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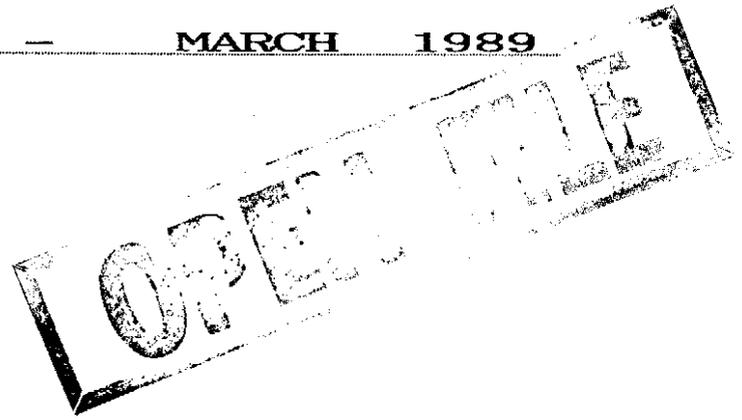
MINERAL RESOURCES DIVISION



E.L. 98⁶/87 PRESTON

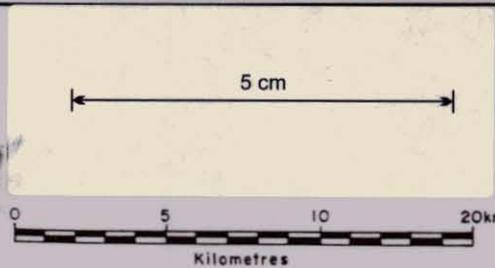
ANNUAL REPORT ON EXPLORATION
ACTIVITY

APRIL 1988 - MARCH 1989



Report No T235

K.J. Virgoe
I.J. Mathison
April 1989



PROJECT: PRESTON E.L. 96/87	
LOCATION MAP	
Compiled: I. MAT. Date: 28-10-88	Fig. 1
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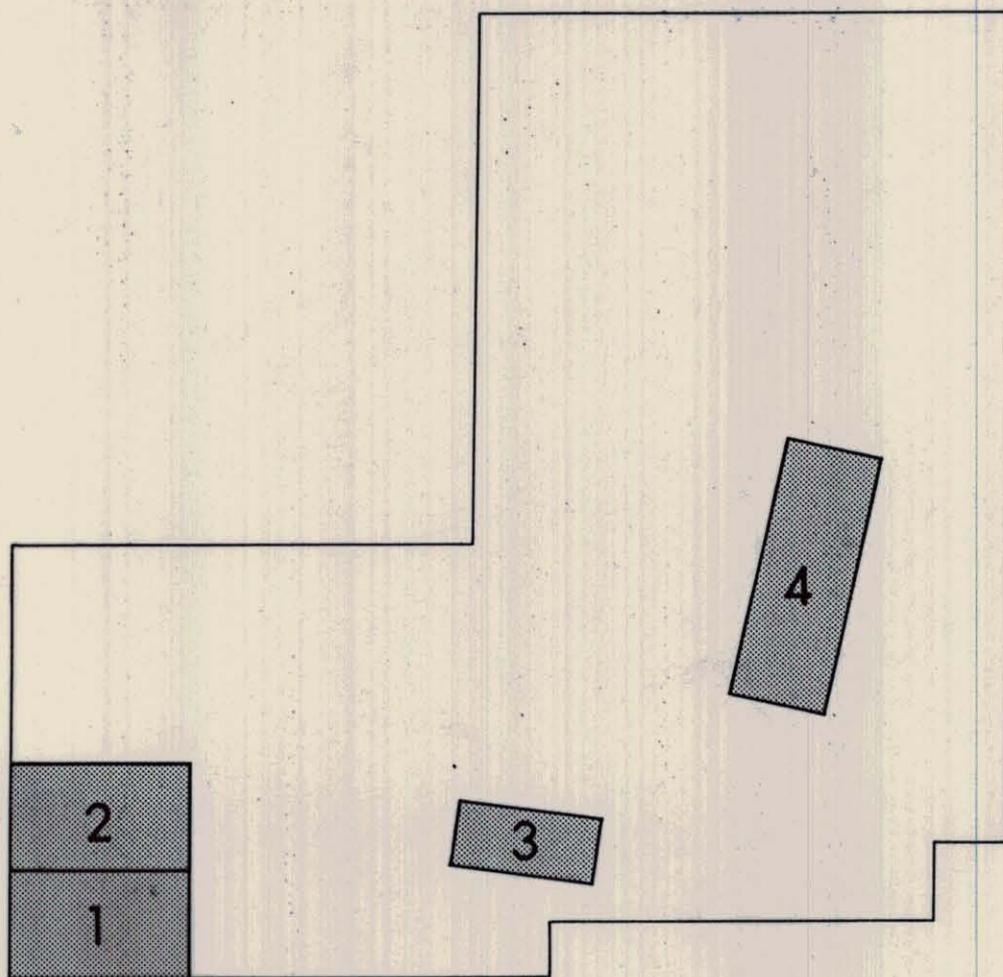
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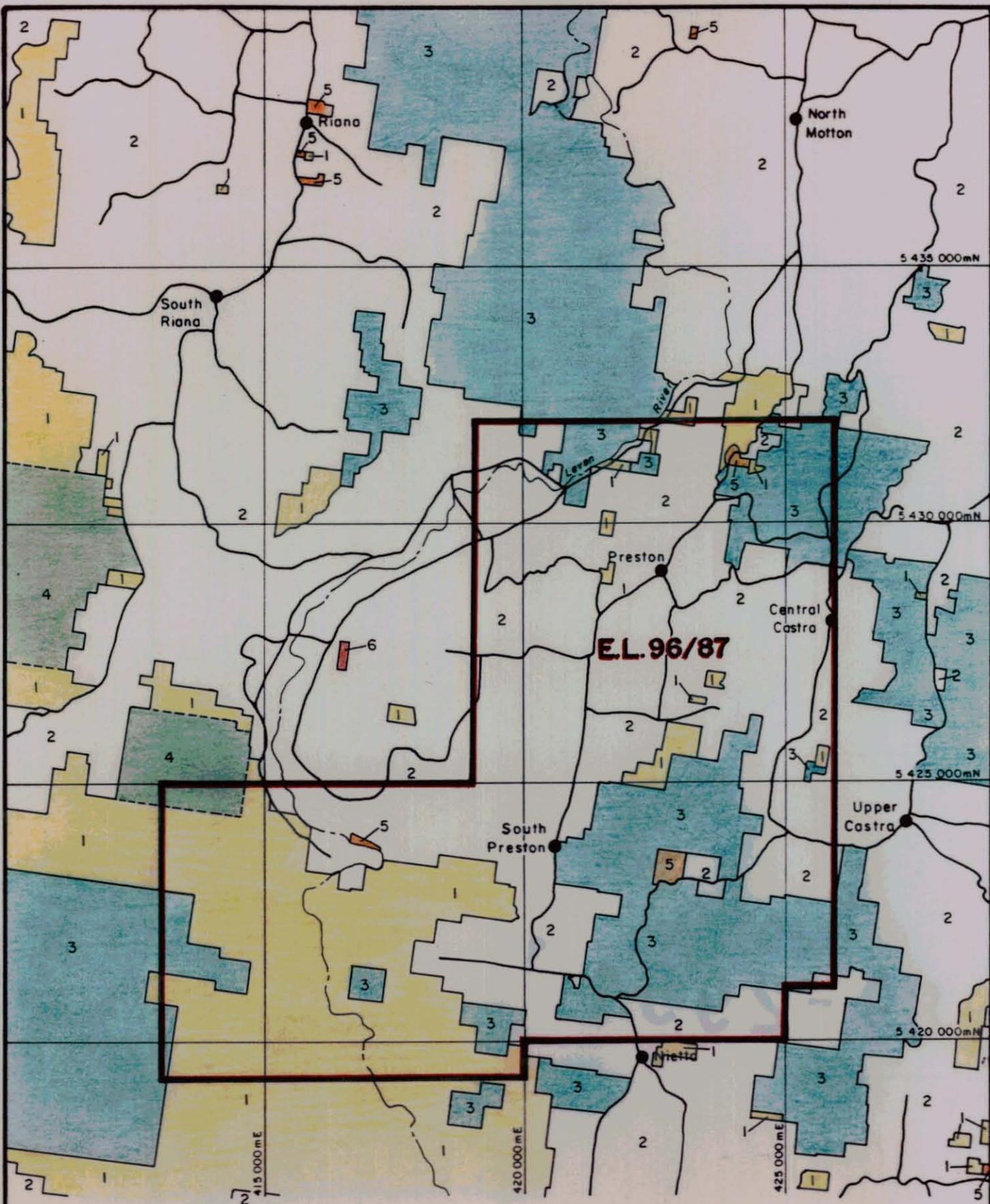
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✓ 533-0013	1:1000	Castra Road	Geology and Sample Locations



PROSPECTS

- 1** Loyetea South
- 2** Loyetea North
- 3** Crosby Creek
- 4** Castra Road



LEGEND

- 1 Leased or non-allocated crown land.
- 2 Private freehold land.
- 3 Forestry Commission-State forest.
- 4 Timber reserve.
- 5 Administrative reserve.
- 6 N.P.W.S. - State reserve.

5 cm

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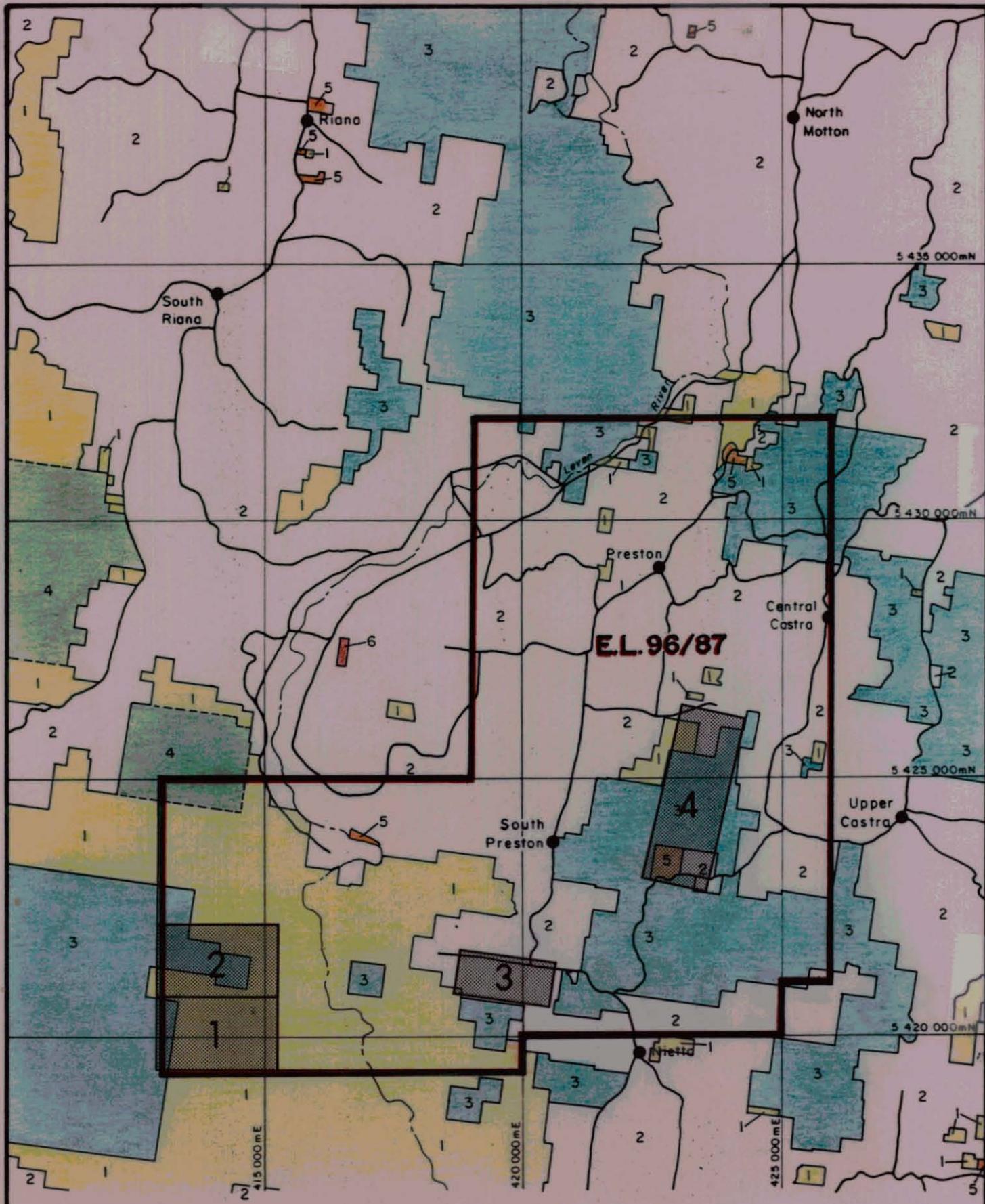
PROJECT: PRESTON E.L. 96/87

LAND TENURE

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Fig. 2



LEGEND

- 1 Leased or non-allocated crown land
- 2 Private freehold land.
- 3 Forestry Commission-State forest.
- 4 Timber reserve.
- 5 Administrative reserve.
- 6 N.P.W.S. - State reserve.

PROSPECTS

- 1 Loyetea South
- 2 Loyetea North
- 3 Crosby Creek
- 4 Castra Road

5 cm

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PROJECT: PRESTON E.L. 96/87

LAND TENURE

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Fig. 2

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1.0 INTRODUCTION

1.1 Location and Access (Fig. 1)

EL.96/87 is located in Northern Tasmania and is centred approximately 25km south of the coastal town of Penguin. Access to the eastern two thirds of the E.L. is by sealed roads with most area being between 35 and 45km from Devonport. Secondary 4WD access by farm tracks and logging tracks to most areas within this eastern portion is good.

However, access to the western third of the area is difficult. The few logging tracks that allow 4WD access are in poor repair and some are overgrown. The more accessible parts of this western area are over an hour's drive from Burnie or Devonport. Secondary access here is by walking track.

1.2 Tenure and Land Usage (Fig. 2 and Appendix 1)

EL.96/87 of 113 sq.km. was granted to the Electrolytic Zinc Company of Australasia (E.Z.) in April, 1988. An additional EL.21/88 of 5 sq. km. adjoining EL.96/87 was subsequently applied for to cover old CRA Exploration grids. When granted, this was combined with EL.96/87. The E.L. schedule is detailed in Appendix 1.

Most of the northern and eastern portions is arable land which is subdivided into numerous freehold blocks which are used for intensive pasture and some cultivation. The southern and western sections, however, are predominantly crown land and State Forest which are administered by the Forestry Commission. Most of these areas are covered by a thick regrowth of eucalypt with some pine plantations.

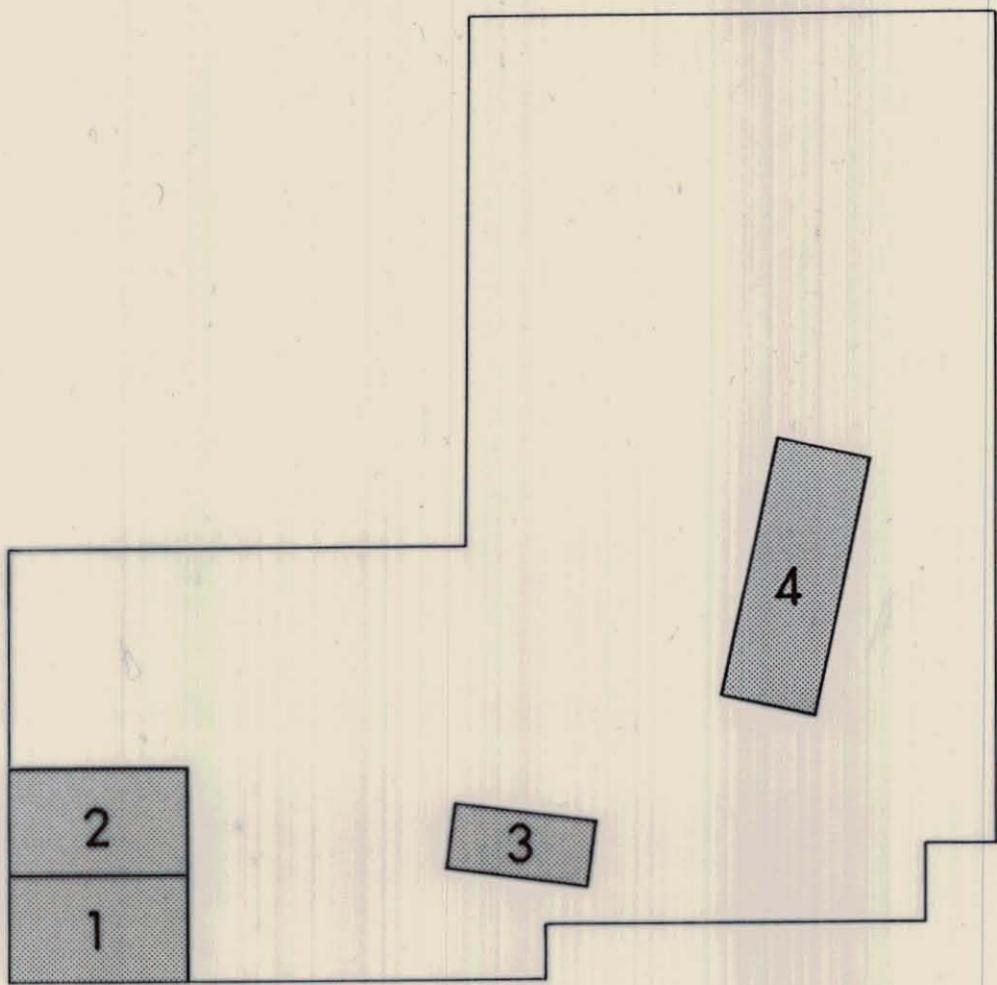
1.3 Regional Geology (Fig. 3)

The oldest rocks exposed in E.L. 96/87 comprise Cambrian volcano-sedimentary units infilling either the Fossey Mountain Trough or the Dial Range Trough. Both of these troughs are considered to be branches of the Dundas Trough which contains the extensively mineralized Mount Read Volcanics.

Within E.L. 96/87, these Cambrian rocks include felsic tuffs, lava and epiclastics; lithic greywackes and greywacke conglomerates; and greywacke-siltstone units. High level Cambrian intrusive bodies intruding the Volcano-sedimentary sequence have been mapped. These include quartz feldspar porphyries and dacitic feldspar porphyries (Bamford and Green, 1988 a and b).

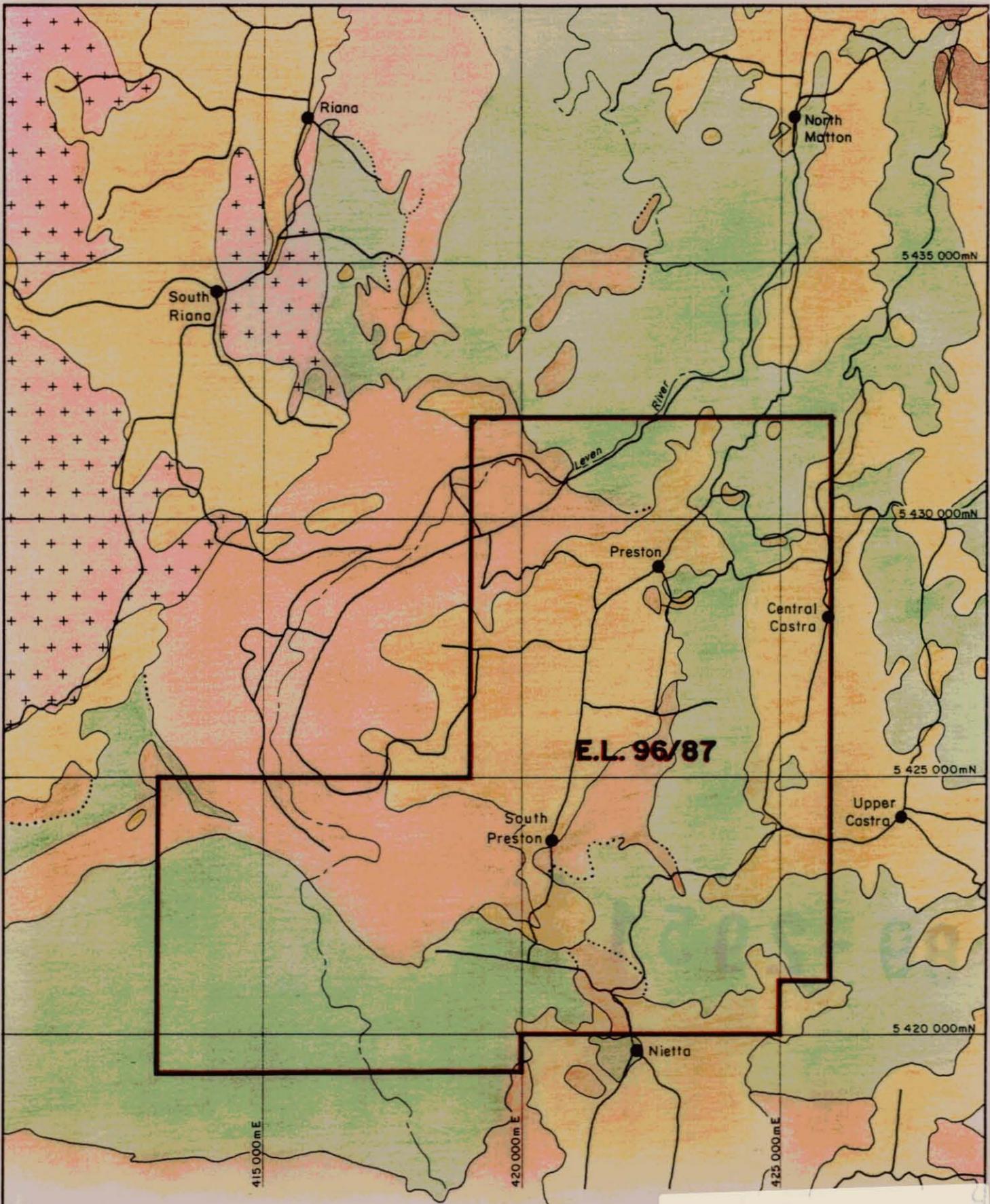
Ordovician rocks which unconformably overlie the Cambrian rocks flank most exposure of Cambrian rocks. These Ordovician units include the Roland Conglomerate, the Moina Sandstone and the Gordon Limestone.

Remnants of Tertiary Basalt flows with associated sub basalt sediments cap the faulted and folded Cambrian and Ordovician rocks. Over one third of EL.96/87 is covered by Tertiary Basalts.



PROSPECTS

- 1** Loyetea South
- 2** Loyetea North
- 3** Crosby Creek
- 4** Castra Road



LEGEND

- 58 Tertiary basalt.
- 13 Ordovician & Silurian Sedimentary rocks.
- 46 Cambrian Volcanic-Sedimentary rocks.
- 55 Precambrian rocks.
- 21 Devonian Granite.

5 cm

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PROJECT: PRESTON E.L. 96/87

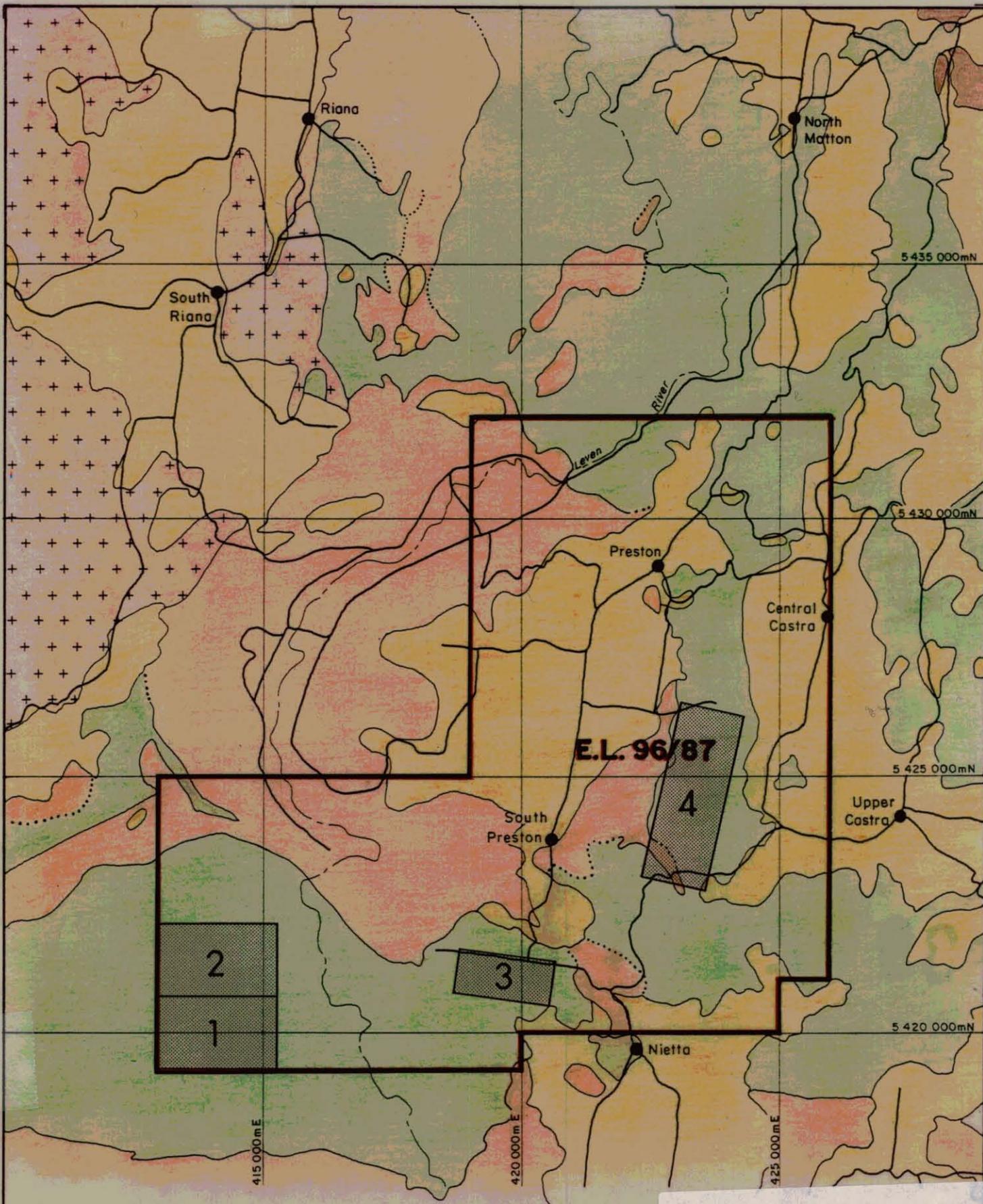
GEOLOGY

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Fig. 3

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LEGEND

- 58 Tertiary basalt.
- 13 Ordovician & Silurian Sedimentary rocks.
- 46 Cambrian Volcanic-Sedimentary rocks.
- 55 Precambrian rocks.
- 21 Devonian Granite.

PROSPECTS

- 1 Loyetea South
- 2 Loyetea North
- 3 Crosby Creek
- 4 Castra Road

5 cm

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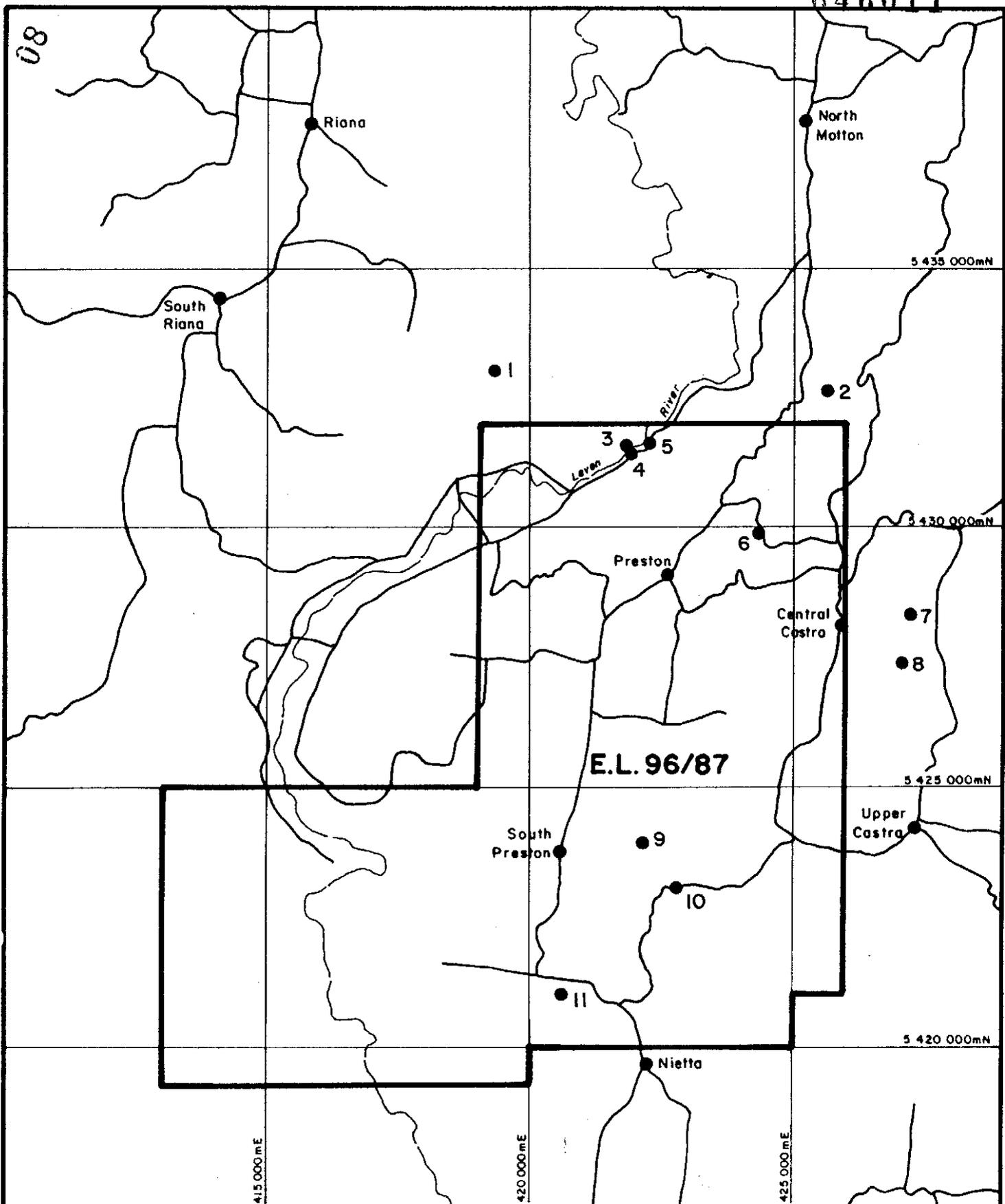
PROJECT: PRESTON E.L. 96/87	
GEOLOGY	
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Government maps, the Cethana 1:50,000 Mineral Occurrence Map (Bamford and Green, 1988a), the Ulverstone 1:50,000 Mineral Occurrence Map (Bamford and Green, 1988b) and the St. Valentine 1:50,000 Geological Map Sheet (Baillie et al, 1986) provide up to date summaries of the geological understanding of EL.96/87 and surrounding areas.

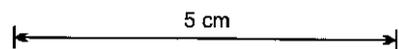
1.4 Known Mineral Deposits/Occurrences (Fig. 5)

Bamford and Green (1988 a and b) list 11 occurrences of metallic minerals within and adjacent to EL.96/87. These are listed below and Fig. 5 shows their locations. Only one deposit, the Walloa Creek Mine (Copper Creek Mine) has any recorded production and this was only a few tonnes. Jennings 1979, contains a good review of early government reports on the old prospects.



LEGEND

No.	NAME	COMMODITIES	GEOLOGY
1.	Walloo Creek Mine. (Copper Creek Mine).	Cu, Au, Ag, py.	Cambrian volcano sedimentary rocks.
2.	Hebblethwaites Propect.	py.	Cambrian volcano sedimentary rocks.
3.	Radfords Reef.	Cu, py.	Cambrian volcano sedimentary rocks.
4.	Browns Blow.	hte.	Near contact of dacitic intrusive.
5.	Colbourns Show.	py.	Cambrian volcano sedimentary rocks.
6.	—	py.	Cambrian volcano sedimentary rocks.
7.	Mc Phersons Mine.	Cu, Pb, Zn, Ba.	Cambrian greywacke.
8.	—	Cu, Ba.	Cambrian greywacke.
9.	Preston Silver Mine.	Pb, Zn, Ag, py.	Cambrian volcano sedimentary rocks.
10.	Castra Prospect.	Ba, py.	Cambrian volcano sedimentary rocks.



PROJECT: PRESTON E.L. 96/87

MINERAL OCCURRENCES

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Fig. 5

Metallic Mineral Occurrences/Deposits

E.L. 96/87 Preston

Map No.	Name	Commodity/ Mineral	Geology
1	Walloa Creek Mine (Copper Ck Mine)	Cu, Au, Ag, py	Cambrian VS
2	Hebblethwaite's Prospect	py	Cambrian VS
3	Radford's Reef	Cu, py	Cambrian VS near contact of dacitic intrusive
4	Brown's Blow	Hte	
5	Colbourn's Show	py	
6	-	py	Cambrian VS
7	McPherson's Mine	Cu, Pb, Zn, Ba	Cambrian greywacke
8	-	Cu, Ba	"
9	Preston Silver Mine	Pb, Zn, Ag, py	Cambrian VS
10	Castra Prospect	Ba, py	"
11	Crosby Creek	Pb, Cu, Zn	Cambrian VS at contact with micro- diorite intrusive

Abbreviations:

py = pyrite
Ba = barite

hte = haematite
VS = Volcano-sedimentary rocks

1.5 Previous Exploration

Recent systematic exploration of parts of what is now EL.96/87 has been conducted by CRA Exploration (1973-77), Geopeko (1976-77), Comalco (1977-79), Shell Metals (1982-83) and CRA Exploration again (1986-87). Techniques applied include stream sediment geochemistry, soil geochemistry, geological mapping, aeromagnetic surveys, helicopter electromagnetic (HEM400) surveys, gradient array EIP, pole dipole and SP surveys, and diamond drilling. Results of earlier exploration are reviewed in Section 2 of this report.

2.0 REVIEW OF PREVIOUS EXPLORATION

2.1 Early Prospecting

The first nine mineral occurrences of the eleven listed in Section 1.4 were located by early prospectors. The Walloa Creek Mine, Preston Silver Mine and Radford's Reef were tested by adits and trenches. No exploitable deposit was located.

2.2 EL.19/72 C.R.A. Exploration (CRAE)

(Figure 5 - Prospect Locations)

EL.19/72 was much larger than EL.96/87 and included the whole area that is now EL.96/87. Only the exploration relevant to EL.96/87 is reviewed in this section.

During 1973-77, CRAE explored the sections of the Cambrian sequence within EL.96/87 for base metal deposits of the Rosebery type. CRAE concentrated their activity on the belt of Cambrian volcano-sedimentary rocks running east-west across the southern section of EL.96/87

Here, exploration commenced with a regional stream sampling programme accompanied by reconnaissance geological mapping (Porter, 1973). Stream sediment anomalies at Crosby Creek, Loyetea South and Loyetea North were detected but were not immediately followed up because mapping indicated that sedimentary rocks were dominant in these areas.

The Castra Anomalies

CRAE selected an area of altered acid volcanics north and north-east of Niatta for further testing on the basis of favourable geological environment. This area did not report any anomalous stream sediment geochemistry. Nevertheless this area was further tested by soil sampling (nominal "C" horizon auger sampling) at 20m intervals along grid lines 400m apart. Rock chips sieved from the soil samples were used as the basis for geological mapping (Porter and Ashton, 1974).

This programme detected low level lead and zinc anomalies in the area west of Mount Minnie - the Castra anomalies of CRAE. On the Castra Road through this belt of volcanic rocks, barite occurs as clots and stringers in intensely silicified, sericitized and pyritized volcanics (Purvis, 1978).

The Castra soil anomalies were followed up by more detailed soil sampling at 20m spacings along lines 100m apart. No well defined anomalies were detected and most elevated lead and/or zinc values were reported from areas mapped as sediments or tuffaceous sediments (Porter, 1976).

Crosby Creek Prospect

In 1975, the Crosby Creek stream sediment anomalies were followed up by "C" horizon soil sampling at 20m intervals along lines 100m apart reducing to 50m apart in selected areas. An anomalous zone with a 1.5km strike length and 20-100m wide was defined by the +400ppm Pb contour. Geological mapping based on soil auger chips outlined a sequence of tuffs, tuffaceous shales and shales intruded by cross cutting microdiorite and rhyodacitic intrusives. Anomalous values ranged from 400-3,000ppm Pb, 200-2,400ppm Zn and 100-700ppm Cu. Zinc and copper soil geochemistry closely supported the lead geochemistry.

Three diamond drill holes DD75CC1 (293m), DD75CC2 (200m) and DD75CC3 (149m) were drilled to test the main soil anomaly. All holes intersected low grade disseminated Cu, Pb, Zn mineralisation in tuffaceous shale close to the contact of a dioritic intrusive (Porter, 1976).

Down hole IP, dipole-dipole IP, gradient array IP, total field ground magnetic, airborne EM (H-400 system) and SP surveys were also completed over the Crosby Creek and adjacent areas.

No well shaped geophysical anomalies were detected and no distinct geophysical targets were defined. However, some coincident IP and soil geochemical anomalies were recommended as possible drilling targets provided they were in favourable geological environments (Porter, 1976; Jenke, 1975; Smith, 1975; Howland Rose, 1975a). None of these has been tested.

Loyetea South

The Loyetea South grid was covered by detailed 100 x 20m or 50 x 20m soil sampling surveys (Porter, 1976). At Loyetea South, the +300 ppm lead contour outlines an anomaly 900m long and 20 - 50m wide with a peak value of 2900 ppm Pb. Anomalous Zn and to a lesser extent copper correspond with the lead soil anomaly. A zone of intense sericitic alteration within tuffaceous shales, tuffs and agglomerate is associated with the soil anomaly. As at Crosby Creek, geological mapping of this area was conducted by logging chips sieved from soil auger samples supported by road traverses.

This soil sampling programme was followed by a gradient array EIP survey with some pole-dipole profiling across selected zones (Howland Rose, 1975b). Several anomalies were detected and rated according to geophysical characteristics and associated geochemistry.

Two diamond drill holes tested selected IP anomalies which had some geochemical support. DD76LS1 (300m) intersected a sequence of shales tuffaceous shales, tuffs and dacitic lava. Although some intense sericitization was logged no significant mineralization was observed.

DD76LS2 (200m) intersected a similar sequence above a weakly altered rhyodacitic "intrusive". Rocks within 50m of this "intrusive" were intensely sericitized but no significant mineralization was observed. No source for either the geochemical or the geophysical anomalies was detected. Neither hole was assayed for base metals or gold.

Loyetee North

The Loyetee North grid was also covered by 100m x 20m and 50m x 20m soil geochemistry and gradient array EIP. Soil geochemistry anomalies were discontinuous but an anomalous zone 1.5km x 250m with a string of eyes of 400-2100ppm Pb and 300-600ppm Zn surrounded by a broad zone of +200ppm Pb was outlined. Numerous weak IP anomalies were also detected, several of which had geochemical support. Due mainly to the absence of significant rock alteration, no drill hole was recommended for the Loyetee North area (Porter, 1976, Howland Rose, 1975b).

2.3 EL.8/77 - Comalco

E.L. 8/77, like E.L. 19/72, contained all of the present E.L. 96/87 and covered a much larger area. Again comments made here are restricted to exploration relevant to EL.96/87.

Comalco explored E.L. 8/77 for fluorite, tin, tungsten and cobalt and concentrated on searching for skarns developed in Ordovician limestone near Devonian granites.

A detailed stream sediment survey was completed covering the portion of EL.96/87 north of the 1973 CRAE survey. Samples of -80 mesh, panned concentrates and magnetic fraction were collected.

A Sn anomaly in the magnetic fraction was detected at AMG grid reference 425,000E/427,000N along a tributary of Crawfords Creek. Tertiary basalt has been mapped in this area (Weste, 1979). No follow up of this anomaly was attempted.

2.4 EL.8/77 - Shell Metals

Most exploration by Shell Metals in EL.8/77 concentrated on a search for Sn or W in skarns and was conducted outside the current EL.96/87. Within the current E.L., exploration was restricted to a stream sediment survey and reconnaissance geological mapping over Cambrian rocks just west of the Leven River. This survey filled a large gap left by the CRAE coverage. In addition, a brief review of the results of CRAE exploration in the Cambrian rocks within EL.8/77 was completed. (Ruxton, 1984)

Shell flew a combined aeromagnetic and radiomagnetic survey over all of E.L. 8/77. The data from this survey relevant to the Cambrian rocks has not yet been interpreted in detail. (Refer)

2.5 EL.8/77 - CRAE (again)

In 1985, CRAE again conducted some exploration over the Cambrian section of E.L. 8/77. Their target was either gold mineralisation associated with volcanic rocks or an inferred gold halo around a Mt. Read Volcanics type VMS deposit.

Some widely spaced cyanide bulk leach samples at a nominal spacing of 1 sample per 4 sq.km. were collected and assayed. Minus 80 mesh stream sediments were also collected from the bulk leach sites and assayed for base metals and gold (fire assay). Most of these samples were collected from sites close to easy road access. Consequently large areas of the prospective Cambrian stratigraphy were not sampled.

The -80# base metal results successfully rediscovered the Crosby Creek, Loyetea North and Loyetea South anomalies. Several weak gold anomalies were followed up by additional sampling without success (Caithness, 1986).

As a continuation of this gold programme, grind sampling and gold assaying of DD75CC1 commenced. The sampled section contained a trace of gold throughout (0.01 -0.02g/t) but nothing greater than 0.04g/t (von Strokirch, 1987). Almost half of DD75CC1 was not sampled. No samples were collected from DD75CC2 or DD75CC3.

2.6 EL.2/76 Geopeko

In 1976 and 1977 Geopeko carried out stream sediment sampling, rock chip sampling, geological mapping and "C" horizon soil sampling in areas within and just west of Loyetea North and South. The only reported thin section descriptions of any rocks collected from within the area of the current EL.96/87 are of five rocks collected by Geopeko during their reconnaissance programme (Rogers, 1976).

Geopeko's Challenger 2 prospect lies 1 to 2km west of the south west corner of EL.96/87. It occurs in similar rocks to those at Loyetea South and Loyetea North and has similar anomalous levels of stream sediment geochemistry. Geopeko further explored Challenger 2 with "C" horizon soil sampling on a 100m x 50m grid.

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A relatively broad zone of high background Pb values (+200 ppm) was outlined with two relatively small zones of elevated Pb geochemistry with peaks of 920 and 1200 ppm. Zinc values did not support the lead anomaly and copper values reported very low.

Geopeko attributed the anomalies to a weakly mineralised rhyolite porphyry which was interpreted as an intrusive.

Since 1977, exploration of this prospect has been conducted by Shell Metals and CRAE as a part of the current EL.36/79. No useful reports from this E.L. are yet on open file so results of this exploration are not known. Shell are reported to have carried out geological mapping, gridding and diamond drilling (one hole) in this area.

2.7 Summary of Results of Previous Exploration

Regional

- * The Crosby Creek, Loyetea South and Loyetea North are geochemically anomalous for Cu, Pb, Zn
- * Reconnaissance stream sediment sampling coverage for gold (both BLEG and -80#) is incomplete. Some weak anomalies detected by a 1986 CRAE survey have not yet been followed up.
- * Some sections of the Cambrian stratigraphy have not been covered by reconnaissance stream sediment sampling and geological mapping because of access difficulties.
- * Aeromagnetic surveys over prospective Cambrian stratigraphy have not been interpreted in detail.

Castra Road

- * A large zone of pyritized and silicified volcanics occurs within a broader zone of fairly intense sericitic alteration.
- * Along Castra Road, veins and segregations of barite occur within these pyritized volcanics.
- * Rocks in this zone appear to be geochemically depleted in Cu, Pb and Zn.
- * Sedimentary units flanking the altered volcanics are weakly anomalous in Pb, Zn and Cu.

Crosby Creek

- * "C" horizon soil sampling has outlined several zones anomalous in Pb and Zn and to a lesser extent Cu.
- * The most prominent geochemical anomaly flanks a mapped microdacite intrusive.
- * Diamond drilling intersected minor disseminated and veinlet Cu, Pb, Zn sulphide mineralisation in tuffaceous shales at the contact with porphyritic microdiorite intrusive.
- * Only the easily accessible portions of the Crosby Creek area have been tested.
- * Coincident IP and geochemical anomalies along the southern portion of the grid have not been tested. Mapping suggests that these southern anomalies are not related to the microdiorite intrusive.
- * Geological mapping by logging soil auger chips appears valid in this area.

Loyetea South

- * Pb, Zn and Cu soil anomalies in this area are associated with intensely sericitised volcano-sedimentary rocks.
- * Some gradient array IP anomalies are associated with soil geochemistry anomalies.
- * Drill holes targeted on geochemistry and IP intersected intensely sericitised rocks associated with rhyodacitic or dacitic lavas.
- * No mineralisation was observed and no source of the IP anomalies was detected.
- * DD76LS2 failed to test its target anomaly. Because of access difficulties it was drilled over 100m too far to the south west.
- * Geological mapping of this area is poor and requires upgrading. Steep slopes in this area suggest that most chips sieved from soil auger samples would be transported from uncertain distances up slope.

Loyetea North

- * Several coincident or related IP and geochemical anomalies were detected.
- * No drill holes were proposed because of a perceived absence of rock alteration.
- * Geological mapping in this area is unreliable and requires upgrading.

Walloa Creek

- * Cambrian volcano-sedimentary rocks in the north of E.L. 96/87 were not explored by CRAE.
- * Geopeko exploration in this area has not yet been reviewed as copies of relevant reports have not yet been purchased.

3.0 EXPLORATION PHILOSOPHY

The elevated Pb, Zn, Cu geochemistry, rock alteration, barite mineralisation and geological setting outlined by earlier explorers indicate that the Loyetee-Crosby Creek Castra Road belt has potential for VMS deposits, for precious metal deposits of the South Hercules type and for low sulphide gold deposits. The lack of success by early prospectors and for later patchy systematic exploration by CRAE suggest that such mineralization is unlikely to outcrop. Any orebody within EL.96/87 is likely to be deeply buried or covered by later sediments or Tertiary Basalts.

The techniques currently available for the second phase exploration for deep VMS deposits and which have been shown to provide useful results. Rosebery, Que River, Hellyer or Queenstown can be sub-divided into two groups. The first group comprises techniques that are useful for screening anomalous areas and mineralised prospects and includes aeromagnetic interpretation; rock alteration studies by petrology and whole rock analysis; lead, oxygen and sulphur isotope studies; and the geological analysis of palaeovolcanic settings. These techniques permit an assessment of the age of mineralisation and allow comparison of prospect alteration with known alteration zones associated with both barren and mineralised systems.

The second group includes techniques used for target definition or for determining vectors towards mineralization within a hydrothermal system. Such techniques as detailed geological mapping, TEM, CSAMT, micro gravity, RMIP, downhole EM and deep diamond drilling have been applied with some success on the West Coast. A well orchestrated approach by a team of experienced and innovative specialists is an essential factor in determining the success of these advanced exploration techniques.

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4.0 EXPLORATION ACTIVITY APRIL 1988 - MARCH 1989

4.1 REGIONAL EXPLORATION

4.1.1 Aims

As outlined in section 2.0 of this report, most of this E.L. has been covered by stream sediment sampling surveys and reconnaissance geological mapping conducted by previous explorers. The aims of the 1988-89 exploration were to fill in the gaps in previous surveys.

4.1.2 Work Completed

A compilation of all previous -80# stream sediment sampling and -4# BLEG (cyanide Bulk Leach Extractible Gold) sampling was completed. Several gaps in the BLEG sampling were identified while one area with very difficult access was found to be inadequately tested by both BLEG and -80# surveys. Thirteen bulk leach samples and check -80# stream sediment samples were collected during the 1988-89 programme. See plan 533-0002 for sample numbers and locations of all stream sediment samples known to have been collected from EL.96/87.

4.1.3 Results Received

The results of the compilation of zinc and lead geochemistry are presented as plans 533-0003 and 533-0005 respectively. On these the Crosby Creek and Tulip Tree Creek drainages are clearly anomalous in zinc and less obviously anomalous in lead. Follow up work by CRAE has confirmed the anomalous lead and zinc geochemistry of these areas. Extensive lead-zinc soil geochemical anomalies were defined at both Crosby Creek Loyetea and low grade disseminated lead-zinc mineralization was intersected by CRAE drill holes at Crosby Creek. The results of BLEG sampling are plotted on plan 533-0006. Walloa Creek draining into the area from the north and a small creek draining the western slope of Mount Minnie are identified as areas warranting follow up. Unfortunately, the source of the Walloa Creek anomaly is probably outside EL.96/87.

4.1.4 Discussion

Only one portion of the prospective Cambrian volcano-sedimentary sequences has not yet been adequately tested by either -80# or -4# BLEG stream sediment sampling. This area, the eastern side of the Leven River gorge requires the establishment of walking track access to facilitate sampling.

4.2 LOYETEA SOUTH

4.2.1 Aims

Anomalous lead and zinc geochemistry was detected in this area by CRAE stream sediment sampling and soil sampling. Follow up diamond drilling (76LS1 and 76LS2) intersected extensively sericitized volcanoclastic rocks and weakly altered lavas. Drill core was not assayed. The aims of EZ's 1988-89 exploration was to locate the bedrock source of the soil geochemical anomalies and to determine the type of alteration and the age of any mineralization associated with these anomalies.

4.2.2 Work Completed

Gridding

In 1988, EZ established a grid over part of the area. From a 2km long base line, 11 north-south cross lines from 2 to 2.8km long, spaced 200m apart were cut. All grid lines were pegged at 20m slope corrected intervals. A total of 29.2km was cut. See Fig 6, Tulip Tree Creek Grid.

Access to the grid is by two 4wd logging tracks. Query Road cuts across the northern part of the grid while Leven Road reaches the southern part.

Rock Sampling

The gridlines, roads and Tulip Tree Creek have been geologically mapped, and rock chip sampled in places of rock alteration and mineralization.

Part of each of the two anomalous Pb zones defined by CRAE soil sampling were investigated and rock chip sampled in order to check the anomaly and to obtain samples with values of Pb >200ppm for future Pb isotope studies. See Fig 6, for position of these zones.

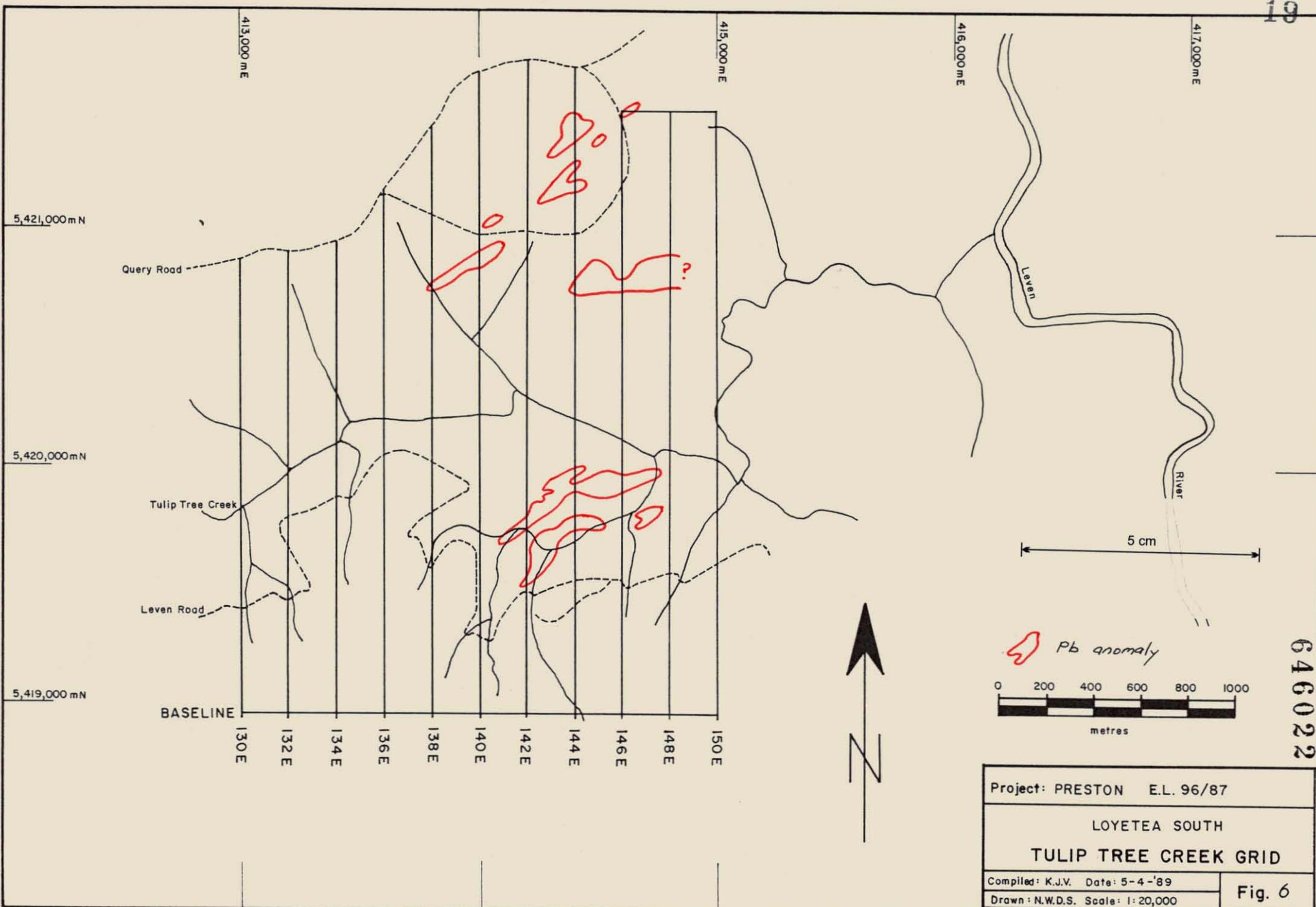
Rocks were submitted to Analabs, Burnie for preparation and analysis. Copper, lead and zinc were determined by A.A.S. after either mixed acid (Analabs 103) or aqua regia (Analabs 140) dissolution. Gold was determined by fire assay.

Ground Magnetics

All grid lines were surveyed with a Lamontagne GSM18 proton precession magnetometer system. Field data was corrected for diurnal variation by reducing the raw data using base data collected by another GSM18 magnetometer at a local base station.

Drill Core

Old CRAE drill core from holes DD76LS1 and DD76LS2 was relogged and selectively sampled. Samples were assayed for copper, lead, zinc and gold. Copper, lead and zinc were determined by A.A.S. after mixed acid dissolution (Analabs 103). Gold was determined by fire assay



646022

Project: PRESTON E.L. 96/87	
LOYETEA SOUTH	
TULIP TREE CREEK GRID	
Compiled: K.J.V. Date: 5-4-'89	Fig. 6
Drawn: N.W.D.S. Scale: 1:20,000	

4.2.3. Results Received

Geology (Plan 533-0012)

The geology of the Tulip Tree Creek Grid area basically consists of a sequence of acid to basic lavas, acid tuffs, and volcanoclastic and clastic sediments. Small intermediate - basic minor intrusives occur within the sedimentary rocks.

All units have been subjected to variable and patchy chloritic, sericitic or carbonate alteration. Some silicification and argillic alteration have also been mapped.

In the central grid area two main, predominantly andesitic lava, volcanic centres are flanked proximally with minor conglomerates and distally with interbedded acid tuffs, epiclastic sandstones and laminated siltstones. Microdiorite and gabbro intrusions also occur in this region. Two conglomerate units of differing composition form ridges in the northern and southwestern parts of the grid. This volcano-sedimentary sequence is cut by Tulip Tree Creek and its tributaries, as the creek flows eastward into the Leven River, to form a steep sided valley of 350m relief.

The grid area seems to form part of a broad anticlinal structure with an axis trending roughly east-west. The general cleavage of the area also trends east-west, varying from 260-295 deg (Magnetic).

Offsets of approximately 100m in the andesite body and in magnetic units suggest the presence of a north-south trending fault through the centre of the grid. The two main CRAE lead anomalies would lie on and to the east of this fault. These anomalies could possibly represent leakage along a fracture zone from a source at greater depth. Most of the sediments and tuffs in the area show at least a minor amount of alteration in the form of chloritisation, sericitisation and silicification. Carbonate and argillic alteration are also observed in a few places. The andesitic lavas and intrusive units generally show weak chloritic and sericitic alteration. Basically, however the outcropping rocks are not so far altered as to destroy their original textures and make classification difficult.

The lithological units of the grid area can be divided into four main groups; lavas, intrusives, volcanoclastic sediments and clastic sediments. These groups are outlined below.

Lavas

The lava units within the grid area show a compositional variation from dacite to basalt.

The predominant lava is andesite which outcrops mainly north of Tulip Tree Creek in the eastern half of the grid. This andesite shows a general textural variation from north to south.

In the north, the andesite tends to have a pale green fine grained groundmass containing vesicles (1-3mm) filled with dark green chlorite or more rarely pink feldspar.

In the central area, the andesite consists of a fine grained groundmass of feldspar laths and chlorite.

In the south, the andesite contains porphyritic plagioclase laths (2-3mm).

The andesite along Tulip Tree Creek west of Line 148E appears to have a more basaltic composition and near Lines 140E and 142E dacitic-andesitic rocks outcrop. South of Tulip Tree Creek on Line 148E, a pale green, chlorite veined trachyte-andesite unit is exposed.

The alteration of these rocks is generally minor, with plagioclase altering to clays +/- sericite and amphibole/biotite altering to chlorite.

Though the andesite has been mapped as one unit it is likely that it consists of a number of different lava flows.

There are also two thin EW trending bands of andesitic-dacitic float in the northwest of the grid. This lava is weathered to pale yellow-orange, and is extremely vesicular. The vesicles (1mm - 2cm) make up to 20% of the rock and are generally empty but may be filled with chlorite or pink secondary feldspar.

Dark siliceous basaltic float occurs on Query Road and the red-orange colour of the soil in this area suggests that it may be underlain by Cambrian basic volcanic rocks.

Intrusions

Closely associated with the andesite is a microdiorite intrusion which outcrops in Tulip Tree Creek near Lines 144E and 146E. In some places the microdiorite appears more gabbroic in composition. The microdiorite consists of pink or green plagioclase phenocrysts (2-3mm) in a green fine grained (<1mm) groundmass of feldspar and chlorite.

It should be noted that in certain areas the microdiorite and porphyritic andesite look similar in appearance and this makes mapping their contact areas difficult. The alteration of the microdiorite is only minor and similar to the andesite, ie; plagioclase altering to clays +/- sericite, amphibole/biotite altering to chlorite.

On Line 136E is an intermediate quartz porphyry with carbonate and chloritic alteration. An dark grey, augite rich gabbro outcrops on Line 130E.

Volcaniclastic Rocks

a) Pyroclastics

The two main types of pyroclastic deposits occurring in the area are acid ash and crystal tuffs. The ash tuffs are very fine grained, massive, pale green to cream and may contain scattered plagioclase crystals. A sericitic ash tuff similar to this, outcrops on Leven Road between Lines 132 and 134E and is anomalous in lead and zinc.

The crystal tuffs are quite common in the area and grains are 90-80% plagioclase laths (2-10mm) and 10-20% volcanic quartz crystals (2-5mm). These units have an average grainsize of 2-3mm and may grade into an ash tuff of similar composition. The tuffs are usually quite weathered with plagioclase altering to clays +/- sericite.

b) Epiclastics

The predominant rock type within the grid is produced by reworking of the crystal tuffs described above. This produces a massive fine grained to coarse grained greywacke or arenite composed of lath shaped or rounded plagioclase (1-10mm) subordinate volcanic quartz (2-3mm) and rounded quartz pebbles (2-4mm) and 20-30% matrix, with a few odd lithic grains. The plagioclase weathers to clays +/- sericite, and chloritic wisps may occur in the matrix. These sandstones are often interbedded with the laminated siltstone units.

At the northern end of the grid within the loop of Query Road is a ridge composed of volcanic "grit". This is a dark grey-black rock composed of white, red, grey and black subrounded-angular lithic fragments and quartz grains in a grey matrix. This unit shows grading on a centimetre scale and also within the whole unit. The unit seems to fine northward from a coarse grained conglomerate (5 cm) through a medium grained greywacke to a fine grained sandstone. This ridge contains a CRAE soil Pb anomaly with values of up to 2100ppm lead.

On Tulip Tree Creek between Lines 134E and 136E is an conglomerate outcrop consisting of angular to subrounded dark green and pale pink lithic clasts in a pink feldspathic greywacke matrix. The fragment size varies from 30cm - 2cm.

Clastic Sediments

a) Laminated Siltstones

These sediments consist of alternating 1-3cm thick beds of cream, pale green or grey finely laminated siltstone. Olive green and black laminated siltstone also occurs in one area. Interbedded with the siltstone may be thin fawn, fine grained arenite beds or thin claystone beds. Grading can be observed within the grey siltstone beds and sandy interbeds. No overturning of siltstone units has been seen.

In a few places, e.g. along Tulip Tree Creek near lines 150E and 130E, the laminated siltstone has slumped and distorted bedding, indicating possible tectonic movement not long after the silt deposition. Micro faulting also occurs in these areas.

Most of the structural information of the area has been obtained from the bedding and cleavage of these units.

Massive dark grey and green siltstone is also present in the area, usually closely associated with the laminated silt.

The siltstone in certain areas may be quite siliceous, chloritic and sericitic, and it occurs within the CRAE soil Pb anomaly south of Tulip Tree Creek. Pale pink Fe staining of the rocks may also occur in places.

b) Sandstones

There is only a very minor percentage of truly clastic (non volcanic) sandstone occurring in the area. These include of a red-brown quartz arenite outcropping in Tulip Tree Creek and cross bedded quartz arenite float on Query Road and at the northern end of Line 150E.

c) Conglomerate

A variety of predominantly quartz pebble conglomerates occurs within the grid area. These consist of one unit that creates a ridge in the southwest corner of the grid and five other groups of outcrop that flank the main andesite body.

The conglomerate along the ridge consists of a green massive poorly sorted rock composed of rounded quartz pebbles, grey lithic pebbles and volcanic quartz in a green feldspathic greywacke matrix. Pebble size grades from 10cm to 3mm southward.

The flanking conglomerates consist of:

- Line 142E, A conglomerate of green and cream subangular-subrounded lithic quartz pebbles (up to 1cm) and volcanic quartz grains (2-3mm)
- Line 146E, A poorly sorted rock of rounded-subangular quartz pebbles and pink lithic fragments (1mm-5cm) and feldspar and quartz grains (2-3mm)
- Line 148E, A conglomerate of tightly packed rounded quartz pebbles (1-10cm) with a few dark grey lithic fragments in a green fine grained feldspathic greywacke matrix. The long axis of the pebbles is orientated EW.
- Line 150E, A poorly sorted rock of subrounded felsic lithic clasts 20cm-2mm.
- Tulip Tree Creek at Line 138E, A conglomerate of rounded quartz pebbles 1mm-10cm, lithic grains, red chert and silt pebbles and volcanic quartz (2-4mm) in a grey green matrix. This rock contained a sulphide lens within a silt clast, 2cm long.

These rocks show minor sericitic, chloritic and siliceous alteration.

Rock Chip Geochemistry (Plan 533.0009 Pb, Plan 533.0010 Zn)

The highest lead and zinc values received were mainly from near the two anomalous CRAE Pb soil zones.

One zone crosses Query Road and contains soil values of up to 2100ppm. This zone is 1 km long and trends NE subparallel to bedding. The associated rock unit is predominantly a dark grey volcanic greywacke to conglomerate composed of black and red lithic fragments. Also in the vicinity are siliceous basaltic float, siltstones and an intermediate volcanic (dyke?). These units dip at approximately 35 degrees to the NNW. Ten samples were collected in this area by EZ and four samples had anomalous values of 170-585ppm Pb.

The other CRAE Pb zone lies north of Leven Road and extends for 750m, also striking NE along the bedding. This zone contains Pb soil values of up to 880ppm. Eleven rock chip samples were collected consisting of epiclastic sandstones, pebble conglomerate, tuff and siltstone with minor chloritic, sericitic, carbonate and argillic alteration. Three of the samples contained anomalous Pb values of 315, 320 and 355ppm and four were anomalous in Zn from 565-1150ppm. Pyrite clasts occur sporadically in some of the pebble conglomerates within this zone.

Two other anomalous zones have been defined by EZ within the grid area. One of these anomalies is on Leven Road between grid line 132E and 134E. This area is underlain by a pale green intensely sericitic acid ash tuff with values of 280, 325 and 440ppm Pb and 240, 310 and 320ppm Zn. This unit is overlain by a quartz pebble conglomerate and overlies a decomposed feldspathic sandstone.

The other anomalous values of 275ppm Pb and 325, 450, 720 and 770ppm Zn occur along the western and northern margin of a large body of andesitic lava.

Ground Magnetics (See Appendix 3)

Ground magnetic data has been plotted as profiles for each grid line. Several obvious magnetic responses can be correlated across the whole grid while other responses and units of distinct magnetic character can be correlated across three or four grid lines. These responses and magnetic units were used to control and expand the geological interpretation.

Drill Core (See Appendix 4)

Relogging of CRAE drill core showed that intense sericitic alteration was confined to the coarser volcanoclastic rocks. Siltstone intervals were only weakly altered. Assays of selected core samples from DD76LS1 and DD76LS2 produced disappointing results. No anomalous lead or zinc values were reported and all gold values were below the detection limit of 0.008ppm.

These holes were drilled by CRAE to test two gradient array IP anomalies. Purvis (1978) reports that, because of access difficulties and steep topography neither hole adequately tested the target IP anomalies. The soil geochemical anomalies were not drill tested.

4.2.4 Discussion

The mapped geology of the Loyetea South area suggest a palaeo-environment of discrete volcanic centres with associated minor intrusive bodies flanked by volcanoclastic fan deposits which are mixed with and grade into detrital sedimentary rocks with a different provenance. The coarser volcanoclastic rocks closer to the volcanic centres are often intensely altered.

Rock chip geochemistry indicates that the outcropping rocks are weakly anomalous in lead and zinc. Tenors of lead and zinc values in rock samples are similar to those in the overlying soil. While lead contents from 200-600ppm in rocks can only be considered as weakly mineralized it may be sufficient to provide meaningful lead isotope values.

Ground magnetic data from the Tulip Tree Creek Grid merits interpretation by a competent geophysicist familiar with the alteration characteristics associated with VMS and associated deposits.

4.3 CROSBY CREEK AREA

4.3.1 Aims

Diamond drilling by CRAE intersected low grade disseminated and veinlet mineralization in drill holes targeted on soil geochemical anomalies. Exploration by EZ was directed at determining the geological environment of the mineralization and of the soil geochemical anomalies and to check whether any gold mineralization was associated with any of the base metal mineralization or alteration zones intersected.

4.3.2 Work Completed

Core from the three CRAE drill holes was relogged and selectively sampled. The area was visited to assess the reliability of the geological mapping of the area.

4.3.3. Results Received

Relogging of the core confirmed the close relationship between the contact zone of the dioritic feldspar porphyry intrusive and the weak lead-zinc mineralization. Mineralization is confined to within a few metres of the contact and occurs within both the feldspar porphyry and the weakly contact altered siltstones. No extensive hydrothermal alteration zones were intersected. Gold values from both the mineralized zones and the weakly altered zones were low.

4.3.4 Discussion

CRAE geology and soil geochemistry indicate that most of the soil geochemical anomalies are derived from low grade disseminated lead-zinc mineralization occurring at the contact between the dioritic feldspar porphyry intrusive and weakly altered sediments. The CRAE drilling has adequately tested this style of mineralization.

However, soil anomalies along the southern portion of the CRAE Crosby Creek grid are not obviously related to the feldspar porphyry intrusive. In addition, drainage geochemistry anomalous in lead and zinc lying west of the grid has not been tested. These areas require additional grid based exploration.

4.4 CASTRA ROAD PROSPECT

4.4.1 Aims and Work Completed

CRAE exploration (Purvis, 1978) reported barite mineralization within intensely silicified, sericitized and pyritized volcanics from this area. It was suggested that the very low geochemistry occurring in parts of this zone were genuine geochemical anomalies associated with hydrothermal depletion zones. In 1988-89, the road traverse through this alteration zone was mapped in detail and rock chip sampled. Samples were assayed for copper, lead zinc and gold. In addition the old Preston Silver Mine, 500m north of this area was located and several samples collected.

4.4.2 Results Received

Plan 533-0013 illustrates the detailed geology and rock chip sample locations for the Castra Road Prospect. Pyrite and sericite alteration are less wide spread than expected. Much of the pyrite is associated with sheared or faulted zones within both the acid volcanics and the volcanoclastic sediments. No barite mineralization was observed.

Assay results from the samples collected are included in Appendix 2.

No sample is anomalous in lead or zinc and the majority of values are very low. Only one sample, 67841, is weakly anomalous in gold (0.079 g/t) while sample 67837 (110ppm) and 67848 (340ppm) were weakly anomalous in copper.

Weak lead zinc mineralization (to 440ppm Zn and 2650ppm Pb) was sampled at the Preston Silver Mine. Base metal mineralization here is associated with pyrite and occurs as thin films parallel to the laminations of the host siltstone - greywacke sequence.

4.4.3 Discussion

Although lead and zinc values along the road traverse are low, no evidence of the hydrothermal depletion zones suggested by Purvis (1978) was detected. Nevertheless, the presence of base metal mineralization at the nearby Preston Silver Mine, the anomalous gold drainage geochemistry (BLEG) from the western flank of Mount Minnie, the reported barite mineralization and the mapped hydrothermal alteration along the road section identify this area as worthy of more rigorous grid based exploration.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Conclusions (1988-89 Exploration)

5.1.1 Regional

- * The eastern side of the Leven River Gorge has not yet been cover by stream sediment sampling or reconnaissance geological mapping.
- * Anomalous gold geochemistry sampled in Walloa Creek is probably sourced by an area north of EL.96/87.
- * Interpretation of all aero magnetic data is warranted.

5.1.2 Loyetea South

- * Anomalous lead and zinc soil geochemistry is associated with weakly elevated lead and zinc values in rock chip samples. Steep slopes in this area indicates that down hill creep of soil anomalies is likely in these areas.
- * Further first stage exploration is required in this area before expensive geophysical or drilling programmes are warranted. Stable isotope values (lead, sulphur, oxygen) should be determined and the results of both ground magnetic and aero magnetic surveys should be interpreted.

5.1.3 Crosby Creek

- * Lead and zinc soil anomalies in the north eastern part of this area are related to low grade mineralization in the contact zone of feldspar porphyry intrusives. This style of mineralization has very little potential for economic mineralization.
- * Lead and zinc soil anomalies on the southern third of the CRAE grid are not obviously associated with feldspar porphyry intrusives. These require field checking and classification.
- * Anomalous drainage geochemistry west of the CRAE grid has not been followed up.
- * Additional grid based exploration south and west of the CRAE grid area is warranted.

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5.1.4 Castra Road Anomalies

- * Pyritic and sericitic alteration of acid volcanics and associated sediments along the Castra Road are associated with shearing and fault zones. Weakly elevated copper and gold values are associated with some of these shear zones.
- * Anomalous gold drainage geochemistry and weak base metal mineralization at the Preston Silver Mine may be associated with the hydrothermal alteration along the road.
- * Additional grid based exploration of the area north of the Castra Road alteration zone is warranted.

5.2 Recommended Exploration Programme
April 1989 - March 1990

5.2.1 Regional

- * Complete the -80# and BLEG stream sampling east of the Leven River.
- * Reconnaissance geological mapping and rock chip sampling along both sides of the Leven River.

5.2.2 Loyetea South

- * Determine lead isotope ratios of weakly mineralized rocks.
- * Conduct alteration and sulphur and oxygen isotope studies on samples of the Loyetea drill core.
- * Commission a geophysical interpretation of the aeromagnetic and ground magnetic data.
- * Review all results to date
- * Geophysical surveys (TEM) - if warranted.
- * Drilling of significant anomalies

5.2.3 Crosby Creek

- * Prepare grid and walking track access to the area south and west of the old CRAE grid.
- * Carry out geological mapping and rock chip sampling of the new grid and adjacent areas.
- * Carry out alteration and stable isotope studies of any altered or mineralized rock samples collected.
- * Review of all results to date.
- * Grid extensions.
- * Ground geophysical surveys (TEM) over the grid area.
- * Drilling of significant anomalies.

5.2.4 Castra Road Prospect

- * Compile and review CRAE data.
- * Cutting of a 400m spaced east-west reconnaissance grid.
- * Reconnaissance geological mapping and rock chip sampling.
- * Stable isotope and alteration studies.
- * Review of all results to date.

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APPENDIX 1
EL.96/87 SCHEDULE

No.E.L. 96/87

(Regulation 6A)

The Mining Act 1929

EXPLORATION LICENCE/RETENTION LICENCE

Issued to E.Z. CO. OF AUSTRALASIA LTD.of P.O. BOX 21, ROSEBERY, TASMANIA, 7470

in respect of 113 square kilometres of land in the Land District of DEVON.....

vicinity of PRESTON as described in the schedule hereto.

This licence shall remain in force until the TWENTY-FIRST day of APRIL.....

19 89.

This licence is subject to the following conditions:—

1. That the licensee shall immediately on the issue of this licence take steps to commence preliminary works necessary for the investigation of the area.
2. That the licensee shall carry out investigations as may be necessary to determine the mineral potential of the area, and in particular will carry out geochemical testing, EM surveys, and diamond drilling of selected targets.
3. That the licensee shall employ such technical and other staff and equipment as may be necessary effectively to carry out such investigations.
4. This licence shall apply to all minerals.
5. The licensee shall notify the owner and occupier of private land, in writing, at least three days before entering such land.
6. That the security (Private Land Deposit) provided by Section 15E (1) (a) & (b) of the Mining Act, 1929, (see below) shall be lodged with the Director of Mines before entering private land.
7. The licensee shall observe, perform and fulfil the conditions as set forth in Schedule 'A' (Revised) attached hereto.
8. The licensee shall be liable to pay the cost of any work carried out to remedy any damage arising from any breach of the conditions of this licence.

9. The licensee shall deposit an amount of \$10,000.00 (Performance Deposit) as security that the conditions contained herein shall be observed. Upon expiry or sooner determination of the licence, if the licensee satisfies the Director of Mines that such conditions have been complied with, the Director of Mines shall refund such deposit or such portion thereof, as he may determine.
10. If it is found, that the operations hereby authorised, are causing any undue damage to, or erosion of, the subject land or other land in the vicinity thereof or are unnecessarily disturbing the environment, the Minister may cancel the licence without compensation to the licensee by giving seven days' notice in writing of his intention so to do.
11. The licensee shall obtain the written permission of the Director of Mines before carrying out any work in a Forest Reserve.
12. The minimum expenditure commitment is \$86,000 over the first two years.

SCHEDULE

Commencing at the northeastern corner of the area whose grid co-ordinates are 426 000 metres E. 5 432 000 metres N. thence grid south to 5 421 000 metres N. grid west to 425 000 metres E. again grid south to 5 420 000 metres N. again grid west to 413 000 metres E. grid north to 5 425 000 metres N. grid east to 419 000 metres E. again grid north to 5 432 000 metres N. aforesaid thence again grid east to the point of commencement.

The area excludes: 13.3 ha Gravel Reserve

LAND TENURE:

The area comprises:

62.6 skm	Private Property
26.3 skm	State Forest
22.8 skm	Crown Land
0.8 skm	Timber Reserve
0.4 skm	Crown Land (subject to Lands Department approval)

This land tenure table is a guide only.

EXCLUSIONS

The area embraced by this licence includes State Forests but does not include:

- (a) All other public reserves or municipal reserves or roadways.
- (b) All forms of mining tenements and water licences including leases, water licences, easement licences, special and exploration licences, prospectors licences, miners rights, permits to enter, owners consents and owners rights which were in lawful possession or marked out prior to the date of marking out of this licence.
- (c) Land exempt from the provisions of the Mining Act, 1929.
- (d) Land under the National Parks and Wildlife Act, 1970, not subject to the Mining Act, 1929.
- (e) All Crown reservations or other land set apart or dedicated for any public purposes.

APPENDIX 2
SAMPLE DATA SHEET
AND ASSAY RESULTS

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: <i>Preston</i>		LOCALITY: <i>Loycea South</i>					
A.M.O. Co-ordinates			Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)				
N	E	T or P				By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au		
77901	19490	131.32	H.S.	Acid Crystal tuff, white plagioclase laths 2mm long in olive green matrix, some wispy chloritic patches, Mn stained in places.										
77902	19510	132.45	RC	Acid Crystal tuff, pl gn plagioclase laths in pale gn matrix, weakly cleaved, sericitic, Fe + Mn stained						40	60	320	0.010	
77903	19515	132.50	RC	Acid Volcanic Greywacke, pk plagioclase irregularly spread in gn matrix, sericitic + chloritic, Fe + Mn stained.						40	35	310	0.008	
77904	19525	132.65	RC	Tuffaceous Siltstone, pl gn with patchy pinkish areas, fg, sericitic, clayey, Fe + Mn stain, small clusters of feldspar crystals in places.						175	325	145	0.008	
77905	19545	133.10	RC	Volcaniclastic Arenite, dk gn, consists of rounded quartz grains (1cm), volcanic quartz crystals + white plagioclase, chloritic, Fe + Mn.						65	20	105	0.008	
77906	19930	134.50	H.S.	Laminated Siltstone, beautifully laminated beds of gy + gn silt, minor grading within the gy bands, 270/25/S (m)										

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: Preston		LOCALITY: Loyteea South										
A.M.S. Co-ordinates			Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)										
N	E	T or P				By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au							
77907	19940	138.45	MS	Volcanic breccia, gy matrix containing sub angular pink + gn Acid fragments 75%, volcanic quartz 15%, matrix 10%, grain size 7-1mm.															
77908	20100	136.45	MS	Feldspathic Arenite, of white plagioclase 1-2mm 85%, volcanic quartz + rounded grains 10% 2-3mm, and 5% matrix, massive, well sorted.															
77909	19470	140.05	MS	Volcanic Greywacke, fg, olive gn with 20% plagioclase laths <1mm.															
77910	19430	139.85	MS	Volcanic Arenite, plg gn, 60% is plagioclase laths → clay + sericite, 40% volcanic quartz + rounded grains, a few rare lithic fragments.															
77911	20270	135.50	RC	Volcanic Greywacke, dk gn, with 5% quartz, 50% biotite + hornblende, sericitic, chloritic, siliceous in places.							75	30	140	60.008					
77912	20270	136.50	RC	Laminated Siltstone, gn, bk + fawn silt bands with fg sandy interbeds, contains diagenetic pyrite cubes, 1mm.							55	20	125	60.008					

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: <i>Preston</i>		LOCALITY: <i>Loyetea South</i>				
							COLLECTED BY: <i>K.V.</i>		DATE: <i>15/11</i>				
Sample Number	A.M.S. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)			
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au
77913	20265	136.70	RC	Laminated Siltstone, gn + black silt bands, siliceous + silicified in places, patches of arsenopyrite						35	30	120	60008
77914	20235	137.35	RC	Laminated Siltstone, olive gn + dk gn silt bands with fawn fg sandy laminae, some layers with a "cherty" appearance.						15	15	140	60008
77915	20230	138.10	HS	Agglomerate - Conglomerate, siliceous, grey-gn matrix with volcanic quartz 4-2mm with some felsic lithic grains.									
77916	20230	138.80	RC	Sulphide clast, rounded within siltstone beds, contains pyrite + arsenopyrite.						20	20	90	60008
77917	20280	141.75	HS	Andesite, porphyritic, gn groundmass with pl gn plagioclase phenocrysts 1-2mm, minor sericitic alteration									
77918	20210	142.05	HS	Volcanic Arenite, matrix of fg feldspar containing quartz grains 1mm 10%, pink plagioclase 55% and biotite → chlorite 2% 2mm									

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER						PROJECT: <i>Preston</i>		LOCALITY: <i>Logetea South</i>			
									COLLECTED BY: <i>KV</i>		DATE: <i>12/11 - 17/11/88</i>			
Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)				
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	
77919	20400	142.60	HS	Andesite, porphyritic, gn ophanitic groundmass with plc gn + pk plagioclase phenocrysts → clays.										
77920	20350	143.50	HS	Andesite, porphyritic, gy groundmass with pk plagioclase phenocrysts and 1% quartz, 3% biotite. Groundmass of feldspars, 4mm.										
77921	20300	143.35	HS	Micro Diorite - Gabbro Intrusive, plc gn plagioclase phenocrysts in an ophanitic gn groundmass, chloritic wisps in places.										
77925	20135	149.0	HS	Andesite, vesicular, dk gn-gy groundmass with 30% plagioclase, groundmass of feldspars + minor quartz, 4mm.										
77926	20130	149.50	RL	Andesite - Basalt, vesicular, with a groundmass of pink feldspar and amphibole, vesicles are filled with chlorite.						50	35	180	0.008	
	A.M.G.	Coordinates												
77932			RL	Andesite, olive gn with dk gn biotite → chloritic plates and feldspars, 1mm, cleaved, mildly sericitic.						10	45	550	0.013	

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Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: Preston		LOCALITY: Layton South					
							COLLECTED BY: KV		DATE: 12/11 - 1/12/88					
Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	
77934	20720	134	float	Andesite, vesicular, gy with pk feldspars + biotite/chlorite plates.					10	20	200	40.008		
77935	20330	134	RC	Andesite, gn, vesicular, with feldspars + dk gn chlorite plates.										
77936	2080	134	RC	Phyllite, highly cleaved gy - pk rock, sericitic.										
77937	20240	134	RC	Volcanic Arenite, highly cleaved 270° n, gy - yellow, of quartz + feldspar grains					5	15	40	40.008		
77938	20730	140	RC	Andesite, fg, olive gn					5	75	770	40.008		
77939	20350 - 360	140	RC	Andesite, porphyritic, dk gn groundmass with plg gn feldspars phenocrysts, groundmass of feldspar < 1mm, some chloritic areas.					55	275	720	40.008		
77940	19040	140	RC	Volcanic Arenite, plg gn - yellow, highly cleaved, sericitic.					10	15	45	40.008		
77941	20790	142	RC	Andesite, porphyritic, fg, olive gn with chlorite/biotite plates and pk plagioclases, < 1mm					10	85	750	40.008		

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: Preston		LOCALITY: Loyetea South								
							COLLECTED BY: KV		DATE: 2/11 - 12/11/88								
Sample Number	M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)								
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	Fe%	Mn		
77942	20460	142	RC	Andesite, porphyritic, groundmass of plagioclase <1mm with plagioclase phenocrysts 1-3mm.													
77943	20230	142	RC	Volcanic Greywacke, cleaved, sm-orange, consisting of round quartz pebbles, gt crystals + feldspars.					10	35	55	<0.008	3.05	160			
77944	20210	142	RC	Volcanic Greywacke, as above.					10	25	120	0.010	3.65	110			
77945	20110	142	RC	Volcanic Arenite, decomposed plagioclase + quartz sediment.					10	20	50	30.008	3.05	260			
77946	20540	144E	RC	Andesite, porphyritic, as for 77941					105	25	195	<0.008	-	-			
77947	20230-210	144	RC	Volcanic Arenite, gy-orange, consisting of lithic fragments, quartz + feldspar crystals					5	25	70	<0.008	-	-			
77948	20540	146	RC	Andesite, vesicular, olive gn groundmass with white feldspar phenocrysts.													
77949	19650	146	RC	Andesitic-trachite, plg gn with plagioclase phenocrysts + groundmass lim of feldspar, some chlorite patches, dk gn chlorite + quartz vein.					5	15	165	<0.008	-	-			

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: <i>Preston</i>		LOCALITY: <i>Loyatea South</i>					
							COLLECTED BY: <i>KV</i>		DATE: <i>12/12 - 18/12/88</i>					
Sample Number	M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	
77950	19340 - 320	136	RC	Intermediate Intrusive, pk ground mass of feldspar with quartz phenocrysts, carbonate + sericite alteration					15	20	200	0.009		
77951	21040 - 50	150	RC	Andesite, d'gn with pk plagioclase + hornblende → chlorite rods, fg.										
77952	21000	150	RC	Andesite, as above.										
77953	20770	150	RC	Andesite, as above.										
77954	21020 - 21030	148	RC	Andesite, vesicular, vesicles filled with chlorite, otherwise as above.					5	20	325	0.008		
77955	19940 - 50	148	RC	Andesite, as above.					5	15	90	0.008		
77956	19880 - 70	148	RC	Andesite, as above.					10	20	265	0.008		
77955	19940 - 50	148	RC	Andesite, as above.										
77957	20180	130	RC	Gabbro, quartz containing intrusive.										
77958			RC	Volcanic breccia of quartz + plagioclase, sericite + chloritic cleaved.					15	15	65	0.008		

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: Preston		LOCALITY: 5 th Layteea					
							COLLECTED BY: KV, Mat		DATE: 17/2/89					
Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	Fe %
77959	19525	132.65	RC	Acid Tuffaceous siltstone, plc gn, sericitic + siliceous.					155	440	240	<0.008	2.70	190
77960	19525	132.90	RC	Siltstone, gy, cherty.					40	280	165	<0.008	2.40	30
77961	20040 - 20	144	RC float	Siltstone, sericitic + chloritic.					35	30	75	<0.008	3.75	165
77962	20000	144	RC-F	Sulphide clast, 1cm long, rounded, within quartz plagioclase granite.										
77963	19980 - 970	144	RC-F	Volcanic Arenite, quartz + plagioclase.					20	25	225	<0.008	5.35	1800
77964	19910	144	RC-F	Siltstone - fq Sandstone, gn-gy, chloritic + carbonate altered.					65	355	790	<0.008	6.60	1050
77965	19880	144	RC-F	Volcanic Arenite, quartz + plagioclase → white clayey rock due to argillic alteration.					50	315	565	<0.008	2.30	890
77966	19815	144	RC-F	Volcanic Arenite, quartz + plagioclase sediment, Fe stained.					10	25	135	<0.008	3.15	280
77967	19800 - 805	144 E	RC-F	Siltstone, v. manganese stained.					100	125	650	<0.008	6.90	2500

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER					PROJECT: <i>Preston</i>		LOCALITY: <i>Loyteea South</i>				
								COLLECTED BY: <i>KV, Mat</i>		DATE: <i>17/2/89</i>				
Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	Fe%
77968	19700-	142.80	RC	Siltstone, chloritic + cleaved.					30	320	1150	<0.008	6.90	1200
	20													
77969	19735	142.60	RC	Volcanic Arenite - conglomerate, siliceous + chloritic, gt grains dominate					45	125	230	<0.008	5.60	1550
77970	19775	142.30	RC	Volcanic Arenite, gt + feldspar, mildly s'd, c'd.					15	25	140	<0.008	3.65	710
	AMG Coordinates													
78504	5420025	414725	RC	Siltstone, cleaved, s'd, c'd					10	40	120	<0.008	-	-
59388	McPherson's Mine		RC	Greywacke of quartz + feldspar, pl gy with 2% disseminated pyrite + galena					170	305	820	<0.008	6.70	170
59389	"	"	RC	Greywacke of quartz + feldspar, pl gy, fg.					20	50	135	<0.008	6.25	2750
59390	"	"	RC	Greywacke of quartz + feldspar, pl gy with fine barite? veining					85	55	100	<0.008	2.40	70
59391	"	"	RC	Siltstone, pl gy					40	80	230	<0.008	4.60	1750

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER					PROJECT: PRESTON		LOCALITY: CASTRA RD PROSPECT					
								COLLECTED BY: O GARDNER.		DATE: Nov '88					
Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)						
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au		
67847			RC	quartz phytic s'd volcanic	Avq s'd					50	40	20	0.015		
67848			RC	pyrite locally to 60%, patchy.											
67849			RC	cleaved s'd si volcanics from fracture zone, py, spy + qtz veins	Avq + Av s'd					340	25	30	0.014		
67850			RC	volcanic silicified sericitised py 1-2%, generally on fractures	Av si s'd					45	20	20	<0.008		
67851			RC	volcanic green trace py, 5% locally weakly s'd, si. Lava?	Av si s'd					50	30	30	<0.008		
67852			RC	very altered volcanic pyrite s'd si, from contact/shear zone	Av si s'd					30	15	20	<0.008		
67853			RC	volcanic cleaved, green cleavage 280° vertical.	Av					30	35	15	<0.008		
67854			RC	green s'd volcanic cleaved 120° vertical, some chl? fragments?	Av si s'd					<5	15	25	<0.008		
67855			RC	pink and green lava? py 1-5%. some cleavage.	Av sil					50	25	35	<0.008		
67856			RC	cleaved green volcanic s'd, some chlorite? fragments?	Av s'd					<5	15	25	<0.008		
67857			RC	volcanic green, cleaved 110° steep N45 dips si s'd	Av si s'd					<5	15	55	<0.008		
67858			RC	volcanic very altered si s'd py up to 5% from shear zone	Av si s'd					40	20	40	<0.008		
67859			RC	volcanic (sediment?) strongly s'd joint set 330°/60° bedding?	Av s'd					30	50	80	<0.008		
67860	5423500	422375	FLOAT	volcanic sediments? libic buff? joints 330°/60° SW bedding?	Av(s?) s'd					<5	10	35	<0.008		
67861	5423550	422475	FLOAT	silicified volcanic, quartz veins very fine sulphides?	Av si					<5	5	20	<0.008		
				mineralised breccia, fragments of white volcanic in chlorite + pyrite matrix	Av bx					<5	10	10	<0.008		

samples from the Castra Rd N Tas between 422550-E 5423050-N and 423100-E 5423100-N

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			STREAMSAMPLE LEDGER				PROJECT: Preston		LOCALITY: Loyetea South									
							COLLECTED BY: KV, BT		DATE: 30/11 -									
Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)									
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Au	(ppb)							
78501	5420025	414725	PC	Fair catch site, under an old log.														
78502	ad	above	BLEG	Fair catch site behind large boulder near bank							10.05							
78503	ad	above	SS	As above														
77927	5422750	414050	SS	Good trap site, pot. hole dug in sand bar, sample of crystalline quartz 40%, gn feldspathic greywacke, dk gy volcanic grit + d gn silt.														
77928	ad	above	BLEG	as above							10.17							
77929	ad	above	P.C.	Large tail of heavy dark sand.														
77930	5423325	414275	BLEG	Good trap site, in deep crevice in creek, sample of crystalline + pebble quartz, yellow-gn phyllite, siltstone + coarse volcanic greywacke							10.05							
77931	ad	above	P.C.	Small tail of heavy black sands.														
77933	ad	above	SS.	as for 77930														

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			STREAM SAMPLE LEDGER				PROJECT: <i>Preston</i>		LOCALITY: <i>South Loyetea</i>					
Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Au (ppm)				
77922	5420150	414725	P.C.	Good trap sites from bank + rock gullies in calm spot in creek,										
77923	as	above	BLEG	Floot in stream consists of laminated siltstone, conglomerate, volcanic granite, + andesite.							60.05			
77924	as	above	SS	as above										
59385	5422850	422825	BLEG	From gravel + sand bank, floot of 90% chrysolite, fg - sg, 10% sediments.							60.05			
59386	"	"	P.C.	One pan of gravel, not many heavies										
59387	"	"	SS	From a fair trap in gravel bank below rocky bar + pool, composed of minor clay with sand + rock fragments.										

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: PRESTON		LOCALITY: CASTRA RD PROSPECT					
							COLLECTED BY: D GARDNER		DATE: Nov '88					
Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)					
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Au	
67832			RC	quartz eyes in fg pale gn ser ground mass	Av q s'd				10	25	35	<0.008		
67833			RC	mg quartz phytic volcanic, py locally to 15%, lava?	Av q s'd				65	20	20	0.016		
67834			RC	pale green-grey, silicified tuff or epiclastic, no py	Av q s'd si				5	10	15	<0.008		
67835			RC	feldspar physis, sericitised pk-gn fg-mg lava? no py,	Av f s'd				35	5	20	<0.008		
67836			RC	feldspar physis rhyolite lava? some dk gn chlorite? spots	LA r f s'd				15	10	20	0.017		
67837			RC	interbedded slst/sst dk gn-black trace py in fg sediments	Sv slt/sst				110	40	40	<0.008		
67838			RC	volcanic sediment or a fg tuff	Sv									
67839			RC	massive fg sediment or tuff ash-silt grade no py	Sv slt/sh				60	30	75	<0.008		
67840			RC	laminated siltstones silicified bedding 000° dips 45°W trace py	lam Sv slt				90	10	20	<0.008		
67841			RC	sheared silts chlorite, py, silica alteration py → 80% in shears	Sv slt/sst si				60	15	15	0.079		
67842			RC	coarse sst - conglomerate sub angular → subround, fg matrix vatered s'd	Sv sst-con				20	30	20	<0.008		
67843			RC	dk fg silicified siltstone laminated in places.	Sv slt				45	55	20	<0.008		
67844			RC	volcanic sediment	Sv				<5	20	25	<0.008		
67845			RC	green and purple silicified volcanic ser, hematite in places.	Av si				5	15	25	<0.008		
67846			RC	quartz phytic gn ser si 10-20% crystals.	Av q s'd si				15	20	15	<0.008		

ANALABS

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Telex AA92560

ANALYTICAL REPORT No.

27.1.08.05812

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

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

ORDER No.	PROJECT
900910	PRESTON
DATE RECEIVED	RESULTS REQUIRED
01/11/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	11/11/88	1	24

DATE	TYPE OF SAMPLES	SAMPLE NUMBERS	PRE TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL VERISE	SIEVE	OTHER SIE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
		70098/70100,58277/97	DC	Prep:	006,010,011,012,013,015						Cu,Pb,Zn,Fe,Mn/103		
		70098/70100,58277/97	DC								Au/309		

RESULTS TO

Mineral Resources Division
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 absorption	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
issue	II	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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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

27.1.08.05812

11/11/88

900910

1 of 2

FILE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	58277	75	65	115	6.70	1200	<0.008			
2	58278	10	25	70	4.45	1050	<0.008			
3	58279	35	40	115	4.20	395	<0.008			
4	58280	15	40	75	3.05	905	<0.008			
5	58281	5	40	90	5.10	1050	<0.008			
6	58282	10	35	90	4.70	840	<0.008			
7	58283	10	30	45	1.70	765	<0.008			
8	58284	85	25	70	4.00	2400	<0.008			
9	58285	5	20	70	2.90	1250	<0.008			
10	58286	<5	20	60	2.60	1100	<0.008			
11	58287	5	15	40	2.05	1050	<0.008			
12	58288	5	20	35	2.20	1150	<0.008			
13	58289	50	35	60	3.10	1150	<0.008			
14	58290	5	65	55	2.05	820	<0.008			
15	58291	30	25	115	4.75	3350	<0.008			
16	58292	445	115	300	6.65	1350	<0.008			
17	58293	5	25	100	3.60	425	<0.008			
18	58294	5	20	95	3.25	595	<0.008			
19	58295	<5	30	85	2.75	425	<0.008			
20	58296	5	15	100	3.85	635	<0.008			
21	58297	5	15	145	3.25	630	<0.008			
22	70098	<5	25	65	3.40	940	<0.008			
23	70099	5	20	45	2.55	795	<0.008			
24	70100	5	35	60	2.35	725	<0.008			
25										

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

AUTHORISED OFFICER 

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A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

27.1.08.05812

11/11/88

900910

2 of 2

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										
16										
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			

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

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57

646060

ANALABS

A division of MacDonal Hamilton & Co. Pty Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

271100.05931

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

Mineral Resources Division
 Electrolytic Zinc Co. of Austl.
 P.O. Box 21
 Rosebery
 Tasmania 7470

ORDER No.	PROJECT
900911	PRESTON
DATE RECEIVED	RESULTS REQUIRED
09/01/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	07/01/88	1	30

DIR LOW	SAMPLE NUMBERS	PRE-TREATMENT							NONL	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
		DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS					
	67832/37, 67839/62	RD									Cu, Pb, Zn/103	
	67832/37, 67839/62	RD									Au, AuChk/309	

Mineral Resources Division
 Electrolytic Zinc Co. of Austl.
 P.O. Box 21
 Rosebery
 Tasmania 7470

RESULTS TO

RESULTS TO

REMARKS

Castro Road Samples.

STATE OF SAMPLES	ANALYSIS --- PREPARATION	ANALYSIS --- METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock RO	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	IIF under pressure A7	other chemicals means CHEM
sludge SI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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

27.1.08.05931

17/01/89

900911

1 OF 2

Tube No.	SAMPLE No.	Cu	Pb	Zn	Au					
1	67832	10	25	35	<0.008					
2	67833	65	20	20	0.016					
3	67834	5	10	15	<0.008					
4	67835	35	5	20	<0.008					
5	67836	15	10	20	0.017					
6	67837	110	40	40	<0.008					
7	67839	60	30	75	<0.008					
8	67840	90	10	20	<0.008					
9	67841	60	15	15	0.079					
10	67842	20	30	20	<0.008					
11	67843	45	55	20	<0.008					
12	67844	45	20	25	<0.008					
13	67845	5	15	25	<0.008					
14	67846	15	20	15	<0.008					
15	67847	50	40	20	0.015					
16	67848	340	25	30	0.014					
17	67849	45	20	20	<0.008					
18	67850	50	30	30	<0.008					
19	67851	30	15	20	<0.008					
20	67852	30	35	15	<0.008					
21	67853	45	15	25	<0.008					
22	67854	50	25	35	<0.008					
23	67855	45	15	25	<0.008					
24	67856	45	15	55	<0.008					
25	67857	40	20	40	<0.008					

() - in ppm unless otherwise specified
 () - element present, but concentration too low to measure
 X - element concentration is below detection limit
 - element not determined

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646062

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

27.1.08.05931

17/01/89

900911

2 OF 2

TUBL No.	SAMPLE No.	Cu	Pb	Zn	Au				
1	67858	30	50	80	<0.008				
2	67859	<5	10	35	<0.008				
3	67860	<5	5	20	<0.008				
4	67861	<5	10	10	<0.008				
5	67862	<5	<5	5	<0.008				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.008				
24	UNITS	PPM	PPM	PPM	PPM				
25	METHOD	103	103	103	309				

Results in ppm unless otherwise specified
 1. Element present but concentration too low to measure
 2. Element trace quantity is below detection limit
 3. Element not determined

AUTHORISED OFFICER 

ANALABS

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 27.1.08.05949

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

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

ORDER No.	PROJECT
900912	Preston

DATE RECEIVED	RESULTS REQUIRED
19/01/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	19/01/89	1	20

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
Various		RC	Prep:	005,009,011,012	013,016					Cu,Pb,Zn/103		
Various		RC								Au,AuChk/309		

RESULTS

TO

Mineral Resources Division
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
oil	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
issue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

27.1.08.05949

26/01/89

900912

1 OF 2

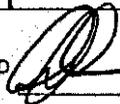
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Au					
1	77902	40	60	320	0.010					
2	77903	40	35	310	<0.008					
3	77904	175	325	145	<0.008					
4	77905	65	20	105	<0.008					
5	77911	75	30	140	<0.008					
6	77912	55	20	125	<0.008					
7	77913	35	30	120	<0.008					
8	77914	15	15	140	<0.008					
9	77916	20	20	90	<0.008					
10	77926	50	35	180	<0.008					
11	77932	10	45	550	0.013					
12	77934	10	20	200	<0.008					
13	77937	5	15	40	<0.008					
14	77938	5	75	770	<0.008					
15	77939	55	275	720	<0.008					
16	77940	10	15	45	<0.008					
17	77941	10	85	450	<0.008					
18	77946	105	25	195	<0.008					
19	77947	5	25	70	<0.008					
20	77949	5	15	165	<0.008					
21	77950	15	20	200	0.009					
22	77954	5	20	325	<0.008					
23	77955	5	15	90	<0.008					
24	77956	10	20	265	<0.008					
25	77958	<5	15	65	<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
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646065

ANALABS

A Division of Macdonald Henderson & Co Pty Ltd

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

78504

12/01/09

906912

2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Au					
1	78504	10	40	120	0.008					
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DRIVE CLEAN	5	5	5	0.008					
24	DRIVE CLEAN	PPM	PPM	PPM	PPM					
25										

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

AUTHORISED OFFICER 

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646066

ANALABS

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890

Telex AA92560

ANALYTICAL REPORT No. 27.1.08.06010

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

Ian Mathison North Broken Hill - Peko Ltd. P.O. Box 180 Rosebery Tasmania 7470	ORDER No. 900913	PROJECT Preston
DATE RECEIVED 10/02/89	RESULTS REQUIRED ASAP	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	04/04/89	1	13

SA	NT	ER	OW	PRE-TREATMENT							ANALYSIS			
				SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
				Various	SS							Au/318		

RESULTS

TO

Ian Mathison
 North Broken Hill - Peko Ltd.
 P.O. Box 180
 Rosebery
 Tasmania 7470

RESULTS

TO

REMARKS

STATE OF SAMPLES	ANALYSIS -- PREPARATION			ANALYSIS -- METHOD	
whole core WC	perchloric acid A1	cold acid CA	atomic absorption AAS		
split core SC	hydrochloric acid A2	specific sulphide SS	x-ray fluorescence XRF		
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 TIN		
water WA	HF under pressure A7	pressed powder (XRF) PP	other chemicals means CHEM		
issue TI	fusion AB	glass fusion (XRF) GF	miscellaneous MISC		
stream sediment SS			fluorescence FLUOR		
heavy mineral HM			inductively coupled plasma ICP		

AUTHORIZED OFFICER

Ian Mathison

ANALABS

A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

27.1.08.06010

04/04/89

900913

1 of 1

TUBE No.	SAMPLE No.	ANAL							
1	59385	<0.05							
2	67801	0.17							
3	67805	0.16							
4	67808	0.88							
5	67811	<0.05							
6	67814	<0.05							
7	67819	0.33							
8	67827	<0.05							
9	67830	<0.05							
10	77923	<0.05							
11	77928	0.17							
12	77930	<0.05							
13	78502	<0.05							
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	0.05							
24	UNITS	PPB							
25	METHOD	328							

Results in ppb unless otherwise specified
 I - element present, but concentration too low to measure
 X - element concentration is below detection limit
 - element not determined

AUTHORISED OFFICER *[Signature]*

66

646068

ANALABS

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

FAX: 004 31 8890

ANALYTICAL REPORT No. 27.1.08.06003

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

ORDER No.

PROJECT

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

900914

Preston

DATE RECEIVED

RESULTS REQUIRED

08/02/89

ASAP

No. OF PAGES
OF RESULTSDATE
REPORTEDNo.
OF COPIES

TOTAL No. OF SAMPLES

1

20/02/89

1

19

DATE
OF
SAMPLES

PRE-TREATMENT

ANALYSIS

SAMPLE
NUMBERS

DRY

CRUSH

SPLIT

PUL-
VERISE

SIEVE

OTHER
SEE
REMARKS

NONE

REFER TO
ANALYSIS
SECTION

PREPARATION

METHOD

Various

RC Prep: 005, 009, 011, 012, 013, 016

Cu, Pb, Zn, Fe, Mn/103

Various

RC

Au/309

RESULTS

TO

Mineral Resources Division
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
split core SC
cutting CU
rock Ro
soil SO
pulp PU
water WA
issue II
stream sediment SS
heavy mineral HM

perchloric acid A1
hydrochloric acid A2
nitric acid A3
aqua regia A4
nitric-perchloric A5
HF mixture A6
HF under pressure A7
fusion A8

cold acid CA
specific sulphide SS
other mixed acids Ma
alkaline attack AA
volatilization VO
ignition IG
pressed powder (XRF) PP
glass fusion (XRF) GF

atomic absorption AAS
x-ray fluorescence XRF
spectrophotometry SPEC
colorimetry COL
chromatography CHR
titration TTN
other chemicals means CHEM
miscellaneous MISC
fluorescence FLUOR
inductively coupled plasma ICP

AUTHORISED OFFICER

68

646070

ANALABS

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

FAX: 004 31 8890

ANALYTICAL REPORT No. 27.1.08.06034

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

Mineral Resources Division
Electrolytic Zinc Co. of Aust.
P.O. Box 180
Rosebery
Tasmania 7470

ORDER No.	PROJECT
900916	PRESTON

DATE RECEIVED	RESULTS REQUIRED
22/02/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	03/03/89	1	11

DATE OF SAMPLES	SAMPLE NUMBERS	PRE TREATMENT						ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	77959/61, 77963/70	RO	Prep: 005, 010, 011, 012, 013, 014						Cu, Pb, Zn, Fe, Mn/103		
	77959/61, 77963/70	RO							Au/309		

RESULTS TO
Mineral Resources Division
Electrolytic Zinc Co. of Aust.
P.O. Box 180
Rosebery
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION						ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS	
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF	
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC	
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL	
oil	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	
issue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC	
stream sediment	SS					fluorescence	FLUOR	
heavy mineral	HM					inductively coupled plasma	ICP	

AUTHORISED OFFICER 

ANALABS

A Division of Macdonald Hamilton & Co Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

27.1.08.06034

03/03/89

900916

1 OF 1

LINE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Au			
1	77959	155	440	240	2.70	190	<0.008			
2	77960	40	280	165	2.40	30	<0.008			
3	77961	35	30	75	3.75	165	<0.008			
4	77963	20	25	225	5.35	1800	<0.008			
5	77964	65	355	790	6.60	1050	<0.008			
6	77965	50	315	565	2.30	890	<0.008			
7	77966	10	25	135	3.15	280	<0.008			
8	77967	100	125	650	6.90	2500	<0.008			
9	77968	30	320	1150	6.90	1200	<0.008			
10	77969	45	125	230	5.60	1550	<0.008			
11	77970	15	25	140	3.65	710	<0.008			
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.05	5	0.008			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM			
	METHOD	103	103	103	103	103	309			

- on to ppm unless otherwise specified
 - element present, but concentration too low to measure
 - element concentration is below detection limit
 - element not determined

AUTHORISED OFFICER



ANALABS

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

FAX: 004 31 8890

ANALYTICAL REPORT No.

646072

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

Lan Mathison
North Broken Hill - Peko Ltd.
P.O. Box 180
Roseberry
Tasmania 7470

ORDER No. 900718 PROJECT Preston

DATE RECEIVED 16/03/84 RESULTS REQUIRED ASAP

No. OF PAGES OF RESULTS DATE REPORTED 16/03/84 No. OF COPIES 1 TOTAL No. OF SAMPLES 10

DATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS				
		DRY	CRUSH	SPLIT	PUL VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD		
	48736/45	RC				008,010,011,012	013,014				Cu, Pb, Zn, Fe, Mn/103		
	48735/45	RC									Au/309		

RESULTS TO

Lan Mathison
North Broken Hill - Peko Ltd.
P.O. Box 180
Roseberry
Tasmania 7470

RESULTS TO

REMARKS

STATE OF SAMPLES	ANALYSIS	PREPARATION	ANALYSIS - METHOD
whole core WC	perchloric acid A1	cold acid CA	atomic absorption AAS
split core SC	hydrochloric acid A2	specific sulphide SS	x-ray fluorescence XRF
cutting CU	nitric acid A3	other mixed acids Ma	spectrophotometry SPEC
rock Ro	aqua regia A4	alkaline attack AA	colorimetry COL
oil 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
issue TI	fusion A8	glass fusion (XRF) GF	miscellaneous MISC
stream sediment SS			fluorescence FLUOR
heavy mineral HM			inductively coupled plasma ICP

Lan Mathison

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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

27.1.08.06074

22/03/89

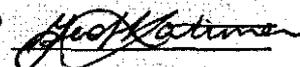
900918

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Al			
1	48736	35	130	1450	6.85	1500	<0.008			
2	48737	80	75	845	11.50	1950	<0.008			
3	48738	85	105	280	5.70	540	<0.008			
4	48739	10	170	1150	7.50	760	<0.008			
5	48740	5	35	465	7.55	1000	<0.008			
6	48741	15	260	690	6.70	1025	<0.008			
7	48742	15	145	655	6.40	1300	<0.008			
8	48743	15	320	515	7.25	2950	<0.008			
9	48744	10	585	1250	6.95	1750	<0.008			
10	48745	<5	155	510	6.65	715	<0.008			
11										
12										
13										
14										
15										
16										
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

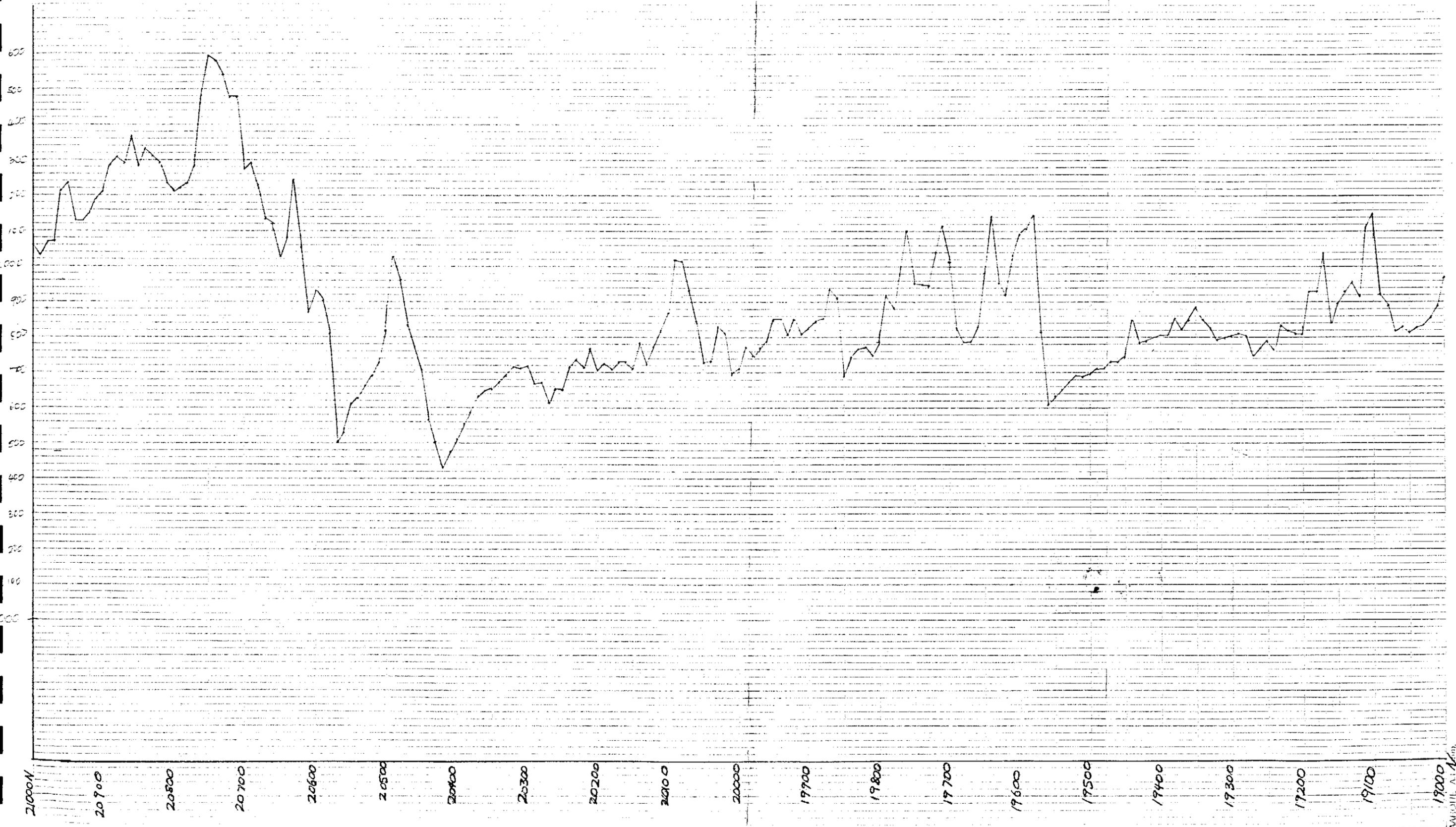


APPENDIX 3
GROUND MAGNETIC DATA

Line 130.00E

MAG 4.5M 18

5 cm



74

646076

Tulip tree creek Grid

SURVEY BY B. Taylor

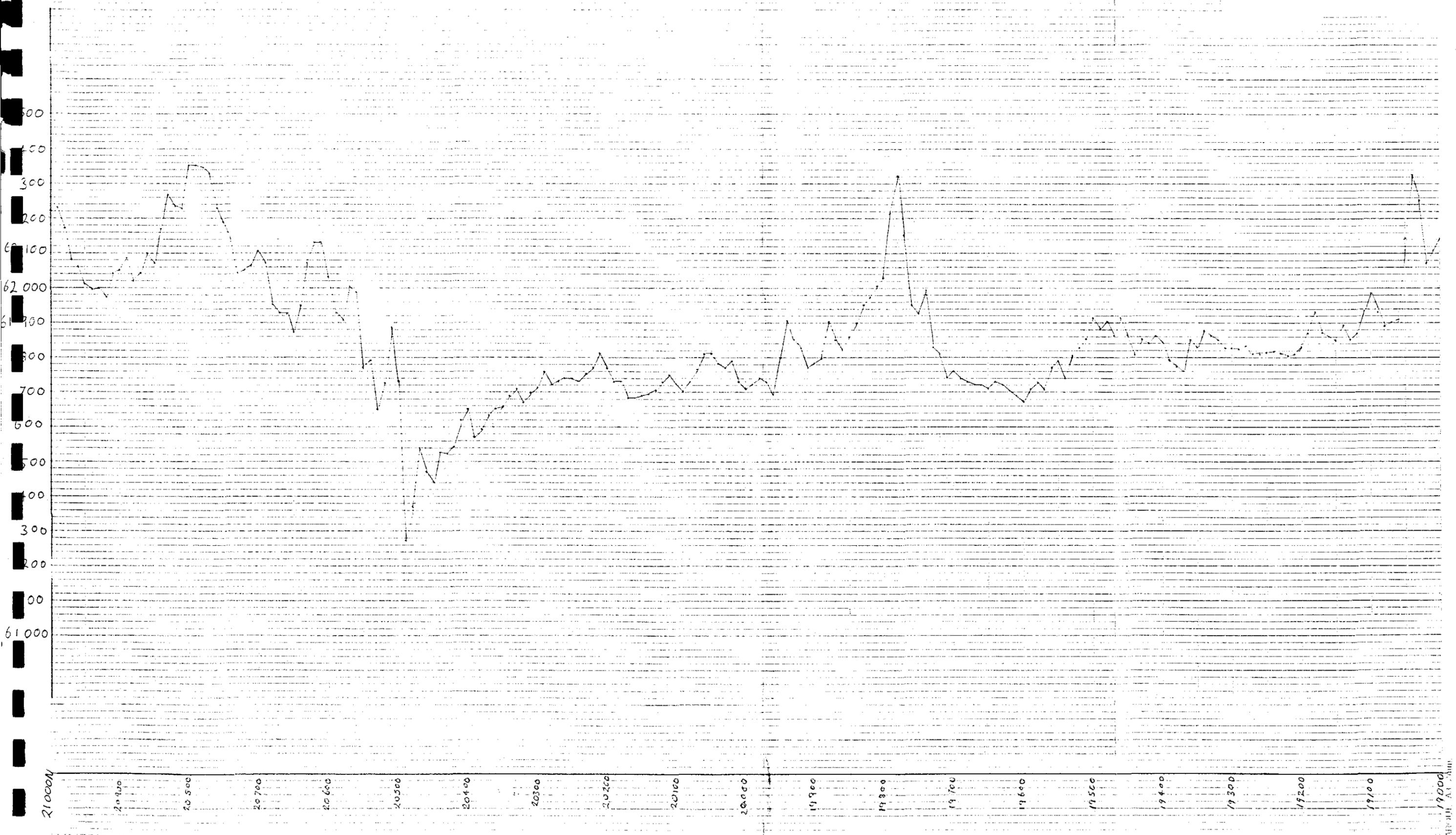
DATE 13-12-88

1:5000

Line 13200E

MAG GSM 18

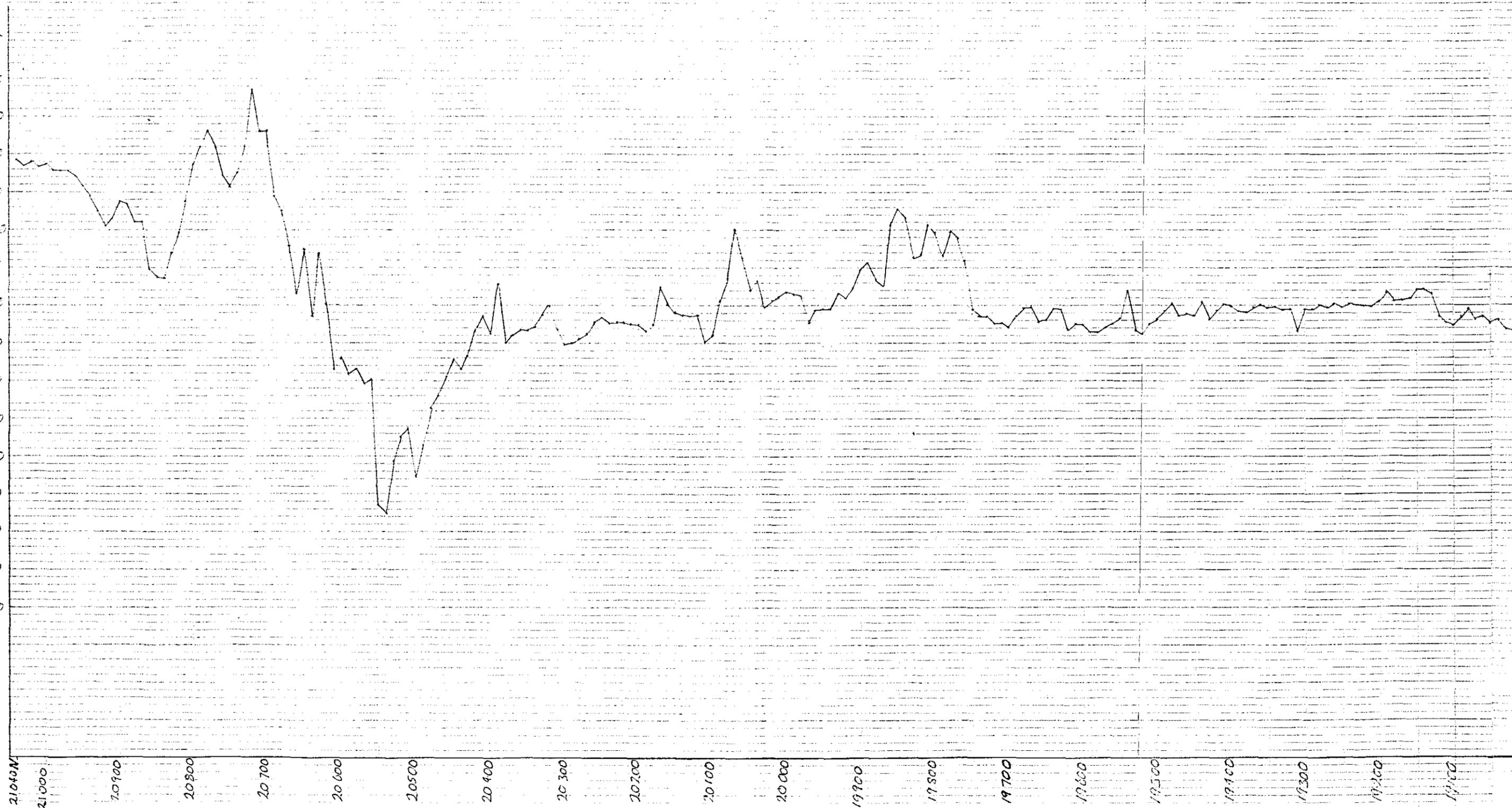
5 cm



Line 134.00E

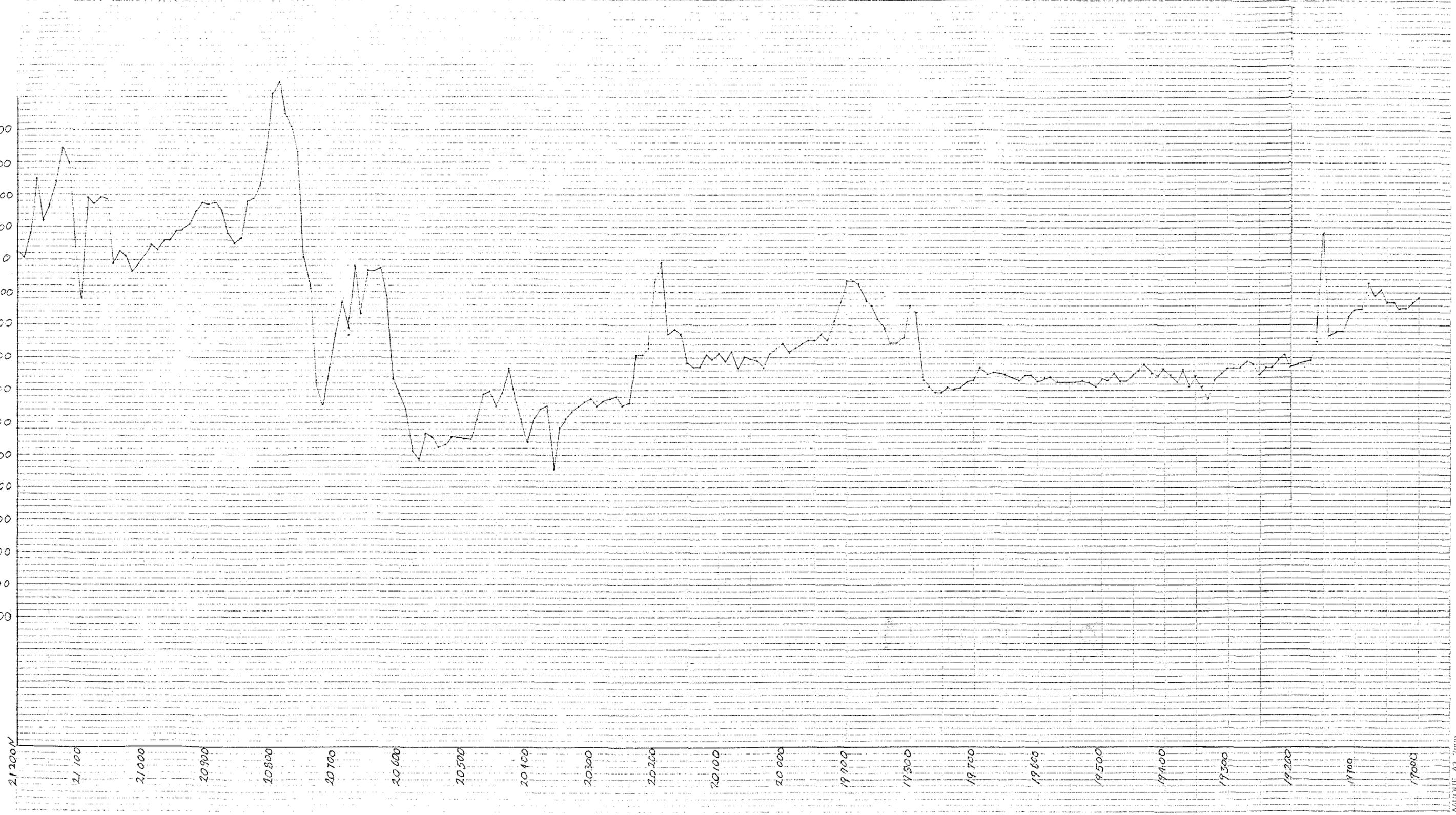
MAS GSM 18

5 cm



Line 136.00 E

MAG GSM 18



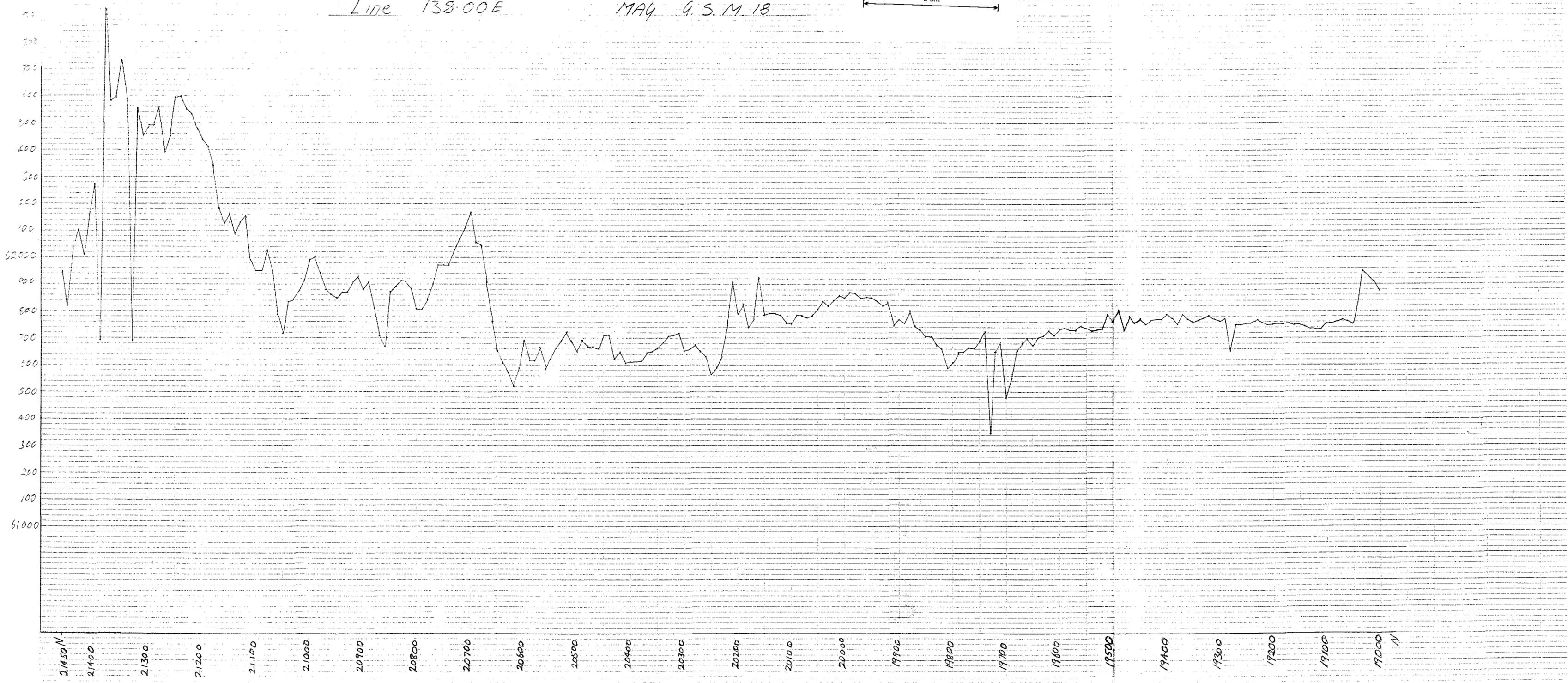
Tulip Tree creek Grid Survey by B Taylor DEE 19-12-88 1:5000

646079

Line 138.00E

MAY 9. S.M. 18

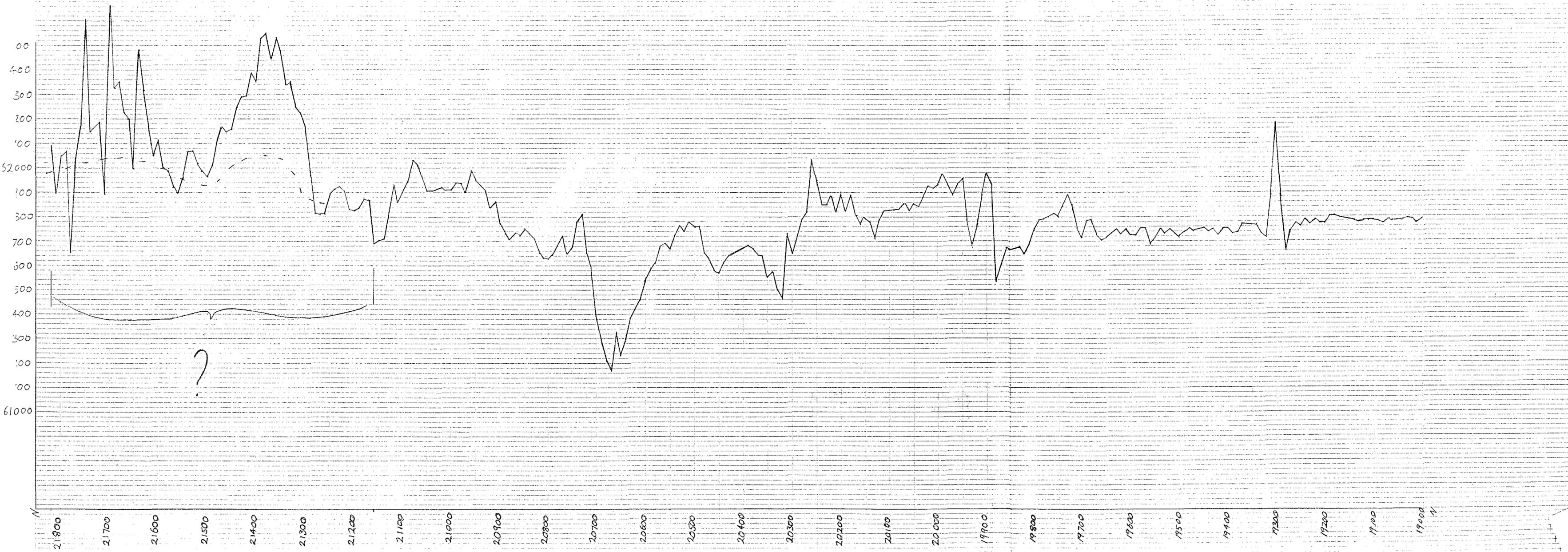
5 cm



Tulip Tree creek Grid Survey by B Taylor DATE 18-12-88 1:5000

Line 140.00E MAG G.S.M 18

5 cm



Tulip tree creek Grid

Survey by B Taylor

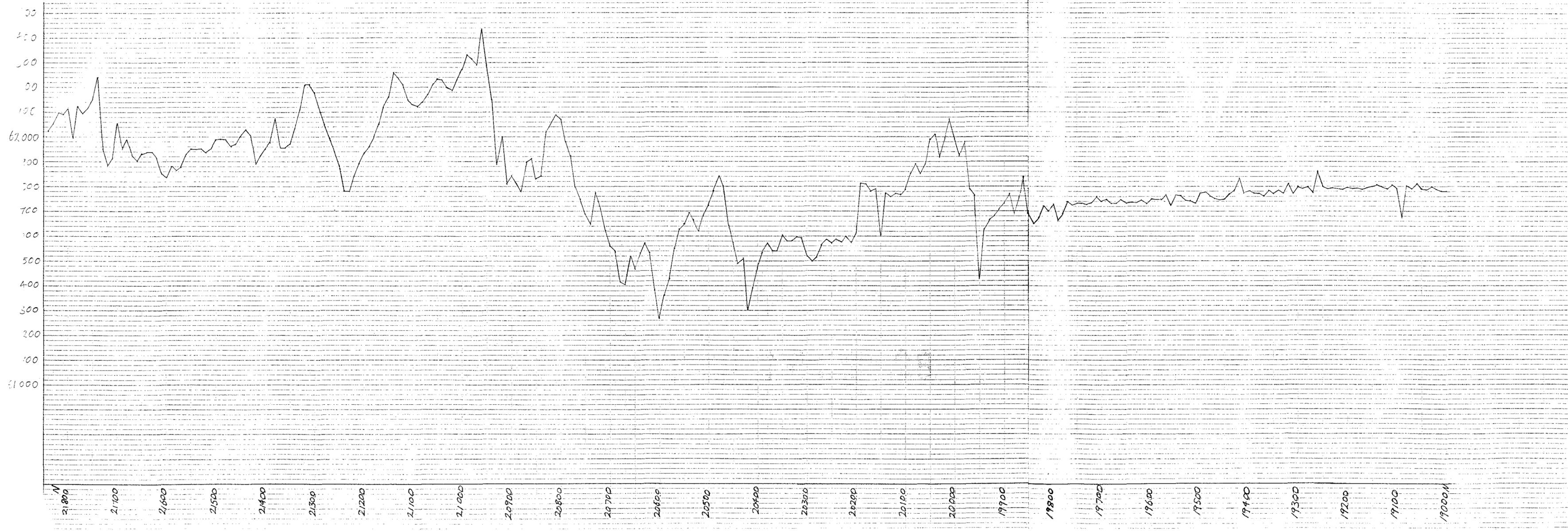
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646081

Line 142.00 E

MA: GSM 18

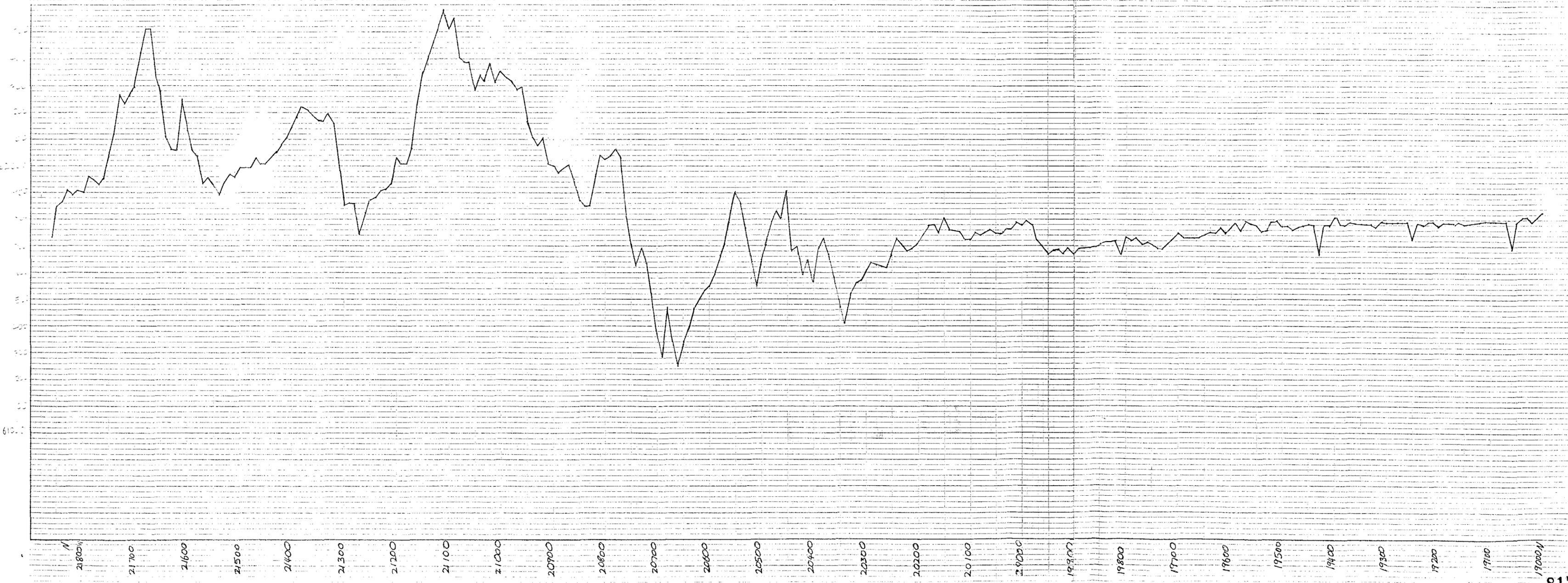
5 cm



Tulip tree creek Grid Survey by B. Taylor Date 17-12-88 1:5000

Line 144.00E MAG 6-5M18

5 cm



Tulip tree creek Grid

Survey by B Taylor

DATE 17-12-88

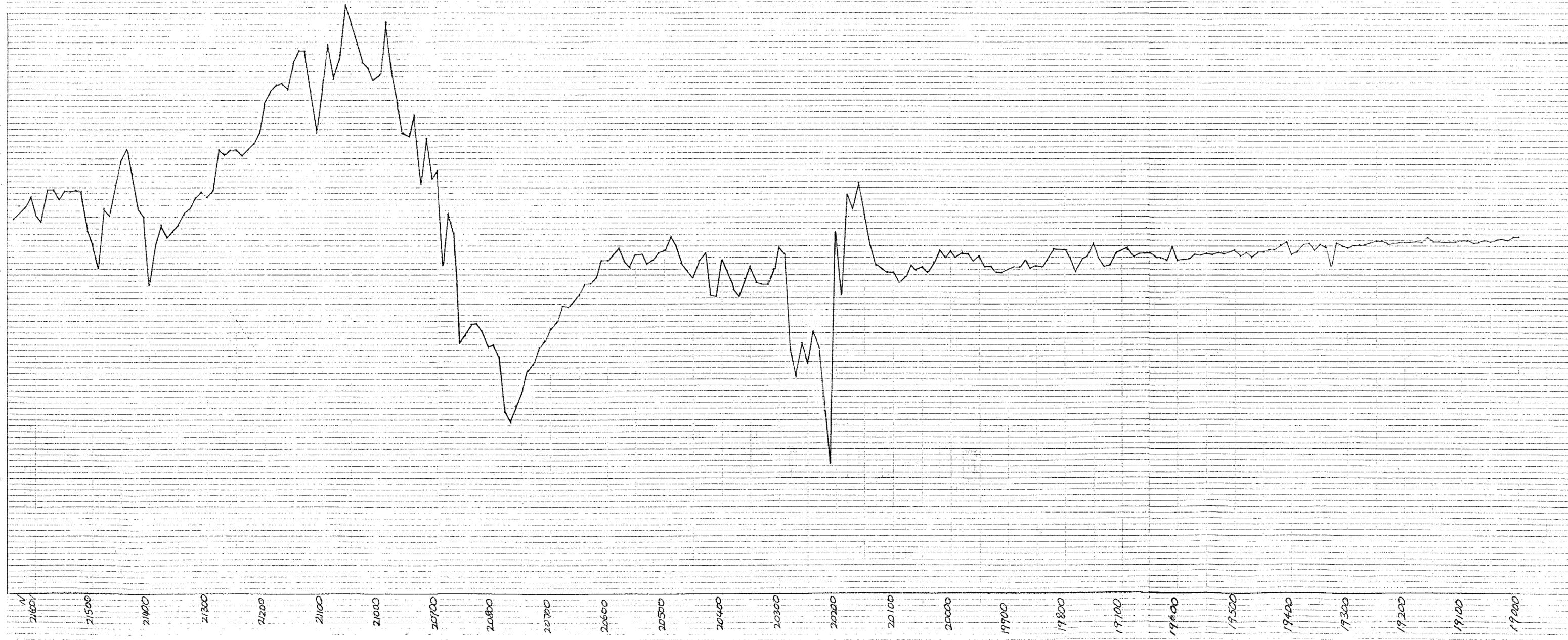
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646083

Line 146.00E

MAG GSM 18

5 cm

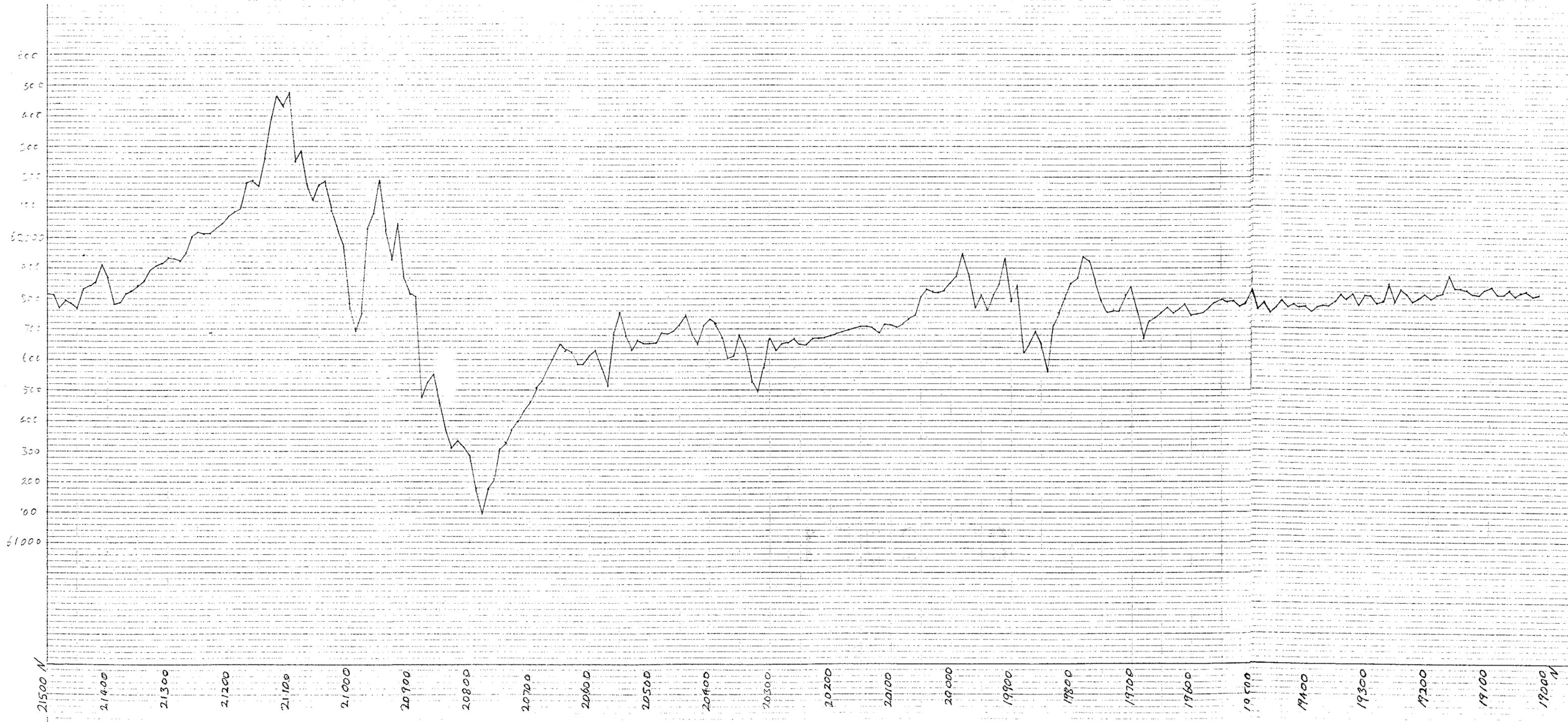


Tulip Tree creek grid Survey by B. Taylor DATE 12-12-33 1:5000

Line 148.00E

MAG 4.5.M.13

5 cm



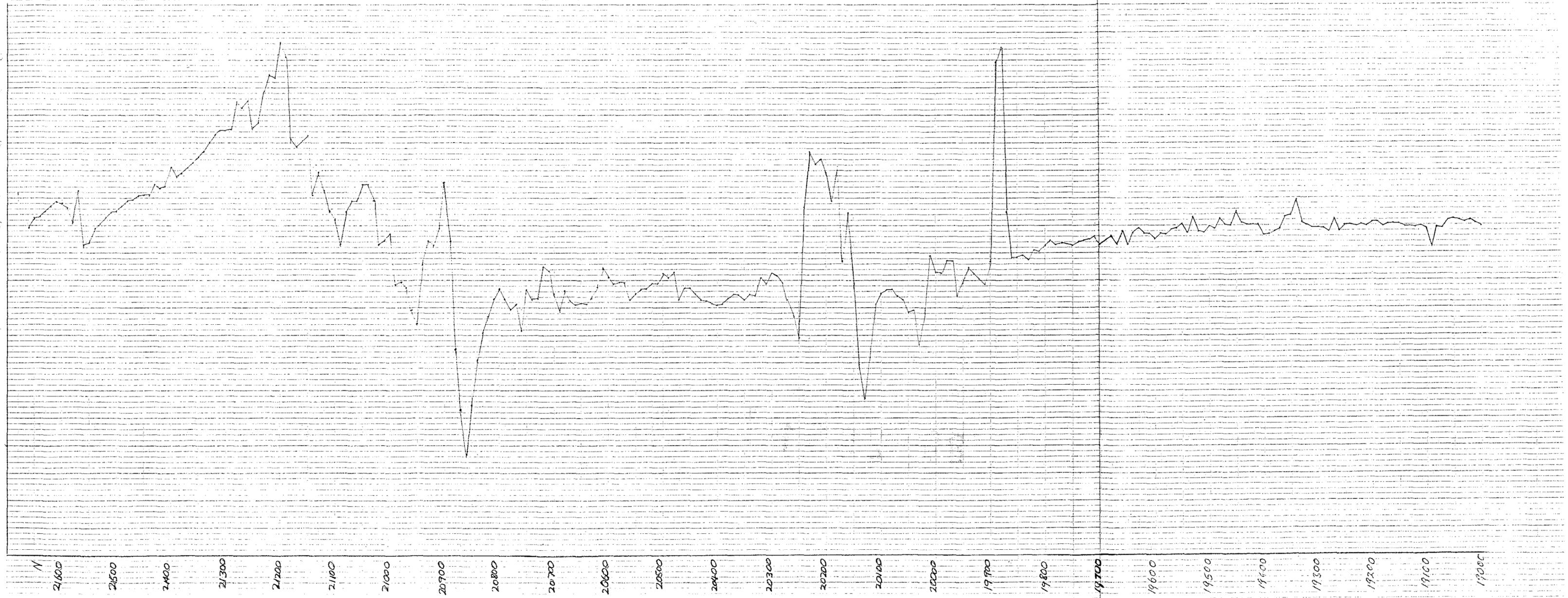
Tullo Tree Creek Grid Survey by B. Taylor Date 19-12-88 1:5000

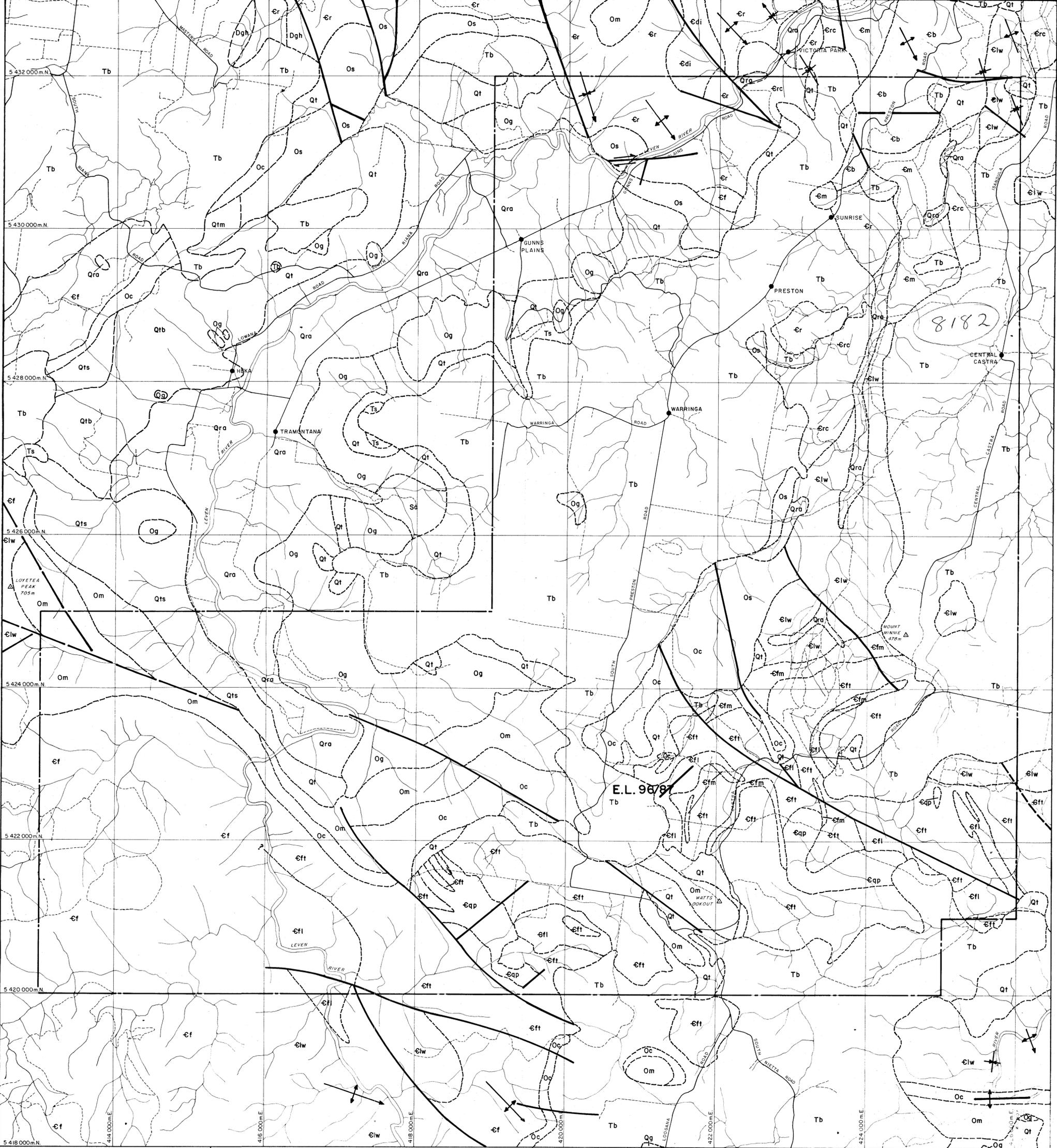
646085

Line 150.00E

MAG. G.S.M. 18

5 cm





GEOLOGICAL LEGEND

LEGEND

- E.L. BOUNDARY.
- SEALED ROADS.
- - - UNSEALED ROADS & TRACKS.
- FOOT-TRACK.
- RIVERS & CREEKS.
- TOWNS.
- △ HILLS.

SILURIAN

18 Sc Shallow marine quartzose sandstone, possible correlate of Crofty Sandstone.

ORDOVICIAN

35 Og Limestone, dolomite and mudstone. (Gordon Group Correlate).

EARLY ORDOVICIAN-LATE CAMBRIAN

35 Os Marine quartzose sandstone, shale, minor conglomerate (Moine Sandstone).
 35 Om Dominantly quartzite and vein quartz pebble to boulder conglomerate, commonly polymict with clast composition (Duncan & Roland Conglomerate).
 35 Oc

CAMBRIAN

DOMINANTLY FELSIC VOLCANIC ROCKS

51 Cf Undifferentiated, felsic volcanics and sediments.
 24 CfM Siltstone, mudstone, lithicwacke.
 42 CfI Felsic lava, quartz phric.
 47 CfII Felsic tuff.
 26 Clw Lithicwacke, mudstone, minor conglomerate. (Gog Range Greywacke).

LATE MIDDLE TO LATE CAMBRIAN - RADFORDS CREEK GROUP

39 Cr Mudstone with horizons of tuff, lava, lithicwacke and quartzose conglomerate.
 39 CrC Conglomerate with clasts of chert and less common splittle in a lithicwacke matrix (Spent Formation).
 63 Cm Basalt, locally pillowed (Motton Spillite).
 69 Cb Chert, minor mudstone (Barrington Chert).

INTRUSIVE IGNEOUS ROCKS

DEVONIAN

15 Dgh Biotite, adamellite of Housetop Granite.

CAMBRIAN

64 EdI Dacitic feldspar porphyry.
 64 Cqp Quartz - feldspar porphyry.

--- Geological boundary - approximate.
 — Fault.
 - - - Fault - approximate.
 ↑ ↓ Axial surface trace of major antiform, synform.

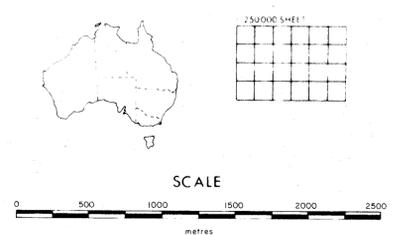
QUATERNARY

2 Qra Alluvium.
 2 Qt Talus, scree deposits of dominantly basalt (Qtb), siliciclastic rocks (Qts), bas. B sil. rocks (Qtm).
 2 Qg Till, marsh deposits, residual gravel.

TERTIARY

11 Tb Basalt lava and pyroclastic rocks.
 9 Ts Dominantly terrestrial sand, gravel, silt and clay with rarer indurated equivalents.

N.B. - Colour numbers from the DERWENT 19 series.



EZ
 ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
 MINERAL RESOURCES DIVISION

PROJECT: PRESTON E.L. 96/87

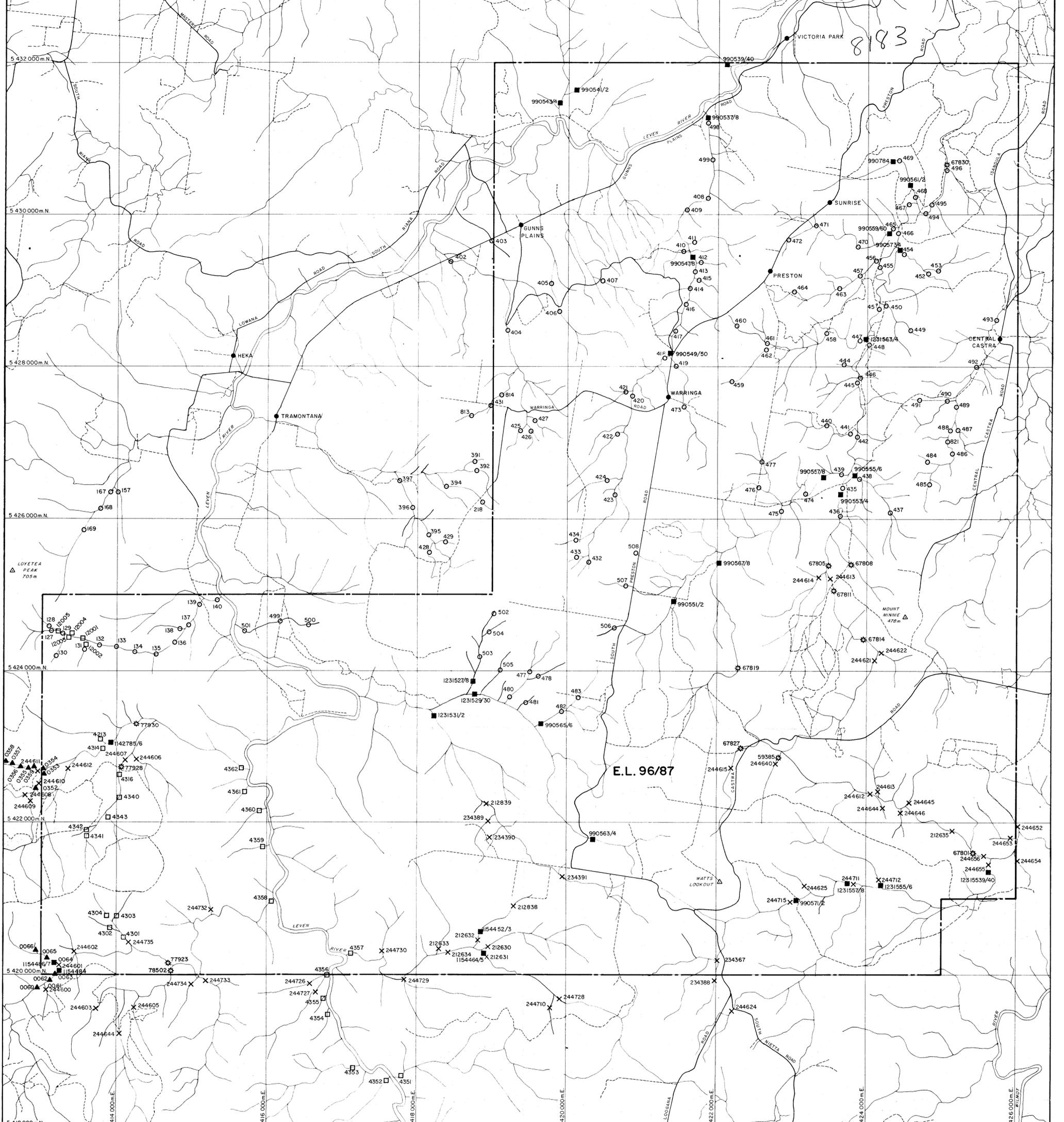
89-2951

GEOLOGY

C46086

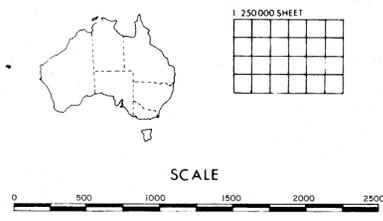
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 AMG Latitude: Longitude:
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8182 AI-533-0001



LEGEND

- E.L. BOUNDARY.
- SEALED ROADS.
- - - UNSEALED ROADS & TRACKS.
- FOOT-TRACK.
- RIVERS & CREEKS.
- TOWNS.
- △ HILLS.
- = Samples taken by COMALCO, 1978.
- × = Samples taken by C.R.A.E., 1976.
- = Samples taken by SHELL, 1984.
- = Samples taken by C.R.A.E., 1985.
- ▲ = Samples taken by GEOPEKO, 1976.
- ☆ = Samples taken by NORTH, 1988.



89-2951

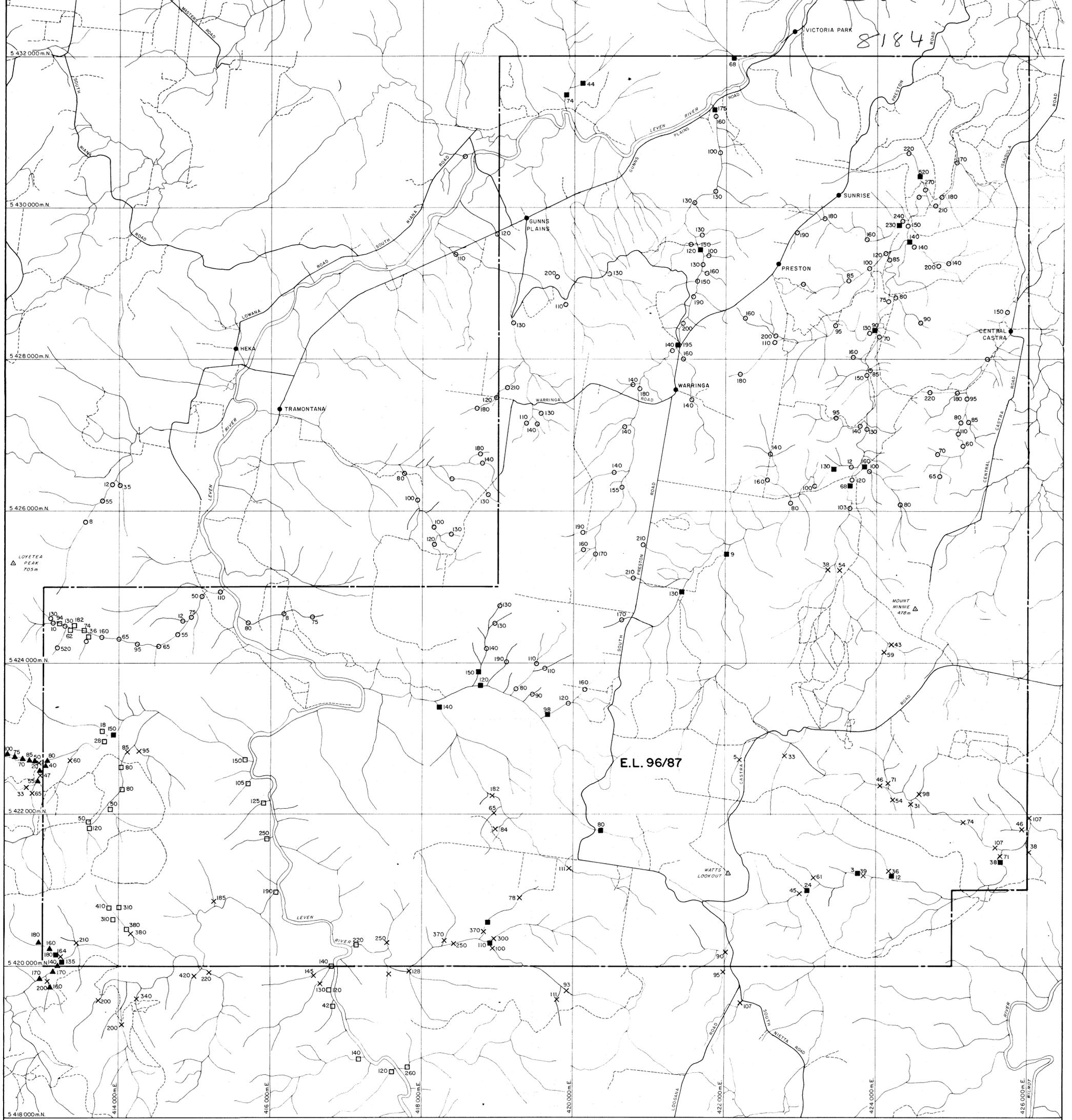
EZ
 ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
 MINERAL RESOURCES DIVISION

PROJECT: PRESTON E.L. 96/87

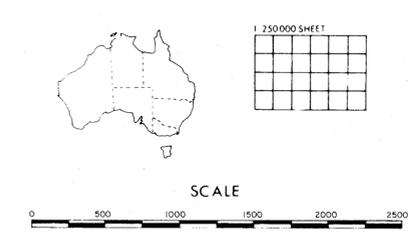
STREAM SEDIMENT SAMPLES
 NUMBERS AND
 LOCATIONS

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AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO:

8183 AI-533-002



- LEGEND**
- E.L. BOUNDARY.
 - SEALED ROADS.
 - - - UNSEALED ROADS & TRACKS.
 - FOOT-TRACK.
 - RIVERS & CREEKS.
 - TOWNS.
 - ▲ HILLS.
- = Samples taken by COMALCO, 1978.
 × = Samples taken by C.R.A.E., 1976.
 N.B.—All results are p.p.m.
 □ = Samples taken by SHELL, 1984.
 ■ = Samples taken by C.R.A.E., 1985.
 ▲ = Samples taken by GEOPEKO, 1976.
 + = Samples taken by N.B.H.P., 1988.



5 cm

89-2951

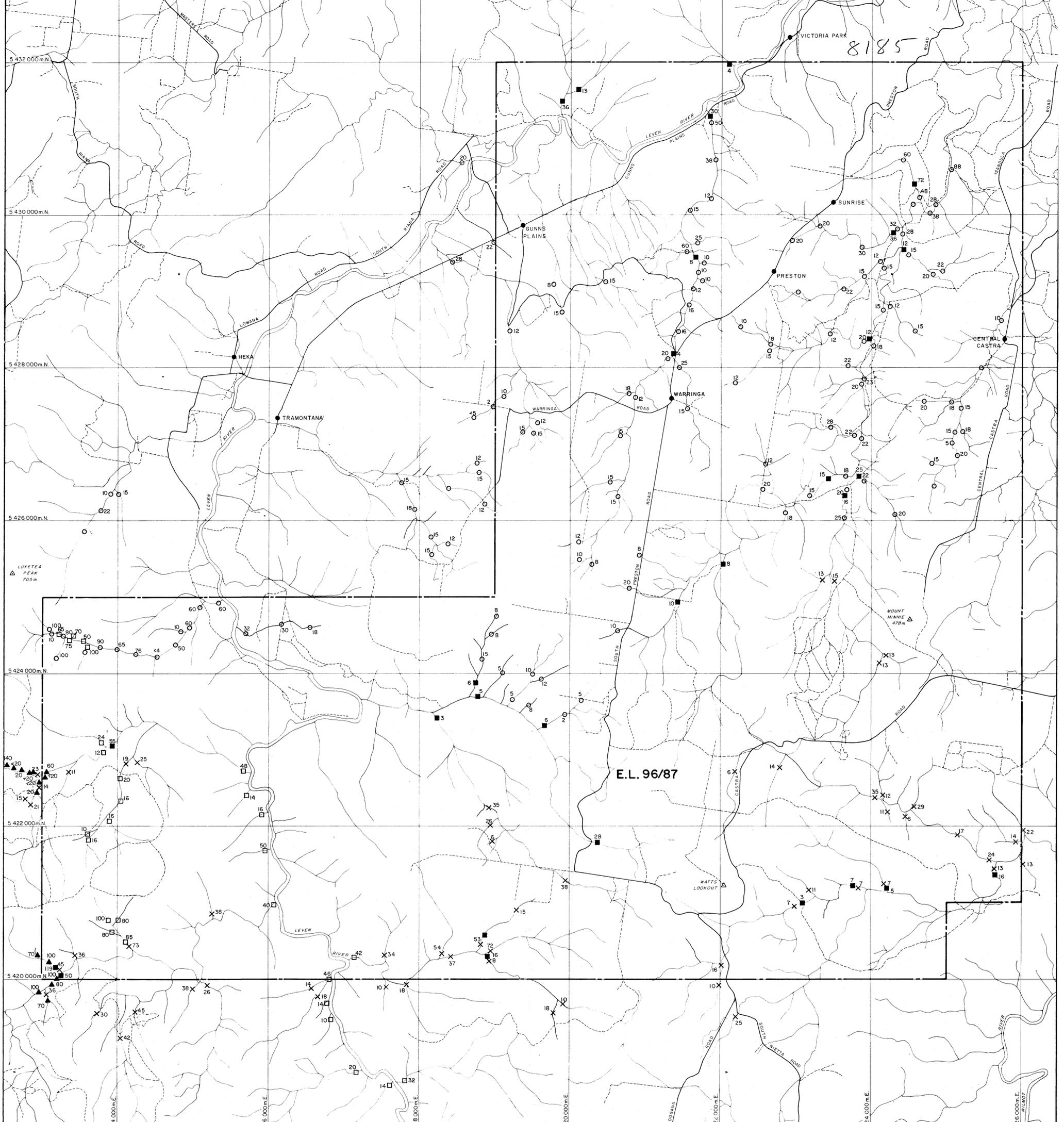
EZ 646088
 ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
 MINERAL RESOURCES DIVISION

PROJECT: PRESTON E.L. 96/87

GEOCHEMISTRY
ZINC

Compiled: I. MAT.	Date: 29-5-'88	Scale: 1:25,000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO:

8184 AI-533-0003



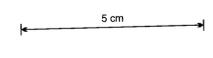
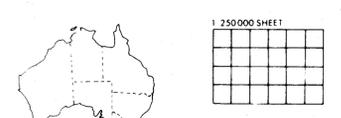
8185

E.L. 96/87

LEGEND

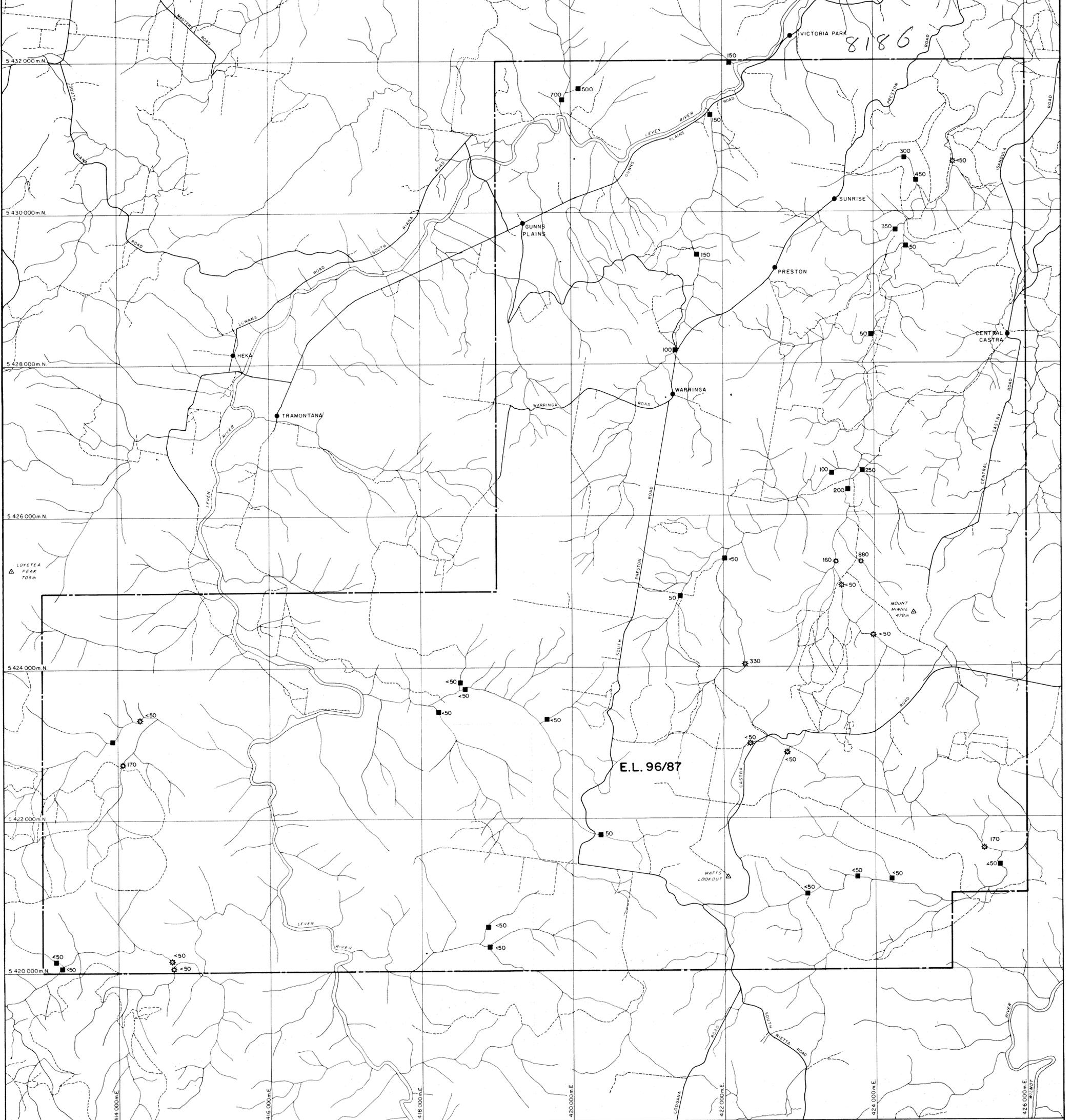
- E.L. BOUNDARY.
- SEALED ROADS.
- - - UNSEALED ROADS & TRACKS.
- FOOT-TRACK.
- ~~~~~ RIVERS & CREEKS.
- TOWNS.
- △ HILLS.

- = Samples taken by COMALCO, 1978.
- × = Samples taken by C.R.A.E., 1976.
- N.B. - All results are p.p.m.
- = Samples taken by SHELL, 1984.
- = Samples taken by C.R.A.E., 1985.
- ▲ = Samples taken by GEOPEKO, 1976.
- + = Samples taken by N.B.H.P., 1988.



89-2951

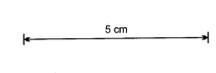
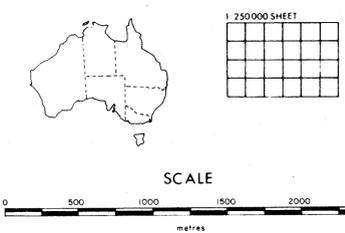
EZ		
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED MINERAL RESOURCES DIVISION		
PROJECT: PRESTON E.L. 96/87		
GEOCHEMISTRY		
LEAD		646089
Compiled: I. MAT.	Date: 29-5-88	Scale: 1:25,000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO:



8186

LEGEND

- E.L. BOUNDARY
- SEALED ROADS
- - - UNSEALED ROADS & TRACKS
- FOOT-TRACK
- ~~~~~ RIVERS & CREEKS
- TOWNS
- △ HILLS
- = Samples taken by C.R.A.E., 1985.
- All results are p.p.t.
- Assays: -4# Bulk Cyanide Leach.
- ☆ = Samples taken by NORTH, 1988.



89-2951

646090

EZ
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

PROJECT: PRESTON E.L. 96/87

GEOCHEMISTRY		
GOLD		
Compiled: I. MAT.	Date: 27-3-89	Scale: 1:25,000
AMG:	Latitude:	Longitude:
Drawn: N.W.D.S.	File No:	PLAN NO:

8186 AI-533-0006

APPENDIX 4

DRILL LOGS

DEPTH		ROCK DESCRIPTION	MINERALISATION	O4				ASSAY DATA (ppm)								CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 % Fe	44-49 Mn	50-55 Au	RUN	SHORT	
0.0	4.0	no recovery															
4.0	6.9	Shale, black, laminated, interbedded with coarse feldspathic arenite beds, sericitic in places, core Fe stained, leached + broken.	15cm wide quartz vein.														
6.9	24.0	Volcanic Arenite, gy-gr with brown Fe areas, coarse grained 1-4mm, massive, siliceous, chloritic + sericitic in places, quartz 20%, feldspar 75%, matrix 5%, grades upward in places, some mud intraclasts. c60 = 60° at 24m.		70098	11.10	12.10		25	65	65	3.40	940	0.008				
				70099	20.0	21.0		20	45	5	2.55	795	0.008				
				70100	23.35	24.35		35	60	5	2.35	725	0.008				
24.0	31.16	Black shale + volcanic arenite, shale with distorted bedding + scattered throughout are sandy patches + grains, 1 1/2 m layer of the above arenite. c60 = 55° at 29.06m	irregular carbonate + quartz veining.														

ELECTROLYTIC ZINC CO. OF A'ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD					HOLE No. <u>DD76LS1</u>											
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D			
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	RUN	SHORT		
31.16	45.1	Shale, black, laminated, some graded fg feldspathetic ple brown carbonate rich sandy beds indicating T, load casts + flame structures also indicate right way up, distorted + slumped beds common, also some microfaulting. cba = 15° at 36.2m.	irregular quartz veining causing brecciation, irregular carbonate veining pyrite/chalcopyrite along shale - fg ss contact.															
45.1	46.5	Intrusive, ple gn, sericitic, carbonate rich, carbonate blebs in cavities, 10% quartz crystals, chilled margin on both contacts, patchy chloritic alteration, unit coarsens inward.																
46.5	63.60	Shale, black, laminated, 4 intervals of ple brown feldspathetic carbonate rich sandy beds grading into shale laminae, some distorted + slumped bedding, leached from 55.20 - 53.20m. cba = 65° at 58.2m.	minor quartz + carbonate veining															
63.60	64.3	Intrusive, ple gn, sericitic, mildly carbonate altered, some dk gn chloritic patches + carbonate blebs.																

646093

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD						HOLE No. <u>0076451</u>						A 11241	
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (PPM)						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn	50-55 Au	RUN
64.3	77.0	Shale, black, laminated, light brown fg feldspathic beds grade into shale laminae +, some sandy beds are carbonate rich, flame + lead casts at 72.0m indicate right way up also, large interseal at 70.15m.	irregular quartz + carbonate veining												
77.0	79.15	Intrusive, plg gn, carbonate rich, fg, banded chill margin at base, carbonate blebs in cavities 1-2 mm 5%, sericitic, feldspar crystals in places. lower contact - 60° cba.	carbonate veinlets	58277	78.0	79.0		65	115	75	6.70	1200	60008		
79.15	130.15	Shale, black laminated, plg brown + grey feldspathic beds grade into black laminae, core with carbonate alteration to 110m, little distortion of beds, 97-110.4m core all broken + fractured, fault zone? cba = 30-35° quite constant.	minor irregular quartz + carbonate veining.												
130.15	140.45	Shale + Tuffaceous shale, plg yellow-gn, sericitic alteration, minor siliceous alteration, with grey-black shale laminae grading from plg brown sandy beds.	carbonate + quartz veining, pyrite patches	58290	134.65	136.40		65	55	5	2.05	820	60008		

646094

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD					HOLE No. <u>DD76LS1</u>									
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (ppm)							CORE REC'D	
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn	50-55 Au	RUN	SHORT
140.45	173.90	Lava, plg gn, sericitic, chloritic + siliceous in places, ^{Fe silicates in} core all Fe carbonate altered, lava is joint brecciated + fg to 162.35m + then coarsens to a grey gn rock that is brecciated + broken at the base, cbg = 10° at 140.45m = 20° at 173.90m. quartz 2-3mm in places.	irregular + partly leached quartz veins, small pyrite patches 1-2mm.	58278	145.0	146.0		25	70	10	4.45	1050	<0.008			
				58279	151.26	152.26		40	115	35	4.20	395	<0.008			
				58280				40	75	15	3.05	905	<0.008			
				58281	163.65	164.65		40	90	5	5.10	1050	<0.008			
				58282	172.5	173.5		35	90	10	4.70	840	<0.008			
173.90	180.40	Shale, black laminated, uniform bedding, some Fe carbonate veins, unit is broken + the last 1m is brecciated. cbg = 30°	2 pyrite veinlets + patches													
180.4	183.4	Lava, al gn, sericitic, feldspar crystals 1-2mm in places, some joint tension breccia, sericitic on joint faces, chill brecciated on upper surface. cbg = 20° at 180.40m	irregular Fe carbonate veinlets.													
183.4	210.8	Shale, black, laminated, shale grades from carbonate rich silt - fg ss beds, 3 1/2m intervals of plg gn graded + laminated silt interbedded with the shale, last 5m of core broken, cbg = 15°	pyrite associated with irregular carbonate + quartz veinlets, last 3m are siliceous + Fe carbonate stained.													

646095

ELECTROLYTIC ZINC CO. OF ASIA LTD.
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. DD 76481

A 11241

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No	5-12 FROM	14-19 TO	CORE REC'D	ASSAY DATA (ppm)						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe	44-49 Mn	50-55 Au	RUN
210.8	225.0	Tuffaceous? Siltstone, ple gn-gy, v. siliceous, sericitic on broken surfaces, chloritic, unit is graded from the base to top, cba = 20°	quartz + carbonate veining.	58283	214	215		30	45	10	1.70	765	0.008		
				58284	223.35	224.55		25	70	85	4.00	2400	0.008		
225.0	229.8	Shale, black, some laminations, most beds are tectonically distorted, core all broken + slickensided, fault zone?, mildly carbonaceous. cba = 20° at 227.6m	quartz veining, small pyrite patches.												
229.8	237.55	Volcanic Arenite, ple gn-gy, siliceous, massive, fines slightly upward, dominated by quartz + lithic grains, 1-2mm also 1cm wide rounded pebbles + 2cm med. intercalated, interbedded is a few thin shale beds + patches.		58289	234.0	235.0									
237.55	257.8	Shale, black, laminated, grading from ple brown fg ss carbonate rich beds, also some sandy fg-mg ple + dk gn bands within shale, some soft sediment slumping, core nearly all broken + fractured.	quartz + carbonate veining.												

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD						HOLE No. <u>DD76451</u>						A 11241	
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	6-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (ppm)						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb.	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn.	50-55 Au	RUN
257.8	289.9	Volcanic Arenite + Siltstone, gn with red-brown staining, Fe carbonate + sericitic alteration, fines upward from 273 m, from coarse ss to silt, 289.9 - 273.0 m is silt, coarser beds are composed of 40% lithic grains, 40% quartz grains 1-4mm + 10% matrix. $\phi = 30^\circ$.		58285	257.8	258.8		20	70	5	2.90	1250	<0.008		
				58286	264.40	265.40		20	60	25	2.60	1100	<0.008		
				58287	281.0	282.6		15	40	5	2.05	1050	<0.008		
				58288	287.0	288.0		20	35	5	2.20	1150	<0.008		
289.9	300.2	Black Shale, faintly laminated, distorted bedding, one 10cm patch of gn coarse ss, core all broken + fractured $\phi = 30^\circ$.	irregular Fe carbonate veins.												
E.O.H.															

646097

DEPTH		ROCK DESCRIPTION	MINERALISATION	ASSAY DATA										CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag-g/t	44-49 Au-g/t	50-55 Fe%	RUN
0.0	5.4	Volcanic Arenite, gn, siliceous, chloritic in places, dominantly quartz + lithic grains 1-4mm subangular - sub rounded.													
5.4	9.5	Volcanic fg Arenite - siltstone, ol gn, siliceous, sericitic, lithic fragments and dark quartz grains in a gn matrix.													
9.5	16.6	Volcanic Arenite, gn, siliceous, chloritic in places, dominantly quartz + lithic fragments 1-4mm.													
16.6	28.1	Volcanic Greywacke - Tuffaceous Silt, black, chloritic, composed of scattered quartz, lithic + feldspar grains in a black fg matrix, also some glass shards + large 5-10cm frags of ple.gn carbonate material, carbonaceous.													

ELECTROLYTIC ZINC CO. OF A'ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD						HOLE No. <u>DD 76452</u>						A 11243	
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (ppm)						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn	50-55 Au	RUN
28.1	35.4	Volcanic Arenite + Siltstone, dk gr, siliceous, sericitic, contains quartz, feldspar + lithic grains 3mm diameter, poorly sorted, lost 1m v. Fe stained.													
35.4	37.3	Laminated Shale, black + dk gr, chloritic, carbonaceous, laminae 2-10mm wide, some disturbed bedding and slump structures. cba = 80°.													
37.3	40.0	Volcanic Greywacke + Shale, black, composed of 20cm of shale and sandy beds of quartz + feldspar grains, sericitic in places. Core all broken.													
40.0	60.0	Volcanic Arenite, gr, sericitic, mildly siliceous, 75% is quartz grains, rounded, some red-brown staining in places.		70083	40.75	41.75		<5	70	20	3.50	1450	<0.008		
				70085	45.0	46.0		5	60	15	3.50	965	<0.008		
				70086	55.30	56.30		10	90	15	3.25	980	<0.008		
60.0	92.4	Volcanic Arenite, plg gr with brown staining, siliceous, sericitic, some chloritic wisps along joint directions, quartz rich matrix 70% (1mm) with 3mm quartz grains + lithic frags, 1/2m block carbonaceous shale band.		70087	68.6	69.6		<5	45	20	2.45	570	<0.008		
				70088	82.45	83.45		<5	40	30	3.15	1300	<0.008		
				70089	88.0	89.0		<5	45	15	3.50	990	<0.008		

ELECTROLYTIC ZINC CO. OF A'ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD										HOLE No. <u>DD76452</u>			
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (PPM)						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn	50-55 Au	RUN
92.4	159.3	Diorite, alternating intervals of red stained and grey black chloritic diorite, siliceous with sericitic alteration on joint or broken faces, feldspar phenocrysts 2-3mm in a fine grained groundmass.		70090	162.35	163.35		<5	250	15	6.35	2200	<0.008		
				70095	126.9	127.9		<5	280	20	7.10	1550	<0.008		
				70096	118.9	119.9		<5	280	40	7.10	1500	<0.008		
				70097	98.5	99.5		<5	95	20	6.05	1650	<0.008		
159.3	200.1	Diorite, red brown stained throughout, causing brecciation in places, siliceous, sericitic on joints, purple chert veins in places, feldspar phenocrysts in a fg groundmass, textures obliterated in places due to alteration + brecciation.		70091	169.95	170.95		5	250	15	5.90	2250	<0.008		
				70092	175.3	176.3		<5	275	15	5.30	1800	<0.008		
				70093	183.25	184.25		<5	280	15	5.30	2650	<0.008		
				70094	188.25	189.25		<5	250	15	5.95	1950	<0.008		
EOH.															

646100

ELECTROLYTIC ZINC CO. OF A'ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD - CRAE Drill Hole					01 HOLE No. (3-7) <u>DD75CC1</u>					
LOCATION	<u>Preston EL 96/87</u>		TOTAL DEPTH	<u>293.0m</u>		03			02			
OBJECTIVE	<u>To test the centre of a geochemical soil anomaly.</u>		HOLE SIZE			8-12 Depth	13-16 Direction	17-18-21 Dip.	8-12 Depth	13-16 Direction	17-18-21 Dip.	ORE DIP. (8-11)
RESULT	<u>A Cu, Zn, Pb anomaly in the siltstone below the microdiorite intrusive.</u>		COMMENCED	<u>10.7.75</u>								COLLAR DIP. (12-15) <u>50°</u>
			COMPLETED	<u>7.8.75</u>								DIRECTION (16-19) <u>0° mag</u>
			LOGGED BY	<u>K.V.</u>								R.L. (20-23)
												CO-ORDS.
												LOCATION <u>Crossy ck</u>

DEPTH		ROCK DESCRIPTION	MINERALISATION	04											CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe%	44-49 Mn	50-55 Au	Ag	RUN
0.0	10.0	<u>no recovery</u>														
10.0	32.87	<u>Microdiorite, Fe + Mn stained, v. weathered.</u>														
32.87	110.0	<u>Microdiorite, gn, with phenocrysts 2-3mm of feldspar (gn, white, pink) in fg groundmass, chloritic + sericitic alteration in places throughout the core, from 92.0m downwards the rock is pink stained, core is very fractured in places.</u>	<u>minor quartz + carbonate veinlets.</u>	207623	115.5	119.5				370	2100	310	-	-	10.04	3.0
110.0	132.6	<u>Siltstone, black, faintly bedded, carbonaceous, carbonate rich, fractured, one coarser grained bed that fines downward, at 116.5m, cbg = 50° at 131.6m.</u>	<u>quartz + carbonate veining, pyrite + sphalerite mineralisation.</u>	207624	119.5	120.7				3100	11600	260	-	-	10.04	3.0
				207625	120.7	122.4				310	1400	140	-	-	10.04	3.0
132.6	151.8	<u>Volcanic Arenite + Siltstone, unit grades from a coarse grained ss to a gy-gn siltstone, coarsens at 148.70m, composed of lithic fragments 70%, feldspar 20% matrix 10% siliceous, wisps of chlorite + sericite.</u>	<u>minor quartz + carbonate veining, some pyrite cubes, mild carbonate alteration in places, cbg = 50° at 144.5m.</u>	58295	144.5	145.5				30	85	45	2.75	425	10.008	-

A 22076

ELECTROLYTIC ZINC CO. OF A'ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD				HOLE No. <u>DD75001</u>														
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D					
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	RUN	SHORT				
151.8	201.8	Siltstone, black, faintly bedded in places, 161.9 - 163.0 m have 6 beds 15cm thick of ga-gy volcanic arenite showing grading, very fractured in places, cba = 45° at 154.0m, 196.1 - 198.95 m have interbedded silt and fg-cg feldspathic sandstone beds + in places have scattered grains 1-2mm throughout the silt, coarser beds are carbonate rich.	minor pyrite mineralisation, minor quartz + carbonate veinlets.																	
201.8	224.5	Crystal Tuff, pl gr, grades from 3mm to silt, 50% pl pk feldspar crystals 1-2mm, 15% quartz crystals 2-3mm, in coarser beds, some light + dk gn banding, breccia at 212.2 - 212.4 m.		58296	219.1	220.1														
224.5	263.3	Crystal Tuff, dk gn with pk alteration, dk pk feldspar laths 2-3mm, quartz crystals 3-4mm in a fine black glassy matrix.	quartz + carbonate veins.	58297	237.9	238.9														

646102

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA				DIAMOND DRILL CORE RECORD - <u>CRAE</u> Drill Hole							01 HOLE No. (3-7) <u>DD75CC2</u>								
LOCATION		Preston EL 96/87		TOTAL DEPTH		199.70m		03		02		01							
OBJECTIVE		To test the centre of a major geochemical soil anomaly		HOLE SIZE		100m		8-12 Depth		13-16 Direction		17-18-21 Dip.							
RESULT		Anomalous Pb, Zn, Cu values in the siltstone above the intrusion.		COMMENCED		13.8.75		8-12 Depth		13-16 Direction		17-18-21 Dip.							
				COMPLETED		23.8.75		199 <th colspan="2"> <th colspan="2">ORE DIP. (8-11) 50° COLLAR DIP. (12-15) 180° mag DIRECTION (16-19) 180° mag R.L. (20-23) CO-ORDS. 7550m N, 8162m E LOCATION Crosby CK</th> </th>		<th colspan="2">ORE DIP. (8-11) 50° COLLAR DIP. (12-15) 180° mag DIRECTION (16-19) 180° mag R.L. (20-23) CO-ORDS. 7550m N, 8162m E LOCATION Crosby CK</th>		ORE DIP. (8-11) 50° COLLAR DIP. (12-15) 180° mag DIRECTION (16-19) 180° mag R.L. (20-23) CO-ORDS. 7550m N, 8162m E LOCATION Crosby CK							
DEPTH		ROCK DESCRIPTION		MINERALISATION		D4		ASSAY DATA (PPM)							CORE REC'D				
FROM	TO					SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe %	44-49 Mn	50-55 Au	Ag	RUN	SHORT
0.0	6.0	no recovery																	
6.0	20.8	Laminated Siltstone, gy, gn with interbeds of vitric crystal (feldspar) tuff, the plagioclase 2-3mm → clays, very weathered + core all broken. cbg = 20°		carbonate veining															
20.8	33.7	Siltstone, grey, laminated, with some fg sandstone beds showing grading ↑, core broken. cbg = 20°		carbonate veining		207626	25.9	38.9		280	1900	270	-	-	-	2.0			
						207627	28.9	30.2		180	300	80	-	-	-	2.0			
						207628	30.2	32.6		1950	4200	2400	-	-	-	3.0			
33.7	199.7	Diorite, gy-pk, with bands of dk pk alteration, porphyritic gn + pk plagioclase 2mm in fg groundmass, 49.2-53 have orange alteration smothering all crystals, have crystal grading with the intrusion.		minor quartz veining															

ELECTROLYTIC ZINC CO. OF ASIA LTD.
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

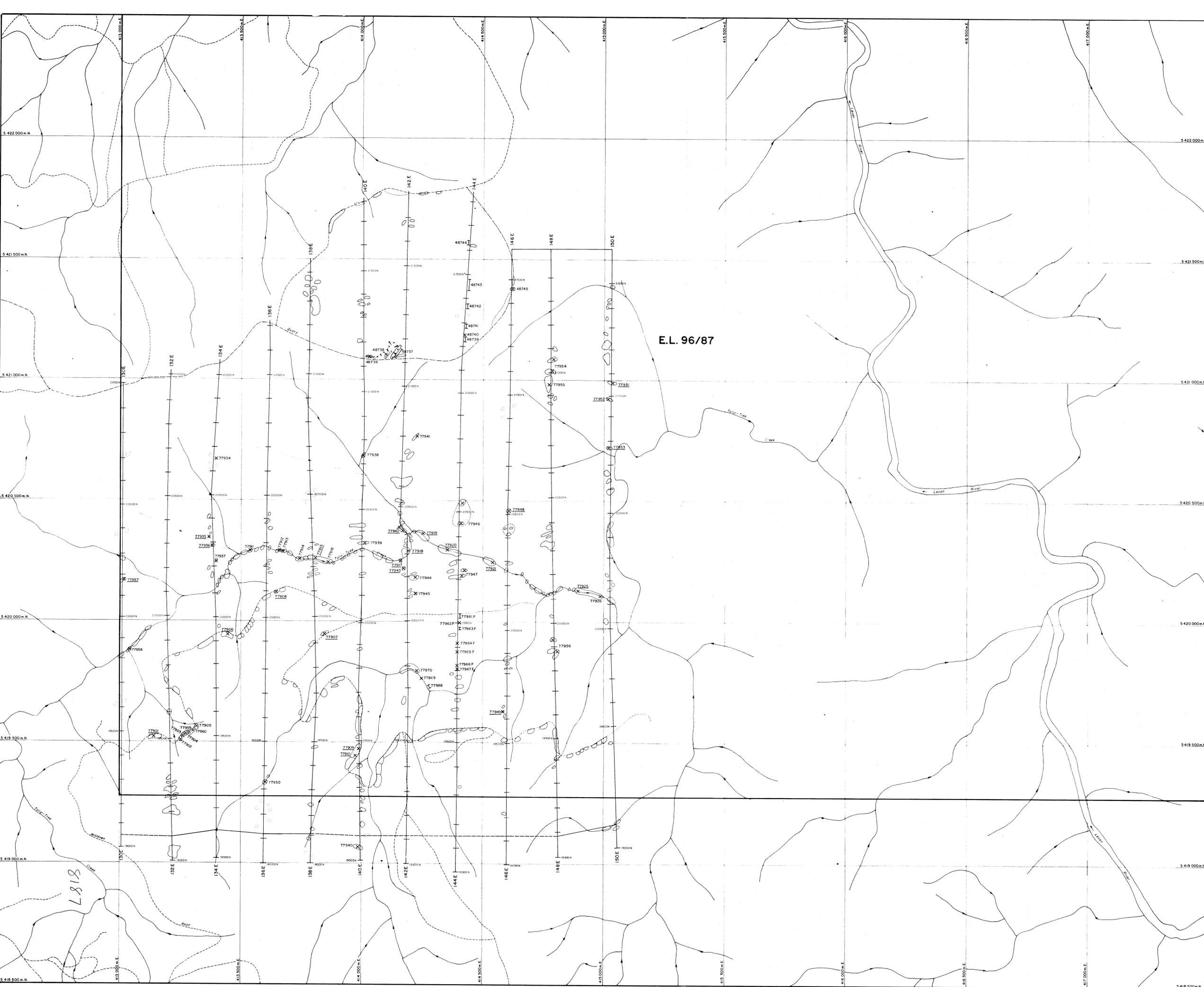
01
HOLE No. (R.Z.) DD75CC3

LOCATION <u>Preston EL 96/87</u> OBJECTIVE <u>To test the centre of a major geochemical soil anomaly.</u> RESULT <u>No significant mineralisation intersected.</u>	TOTAL DEPTH <u>149.12 m</u> HOLE SIZE <u>50mm</u> COMMENCED <u>28.8.75</u> COMPLETED <u>5.9.75</u> LOGGED BY <u>K.V.</u>	03 8-12 Depth <u>50m</u> 13-16 Direction 17-18-21 Dip. <u>59°</u> 8-12 Depth 13-16 Direction 17-18-21 Dip. <u>54°</u> <u>45.5°</u>	02 ORE DIP. (8-11) <u>60°</u> COLLAR DIP. (12-15) DIRECTION (16-19) <u>0° (mag)</u> R.L. (20-23) CO-ORDS. <u>7503mN, 7340mE</u> LOCATION <u>Crossby Cr</u>
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DEPTH		ROCK DESCRIPTION	MINERALISATION	04										CORE REC'D				
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (PPM)								RUN	SHORT	
								Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe %	44-49 Mn	50-55 Au	Ag			
0.0	6.0	<u>no recovery</u>																
6.0	22.90	<u>Diorite, uniform texture of feldspar phenocrysts, 2mm long, v. weathered + broken core, Mn stained on broken faces.</u>																
22.90	70.28	<u>Diorite, grey, with pink and green areas due to Kfeldspar + chloritic alteration respectively, sericitic in places also, 30cm of brecciation ending at 47.02m, diorite is grey-pink below 42m.</u>	<u>irregular quartz + Fe carbonate veins, mineralised</u>															
			<u>venlets with ? hematite + ? bornite.</u>	58291	42.3	43.3			25	115	30	4.75	3350	<0.008				
				58292	64.1	65.1			115	300	445	6.65	1350	<0.008				
				207630	67.9	70.5			45	590	340	-	-	<0.04	1.0			
70.28	88.20	<u>Shale, black, faintly bedded at c69 = 80°, well cleaved at c69 = 90, 1.10cm d gn tuffaceous silt band, core all cleaved + in places fractured.</u>	<u>quartz + carbonate veined, dispersed fg sulphides at 71.0m.</u>	207629	72.9	74.5			970	1950	85	-	-	<0.04	1.0			
88.20	98.20	<u>Volcanic Arenite - Silt, pl + dk gy, siliceous, chloritic ss that grades into a silt at 92m, the ss is massive, 1.3mm + consisting of feldspar, quartz, + lithic grains.</u>	<u>minor quartz + carbonate veining.</u>	58293	94.28	95.28			20	95	5	5.25	595	<0.008				

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD										HOLE No. <u>DD75CC3</u>				A 11241		
FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA (PPM)							CORE REC'D			
FROM	TO							Sample Length	20-25 Pb	26-31 Zn	32-37 Cu	38-43 Fe %	44-49 Mn	50-55 Au	RUN	SHORT		
98.20	141.12	Siltstone, black, fines upward from 5 thin beds of gy-black arenite, also interbedded with thin fawn carbonate rich lg ss. $\text{spg} = 85^\circ$	quartz + carbonate veined															
141.12	149.12	Volcanic Arenite, grey-ga, siliceous, chloritic, massive, unsorted, lg-mg, consisting of lithic fragments 70%, quartz 10%, feldspar 10%, matrix 10%.	4 large quartz veins, carbonate veinlets.	58294	143.0	144.0		20	95	5	3.25	595	0.008					
EOH.																		

646106



E.L. 96/87

L818

LEGEND
 ———— Cut grid line.
 - - - - - Approximate position of base line.
 X Float Sample + 77963 F.
 O Hand Specimen Sample + 77925.
 ● Assayed Sample + 77939.



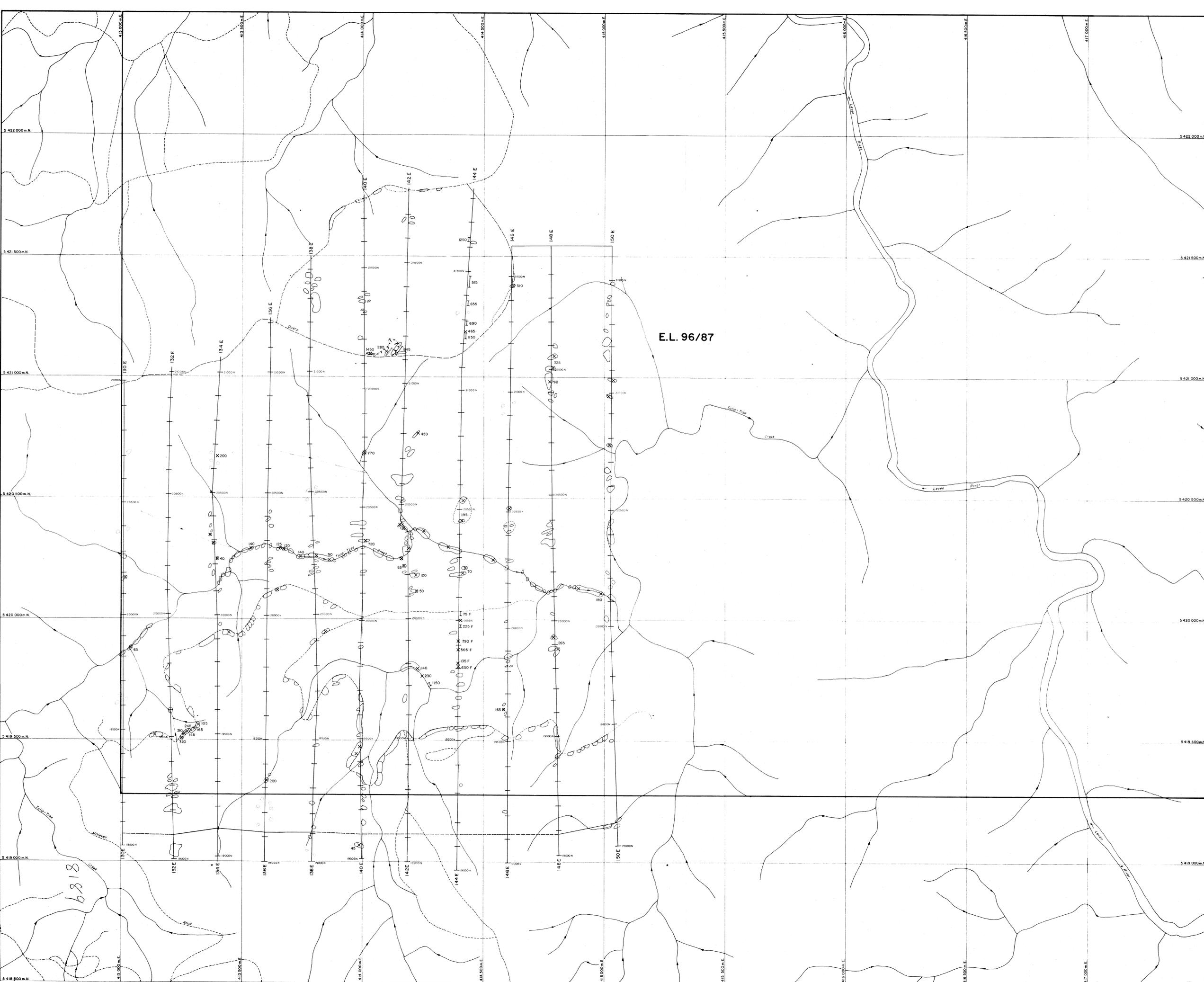
89-2951 646107

MINERAL RESOURCES DIVISION
 PROJECT: PRESTON E.L.96/87 ,TAS.

SOUTH LOYETEA
 TULIP-TREE CREEK GRID
 SAMPLE LOCATIONS

8187

Scale: 1:5000	Survey: K.V.	Revised:
Reference:	Date: 29-3-89	Checked:
Drawn: N.W.D.S.		A0-533-0007



E.L. 96/87

8189

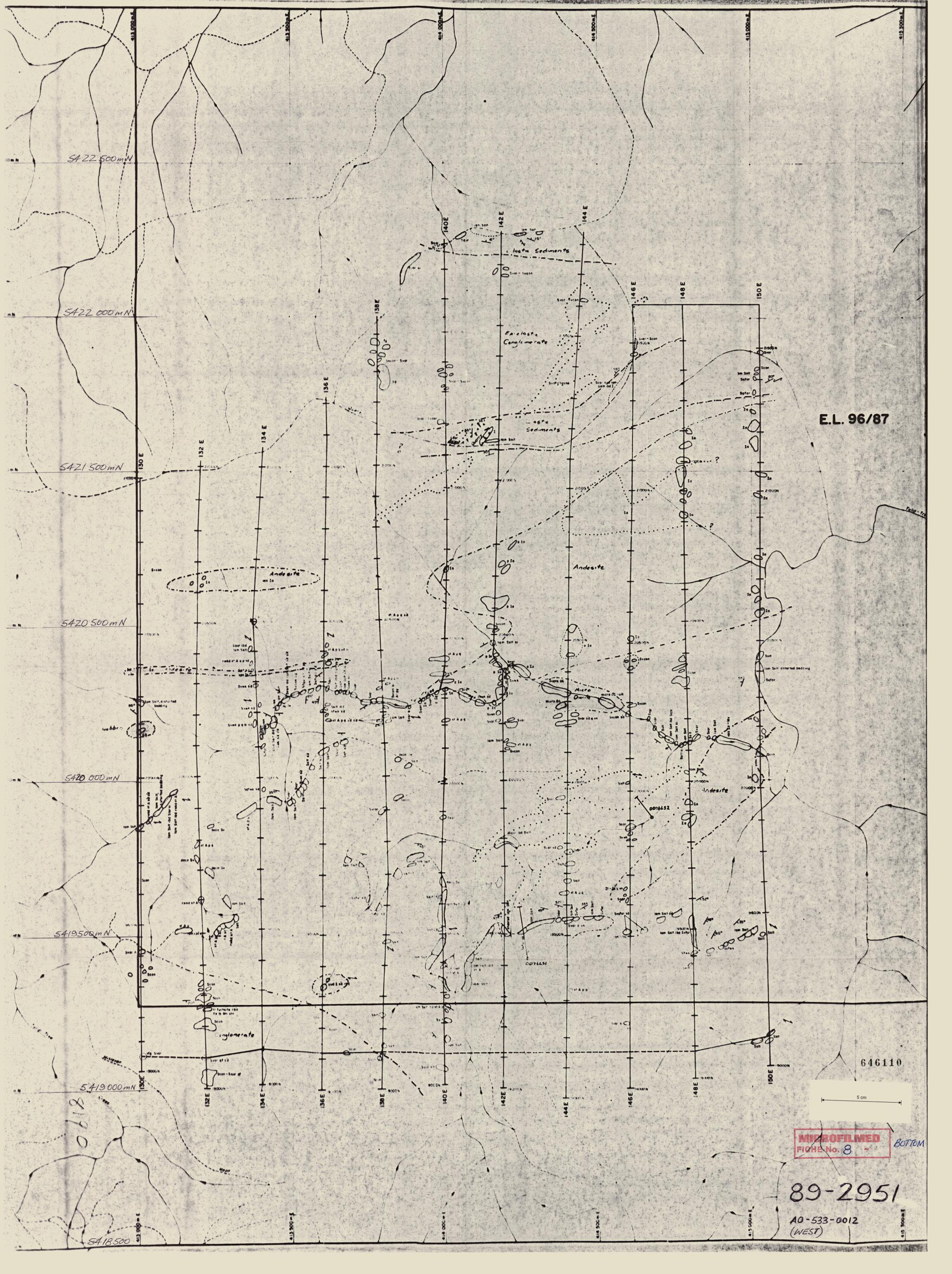
LEGEND
 --- Cut grid line.
 - - - - - Approximate position of base line.
 X Floor Sample = 225 F
 O Assayed Sample = 265
 All results are ppm.

5 cm

89-2951
646109

MINERAL RESOURCES DIVISION
PROJECT: PRESTON E.L.96/87 ,TAS.
SOUTH LOYTEA
TULIP-TREE CREEK GRID
GEOCHEMISTRY- Zn.
8189

Scale: 1:5000	Survey: K.V.	Revised:
Reference:	Date: 30-3-89	Drawn: N.W.D.S.
Checked:		AO-533-0010



E.L. 96/87

646110

5 cm

MICROFILMED
FICHE No. 8

BOTTOM

89-2951

AO-533-0012
(WEST)

0618

5418500

E.L. 96/87

1 Colour		2 Clearages	
pl	plate	msv	
dk	dark	w.cvd	
pk	pink	clvd	
rd	red	sv.cvd	
brn	brown		
or	orange		
yel	yellow		
oi	olive		
grn	green		
blk	black		
wht	white		
crm	cream		
ppl	purple		
clr	clear		

4 Sediment Grain Size			
argillites	0.06-0.2 mm	rudites	> 2.0 mm
arg	0.06-0.2 mm	gr granule	2-4 mm
fg	0.12-0.25 mm	pb pebble	4-64 mm
mg	0.25-0.5 mm	cb cobble	64-256 mm
cg	0.5-1.0 mm	bd boulder	> 256 mm
vcg	1.0-2.0 mm		

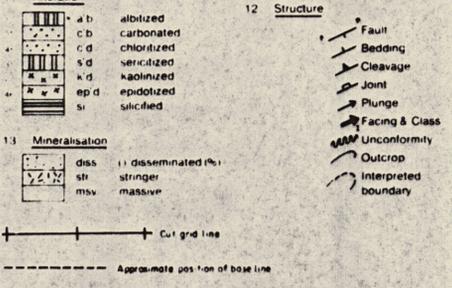
5 Igneous Rock Classification			
IA	Acid tuff	rhyolite	
A	Acid Lava	rhyodacite	
IA	Minor Acid Intrusives	dacite	
MA	Major Acid Intrusives	P pegmatite	
		GR granite	
		QFP quartz feldspar porphyry	
II	Intermediate tuffs	trachyte	
		labite	
		andesite	
MI	Minor Intermediate Intrusives		
DI	Major Intermediate Intrusives		
MV	Mafic Volcanics		
MI	Minor Mafic Intrusives	dolerite	
GB	Major Mafic Intrusives		
U	Ultramafic Rocks		

6 Sedimentary Rock Classification			
VS	Volcaniclastic Sediments		
Sv	Volcanogenic Sediments		
Srd	Rudites	Scon Conglomerate	
		Sbr Brackia (sedimentary)	
		Sst Tuffite	
Ssa	Sandstones	Sar arenites	Sqt orthoquartzite
		Sar 15% matrix	Sqr quartz arenite
		Sar	Sar felspar arenite
		Sar	Sar arkose
		Sar	Sar lithic arenite
		Sar	Sar volcanic arenite
		Sar	Sar quartz wacke
		Sar	Sar feldspathic wacke
		Sar	Sar lithic wacke
		Sar	Sar volcanic wacke
Sag	Argillites	Sst Siltstone	
Sst	Limestone	Ssh Shale	
Sst		Sbs Black shale	
Sdol	Dolomite		
Scl	Chert	Sgl	Glacial deposits
Sif	Iron formation	Sfgl	Fluvio-glacials
Sev	Evaporite	Salv	Alluvium
Sch	Undifferentiated Metamorphic Rocks		

7 Silicates			8 Sulphides			9 Carbonates		
q	quartz	bwk	boxwork	cb	carbonate			
af	albite	sul	sulphides	sd	siderite			
p	plagioclase	gos	gossan	cl	calcite			
a	amphibole	hm	haematite	dol	dolomite			
px	pyroxene	mag	magnetite	rh	rhodochrosite			
bt	biotite	lim	limonite	ba	barite			
chl	chlorite	bn	bornite	fl	fluorite			
ser	sericite	co	chalcopyrite	shl	scheelite			
ep	epidote	cas	casiterite	Au	gold			
tm	tourmaline	sp	sphalerite	ix	Leucosene			
fs	feldspar	gn	galena					
hb	hornblende	py	pyrite					
tal	talc	pyr	pyrrhotite					
		asp	arsenopyrite					
		Mn	Mn-oxides					
		Fe	Fe-oxides					
		tet	tetrahedrite					

10 Textures			
lava		bm bombs	
lt	lithic tuff	pm pumice	
ct	crystal tuff	fm (l) flamme	
vt	vitric tuff	(length cm)	vns veins
lpt	lapilli tuff	P porphyritic	abd cross-bedded
ag	agglomerate	a amygdaloidal	tkbd thick-bedded
af	ash flow	ves vesicular	tnbd thin-bedded
ashll	ash fall	sph spherulitic	ib inter-bedded
bx	breccia	wld welded	rb reworked
qe/auq	quartz eyes augen	fr fragments	lam laminated
hd	bedded	cl clasts	bd brecciated
schistose		bnd banded	stg staining
		fb flow banded	

11 Alteration		12 Structure	
alb	albitized	Fault	
carb	carbonated	Bedding	
chl	chloritized	Cleavage	
ser	sericitized	Joint	
kaol	kaolinized	Plunge	
epid	epidotized	Facing & Class	
sil	silicified	Unconformity	
dis	disseminated (msv)	Outcrop	
str	stringer	Interpreted boundary	
msv	massive		



possible Metamorphic boundary
Anomalous Pb zone

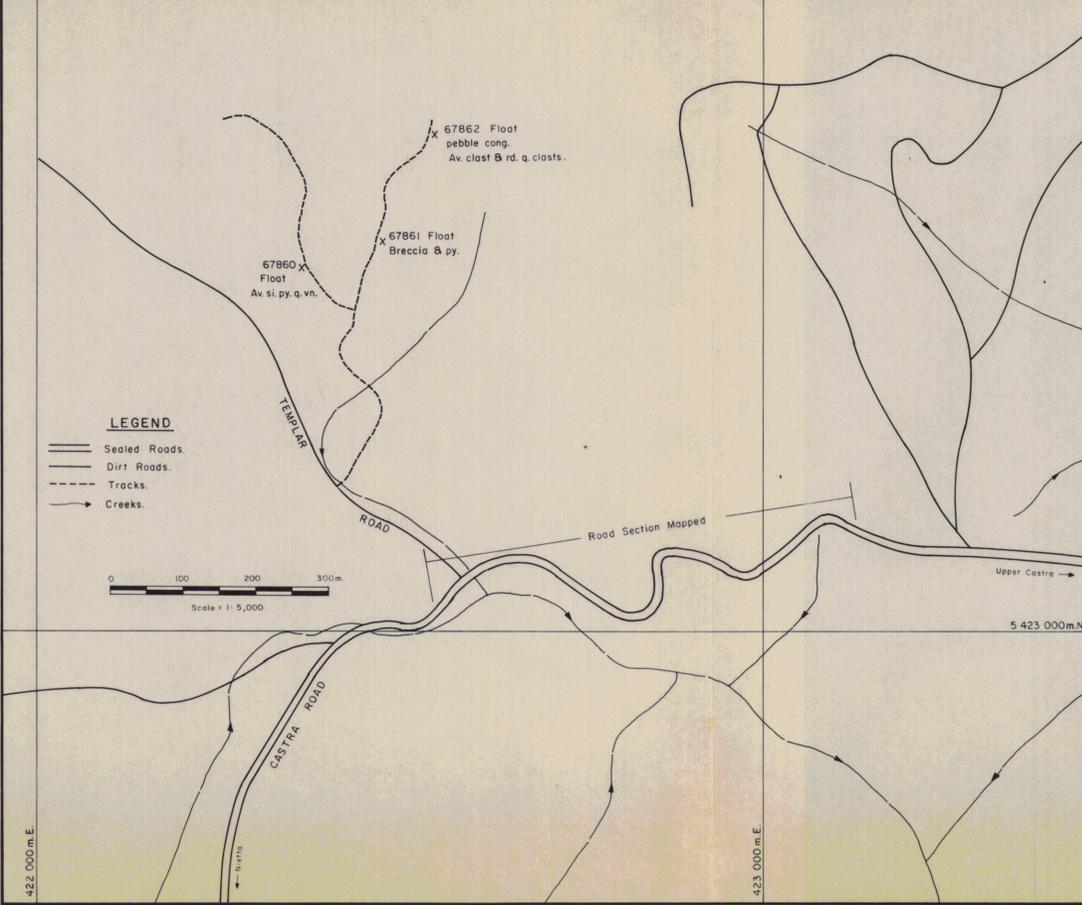
MICROFILMED
FICHE No. 8 - TOP

89-2951
646111

MINERAL RESOURCES DIVISION
PROJECT: PRESTON E.L.96/87 ,TAS.
SOUTH LOYTEA
TULIP-TREE CREEK GRID
GEOLOGY INTERPRETATION
8190

Scale: 1:5000	Survey: K.V.	Revised:
Reference:	Date: 14-4-89	
Drawn: N.W.D.S.	Checked:	AO-533-0012 (EAST)

CASTRA ROAD PROSPECT LOCALITY MAP



LEGEND

- Sealed Roads.
- Dirt Roads.
- Tracks.
- Creeks.

10. Textures

- | | | | | | |
|-----------|-------------------|--------|--------------------|------|-----------------|
| lt | lithic tuff | bm | bombs | f Δ | flow brecciated |
| xt | crystal tuff | pm | pumice | vns | veins |
| vt | vitric tuff | fm (l) | fiamme (length cm) | xbd | cross-bedded |
| lpt | lapilli tuff | P | porphyritic | tkbd | thick-bedded |
| ag | agglomerate | a | amygdaloidal | tnbd | thin-bedded |
| af | ash flow | ves | vesicular | ib | inter-bedded |
| ashfill | ash fall | sph | spherulitic | lam | laminated |
| bx | breccia | wld | welded | bx'd | brecciated |
| qe/aug | quartz eyes augen | fr | fragments | stg | staining |
| bd | bedded | cl | clasts | | |
| schistose | schistose | bnd | banded | | |
| | | fb | flow banded | | |

11. Alteration

- | | | |
|----|------|-------------|
| 17 | a'b | albitized |
| 55 | c'b | carbonated |
| 45 | c'd | chloritized |
| 31 | s'd | sericitized |
| 27 | k'd | kaolinized |
| 46 | ep'd | epidotized |
| 20 | si | silicified |

13. Mineralisation

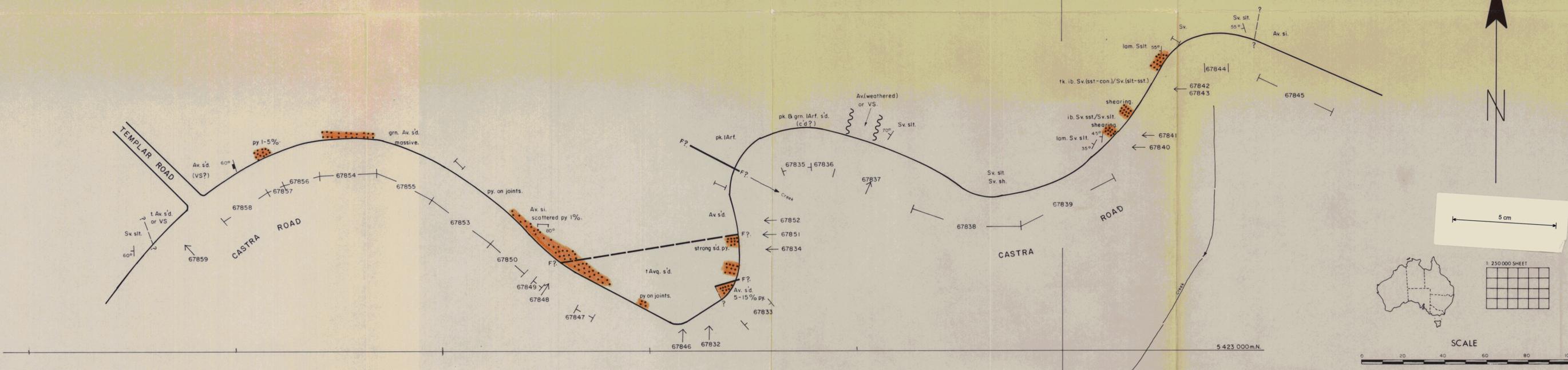
- | | | |
|-----|------|----------------------|
| dis | diss | () disseminated (%) |
| str | str | stringer |
| msv | msv | massive |

12. Structure

- Fault
- Bedding
- Cleavage
- Joint
- Plunge
- Facing & Class
- Unconformity
- Outcrop
- Interpreted boundary

- | | | | | | | | | | | | | | | | | | | | | | | | |
|----|-------------|------------------------------------|----------------------|----------------|--------------|----------------|----------|------------------|---------|--------|----------|----------------|---------------|------------------|--------|--------------|----------|-------------------|-----------|--------------|------|----------------|-----------|
| 33 | Ssst | Sandstones | Sqtz | orthoquartzite | Sqar | quartz arenite | Sfar | feldspar arenite | Sak | arkose | Siar | lithic arenite | Svar | volcanic arenite | Sqwk | quartz wacke | Sfwk | feldspathic wacke | Sllwk | lithic wacke | Svkw | volcanic wacke | |
| 23 | Sag | Argillites | Sst | Siltstone | Ssh | Shale | Sbs | Black shale | | | | | | | | | | | | | | | |
| 34 | Ssl | Limestone | | | | | | | | | | | | | | | | | | | | | |
| 34 | Sdol | Dolomite | | | | | | | | | | | | | | | | | | | | | |
| 31 | Sct | Chert | | | | | | | | | | | | | | | | | | | | | |
| 31 | Sif | Iron formation | | | | | | | | | | | | | | | | | | | | | |
| 31 | Sev | Evaporite | | | | | | | | | | | | | | | | | | | | | |
| 69 | Sch | Undifferentiated Metamorphic Rocks | | | | | | | | | | | | | | | | | | | | | |
| 7. | Silicates | quartz | 8. Sulphides, Oxides | cb | carbonate | sid | siderite | cl | calcite | dol | dolomite | rh | rhodochrosite | ba | barite | fl | fluorite | shl | scheelite | Au | gold | lx | Leucocene |
| q | quartz | K-feldspar | bwk | boxwork | | | | | | | | | | | | | | | | | | | |
| ab | albite | amphibole | sul | sulphides | | | | | | | | | | | | | | | | | | | |
| p | plagioclase | pyroxene | gos | gossan | | | | | | | | | | | | | | | | | | | |
| a | amphibole | lim | limonite | hm | haematite | | | | | | | | | | | | | | | | | | |
| px | pyroxene | bn | bornite | mag | magnetite | | | | | | | | | | | | | | | | | | |
| b | biotite | co | chalcopyrite | lim | limonite | | | | | | | | | | | | | | | | | | |
| c | chlorite | sp | sphalerite | bn | bornite | | | | | | | | | | | | | | | | | | |
| s | sericite | gn | galena | py | pyrite | | | | | | | | | | | | | | | | | | |
| e | epidote | py | pyrite | po | pyrrhotite | | | | | | | | | | | | | | | | | | |
| to | tourmaline | asp | arsenopyrite | Mn | Mn-oxides | | | | | | | | | | | | | | | | | | |
| fb | feldspar | Mn | Mn-oxides | Fe | Fe-oxides | | | | | | | | | | | | | | | | | | |
| hb | hornblende | Fe | Fe-oxides | tet | tetrahedrite | | | | | | | | | | | | | | | | | | |
| t | taic | cas | cassiterite | | | | | | | | | | | | | | | | | | | | |

- LEGEND
- | | | | |
|--------|--------|-----------|-----------|
| Colour | 2 | Cleavages | |
| ple | pale | msv | w. clvd |
| dk | dark | pk | clvd |
| pk | pink | rd | str. clvd |
| rd | red | | |
| brn | brown | | |
| or | orange | | |
| yel | yellow | | |
| ol | olive | | |
| grn | green | | |
| blk | black | | |
| wht | white | | |
| crm | cream | | |
| ppl | purple | | |
| clr | clear | | |
- | | |
|-----|--------------------|
| 3 | Igneous Grain Size |
| fg | > 1 mm |
| mg | 1 - 5 mm |
| cg | 5 - 50 mm |
| vcg | > 50 mm |
- | | | | |
|------------|---------------------|-------------|-------------|
| 4 | Sediment Grain Size | rudites | > 2.0 mm |
| argillites | < 0.06 mm | gr granule | 2 - 4 mm |
| arenites | 0.06 - 2.0 mm | pb pebble | 4 - 64 mm |
| vfg | 0.06 - 0.12 mm | cob cobble | 64 - 256 mm |
| fg | 0.12 - 0.25 mm | bld boulder | > 256 mm |
| mg | 0.25 - 0.5 mm | | |
| cg | 0.5 - 1.0 mm | | |
| vcg | 1.0 - 2.0 mm | | |
5. Igneous Rock Classification
- | | | | | |
|----|----|-------------------------------------|------------|--------------------------|
| 10 | IA | Acid tuff | rhyolite | r |
| | A | Acid Lava | rhyodacite | r d |
| | | | dacite | d |
| 6 | IA | Minor Acid Intrusives | | |
| 19 | + | Major Acid Intrusives | P | pegmatite |
| | | | GR | granite |
| | | | QFP | quartz feldspar porphyry |
| 51 | tl | Intermediate tuffs | trachyte | t |
| 47 | I | Intermediate lava | latite | l |
| | | | andesite | a |
| 47 | il | Minor Intermediate Intrusives | | |
| 41 | DI | Major Intermediate Intrusives | | |
| 60 | MV | Mafic Volcanics | | |
| 54 | iM | Minor Mafic Intrusives - dolerite d | | |
| 54 | GB | Major Mafic Intrusives | | |
| 64 | U | Ultramafic Rocks | | |
6. Sedimentary Rock Classification
- | | | | |
|----|-----|--------------------------|-----------------------|
| 27 | VS | Volcaniclastic Sediments | |
| 27 | Sv | Volcanogenic Sediments | |
| 28 | Srd | Rudites | |
| | | Scon | Conglomerate |
| | | Sbx | Breccia (sedimentary) |
| | | Sst | Tillite |



88-5221

EZ 646112
 ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
 MINERAL RESOURCES DIVISION

PROJECT: PRESTON E.L. 96/87

CASTRA ROAD PROSPECT
 GEOLOGY and
 SAMPLE LOCATIONS 8191

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