. 6/86 Aeromagnetics and chloritic zones
10.	As shown (Overlay)	Jukes-Darwin E.L. 6/85 Major Prospects
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	Plan No.	Scale	Description
1.	A1-518-0033	1:5,000	Allan's Creek Grid Sample locations and types
2.	A1-518-0034	1:5,000	Allan's Creek Grid Geology
3.	A1-518	1:5,000	Darwin Sheet Sample locations and types
4.	A1-518	1:5,000	Darwin Sheet Interpretive Geology

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ACKNOWLEDGEMENTS

This work was completed in collaboration with David Gardner, Ian Mathison, Jeremy Read and Nigel Ferguson of the E.Z. Company.

1. INTRODUCTION

1.1. Location and Access

The Jukes-Darwin E.L. 6/85 covers 70 sq.km. approximately 20km south of Queenstown, Western Tasmania (Fig. 1).

Access to the eastern part of the E.L. is by 4WD track from the Crotty Road. Other parts of the licence are only accessible by helicopter or walking track.

1.2. Previous Work

The Jukes-Darwin area has been explored by several companies, namely B.H.P., Mt. Lyell, I.N.A.L., E.Z. and Goldfields in the search for stratabound volcanogenic style mineralisation. Only minor work by Goldfields has attempted to assess the gold potential of the area.

Early investigations included Turair and aeromagnetics with ground follow-up of I.P. and geochemistry. Magnetite/haematite veining in the Central Sequence and sulphide-bearing chloritic schists in the Eastern and Western Sequence were defined. Detailed work concentrated on the base metal potential of the Prince and East Darwin Workings. No massive sulphides were located.

1.3. Geology

1.3.1. Stratigraphy

Cambrian rocks of the Mt. Read Volcanics form the oldest rocks in the E.L. three divisions are recognizable (Fig. 2):

a) Central Sequence:
Central Sequence rocks are dominated by altered feldspar-phyric lavas and intrusives of probable rhyolitic composition. These rocks generally contain euhedral feldspar phenocrysts. Towards the southern end of the Darwin Plateau small quartz phenocrysts are visible.

b) Western Sequence:
Western Sequence rocks consist of lavas, ashflows, agglomerates, tuffs and minor intrusives.

c) Eastern Sequence:
The Eastern Sequence is characteristically quartz-phyric, consisting predominantly of lavas and

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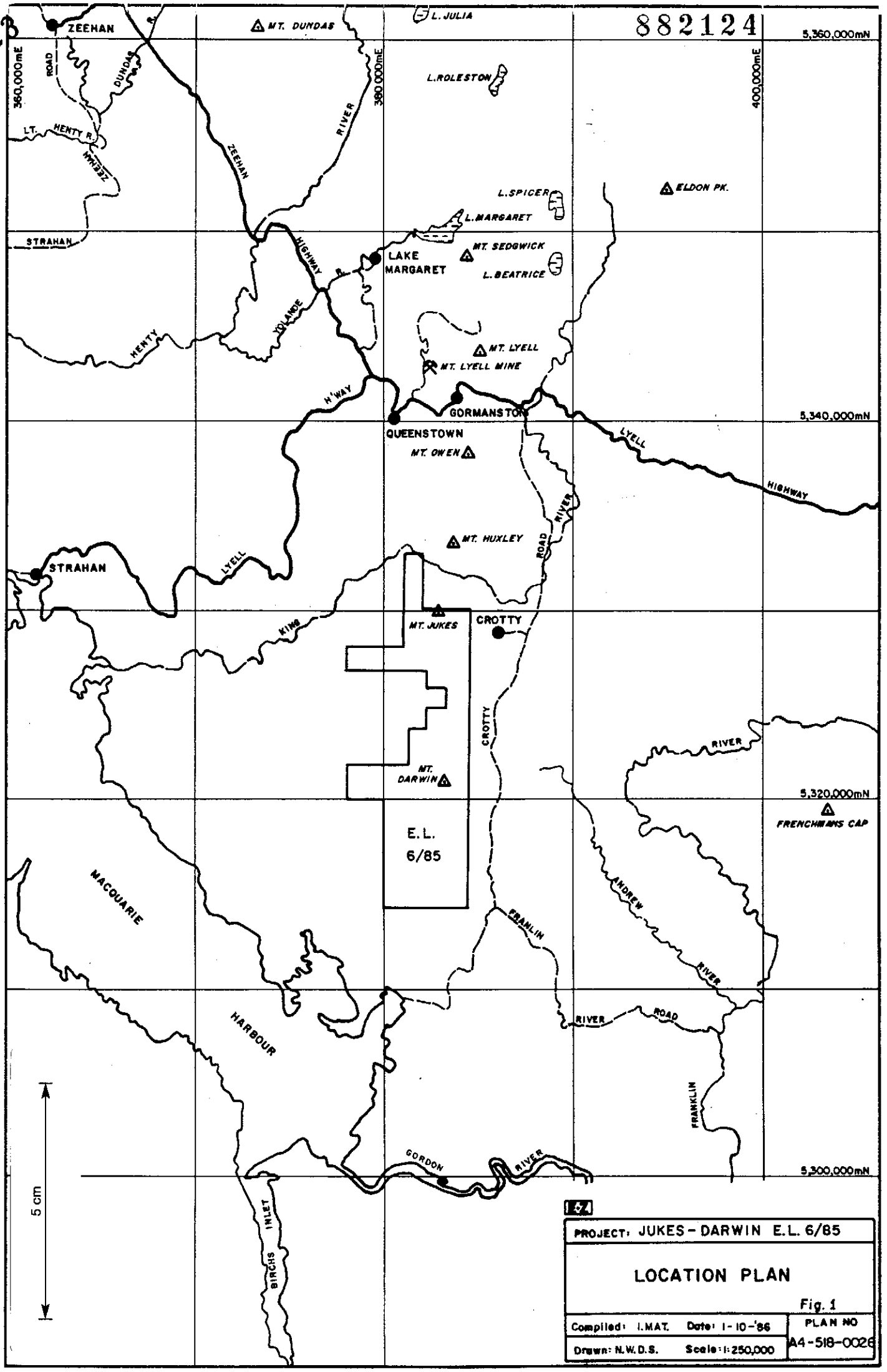

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PROJECT: JUKES - DARWIN E.L. 6/85

LOCATION PLAN

Fig. 1

Compiled: I.MAT.	Date: 1-10-'86	PLAN NO
Drawn: N.W.D.S.	Scale: 1:250,000	A4-518-0026

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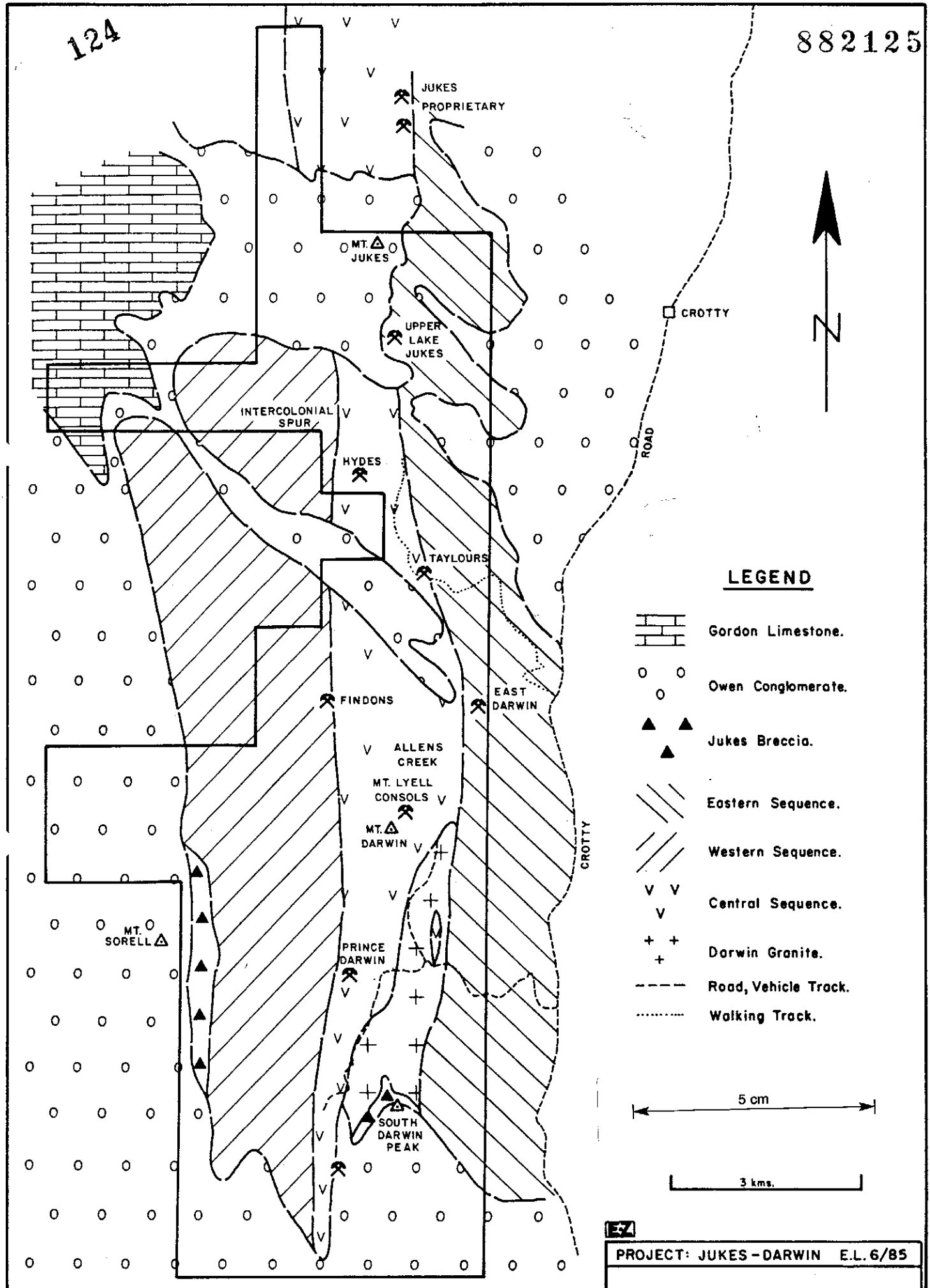

N.B. - Modified after N. White-1975 and K. Corbett - 1979.

E-Z

PROJECT: JUKES-DARWIN E.L. 6/85	
REGIONAL GEOLOGY	
Compiled: P.A.R. Date: FEB. 1987	PLAN NO Fig. 2
Drawn: N.W.D.S. Scale:	

intrusive rocks. These rocks are generally highly chloritised adjacent to the Central Sequence contact.

The time relationships between the three sequences were not discernible in the field.

The Mt. Read volcanics are intruded by the Cambro-Ordovician Darwin Granite. The fact that the granite forms most of the Darwin Plateau outcrop and is absent in the Clarke and King River valleys on either side, suggests steep or faulted contacts. Hornfelsing of the Eastern Sequence at the granite margin suggests that the granite is younger than the Mt. Read Volcanics. The granite is generally coarse grained and leucocratic.

The Darwin Granite and Mt. Read Volcanic Sequences are overlain unconformably by the Owen Conglomerate and subsequent Gordon Limestone of Ordovician age.

1.3.2. Alteration

a) Central Sequence

Feldspathic volcanics of the Central Sequence are highly altered. Mapping on the Allan's Creek Grid has led to the identification of three alteration types (Fig. 4).

i) Pink K-Feldspar
Fine grained pink alteration is common consisting of K-feldspar replacement of matrix phases. Pink rocks are variably chloritised. Relic euhedral feldspar phenocrysts are common.

ii) Green Chloritic
Chloritisation of the feldspathic rocks is variable from replacement of euhedral feldspar phenocrysts to total alteration. Chloritic breccias and veins are common.

iii) Silicification
Extensive silicification occurs along the Mt. Darwin-Sumpters Peak Ridge. A mappable band of 'chert' in this zone may represent an intensely silicified finer grained volcanic lithology (Fig. 4). Silicification is accompanied by brecciation and minor disseminated pyrite development. Rare relict euhedral feldspar pseudomorphs have been observed in the silicified zone, suggesting the altered feldspathic lithology.

These three types of alteration are cross cut by NW-trending chloritic lodes. Magnetite, haematite, tourmaline, minor disseminated pyrite and silicification are associated.

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1.3.3. Mineralisation

The results of the rock chip sampling will determine the hardrock gold source(s).

The position of old workings strongly suggest two gold sources in the Central Sequence rocks:

a) Magnetite breccias - veins
Magnetite veining _haematite, chlorite, pyrite and tourmaline have been extensively worked. At Upper Lake Jukes 4 adits were driven into a NW-trending copper-bearing magnetite breccia/vein zone. Recorded production from 134 tons of ore is 14 oz Au (approximately 3 g/t).

Magnetite-haematite float is abundant in the alluvial gold workings particularly south of Mt. Darwin.

b) Silicification + chloritic fault gangue
The Mt. Lyell Consols adit is driven through silicified volcanics with disseminated pyrite to intersect a strongly chloritised fault zone (Fig. 5). Two surface workings 80m east of the adit mouth are dug on chloritic - lode material. This chloritic fault gangue trends NE parallel to the silicified zone (Fig. 5).

At the margins of the Central Sequence intensely chloritised Western and Eastern Sequence rocks contain disseminated iron and copper sulphide (_galena and sphalerite). This mineralisation style is typified by the East Darwin and Bean and Thow workings. Rock chip assaying of the East Darwin prospect indicates a low gold potential (see Mathison and Taylor, 1986, p11).

2. WORK COMPLETED

2.1. Preliminary Work 1985/86

Regional stream sediment and rock chip sampling by Paul Gammon, 1985/86 (summarized in Mathison and Taylor, 1986) highlighted three areas worthy of follow-up:

a) Allan's Creek/Mt. Lyell Consols/Mt. Darwin - Altered Central Sequence rocks assaying upto 5.13 g/t Au.

b) Upper Lake Jukes - Central Sequence pink altered volcanics with magnetite veining assaying upto 1.98 g/t Au.

c) Intercolonial Spur - Central Sequence pink altered volcanics with previous Goldfields sampling yielding 3.9 g/t Au and with Paul Cammon's batch giving 0.32 g/t Au. More recent sampling by Ian Mathison gave values of up to 0.658 g/t Au.

2.2. Follow-up 1986/87

Follow-up work during January was concentrated in the Allan's Creek/Mt. Lyell Consols/Mt. Darwin area with the placement of a reconnaissance grid. During February work centred on the South Darwin/Darwin Plateau/Clarke river area with stream sampling and reconnaissance rock chip sampling.

Brief visits were made to Upper Lake Jukes/Bean and Thow (1 day) and Intercolonial Spur (1 hour).

2.2.1. Mt. Lyell Consols/Allan's Creek Area

Introduction

The Mt. Lyell Consols/Allan's Creek area is located between Mt. Darwin and Snakes Peak, approximately 18km south of Queenstown in E.L. 6/85 (Fig. 2).

5 personnel working from a helicopter supported camp collected 308 rock chip samples and 9 stream sediment samples to follow-up anomalous reconnaissance geochemistry.

Exploration Rationale

Regional stream sediment and rock chip sampling by Paul Gammon in 1985/86 recorded anomalous values in the Mt. Lyell Consols/Allan's Creek area. Rock chip values ranged up to 5.13 g/t Au. 0.29% Pb, 0.13% Zn and 335 ppm Cu.

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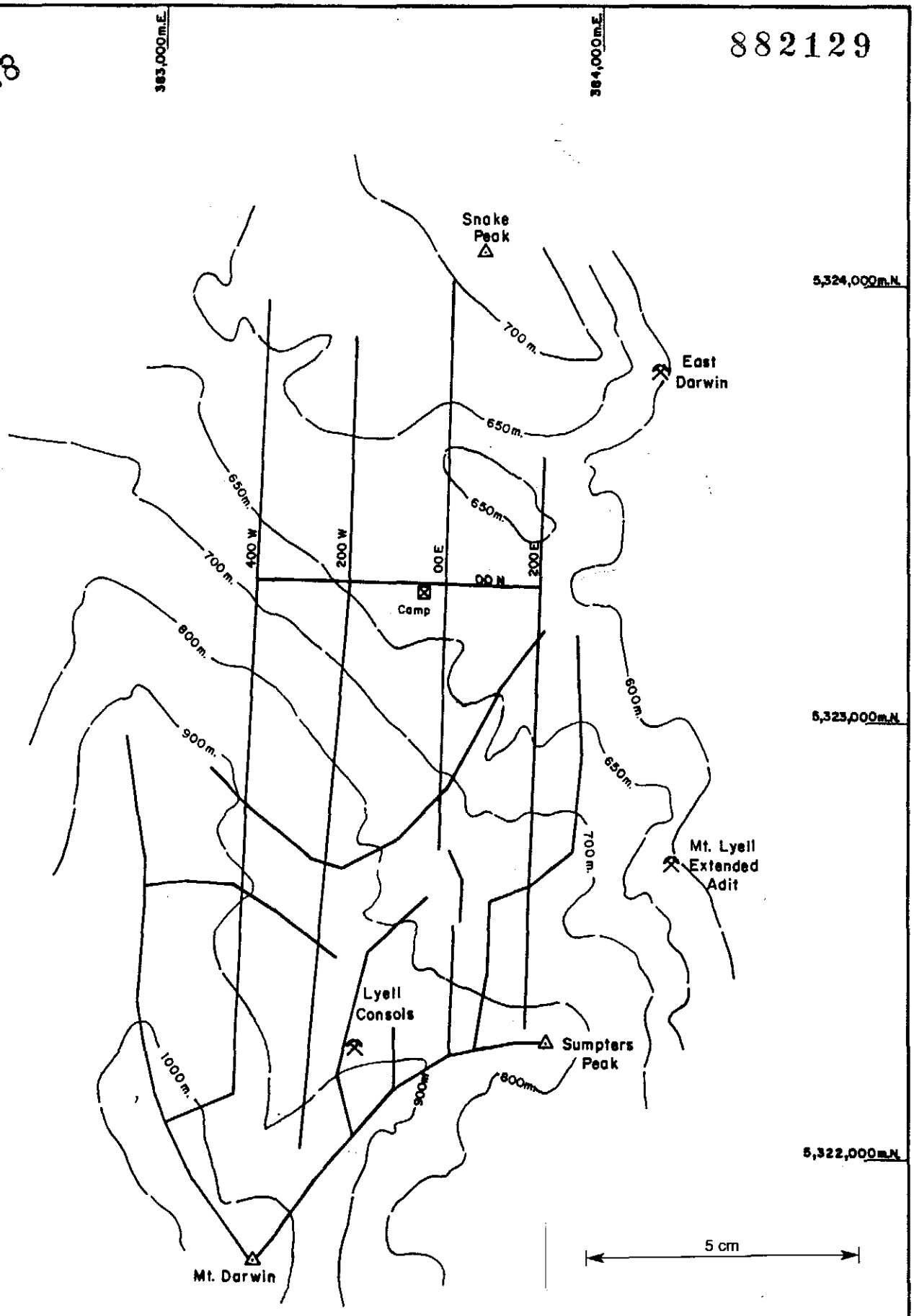

N.B. – Grid, ridge and spur sampling

by

P.A. Ruxton, N. Ferguson, J. Read, I. Matheson.

EZ

PROJECT: JUKES – DARWIN E.L. 6/85	
ALLENS CREEK GRID	
Compiled: P.A.R. Date: 2 – 2 – '87	PLAN NO
Drawn: N.W.D.S. Scale: 1:12,500	

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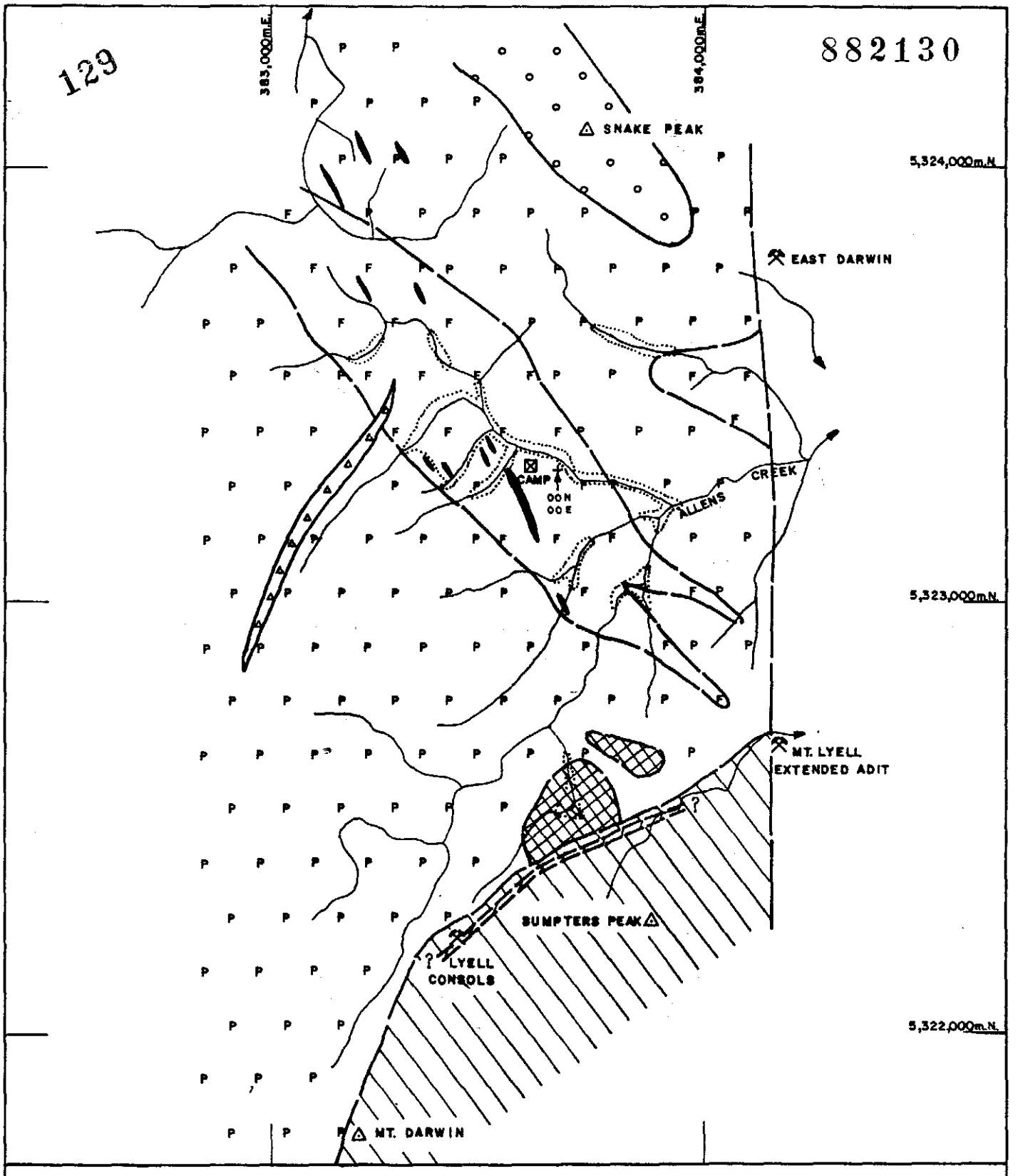


LEGEND

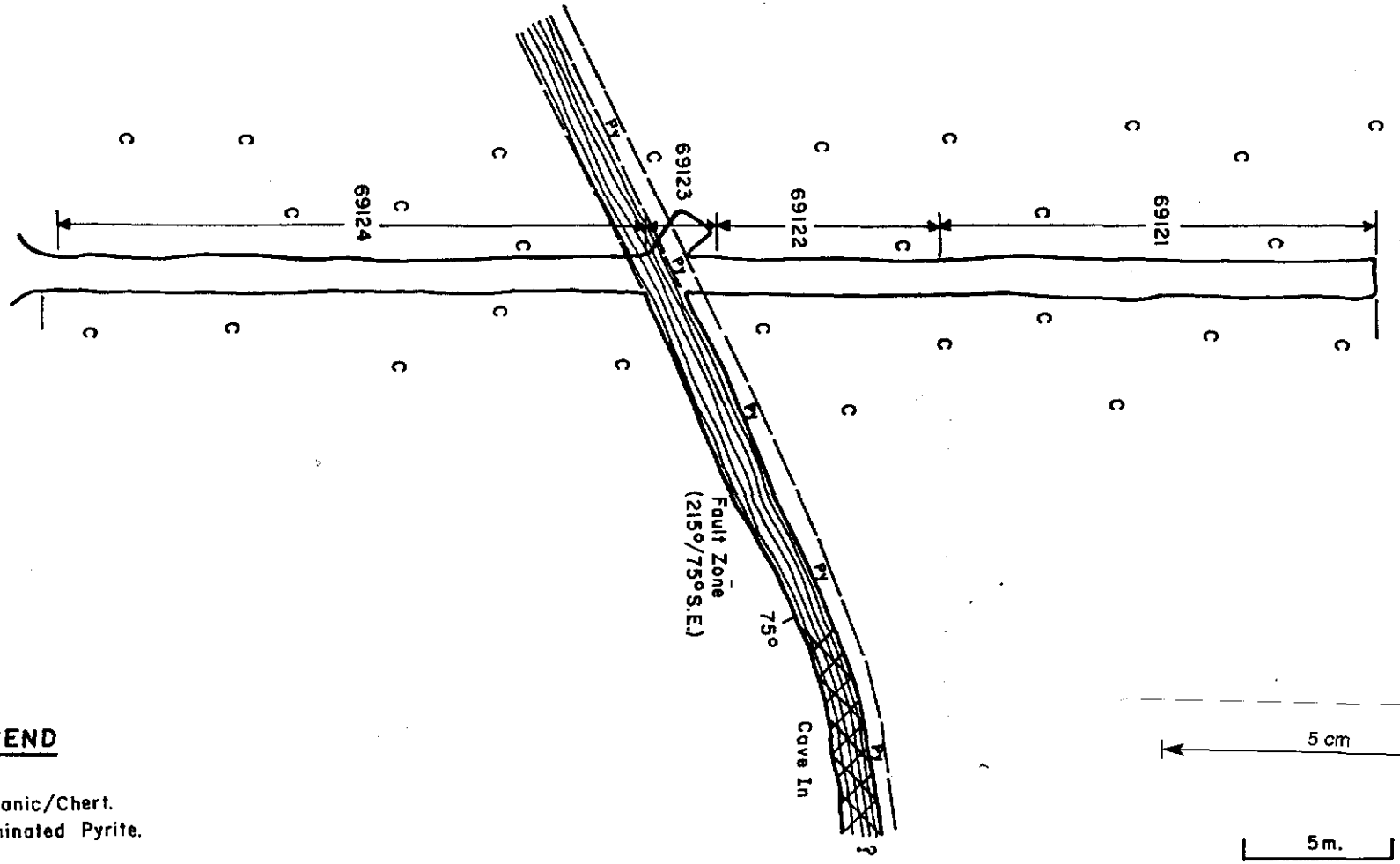
- Owen Conglomerate.
- Agglomerate.
- Feldspar-Phyric Lava.

ALTERATION

- F.G. Pink Alteration.
- Intense Chloritization.
- Silicification.
- "Chert" Band.
- Chloritic Lodes.
- Hardrock Workings.
- Alluvial Workings.
- Mountains.
- Camp Site.
- Creeks.

5 cm

PROJECT: JUKES-DARWIN E.L.6/85	
GEOLOGY	
Compiled: P.A.R. Date: 31-1-'87	PLAN NO
Drawn: N.W.D.S. Scale: 1:12,500	



LEGEND

C = Silicified Volcanic/Chert.
2-5% Disseminated Pyrite.

= Chloritic Fault Gangue.

Py = Chloritic/Siliceous Volcanic.
20-40% Pyrite.

EZ

PROJECT JUKES-DARWIN.-E.L. 6/85.

ALLANS CREEK GRID

LYELL CONSOLS ADIT

Compiled P.A.R. Date Jan. 1987	PLAN NO
Drawn N.W.D.S. Scale	Fig.

These anomalous rock chip results are spatially related to alluvial gold workings and with the Mt. Lyell Consols adit.

Limited geophysical work by International Nickel Australia Ltd. involved ground follow-up of two Turair anomalies with I.P. Two weak chargeability responses were not considered worthy of follow-up.

Work Completed

A reconnaissance grid of 4 lines and several ridge and spur traverses was placed to cover the anomalous area (Fig. 3, Plan 1). Grid lines and ridge and spur traverses were measured with topolite and compass and were rock chip sampled over 40m and 50m lengths respectively. The gridded area was geologically mapped (Fig. 4, Plan 2).

7 stream sediment samples were collected on the grid in an effort to narrow down the gold source.

Detailed rock chip sampling and geological mapping of the Mt. Lyell Consols adit was completed (Fig. 5). A detailed line of surface rock chip sampling was done over shallow surface workings 80m east of the adit.

2 stream sediment and 4 rock chip samples were collected from the Mt. Lyell Extended adit area.

13 petrological samples have been dispatched for sectioning and description to confirm the alteration hypothesis.

Two reconnaissance lines of ground magnetics were completed to determine if the major chloritic-magnetite lode zone immediately south of the camp was magnetic. One line perpendicular to the NW-trending lode and a traverse along 200W line were done. Neither line was anomalous (Fig's 6 and 7).

Results

On the ground, alluvial gold workings were found to be more extensive than previously indicated. The major workings occur immediately west of the camp, in the saddle between Mt. Darwin and Snake Peak (Fig. 4, Plan 2).

Hardrock workings were located on two distinct styles of mineralisation:

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Trimline A3 for reproduction

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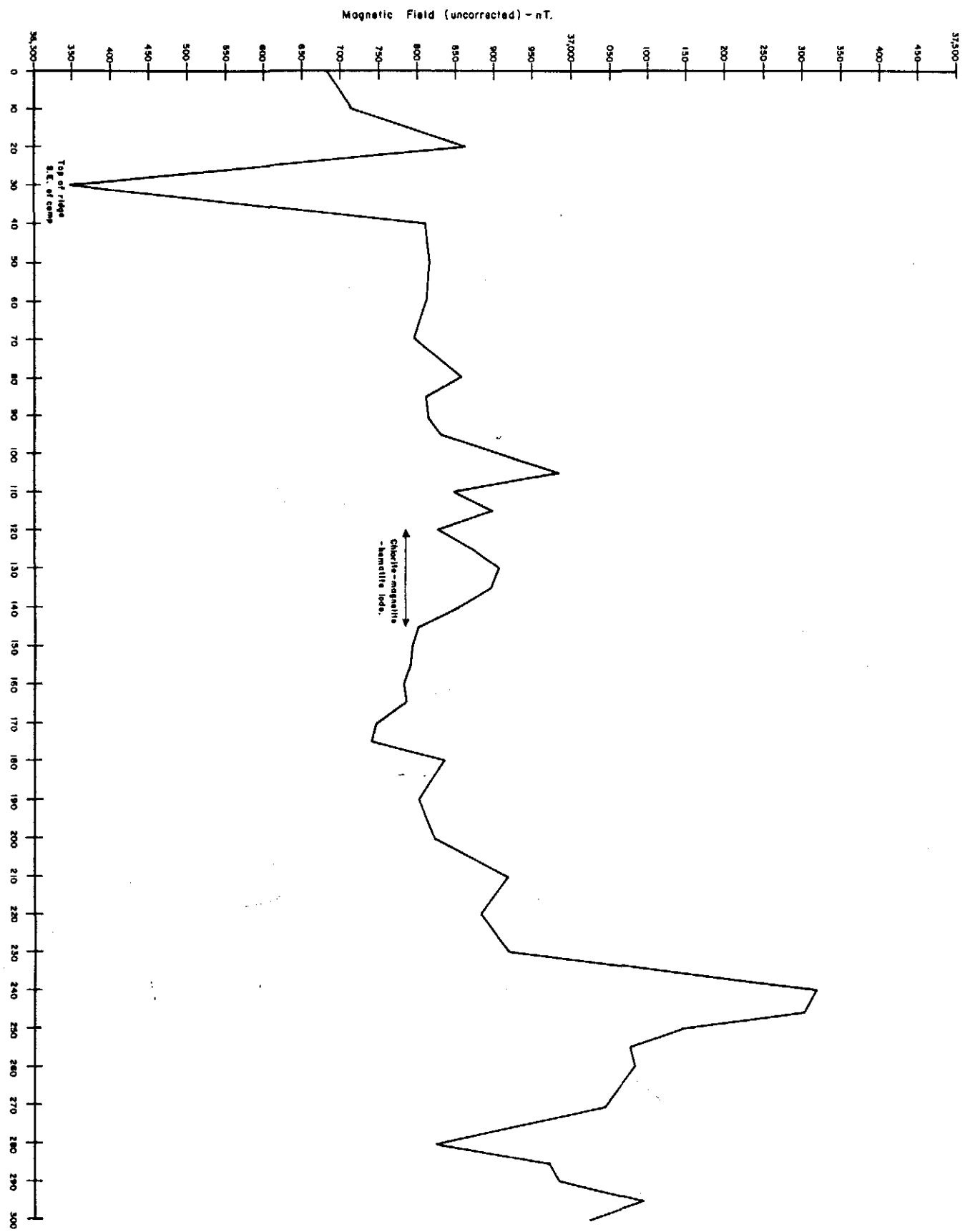
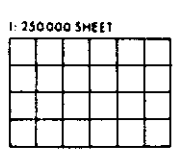


ie Mag. No. = 1111

Scales = Horizontal - 1cm = 10m.
Vertical - 1cm = 50 nT.

1: 250000 SHEET



SCALE

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES - DARWIN E.L. 6/85

LYELL CONSOLS
GROUND MAGNETIC LINE

Compiled: J. Read Date: 2-2-'87 Scale:

Latitude: Longitude:

Drawn: N.W.D.S File No

PLAN NO
Fig 6

Mobile Mag. No. = 1111

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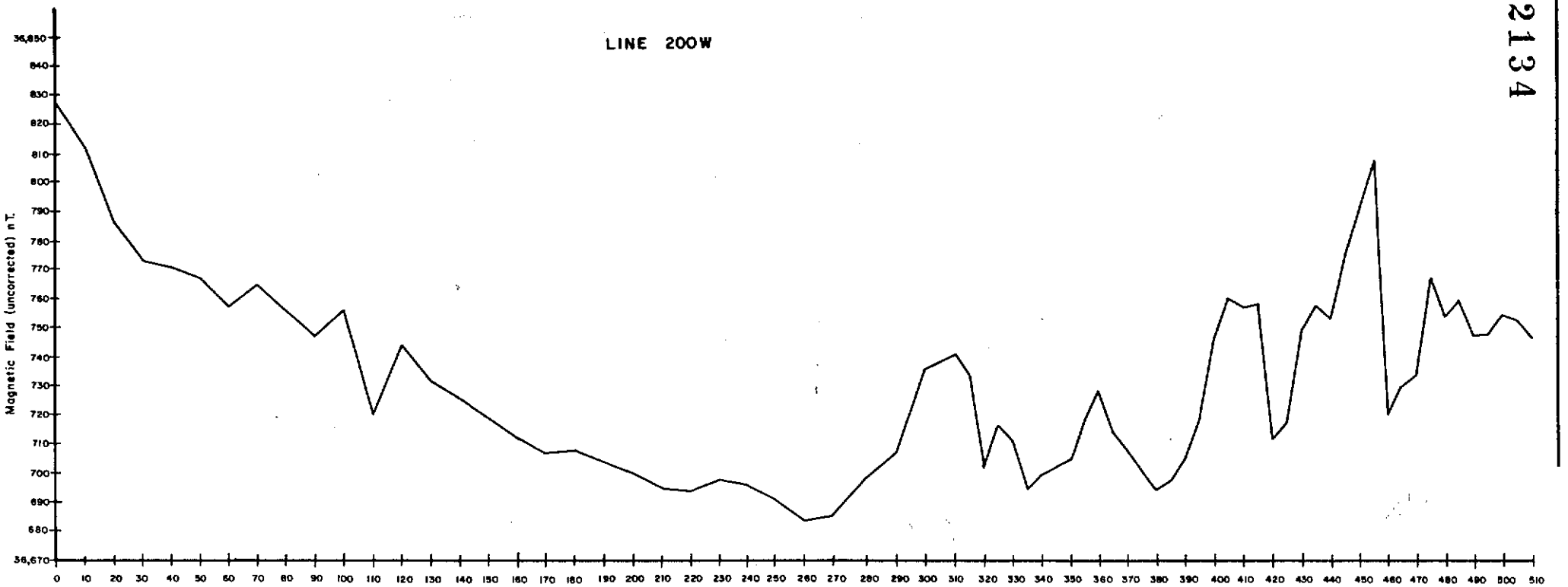
8821134

LINE 200W



Metres North from Baseline.

Scales = Horizontal - 7mm = 10m.
Vertical - 7mm = 10 nT.

1:250000 SHEET

SCALE

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85		
LYELL CONSOLS GROUND MAGNETIC LINE		
Compiled J. Read	Date 2/2/1987	Scale
Latitude:	Longitude:	PLAN NO Fig. 7
Drawn N.W.D.S.	File No:	

* A3 for binding within text

* A3 for report pockets

a) NE trending silicified rocks:- The Mt. Lyell Consols adit was driven into silicified volcanics with disseminated pyrite. A major drive followed a highly chloritised fault zone with up to 40% pyrite in the footwall.

b) NW-trending chloritic lodes:- Highly chloritised volcanics with associated disseminated pyrite and magnetite/haematite veining have been worked. Workings are shallow and obviously had limited success. The main zone of chloritic lode development occurs in the saddle between Mt. Darwin and Snake Peak (Fig. 4).

Assay results are awaited.

2.2.2. Darwin Plateau/Clarke River Area

Introduction

The Darwin Plateau/Clarke River area is located south of Mt. Darwin, about 20km due south of Queenstown (Fig's 1 and 2).

Two crews of two spent eight days reconnaissance stream sediment, rock chip sampling and geological mapping in the area. Helicopter and 4WD access was used.

A total of 126 rock chip, 67 -80 mesh stream sediment and 65 panned concentrate samples were collected. Sample locations are shown on Plan 3 and geology on Plan 4.

Exploration Rationale

The reconnaissance programme was designed to test the mineral potential of the Central Sequence south of Mt. Darwin, on the Darwin Plateau.

Regional work by Paul Gammon in 1985/6, returned an anomalous -80 mesh stream sediment sample with 0.231 ppm Au in drainage on the west side of the plateau.

One rock chip sample collected by Goldfields in 1983/84 on the southern edge of Mt. Darwin summit, assayed 3.8 ppm Au.

Several small alluvial gold workings were located on the plateau and in the Clarke River during the current programme.

Work Completed

Work concentrated on three main areas:

a) 9 tributaries of the Clarke River west of the Darwin Plateau were stream sediment and rock chip sampled. These added to the 2 streams sampled by Paul Gammon in 1985/86.

b) Reconnaissance geological mapping, rock chip and stream sediment sampling on the Darwin Plateau was completed.

c) 3 creeks draining the eastern side of Sumpter's Peak were rock chip and stream sediment sampled. 1 stream in this area was sampled by Paul Gammon.

Rock chip samples consisted of 3-4 kg of chips over exposed outcrop. 250 to 500 grams of -80 mesh stream sediment was seived in the field. Panned concentrates were dished on site to retain 5 to 20 grams of sample. Panned concentrates were taken at the same location as -80 mesh samples.

Results

The Darwin Plateau/Clarke River area has been adequately covered with 126 rock chip, 67 -80 mesh and 65 panned concentrate samples. Assay results are awaited.

The work revealed 3 previously unknown alluvial gold locations, 2 on the plateau and 1 in the Clarke River. 1 hardrock workings - Norm's Working - was discovered and sampled (Plans 3 and 4).

Exposure of the Darwin Granite was found to be more extensive than previously mapped, thus reducing the area of Central Sequence outcrop (Plan 4).

2.2.3. Upper Lake Jukes

Work Completed

An access track and five grid lines have been placed over the Upper Lake Jukes workings. A total of 51 rock chips were collected. Further sampling and geological mapping is necessary.

Initial mapping has confined the Central Sequence volcanics to a prominent NW-trending Knob known as

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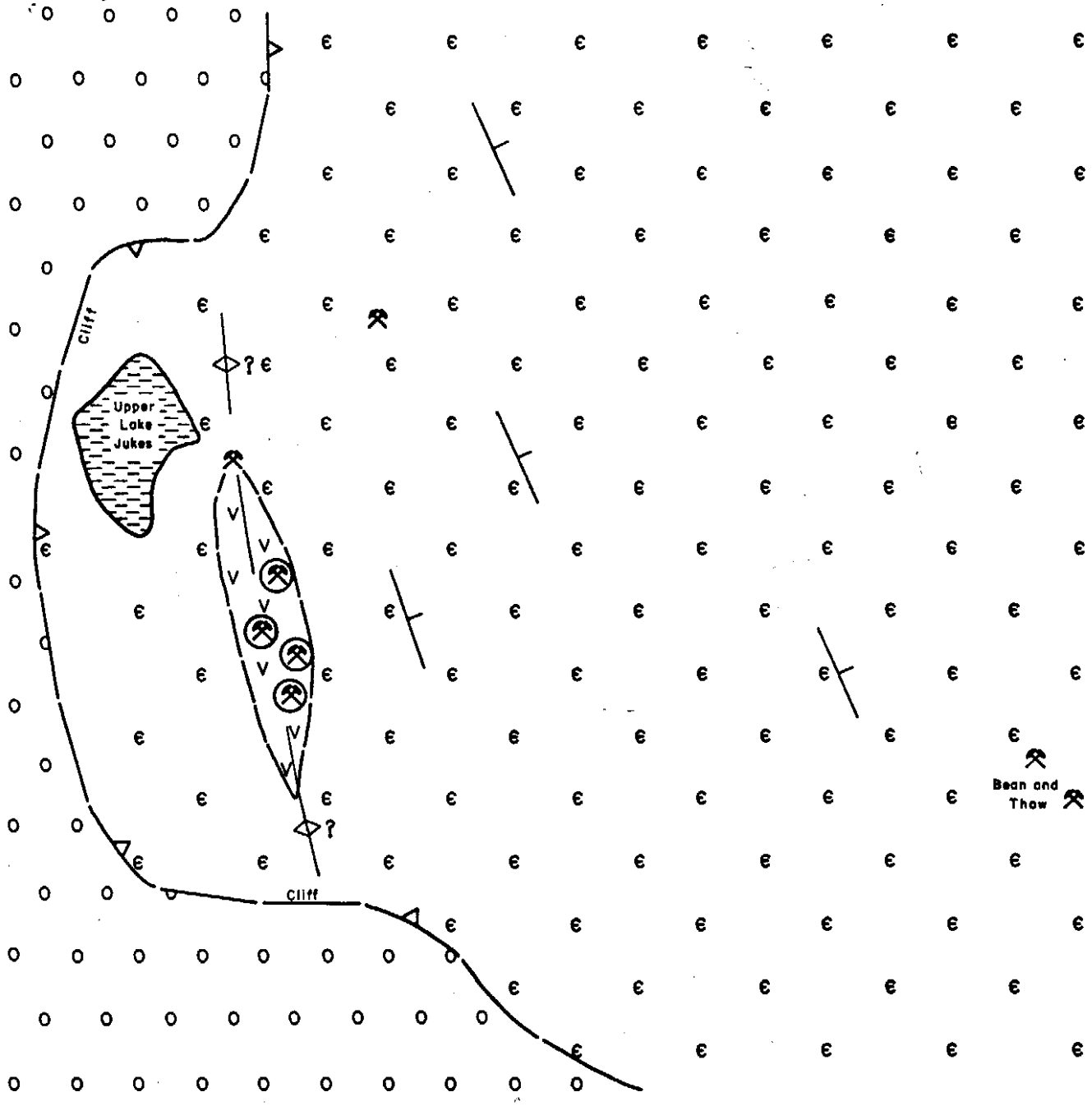


LEGEND

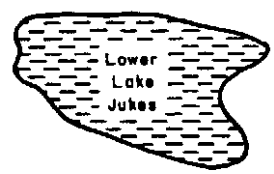
O O O — OWEN CONGLOMERATE.

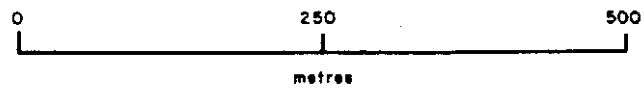
ϵ ϵ — EASTERN SEQUENCE
Quartz-phyric volcanics.

V V — CENTRAL SEQUENCE
Feldspar-phyric volcanics.
Pink + chlorite alteration.

Adit.

Old Working.





5 cm

PROJECT: JUKES - DARWIN E.L. 6/85	
UPPER LAKE JUKES GEOLOGY	
Compiled: P.A.R. Date: FEB. 1987	PLAN NO Fig. 8
Drawn: N W D S Scale:	

137

'Adit Knob' (Fig. 8). Central Sequence rocks consist of fine grained pink to grey feldspathic volcanics with minor(?) silicification and magnetite plus subordinate magnetite and quartz veining. The eastern and western flanks of the Knob show some chloritization.

To the east and west of Adit Knob green chloritised quartz-phyric volcanics of the Eastern Sequence outcrop on low ridges which trend NW.

Adit Knob is thought to represent the core of a domal fold structure which restricts the exposed strike to 350m (Fig. 8).

Potential

Recorded production indicates a recoverable gold grade of 3 g/t from Adit Knob (the Lake Jukes Mine). Mineralisation is confined to a NW trending zone in the centre of Adit Knob. The distance between the four adit workings indicates a minimum strike length of 150m. The outcrop area of the Central Sequence indicates an exposed strike length of 350m with further strike potential at depth.

2 drill holes (L1, L7) were drilled beneath the adit workings in 1957/58. Two selected bulk samples of EX core from L7 indicated:

0- 80 feet	0.06 g/t Au
80-400 feet	0.12 g/t Au

There is clearly potential for further more systematic drilling and assaying of Adit Knob.

2.2.4. Intercolonial Spur

A very brief visit was made to the Intercolonial Spur area. Initial work includes spot rock chip sampling, line pegging, rock chip traverse sampling and mapping. This work has only partially been completed.

Rock types in the area consist of Central Sequence feldspar-phyric volcanics altered to pink K-feldspar and variably chloritised. Magnetite and haematite veining is common and is at least in part associated with NW-trending chloritic lodes. Rock chip assays and further work is required to fully define the mineralisation in this area.

2.2.5. Bean and Thow

A brief visit to the Bean and Thow Workings indicated little economic potential. Minor pyrite _chalcopyrite is confined to a narrow zone (2 to 3m) in highly chloritic schists. Two rock chip samples were collected.

3. DISCUSSION

3.1. Alteration - Central Sequence/Darwin Granite

Pink fine grained K-feldspar and chloritization can be mapped in the roof zone of the Darwin Granite. Cross cutting NW-trending chloritic and magnetite veins have been observed and sampled in the granite.

A similar alteration sequence is mappable in the Central Sequence volcanics which form a roof zone to the granite. Pink alteration, chloritization and silicification are cross cut by late stage chloritic and magnetite veins.

This similarity of alteration types suggests that alteration of the Central Sequence is granite-related.

Support for a granite origin of the magnetite/chlorite veins was obtained by geochemistry and petrology done by Goldfields in 1983-84. Samples containing magnetite-chlorite-haematite were found to be tourmaline-bearing and were elevated in Sn + W03 (1,000ppm maximum).

3.2. Alteration - Eastern and Western Sequence

Adjacent to the Central Sequence both Eastern and Western Sequence rocks are highly chloritised (Fig. 9). Pyrite-chalcopyrite is disseminated within these chloritic zones e.g. East Darwin, Intercolonial Spur.

These chloritic alteration zones lie on the edge of aero-magnetic highs which are coincident with Central Sequence rocks and the Darwin Granite (Fig. 9).

The highest aeromagnetic response is coincident with the outcrop of the Darwin Granite. The magnetic signature is probably due to disseminated magnetite within the altered granite.

In the north of the E.L. the magnetic response decreases and broadens suggesting that the granite contact increases with depth in this direction.

The association of chloritic zones/mineral prospects and the Darwin Granite to the aeromagnetic pattern suggests a relationship between granite and mineralized chloritic schists (Fig. 10).

3.3. Mineralisation

Previous work has outlined two styles of mineralisation in the Jukes-Darwin area:-

140

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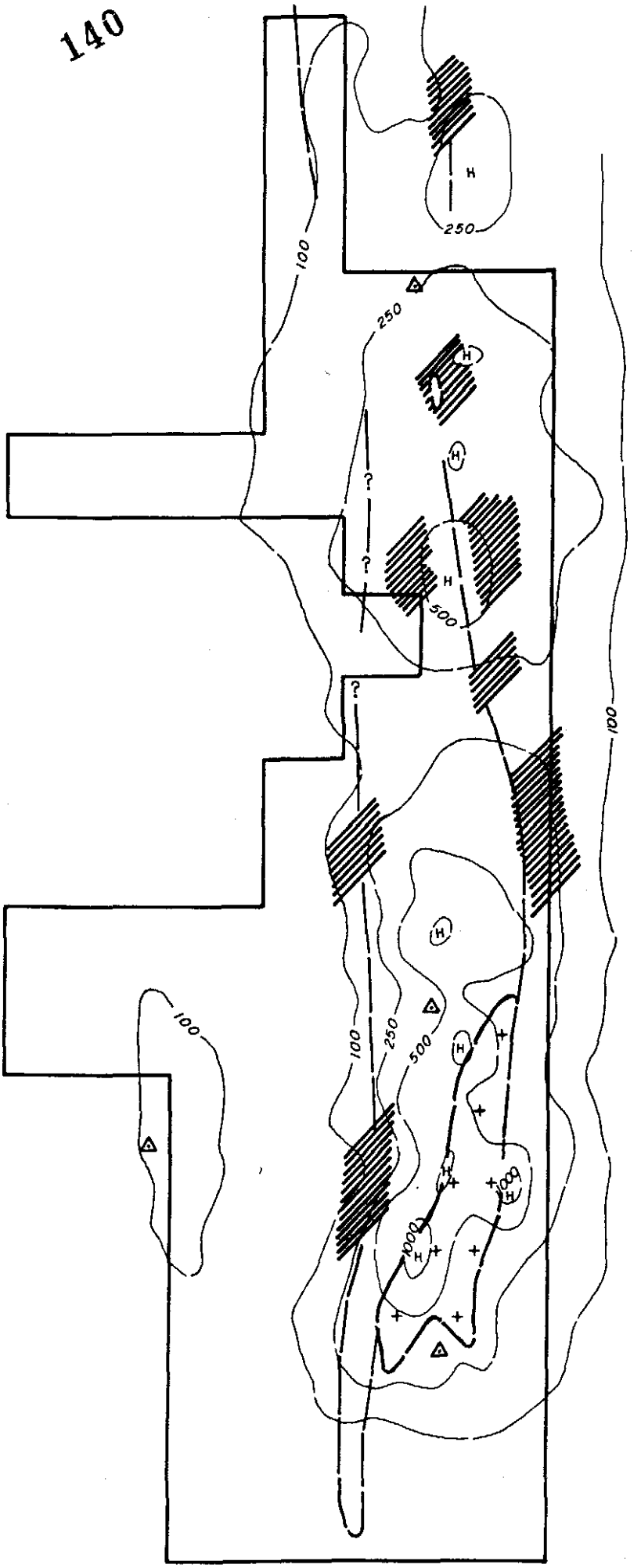


LEGEND

Chloritic Zones.

Boundary of Central Sequence.

Darwin Granite.

H Aeromagnetic Contour.

N

3 kms.

PROJECT: JUKES-DARWIN E.L. 6/85

AEROMAGNETICS & CHLORITIC ZONES

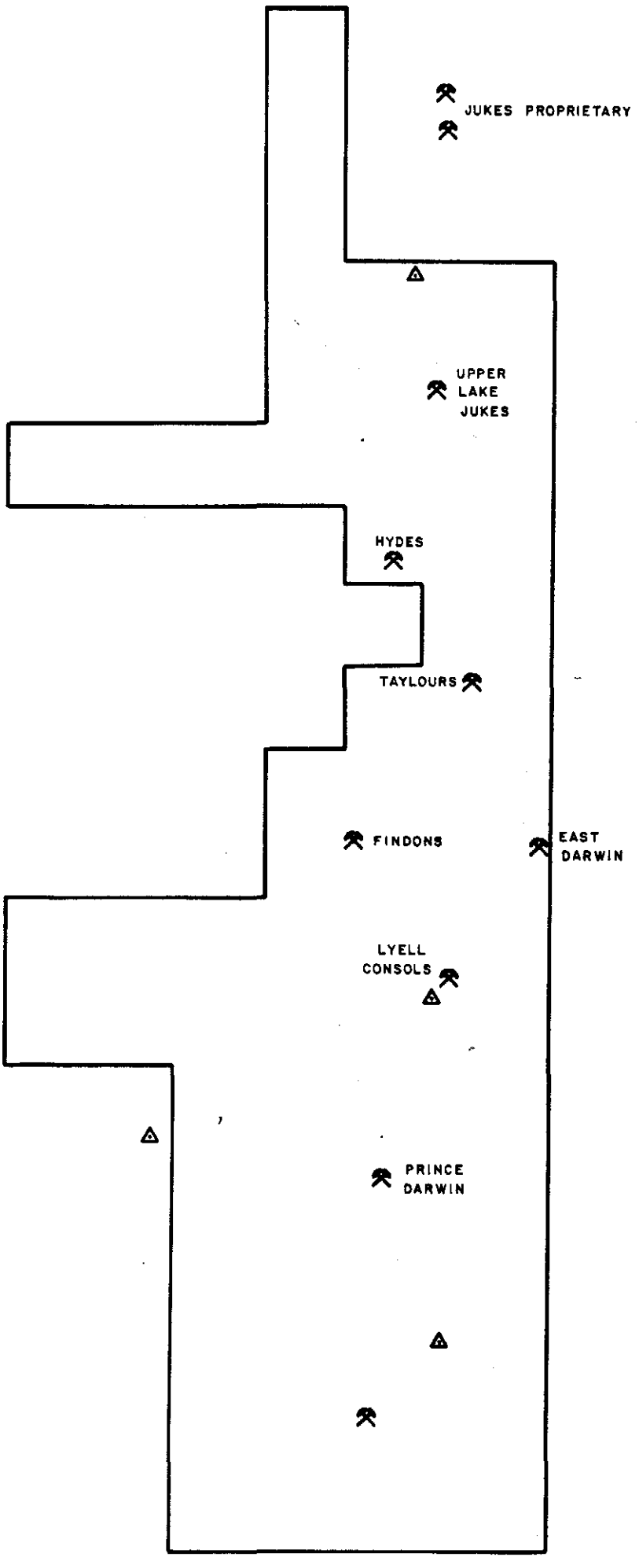
Compiled: P.A.R. Date: FEB. 1987

Drawn: N.W.D.S. Scale:

PLAN NO Fig. 9

141

882142



5 cm

N

3 kms.

EZ

PROJECT: JUKES – DARWIN E.L. 6/85

MAJOR PROSPECTS

Compiled: P.A.R. Date: FEB. 1987

Drawn: N.W.D.S. Scale:

PLAN NO Fig. 10

a) Magnetite-haematite veining in the Central Sequence,

b) Disseminated pyrite-chalcopyrite in chloritic schists.

The relationship of aeromagnetics to granite, to alteration, and to mineralisation strongly implies that all mineral occurrences are Cambrian in age, related to the Darwin Granite (Fig's 9 and 10).

In the Central Sequence chlorite, magnetite and silicification are related to NW-trending (and subordinate NE-trending) faults.

In the Eastern and Western Sequence pyrite and chalcopyrite are disseminated in chloritic schists. The disseminated style of this type is probably related to high porosity/-permeability and increased distance from the granite source (Fig. 11).

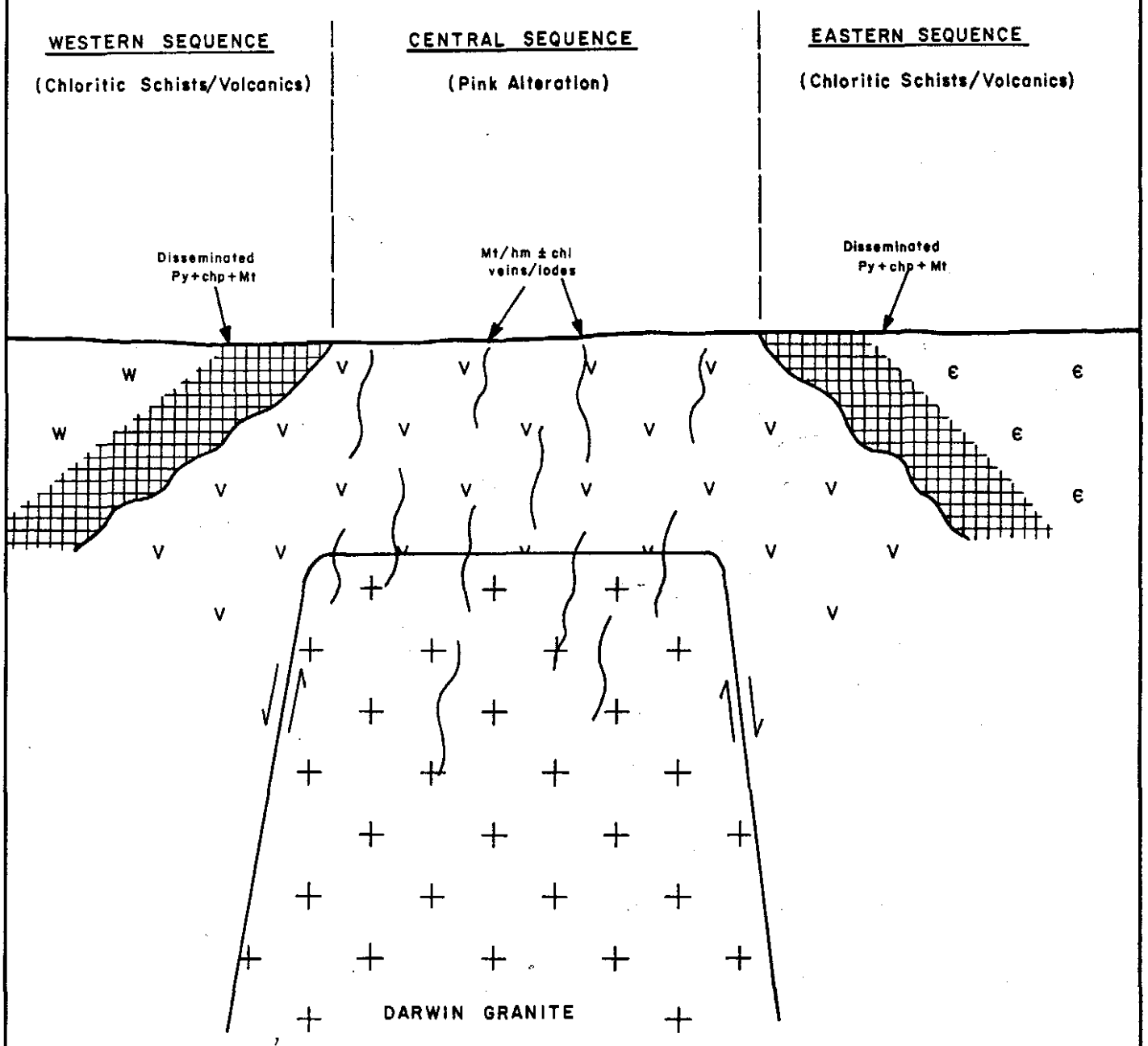
The evidence points to mineralization being epigenetic related to the Darwin Granite. A porphyry copper style alteration is with early potassic and later chloritic/-magnetite introduction.

Similar conclusions have been reached in the Lake Selina area where an identical alteration pattern is observed, again related to magnetic highs. Exposures of the Murchison Granite in the new Anthony Road show a similar early potassic alteration followed by chloritization. Minor gold has been recorded at the Lake Selina prospect.

Mineralisation at Red Hills is thought to represent the same style.

143

882144



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PROJECT: JUKES - DARWIN E.L. 6/85

CAMBRIAN MINERALIZATION STYLES

Compiled: P.A.R. Date: FEB. 1987

Drawn: N.W.D.S. Scale:

PLAN NO Fig. 11

4. RECOMMENDATIONS

4.1. Mt. Lyell Consols/Allan's Creek Area

1. Further work is dependent on assay results received from reconnaissance grid rock chip and minor stream sediment sampling.

2. The area has been sufficiently well sampled to warrant early drilling of geochemically anomalous targets.

4.2. Upper Lake Jukes

1. Completion of reconnaissance line mapping and rock chip sampling.

2. Rock chip traverse sampling and geological mapping of the 4 adits on "Adit Knob". All adits are in safe condition and easily accessible.

3. Favourable assay results should be followed up by early drilling.

4.3. Bean and Thow

1. Rock chip results from two samples collected from the two workings are awaited.

2. The prospect has severely restricted strike and width potential.

4.4. Intercolonial Spur

1. Completion of reconnaissance grid line mapping and rock chip sampling.

2. Reconnaissance mapping (+rock chip sampling) of the ridge at 1:5,000 scale to determine mineralisation potential outside the present anomalous area. Minor stream sediment sampling may aid in this programme.

4.5. Darwin Plateau/Clarke River Area

1. Assay results from regional stream and rock sampling are awaited.

2. Thorough coverage of the Darwin Plateau up to 2km south of Mt. Darwin has been completed. Anomalous zones will require gridding, rock chip sampling and geological mapping.

4.6. Prince Darwin/Southern Darwin Plateau

1. No work has been done in this area during the current programme.

2. Assessment of I.N.A.L., B.H.P. and early E.Z. work is required prior to any investigation. Particular attention should be paid to the amount and extent of gold sampling in the area.

3. Regional stream sediment and rock chip reconnaissance may be necessary, particularly on the western side of the Darwin Plateau.

4. Mineralisation around Prince Darwin should be investigated.

4.7. Head of the Garfield river

1. The Garfield River drains the western side of Mt. Darwin and Snake Peak.

2. Although no alluvial gold workings were seen in creeks draining west from the Mt. Darwin/Snake Peak Saddle work is still required to fully test the potential on the western margin of the Central Sequence.

3. Two to three days stream traversing would be required from helicopter put downs in the Garfield River valley.

4.8. Additional Assaying

1. Rock chip, -80 mesh and panned concentrate samples have been submitted for Cu, Pb, Zn, Au, Fe and Mn analysis (Gold by fire assay/A.A.S. -30g charge).

2. Anomalous samples should be run for

Ag		
Sb, As, Tl	-	Epithermal indicators
Sn, W03, Bi, Mo	-	Granite porphyry copper indicator elements.

This work will help to confirm the mineralisation style.

REFERENCES

CARTWRIGHT, A.J., 1983/84
Jukes-Darwin, E.L. Final Report 1983/84
Unpub. Goldfields Report 84/2137

CORBETT, K.D., 1976
"Notes on the volcanic stratigraphy and Cambrian Ordovician relationships in the Mt. Jukes area."
Unpub. Mines Dept. Report 1976/49

CORBETT, K.D., 1976
"The Mount Read Volcanic sequence in the King River Gorge below Crotty."
Unpub. Mines Dept. Report 1976/52

CORBETT, K.D., 1979
Stratigraphy, Correlation and Evolution of the Mount Read Volcanics in the Queenstown, Jukes-Darwin and Mt. Sedgewick areas.
Geological Survey Bulletin No. 58

CORBETT, K.D., 1985
"Geological Compilation Map of the Mount Read Volcanics, between Que River and Mt. Darwin."
Unpub. Mines Dept. Report 1985/11

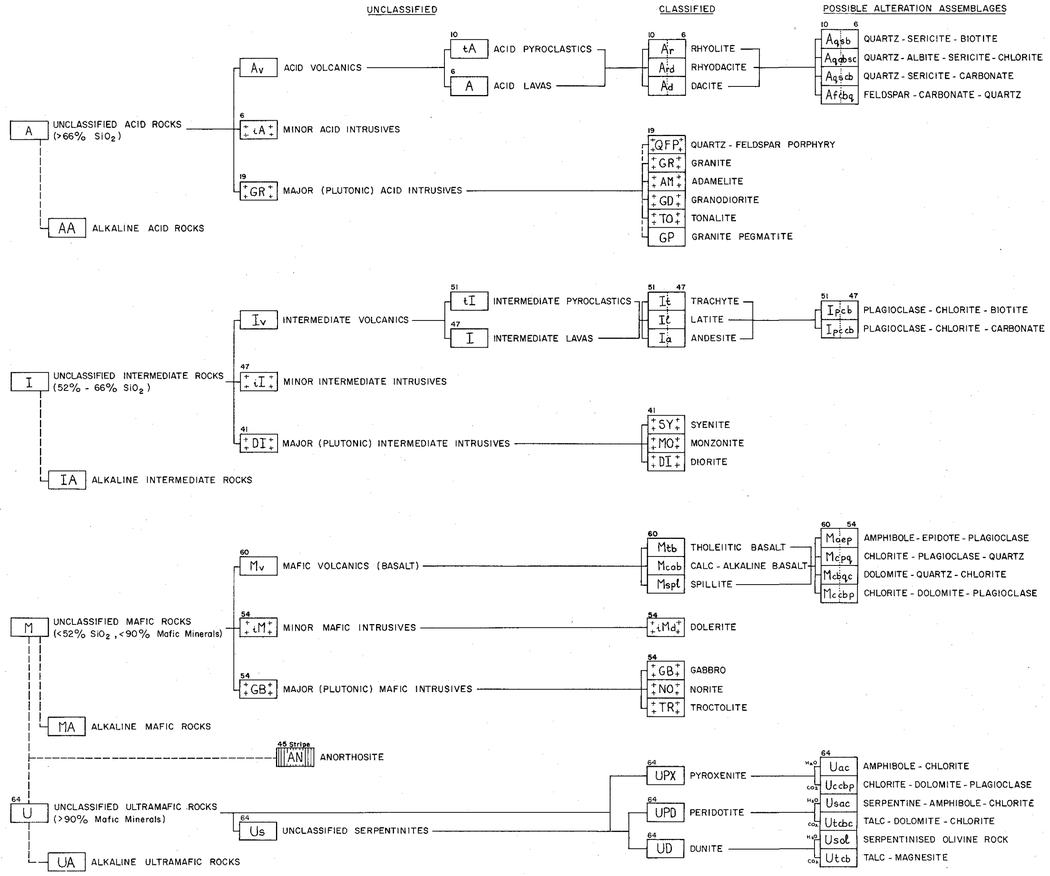
HUTTON, M.J., 1978/79
Annual Report on Jukes-Darwin area.
Unpub. Mines Dept. Report, 79/1384

MATHISON, I.J. and TAYLOR, S., 1986
"Progress Report on Exploration Activity, October, 1985 to September, 1986 in E.L. 6/85 Jukes-Darwin".
Unpub. E.Z. West Coast Mines Rept. T219, October, 1986.

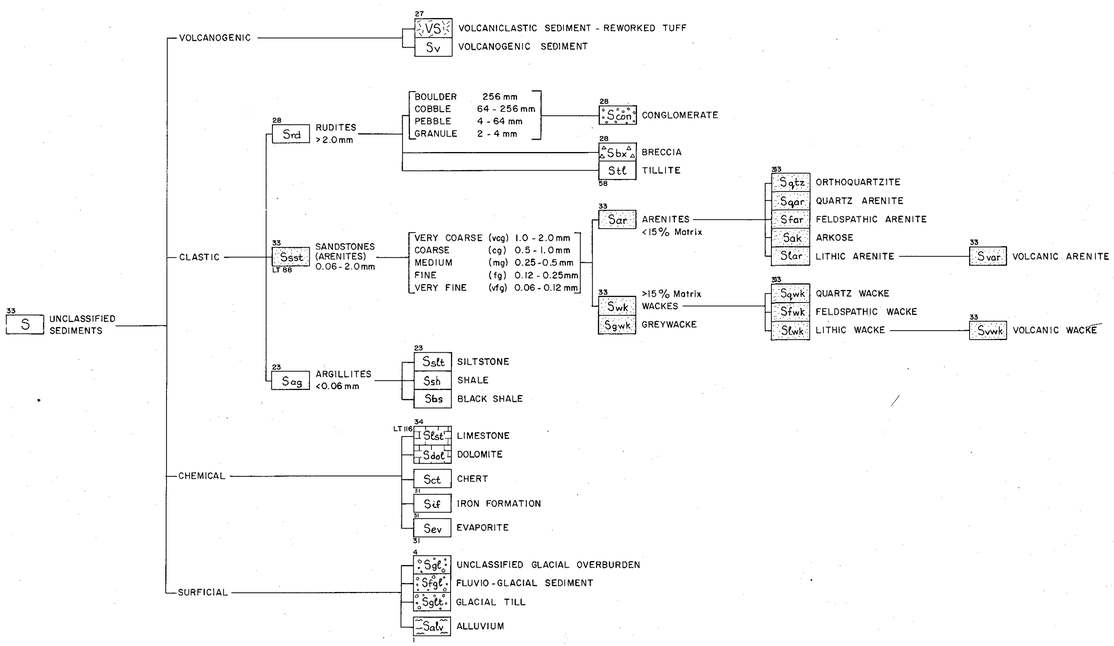
RUDDOCK, I., 1974
"Final Report to B.H.P. Co. on Jukes Darwin E.L. 13/65 between Oct., 1972 to March, 1974."
Unpub. International Nickel Australia Ltd. April, 1974

WILLIAMS, R.E., 1975
"Final report on Jukes-Darwin E.L. 13/65 and S.P.L. 140"
Unpub. E.Z. West Coast Mine Report, August, 1975

IGNEOUS ROCKS



SEDIMENTARY ROCKS



METAMORPHIC ROCKS

69 (Igneous overstripe if required)

SCH UNCLASSIFIED SCHISTS

IGNEOUS GRAIN SIZE

vcg	VERY COARSE GRAINED	>5cm
cg	COARSE GRAINED	5cm - 5mm
mg	MEDIUM GRAINED	5mm - 1mm
fg	FINE GRAINED	<1mm

STRUCTURAL AND TEXTURAL SYMBOLS

	MAJOR INTRUSIVES	
	t MINOR INTRUSIVES	
LT 958	t UNDIFFERENTIATED TUFF	
LT 963	lt LITHIC TUFF	
LT 132	xt CRYSTAL TUFF	
LT 132	vt VITRIC TUFF	
LT 132	lpt LAPILLI TUFF	4 - 32mm
LT 130	bx PYROCLASTIC BRECCIA	>32mm
LT 970	ag AGGLOMERATE	>32mm
LT 970	af ASH FLOW	
LT 191	ashflt ASH FALL (AIR FALL TUFF)	
LT 132/153		
LT 973	LAVA	
	bm BOMBS	
	pm PUMICE	
	fm(3) FIAMME (LENGTH IN cms)	
	p PORPHYRITIC	
	a AMYGDALOIDAL	
	ves VESICULAR	
	s SPHERULITIC	
	wld WELDED	
	rwkd REWORKED	
	Σ ACICULAR	
	oph OPHITIC	
	clt CLOTS	
	pg PEGMATIC	
	qe/aug QUARTZ EYES / AUGEN TEXTURE	
	bnd BANDING	
	fb FLOW BANDING	
	fa FLOW BRECCIA	
	pil PILLOWS (WITH FACING)	
	chlmgn CHILLED MARGIN	
	vns VEINS	
LT 153	bd BEDDED	
	Xbd CROSS BEDDED	
	tkbd THICK BEDDED	
	tnbd THIN BEDDED	
	lam LAMINATED	
	gd GRADED or DIRECTION OF DECREASING GRAIN SIZE	
	fd cst LODE CAST	
	sf SCOUR AND FILL	
	m MASSIVE	
	clvd CLEAVED	
	sch SCHISTOSE	
	jtd JOINTED	
	bx'd BRECCIATED (TECTONIC)	
	ox OXIDISED	
	L LATERITE	
	stn STAINING	
	ibd INTERBEDDED	
	hflsd HORNFELSED	

STRUCTURAL SYMBOLS

- FAULT
- DEFINITE CONTACT or OUTCROP LIMIT
- APPROXIMATE CONTACT or RUBBLE BOUNDARY
- INTERPRETED CONTACT or FLOAT BOUNDARY
- SCHISTOSE ZONE
- UNCONFORMITY
- BEDDING
- OVERTURNED BEDDING
- CLEAVAGE
- PRIMARY FOLIATION
- JOINTING
- PLUNGE
- FOLD AXIS PLUNGE
- FACING

SULPHIDE AND OXIDE MINERALOGY

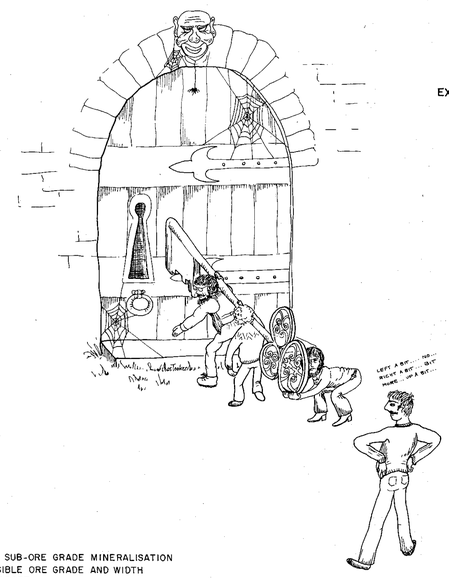
	bwk	BOXWORK
	sul	SULPHIDES
RED INK	gos	GOSSAN
	pn	PENTLANDITE
	hm	HÆMATITE
	cc	CHALCOCITE
	cv	COVELLITE
	bn	BORNITE
	cp	CHALCOPYRITE
	sp	SPHALERITE
	gn	GALENA
	po	PYRRHOTITE
	py	PYRITE
	il	ILLMENITE
	lx	LEUCOXENE
	mag	MAGNETITE
	lim	LIMONITE
	Mn	MANGANESE OXIDES
	chr	CHROMITE

MINERALISATION

STAEDTLER 104 - 2	DIS5	10% DISSEMINATED
	DIS9	10 - 20% DISSEMINATED
	DIS6	~25% DISSEMINATED
	STR	STRINGER
	MAS	MASSIVE

DRILL HOLE SYMBOLS

- DRILL HOLE - BARREN
- DRILL HOLE - MINOR OR POSSIBLE SUB-ORE GRADE MINERALISATION
- DRILL HOLE - SIGNIFICANT OR POSSIBLE ORE GRADE AND WIDTH
- DRILL HOLE - FAILED TO REACH TARGET



SILICATE MINERALOGY

20	q	QUARTZ
51	k	K - FELDSPAR
17	ab	ALBITE
45	p	PLAGIOCLASE
45	a	AMPHIBOLE
64	px	PYROXENE
10	b	BIOTITE
45	c	CHLORITE
55	cb	CARBONATE
31	s	SERICITE
46	e	EPIDOTE
64	t	TALC
6	ba	BARITE
45	f	FELDSPAR
45	hb	HORNBLENDE
55	sd	SIDERITE
47	to	TOURMALINE
51	ov	OLIVINE

ALTERATION MINERALOGY

17	a'b	ALBITISED
55	cb'd	CARBONATED
45	c'd	CHLORITISED
31	s'd	SERICITISED
20	si	SILICIFIED
45	hb'd	HORNBLENDISED
47	to'd	TOURMALINISED
27	kl'd	KAOLINISED

COLOURS

ple	PALE
dk	DARK
pk	PINK
rd	RED
org	ORANGE
yel	YELLOW
ol	OLIVE
grn	GREEN
bl	BLUE
gry	GREY
blk	BLACK
brn	BROWN
wht	WHITE
crm	CREAM
purp	PURPLE

TOPOGRAPHICAL SYMBOLS

- WATER RACE
- FENCE
- FORMED ROAD
- TRACK
- RAILWAY
- RAILWAY (ABANDONED)
- RIVER
- STREAM
- LAKE
- SWAMP
- BUILDING
- POWER LINE
- TRIG. STATION
- WET HILL — HILL
- SHAFTS
- ADIT
- TRENCH
- MINE OR QUARRY

OPERATION OF LEGEND

DESCRIBING ROCK UNITS

1. CAPITAL LETTER : indicates primary classification eg. S - sedimentary rocks
   A - acid igneous rocks
2. LOWER CASE LETTERS : indicates the following -
   2.1. AS PREFIXES : in progressive order
   (i) COLOURS eg. gm M : green mafic igneous rock
   pk/grn A : pink fragments or phenocrysts in an acid igneous rock with a green matrix
   (ii) STRUCTURAL or TEXTURAL FEATURES
   eg. xtA : crystal tuff of acid composition
   xbd S : cross bedded sedimentary rock
   2.2. AS SUFFIXES : in progressive order
   (i) CATEGORISED
   eg. Ar : rhyolite, Ssh : Shale
   (ii) MINERALOGY
   eg. pArf : rhyolite with feldspar phenocrysts
   Aqs : quartz sericite rock of acid igneous origin
   Ara'b : albitised rhyolite

EXAMPLE : pk/grn clvd xvt Ard ab c'd
pk/grn : (Colours) pink crystals in a green matrix
clvd : (Structural feature) cleaved
xvt : (Texture) crystal vitric tuff
A : (Primary subdivision) acid igneous rock
rd : (Categorised) rhyodacite
ab : (Primary mineralogy) albite phenocrysts
c'd : (Alteration mineralogy) chloritised

LT 132 : Code Number of LETRATONE pattern
10 : Number of CUMBERLAND DERWENT SERIES No. 19 Coloured Pencil

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: TAS.

87-2706
Vol 2

GEOLOGICAL LEGEND

EXPLORATION

882148

SCALE:	Survey: I.R.M.	Revised:
Reference:	Date: August 1980	REF. NO.
Drawn: R.P.T.	Checked: J.R.M.D.	AI-504 - ORIGINAL

AI-518-0033

382 000m.E. | 383 000m.E. | 384 000m.E. | 385 000m.E.

5 323 000m.N.

5 322 000m.N.

5 321 000m.N.

SNAKE PEAK

00E | 200W | 200E | 00 N | 400W

ALLANS CREEK

DARDUS CREEK

LEASE BOUNDARY

MOUNT DARWIN

SUMPTERS PEAK

Helipad

N.O. NO OUTCROP.

N.S. NOT SAMPLED.

S/S OVERLAPPING SAMPLES.

LEGEND

- STREAM SEDIMENT SAMPLE.
- ROCK CHIP SAMPLE.
- ROCK CHIP TRAVERSE SAMPLE.
- OLD WORKINGS.

Samples taken by:
P.A. RUXTON
N. FERGUSON
J. READ
I. MATHISON

1:250 000 SHEET

5 cm

SCALE

0 100 200 300 400 500 metres

EZ

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85

87-2706 Vol 2

SAMPLE LOCATIONS AND TYPES

(ALLANS CREEK GRID) 882149

Compiled: P.A.Ruxton.	Date: Jan. 1987	Scale: 1:5,000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 1

AI-518-0033

5693

Trimline A1 for reports

AI-518-0034

LEGEND

	(ORDOVICIAN)	Owen Conglomerate.
△ △	CENTRAL SEQUENCE (CAMBRIAN)	Agglomerate.
F	"	Feldspar-phyric lava (feldspar phenocrysts).

ALTERATION — CENTRAL SEQUENCE

P	Fine grained pink alteration of feldspar-phyric lava. Variable chloritization. (K feldspar or hematite + albite).
	Intense chloritic alteration of feldspar phyric lava and fine grained pink altered lava.
	Silicification of feldspar-phyric lava and fine grained pink altered lava Gossanous ± brecciation ± pyrite.
	"Chert" band. Silicified fine grained volcanic(?) rock and feldspar-phyric lava. Minor brecciation. Gossanous ± pyrite
	Chloritic lodes. Intensely chloritized lava with quartz/magnetite/hematite veins. ± disseminated and vein pyrite.
M/h	Magnetite/hematite veining.
sil	Patchy silicification.
chl	Chloritic breccias/fault zones, (up to 10cm. across).
Py	Disseminated/vein pyrite.
	Alluvial Gold Workings.
⚒	Hardrock Workings.

Geology by:
P.A. RUXTON.
N. FERGUSON.
J. READ.
I. MATHISON.

382 000m E · 383 000m E · 384 000m E · 385 000m E

5 323 000m N · 5 322 000m N · 5 321 000m N

SNAKE PEAK 1 42°

SCREE SLOPE

ALLANS CREEK

Alluvial 70° Gold Workings

Helipad · Camp · Mu

Allans Falls

LEASE BOUNDARY

EASTERN SEQUENCE

DARDUS CREEK

Mt. Lyell Extended Adit

Lyell Consols Adit

SUMPTERS PEAK

MOUNT DARWIN

1:250000 SHEET

5 cm

SCALE

0 · 100 · 200 · 300 · 400 · 500 metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85

87-2706 Vol 2

GEOLOGY

882150

(ALLANS CREEK GRID)

Compiled: P.A. Ruxton.	Date: Jan. 1987	Scale: 1:5,000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: AI-518-0034

5691

AI-518-0048

382000 mE | 382500 mE | 383000 mE | 383500 mE | 384000 mE | 384500 mE

5323000 mN

5322500 mN

5322000 mN

5321500 mN

5321000 mN

NB:- 0= <0·008 - Below Detection.

5 cm

SCALE

0 100 200 300 400 500
metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85

87-2706 Vol 2

ROCK CHIP GEOCHEMISTRY

Au

(ALLANS CREEK GRID) 882151

Compiled: I.M.A.T.	Date: 17-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 3

AI-518-0048

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5694

AI-518-0046

382000 mE | 382500 mE | 383000 mE | 383500 mE | 384000 mE | 384500 mE

5323000 mN

5322500 mN

5322000 mN

5321500 mN

5321000 mN

SCALE
0 100 200 300 400 500
metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L.6/85

87-2708 Vol 2

ROCK CHIP GEOCHEMISTRY

Cu

(ALLANS CREEK GRID) 882152

Compiled: I.MAT.	Date: 17-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 4

AI-518-0046

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5695

AI-518-0047

382000 mE
382500 mE
383000 mE
383500 mE
384000 mE
384500 mE

5323000 mN
5322500 mN
5322000 mN
5321500 mN
5321000 mN

5 cm

SCALE
0 100 200 300 400 500
metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85

87-2706 Vol 2

ROCK CHIP GEOCHEMISTRY

Pb

(ALLANS CREEK GRID)

882153

Compiled: I. MAT.	Date: 17-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 5

AI-518-0047

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5696

AI-518-0045

382000 mE
382500 mE
383000 mE
383500 mE
384000 mE
384500 mE

5323000 mN
5322500 mN
5322000 mN
5321500 mN
5321000 mN

5 cm

SCALE
0 100 200 300 400 500
metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L.6/85

87-2706 Vol 2

ROCK CHIP GEOCHEMISTRY

Zn

(ALLANS CREEK GRID) 882154

Compiled: I.MAT.	Date: 17-SEP-87	Scale 1: 5000	
AMG:	Latitude:	Longitude:	
Drawn: N.W.D.S.	File No:	PLAN NO:	6.
		AI-518-0045	

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5697

380 500mE
381 000mE
381 500mE
382 000mE
382 500mE
383 000mE
383 500mE
384 000mE
384 500mE
385 000mE

5 329 500mN
5 329 000mN
5 328 500mN
5 328 000mN
5 327 500mN
5 327 000mN
5 326 500mN
5 326 000mN

MOUNT JUKES
CENTRAL PEAK
WEST JUKES PEAK
PYRAMID PEAK
SOUTH JUKES PEAK
UPPER LAKE JUKES
LOWER LAKE JUKES

E.L. 6/85

400N
300N
200N
100N
00N

R66536
R66558
R66557
R66556
R66555
R66554
R66553
R66542
R66543
R66534
R66535
R66544
R66539
R66540
R66541
R66545
R66546
R66552
R66551
R66577
R66578
R66479
R66478
R66477
R66476
R66475
R66474
R66473
R66472
R66485
R66484
R66483
R66482
R66481
R66460
R66462
R66458
R66457
R66456
R66455
R66576
R66451

R66473 - Rock Chip Sample.
S48973 - Stream Sediment Sample.
Sampled by P. Gamman, 1985
R 66576 - Rock Chip Sample.
S 65432 - Stream Sediment Sample.
Sampled by P.A. Ruxton, 1987 D. Gardner,
Trenches
Adits.

JUKES
SNAKE
DARWIN

AMG MN
11°E

882155

5 cm

PLAN No. 7

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

97-276b Vol 1

SAMPLE LOCATIONS

TYPES and NUMBERS

Scale: 1:5000	Survey: P.G.	Revised:
Reference:	Date: 4-4-85	Ref. No. AO-518-0007
Drawn: R.J.R.	Checked:	

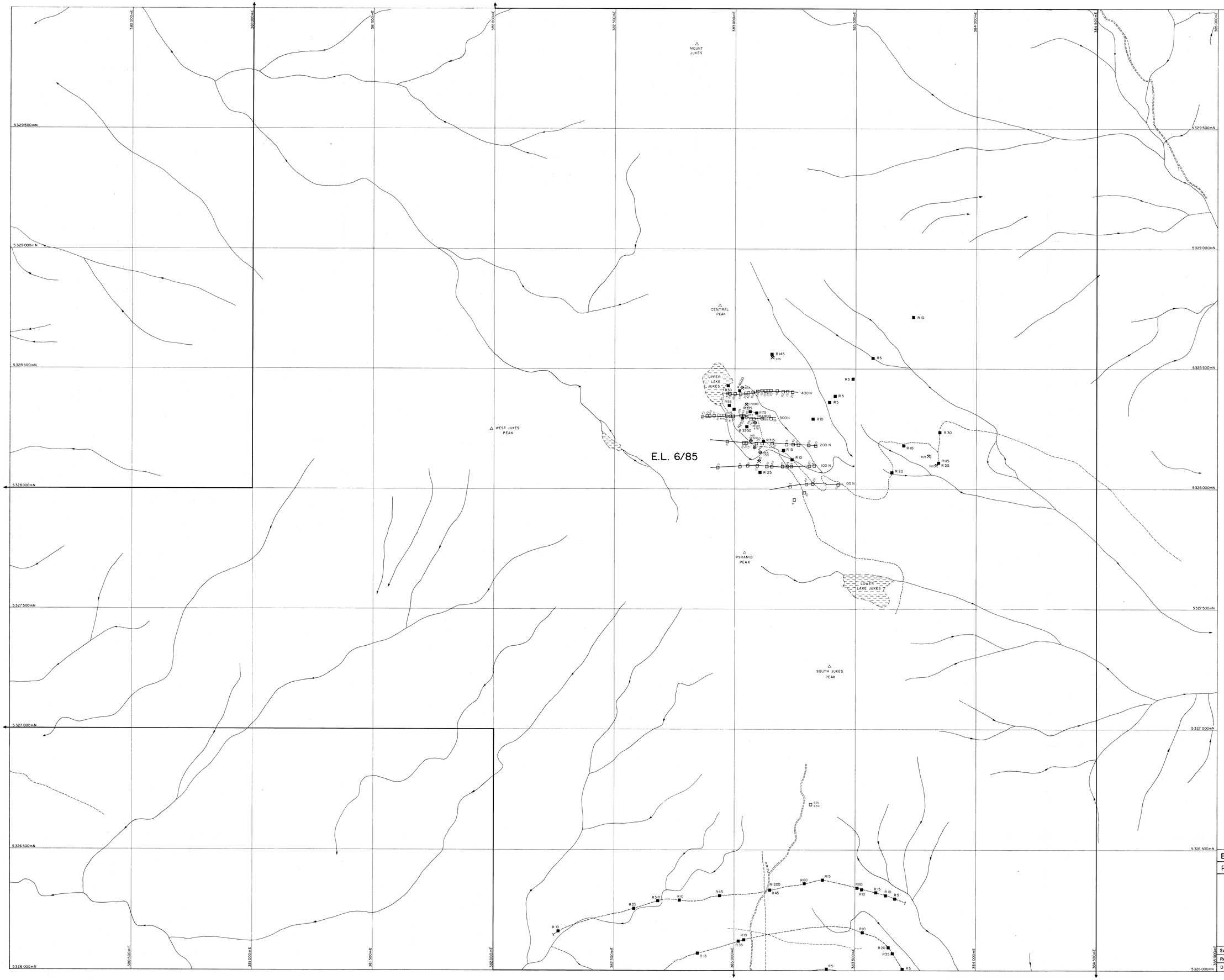
5698

5698


MOUNT JUKES
CENTRAL PEAK
WEST JUKES PEAK
E.L. 6/85
UPPER LAKE JUKES
PYRAMID PEAK
LOWER LAKE JUKES
SOUTH JUKES PEAK
400 N
300 N
200 N
100 N
00 N
5 329 500mN
5 329 000mN
5 328 500mN
5 328 000mN
5 327 500mN
5 327 000mN
5 326 500mN
5 326 000mN
380 500mE
381 000mE
381 500mE
382 000mE
382 500mE
383 000mE
383 500mE
384 000mE
384 500mE
385 000mE
□ ·017 Rock Chip Sample.
⚒ ·317 Trenches - Rock Chip.
⊕ ·067 Adits - Rock Chip - Surface
O = Below level of detection. (<·008).
N.B. - All results are ppm.
Samples 72301-42 taken U/G, in adits.
Sampled by P.A. Ruxton, D. Gardner, 1987.
■ R20 - Rock Chip Sample.
● S50 - Stream Sediment Sample.
N.B. - All results are ppm.
X = Below level of detection.
Sampled by P. Gammon 1985
JUKES
SNAKE
DARWIN
AMG
MN
11·5°
5 cm
PLAN No 8
ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
PROJECT: JUKES - DARWIN ,TAS.
87- 2706 Vol 2
GEOCHEMISTRY
Au
882156
Scale: 1:5000
Survey: P.G.
Revised:
Reference:
Date: 10-4-'85
Ref. No.
Drawn: R.J.R.
Checked:
AO-518-0016

5699

5699



PLAN No. 9

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

87-2706 Vol 2

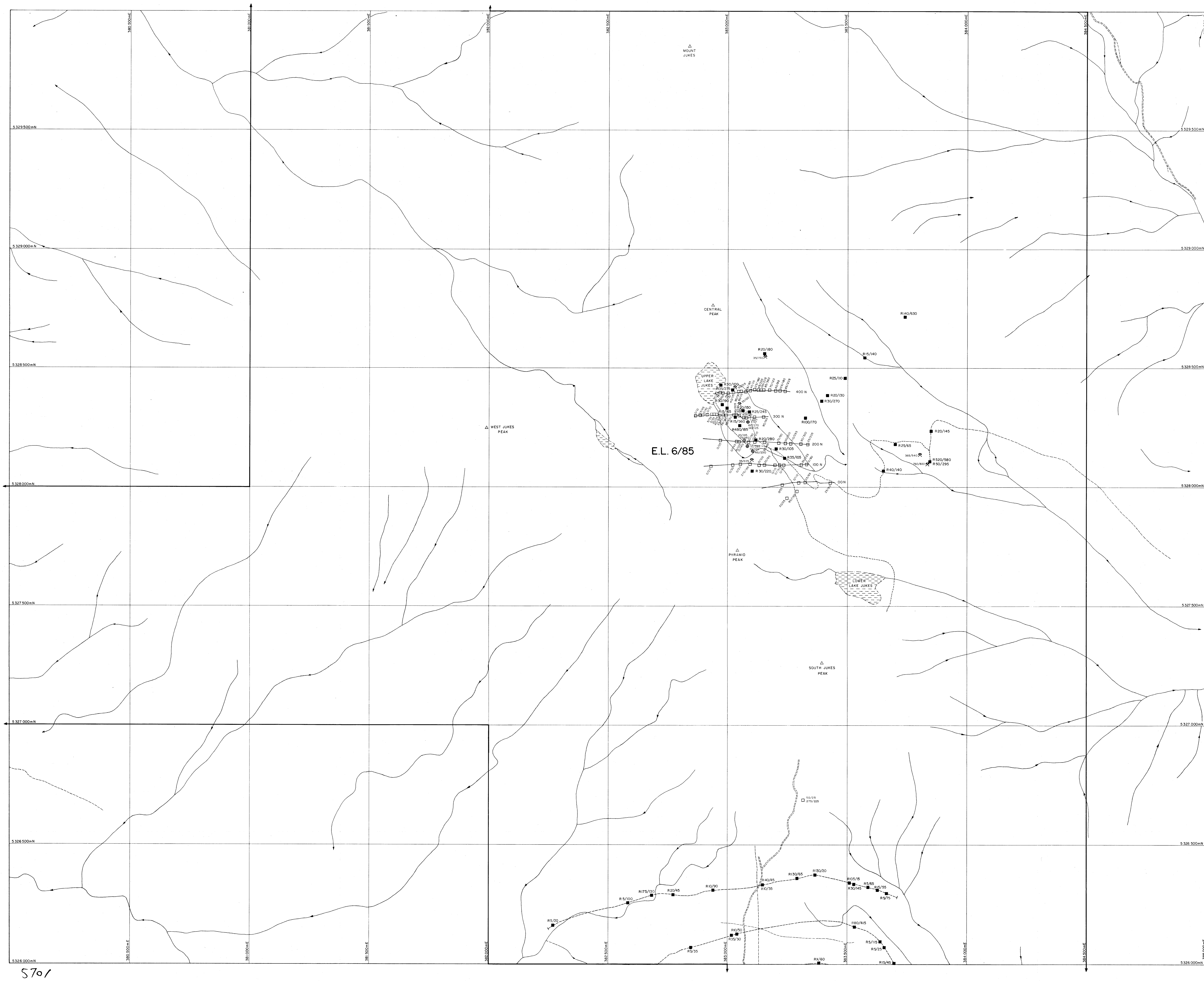
GEOCHEMISTRY

Cu

882157

Scale: 1:5000	Survey: P.G.	Revised:
Reference:	Date: 10-4-'85	Ref No. AO-518-0013
Drawn: R.J.R.	Checked:	

5700



□ 110/285 – Rock Chip Sample.
⚒ 35/225 – Trenches – Rock Chip.
⊕ 10/285 – Adits – Rock Chip – Surface.
O = Below level of detection, (<5 ppm.).
N.B. – All results are ppm.
Samples 72301–42, taken U/G, in adits.
Sampled by P.A. Ruxton, D. Gardner, 1987.

■ R 20 – Rock Chip Sample.
● S 50 – Stream Sediment Sample.
N.B. – All results are ppm.
R/X Less than 5ppm.
Pb Zn
R 20/R 30
Sampled by P. Gammon, 1985.

PLAN No. 10 & 11

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES – DARWIN ,TAS.

87-2706 Vol 2

GEOCHEMISTRY

Zn/Pb

882158

Scale: 1:5000	Survey: P.G.	Revised:
Reference:	Date: 10-4-'85	Ref. No.
Drawn: R.J.R.	Checked:	A0-518-0010

5701

5701

E.L. 6/85

R66464 R66463 R66448 R66449 R66450 R66451 R66452 R66454
R66459 R66465 R66468 R66469 R66470
R66460 R66467
R66501 R66466
R66500
R66499
R66497 R66498
R66446 R66447
R66445
R66444
R66443
R66573 R66575 R66574
R66493 R66492 R66491 R66490 R66489 R66488 R66487 R66486
R66496 R66495
R66494 R66441 R66442
small old R66440
R66437 R66439
R66438
R66436 R66435 R66434
R66471
R66520 R66517
R66518 R66519
R66521 R66522
R66512 R66523
R66514 R66515 R66516 R66530
R66529 R66524 R66528 R66531
R66559 R66568
R66560
R66527 R66526
R66532 R66533 R66561
R66503
R66507 R66562 R66563 R66564
R66558 R66509 R66510 R66511
R66504
R66566 R66567 R66505 R66506 R66565

R48912 R48944 R48943 R48942

Composite
Composite
trench
SWAMP
CREEK
CONGLOMERATE PEAK
SNAKE PEAK
TOWNSHIP
CREEK
ALLANS
Falls
Falls

R63983 R63985 R63986 R63984 R63987 R63982 R63981 R63988 R63990 R63991 R63989 R63993 R63994 R63992

R66433 S66432 R66431 R66430 S66429

JUKES S66428
SNAKE
DARWIN

AMG MN 11°E

■ R66439 – Rock Chip Sample.
● S63982 – Stream Sediment Sample.
Sampled by P. Gamman, 1985

□ R66543 – Rock Chip Sample.
○ S56789 – Stream Sediment Sample.
Sampled by P.A. Ruxton, 1987 D. Gardner,

5 cm

380 500mE 381 000mE 381 500mE 382 000mE 382 500mE 383 000mE 383 500mE 384 000mE 384 500mE 385 000mE

5 325 500mN 5 325 000mN 5 324 500mN 5 324 000mN 5 323 500mN 5 323 000mN 5 322 500mN 5 322 000mN

5850N 5750N

PLAN No 12

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

87-2706 Vol 2

SAMPLE LOCATIONS

TYPES and NUMBERS

882159

Scale: 1:5000	Survey: P.G.	Revised:
Reference:	Date: 4-4-'85	Ref. No.
Drawn: R.J.R.	Checked:	AO-518-0008

5703

5703

E.L. 6/85

□ ·008 – Rock Chip Sample.
0 = Below level of detection,(<·008).
N.B.– All results are ppm.

Sampled by P.A.Ruxton, D. Gardner, 1987.

■ R·020 – Rock Chip Sample.
● S·268 – Stream Sediment Sample
N.B.– All results are ppm
N/R = No results.
RX = Below level of detection.

Sampled by P.Gammon, 1987.

PLAN No. 13

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES – DARWIN ,TAS.

87-2106 Vol 2

GEOCHEMISTRY

Au

882160

Scale: 1:5000	Survey: P. G.	Revised:
Reference:	Date: 10-4-'85	Ref. No.
Drawn: R. J. R.	Checked:	AO-518-0017

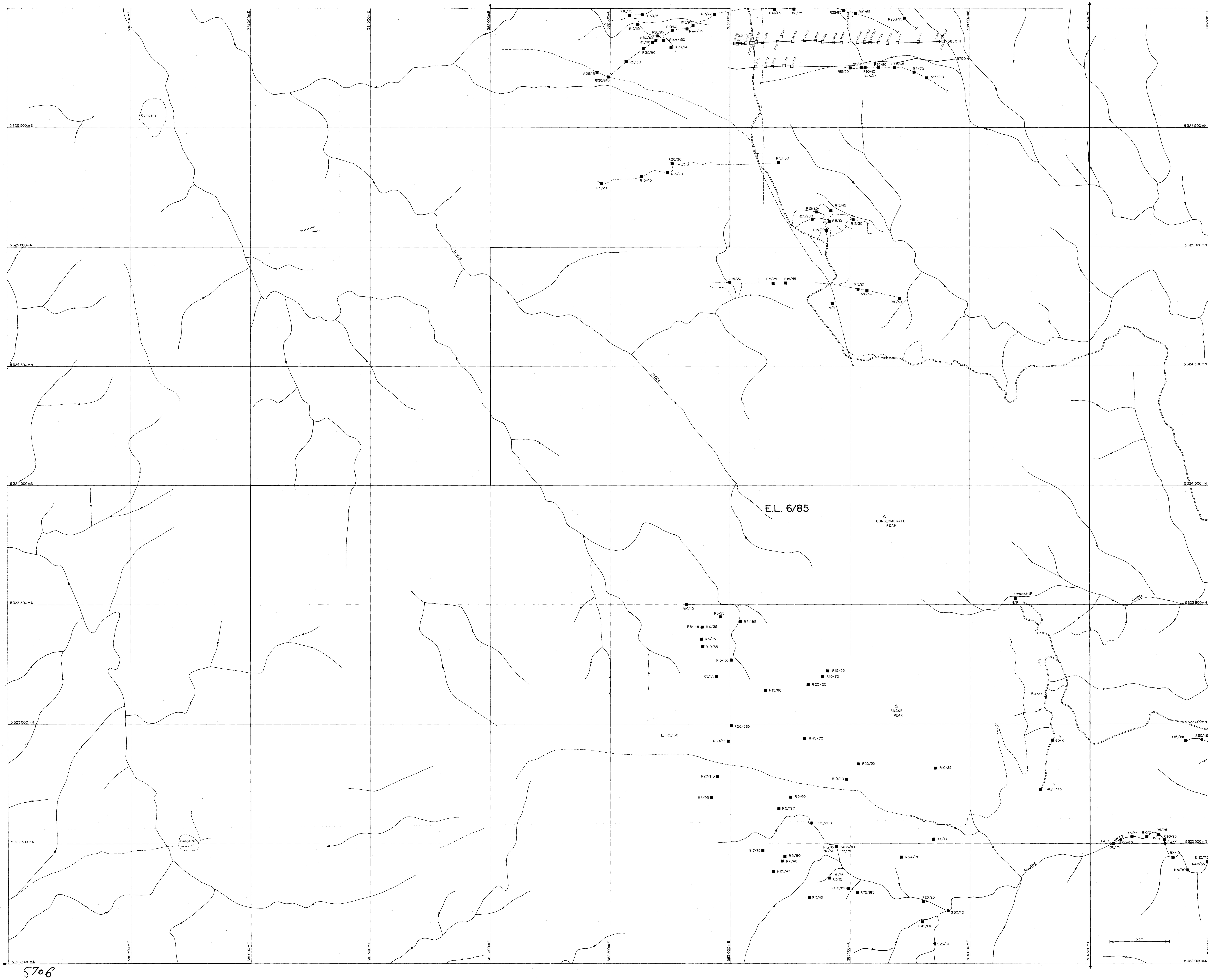
5704

5704


E.L. 6/85
CONGLOMERATE PEAK
SNAKE PEAK
TOWNSHIP
CREEK
ALLANS
Composite
Trench
□ 30 – Rock Chip Sample.
O = Below level of detetion.
N.B. – All results are ppm.
Sampled by P.A. Ruxton, D. Gardner, 1987.
■ R70 – Rock Chip Sample.
● S40 – Stream Sediment Sample.
N.B. – All results are ppm.
N/R = No results.
Sampled by P. Gammon, 1985.
JUKES
SNAKE
DARWIN
PLAN No. 14
ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
PROJECT: JUKES – DARWIN ,TAS.
87-2706 Vol 2
GEOCHEMISTRY
Cu
882161
Scale: 1:5000
Survey: P.G.
Revised:
Reference:
Date: 10-4-'85
Ref. No.
Drawn: R.J.R.
Checked:
AO-518-0014

5705

5705



□ 10/160 - Rock Chip Sample.
O = Below level of detection.
N.B. - All results are ppm.
Pb Zn
10/160

Sampled by P.A. Ruxton, D. Gardner, 1987.

■ R 90 - Rock Chip Sample.
● S 50 - Stream Sediment Sample.
N.B. - All results are ppm.
RX - Below level of detection.
Pb Zn
R10/R75
N/R = No results.

Sampled by P. Gammon, 1985

JUKES
SNAKE
DARWIN

PLAN No. 15, 16

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

87-2706 Vol 2

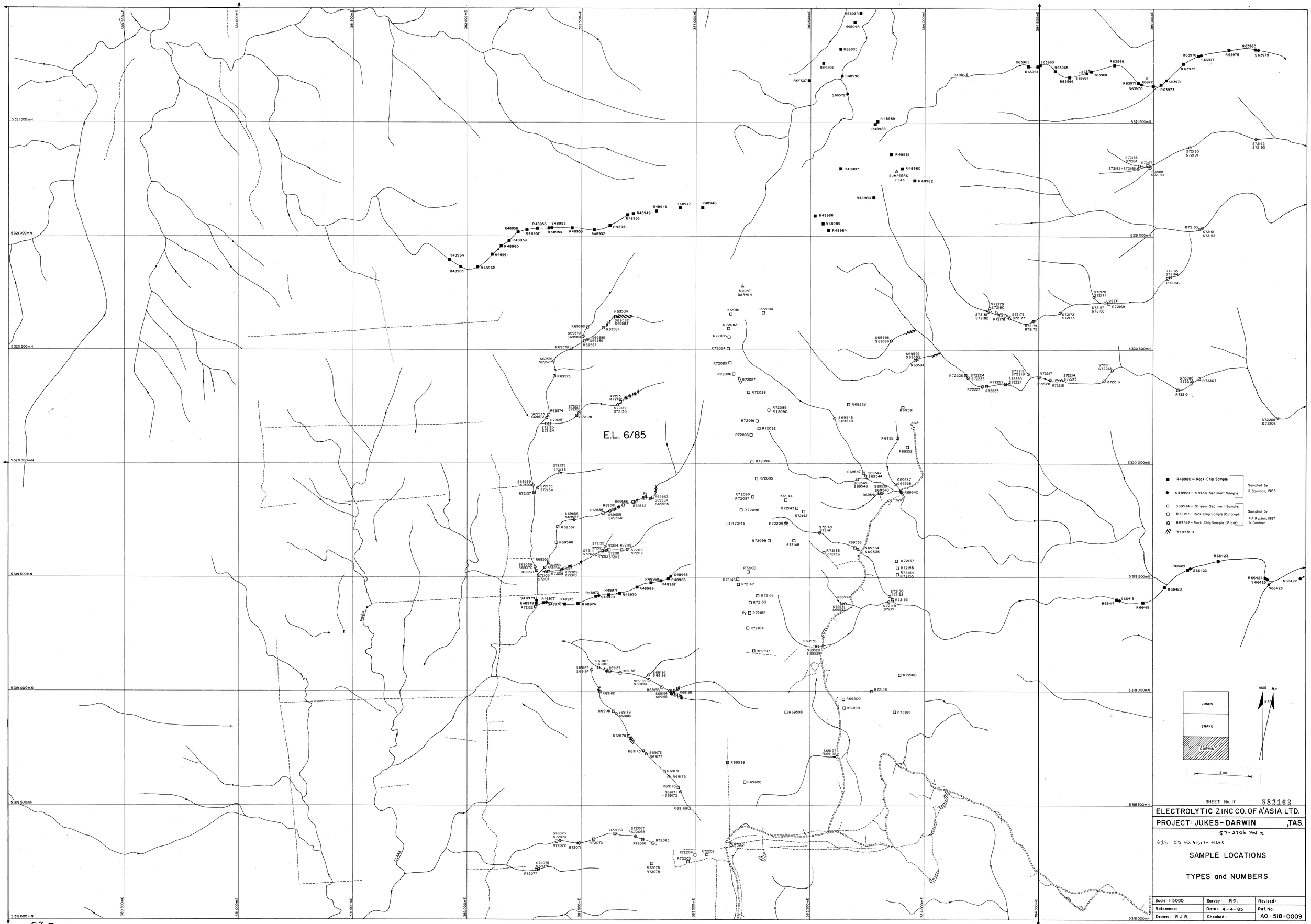
GEOCHEMISTRY

Zn/Pb

882162

Scale: 1:5000	Survey: P. G.	Revised:
Reference:	Date: 10-4-'85	Ref. No.
Drawn: R.J.R.	Checked:	AO-518-0011

5706



SHEET No. 17 882163

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

87-2706 Vol 2

GIS ID No. 41517-41695

SAMPLE LOCATIONS

TYPES and NUMBERS

Scale: 1:5000	Survey: P.G.	Revised:
Reference:	Date: 4-4-'85	Ref. No. AO-518-0009
Drawn: R.J.R.	Checked:	

5707

5707

380 500mE
381 000mE
381 500mE
382 000mE
382 500mE
383 000mE
383 500mE
384 000mE
384 500mE
385 000mE

5 321 500mN
5 321 000mN
5 320 500mN
5 320 000mN
5 319 500mN
5 319 000mN
5 318 500mN
5 318 000mN

DARDUS
MT. LYELL EXTENDED ADIT
CREEK
LYELL CONSOLS ADIT
SUMPTERS PEAK
MOUNT DARWIN
CLAYTON
CREEK
Magnetite Veining Common
E.L. 6/85
NORMS WORKINGS
RIVER
CLARK

LEGEND

- Old Workings (Hardrock).
- Alluvial Gold Workings.
- Chloritic lodes. Intensely chloritized lava with quartz/magnetite/hematite veins. ± disseminated/vein pyrite.
- "Chert" band. Silicified fine grained volcanic (?) rock and feldspar-phyric lava. Minor brecciation. Gossanous ± pyrite.
- Darwin Granite.

MOUNT READ VOLCANICS
- W Western Sequence.
- € Eastern Sequence.
- V Central Sequence.
- △ Agglomerate.

JUKES
SNAKE
DARWIN
CLARK

AMG MN
8.5°

5 cm

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: JUKES - DARWIN ,TAS.

87-2706 Vol 2

GEOLOGY INTERPRETATION

882164

Scale: 1:5000	Survey: P.A.RUXTON	Revised:
Reference:	Date: 18-2-87	Ref.No. AO-518-0037
Drawn: N.W.D.S.	Checked:	

5692

5692

381500 mE
382000 mE
382500 mE
383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE

5321500 mN
5321000 mN
5320500 mN
5320000 mN
5319500 mN
5319000 mN
5318500 mN
5318000 mN

■ Rock Chip Sample.
● Stream Sediment Sample.
Sampled by P. Gammon, 1985.

□ Rock Chip Sample.
○ Stream Sediment Sample.
0 = 0.008 - Below Detection.
I.S. = Insufficient Sample.
N.B. - All results are ppm.
Sampled by P.A. Ruxton, D. Gardner, 1987.

5 cm

SCALE
0 100 200 300 400 500
metres

E-Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L. 6/85 ,TAS.

87-2706 Vol 2

GEOCHEMISTRY

Au 882165

Compiled: I.MAT.	Date: 25-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 12

AO-518-0049

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5702

5702

381500 mE
382000 mE
382500 mE
383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE

5321500 mN
5321000 mN
5320500 mN
5320000 mN
5319500 mN
5319000 mN
5318500 mN
5318000 mN

■ Rock Chip Sample
● Stream Sediment Sample
Sampled by P Gammon, 1985.

□ Rock Chip Sample
○ Stream Sediment Sample
I.S. = Insufficient Sample.
N.B. - All results are ppm.
Sampled by P.A. Ruxton, D. Gardner, 1987.

5cm

SCALE
0 100 200 300 400 500
metres

E·Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L.6/85 ,TAS.
87-2706 Vol 2

GEOCHEMISTRY

Cu 882166

Compiled: I.MAT.	Date: 25-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 20
		A0-518-0052

PRODUCED BY SURPAC MINING SYSTEMS, PERTH WA (09)4781411

5708

5708

AO-518-0051	
Drawn: N.W.D.S.	File No: PLAN No: 21
AMG:	Latitude: Longitude:
Compiled: i.MAT	Date: 25-SEP-87 Scale 1: 5000
882167	
PD	
GEOCHEMISTRY	
87-2706 Vol 2	
PROJECT: JUKES-DARWIN EL.6/85 TAS	
MINERAL RESOURCES DIVISION	
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED	
E·Z	

SCALE

0 100 200 300 400 500

metres

5cm

- Rock Chip Sample.
- Stream Sediment Sample.

Sampled by P Gemmon, 1983.

- Rock Chip Sample
- Stream Sediment Sample
- Stream Sediment Sample

Sampled by P.A.Buxton, D.Grainger, 1987

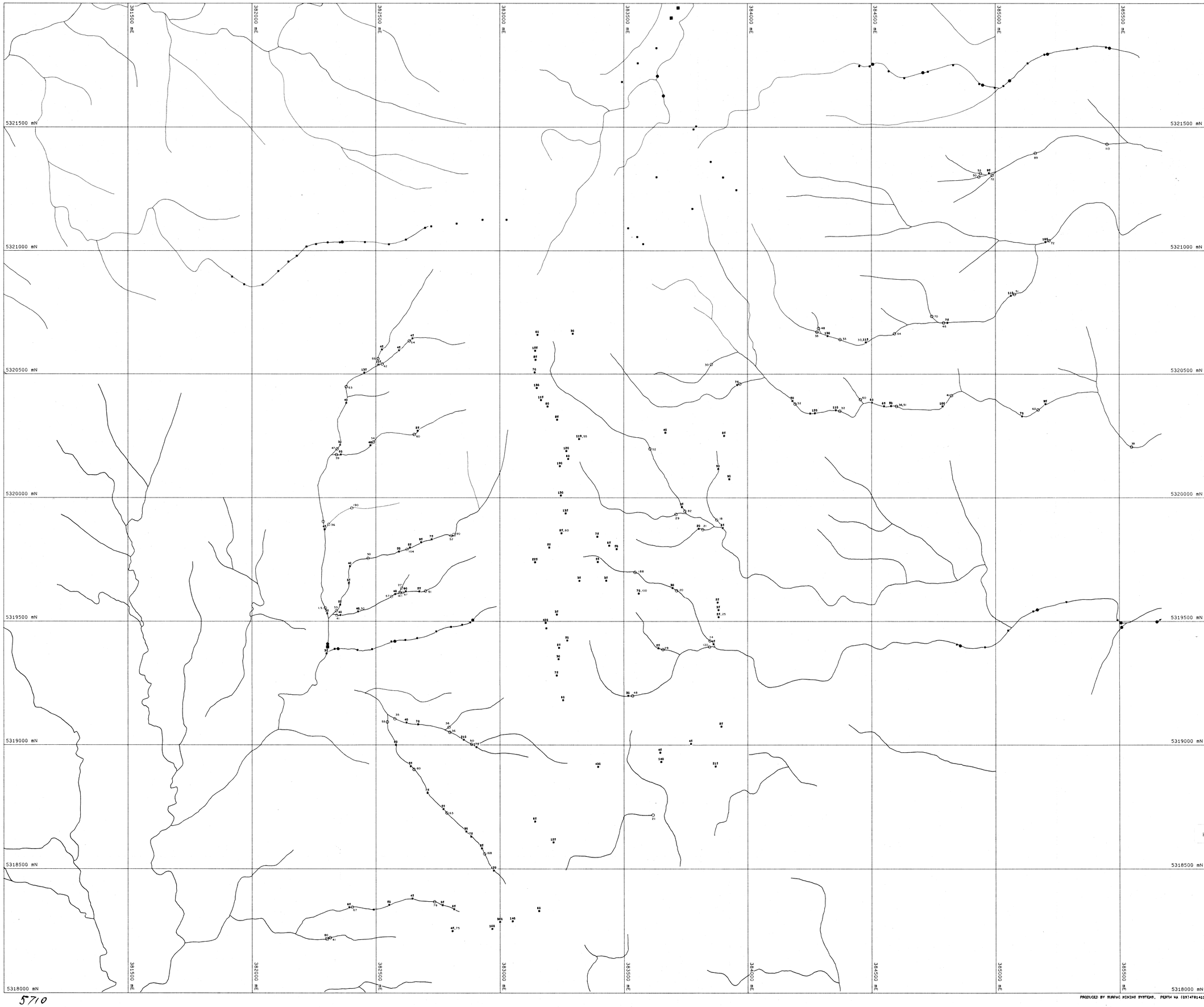
LS = Insufficient Sample

O = Below level of detection

NB - All results are ppm.

385500 mE
385000 mE
384500 mE
384000 mE
383500 mE
383000 mE
382500 mE
382000 mE
381500 mE

5318000 mN
5318500 mN
5319000 mN
5319500 mN
5320000 mN
5320500 mN
5321000 mN
5321500 mN



■ Rock Chip Sample.
● Stream Sediment Sample.
Sampled by P. Gammon, 1985.

□ Rock Chip Sample.
○ Stream Sediment Sample.
I.S. = Insufficient Sample.
N.B – All results are ppm.
Sampled by R.m. [illegible]

5cm

SCALE
0 100 200 300 400 500

E-Z

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: JUKES-DARWIN E.L.6/85 ,TAS.

EZ 2706 Vol 2

GEOCHEMISTRY

Zn

882168

Compiled: I.MAT.	Date: 25-SEP-87	Scale 1: 5000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO: 22

AO-518-0050

PRODUCED BY BURPAC MINING SYSTEMS, PERTH WA (09)4781411

5710

5710