

RIO TINTO AUSTRALIAN EXPLORATION PTY LTD
Melbourne, Australia

INVESTIGATIONS CUNI AREA

PART I – GEOPHYSICAL

by
N G Mattocks

PART II – GEOCHEMICAL

by
E Muceniekas

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INVESTIGATIONS GUNI AREACONTENTSPART I

Geophysical - by N.G. Mattocks

PLANSScale

Plan No. T.664	Guni Area - Plan showing Aeromagnetic Anomaly	4" to 1 mile
" " T.665	Guni Area - Vertical Intensity Magnetic Survey	1" to 100'
" " T.666	Guni Area - Self Potential Survey	1" to 100'

PART II

Geochemical - by E. Museniekas

PLANS

Plan No. T.662	Guni Area - Geochemical Field Results	1" to 100'
" " T.663	Guni Area - Geochemical Analysis Results	1" to 100'

INVESTIGATIONS CUNI AREAPART I GEOPHYSICAL

The Cuni aeromagnetic anomaly is situated $4\frac{1}{2}$ miles NNE of Zeehan (See Plan No. T.664). It is a broad airborne response of low intensity (400 gammas above background) occurring in an area of sparse outcrop. It was selected for geophysical surveying because it was considered to occur in the slates and quartzites forming the host for the Renison Bell tin - pyrrhotite bodies.

Survey

Initially a traverse 10,000 feet in length, on a magnetic bearing of 100° , was surveyed by magnetometer to relocate the airborne response. Stations were spaced at 300 feet and closed to 100 feet over the anomalous zone.

Since the geological strike in the area was not known, and no definite direction could be inferred from the airborne results, a preliminary grid was prepared on a base-line bearing of 10° magnetic, to cover the magnetic activity and determine its strike. The grid consisted of six traverses 3,000 feet long and 200 feet apart and readings were taken at 50 foot intervals along traverses. Line 4N to the east was out of course and was not used in the survey.

Surveys by magnetometer and SP in a similar setting at Renison Bell successfully detected mineralization and these two methods were selected for this survey.

ResultsMagnetic. Relocation (Plan No. T.664)

In the magnetic relocation traverse a broad anomaly of 1,000 gammas appeared in close proximity to the line of aeromagnetic peaks. Apart from a sharp 400 gamma anomaly to the west of this, there was no further magnetic activity along the line and it could be concluded that this broad anomaly was the source of the airborne response. The gradual increase in magnetic values from over 2,000 feet away from the anomaly, and the occurrence of the major part of the anomaly over a width of 1,100 feet indicated a source of considerable size and depth extent.

Survey (Plan No. T.665)

The magnetic survey showed the main anomaly on the centre-line to have a northerly strike. The southern limit of the anomaly was established when no indication, apart from a small broad expression on line 2S, appeared on the two southerly lines. From the aeromagnetic data, the anomaly can be expected to continue for some distance to the north. Expressions on CL, 2N and 6N show a 400 feet wide, jagged, near-surface effect (peaks up to 1200 gammas) with a gradual increase of 500 gammas from about 500 feet either side. These characteristics suggest the presence of a near-surface basic intrusive comparable to the magnetite-bearing basics outcropping further east.

Three peaks of approximately 400 gammas each with expression on one line only occur, outside the main anomaly, at 2S/250W, CL/650W and 2N/11E.

Self Potential (Plan No. T.666)

No definite anomalies were recorded in the S.P. survey and there were no negative potentials coincident with the three magnetic peaks mentioned above. The negative centre at 28/350W may be discounted due to its small magnitude and poor correlation with the magnetic peak.

From the west of the grid there is, on all lines except 28 and 48, a gradual decrease in potential of about 80 millivolts terminating at the main magnetic anomaly. This would be where slates contact the inferred intrusive body. As in the magnetic results, lines 28 and 48 indicate the southern closure of the feature.

Conclusion

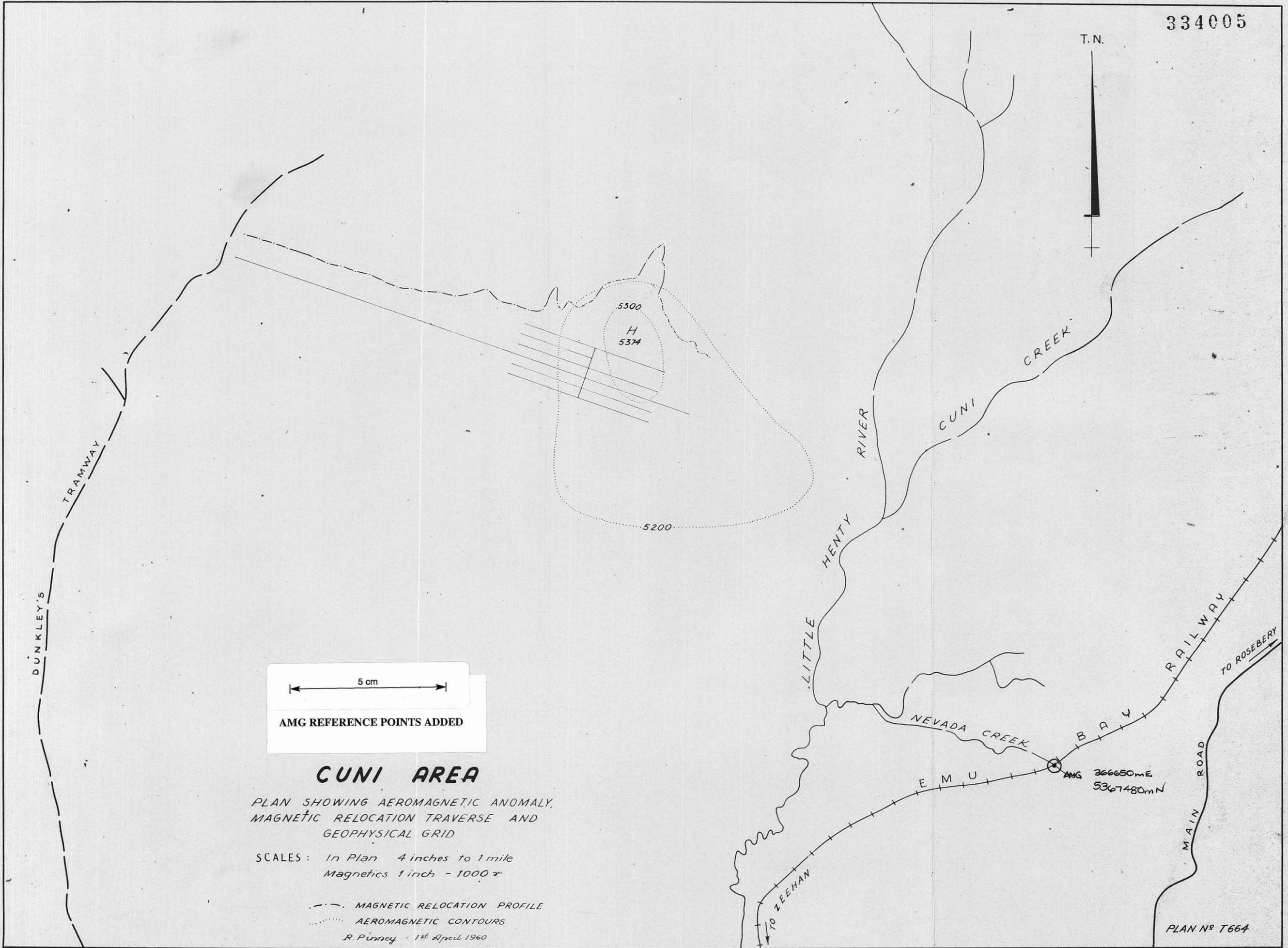
The magnetic anomaly appears to be due to a basic intrusion. It occurs near lower Cambrian slates thought to be those in which the Renison Bell deposits are emplaced. No significant geophysical anomalies were recorded surrounding the inferred intrusion.

The tracing of the magnetic indication northwards and further surveying around it is dependent on geochemical work detecting substantial mineralization.

4th April, 1960.
Zeehan, Tas.

H.G. Mattocks,
Geophysicist.

T.N.



5 cm
 AMG REFERENCE POINTS ADDED

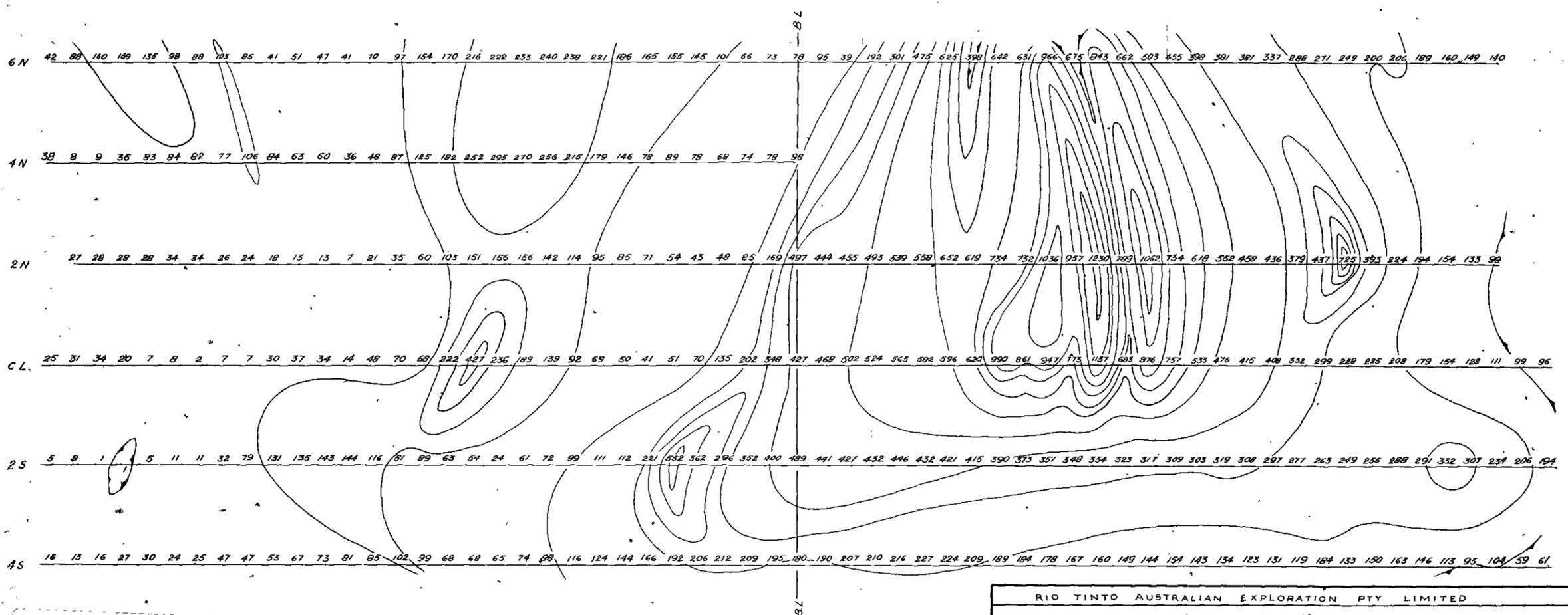
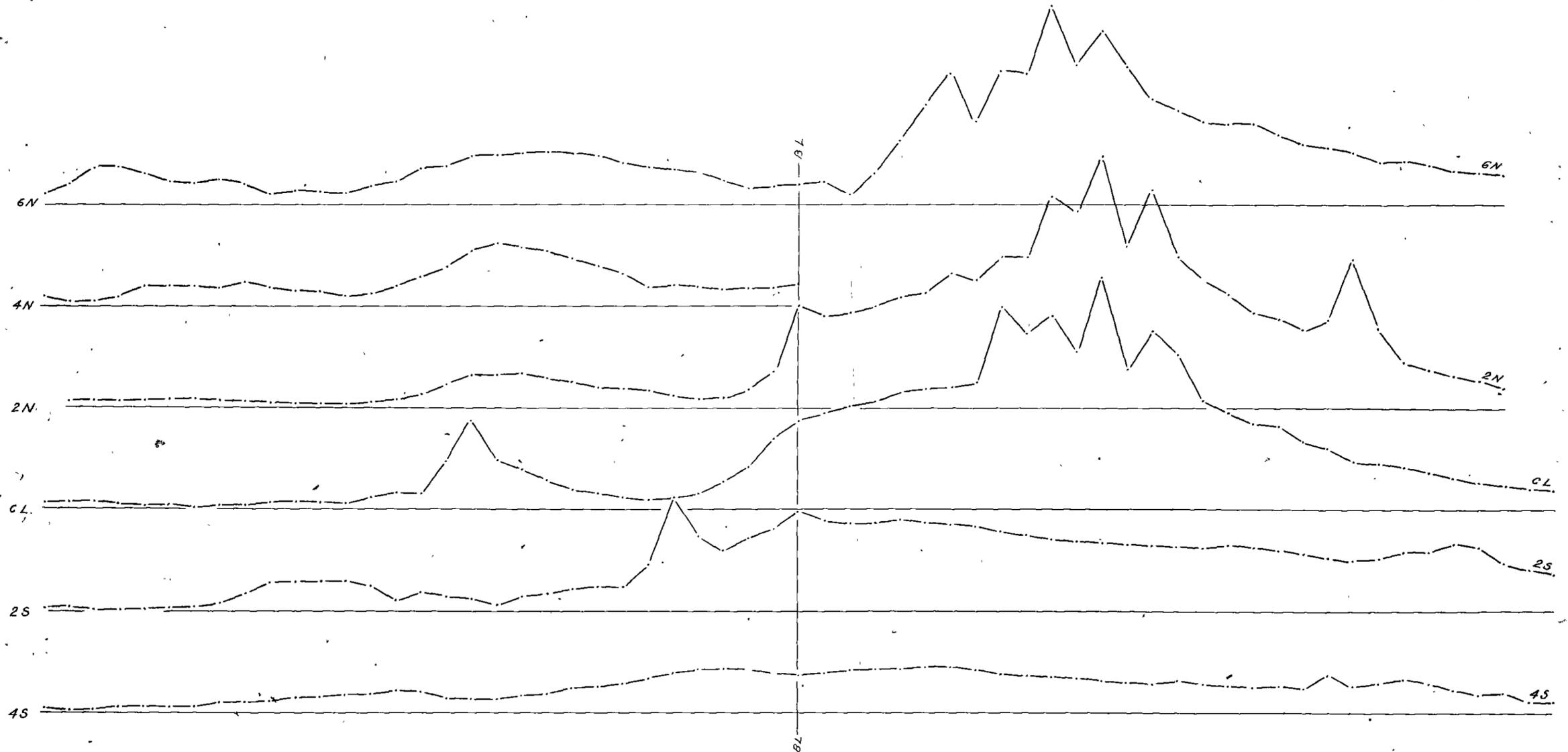
CUNI AREA

PLAN SHOWING AEROMAGNETIC ANOMALY,
 MAGNETIC RELOCATION TRAVERSE AND
 GEOPHYSICAL GRID

SCALES: In Plan 4 inches to 1 mile
 Magnetics 1 inch = 1000 x

- MAGNETIC RELOCATION PROFILE
- AEROMAGNETIC CONTOURS

R. Purney - 1st April 1960



6N 42 88 160 189 135 98 88 103 85 41 51 47 41 70 97 154 170 216 222 233 240 238 221 186 165 155 145 101 66 73 78 95 39 192 301 475 625 398 642 631 966 675 643 662 503 455 399 391 381 337 288 271 249 200 206 189 160 149 140

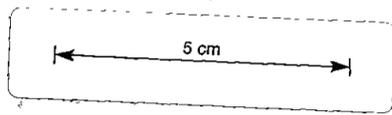
4N 38 8 9 36 83 84 82 77 106 84 63 60 36 48 87 185 182 252 295 270 256 215 179 146 78 89 78 68 74 78 98

2N 27 28 28 28 34 34 26 24 18 13 13 7 21 35 60 103 151 156 142 114 95 85 71 54 45 49 85 169 497 444 435 493 539 558 652 619 734 732 1036 957 1230 789 1062 754 618 582 459 436 379 437 285 393 224 194 154 133 99

CL 25 31 34 20 7 8 2 7 7 30 37 34 14 48 70 68 222 427 236 189 139 92 69 50 41 51 70 135 202 348 427 468 502 524 565 582 596 620 990 861 547 175 1137 685 876 757 533 476 415 408 332 259 288 285 208 179 154 128 111 99 96

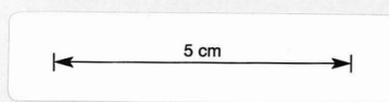
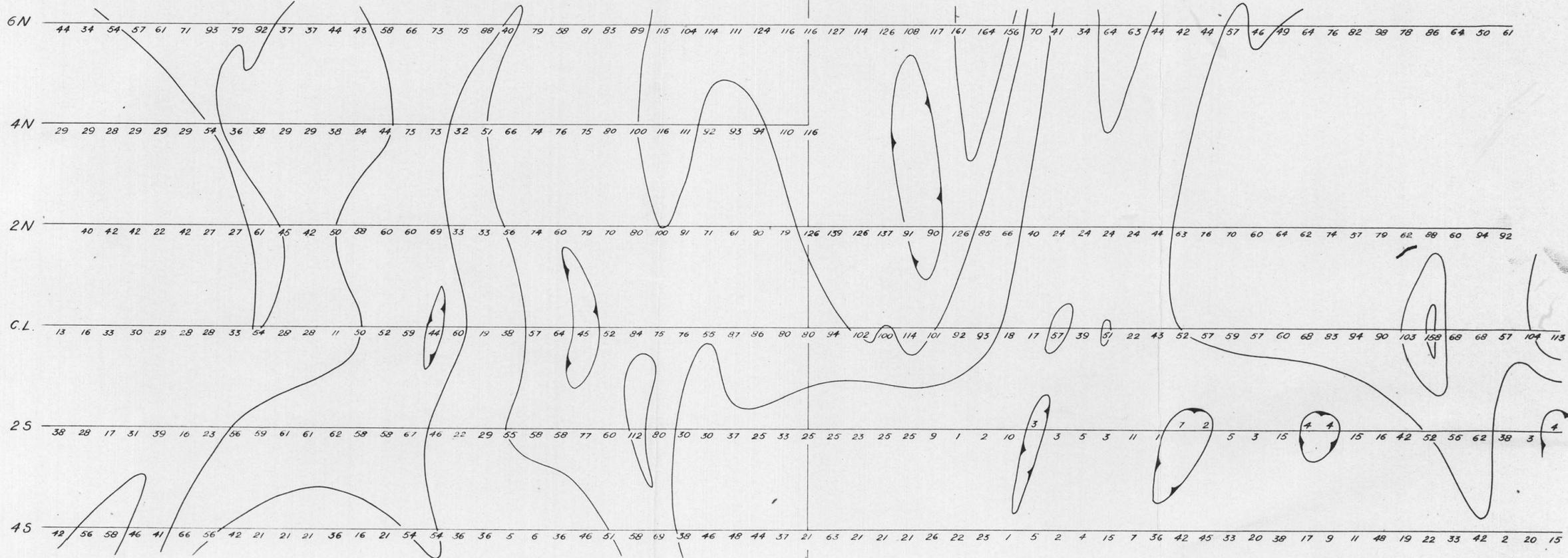
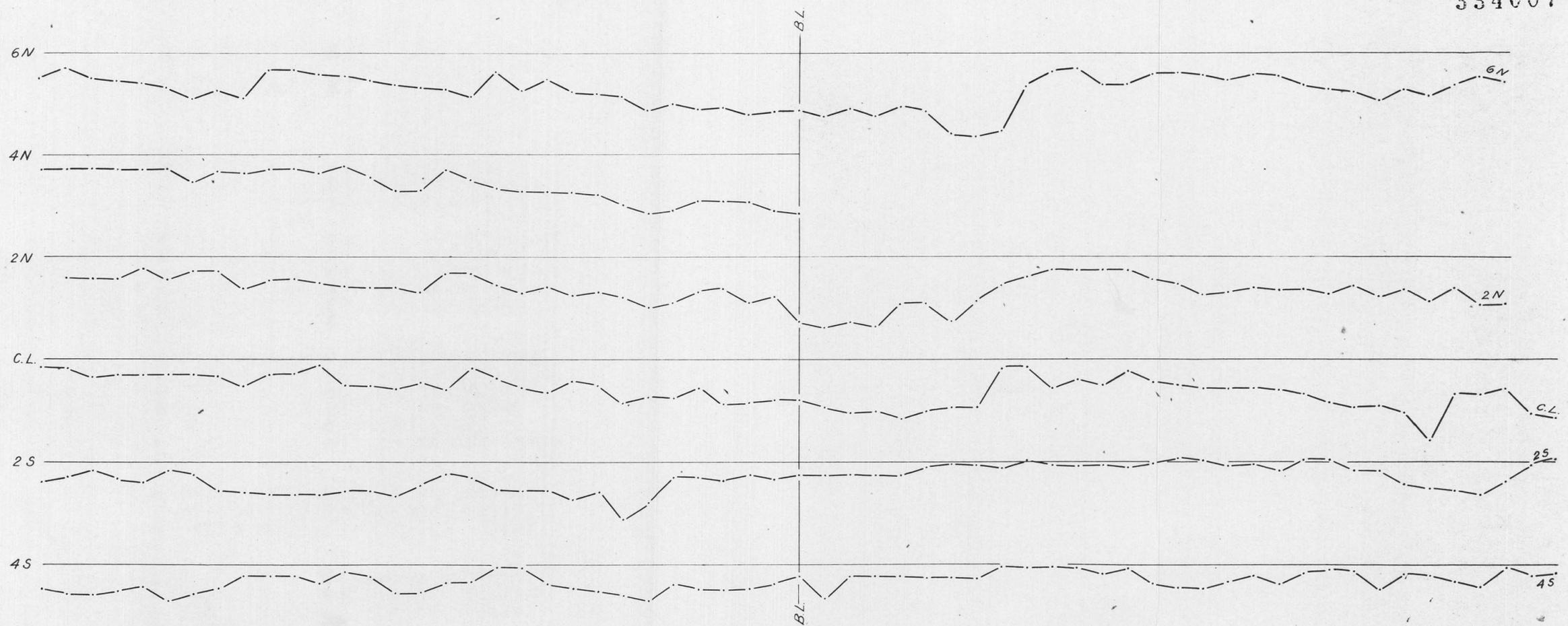
2S 5 9 1 5 11 11 32 79 131 135 143 144 116 51 89 63 54 24 61 72 99 111 112 221 552 362 296 352 400 489 441 427 432 446 432 421 415 390 373 351 348 334 523 317 309 305 319 308 297 277 263 249 255 288 291 332 307 234 206 194

4S 16 15 16 27 30 24 25 47 47 55 67 73 81 85 102 99 68 68 65 74 88 116 124 144 166 192 206 212 209 195 180 190 207 210 216 227 224 209 189 184 178 167 160 149 144 154 143 134 123 131 119 184 133 150 163 146 113 95 104 59 61



VERTICAL SCALE 1 inch = 500 ft
 CONTOUR INTERVAL 100 ft
 B.L. BEARING 10° T.N.

RIO TINTO AUSTRALIAN EXPLORATION PTY LIMITED			
CUNI AREA			
VERTICAL INTENSITY MAGNETIC SURVEY			
N Methods, April 1960	Scale in Plan 1 inch = 200 ft	PRP/7/100	PLAN N° T 665



VERTICAL SCALE: 1 inch = 200 mv.
 CONTOUR INTERVAL: 50 mv
 B.L. BEARING 10° T.N.

RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED			
CUNI AREA - SELF-POTENTIAL SURVEY			
N. Matlocks, April 1960	SCALE IN PLAN 1 inch = 200 feet	PRP/7/100	PLAN No T666

INVESTIGATIONS CUNI AREAPART II GEOCHEMICAL

Geochemical work was undertaken in the Cuni area in an attempt to locate mineralization particularly tin and nickel, along the geophysical grid lines.

Field testing has indicated a few low mineralized zinc zones (see Plan No. T.663). One of them is at the peak of the aeromagnetic anomaly occurring in the swamp where low zinc values were recorded. This is due to mineral concentration in the mud, as it is known that slates in the area contain zinc lead.

The other low zinc mineralized locations along the grid are at 4N/1W occurring in very black slate, 01/1, 2, 3W in black slate, 015, 0W in grey slate and 2S/3W in a yellow clay, probably overlaying slate. Good values were obtained in a grey slate at the western fringe of the area at 2S/15W. Gossans were observed at 2S/5W where low zinc mineralization occurs.

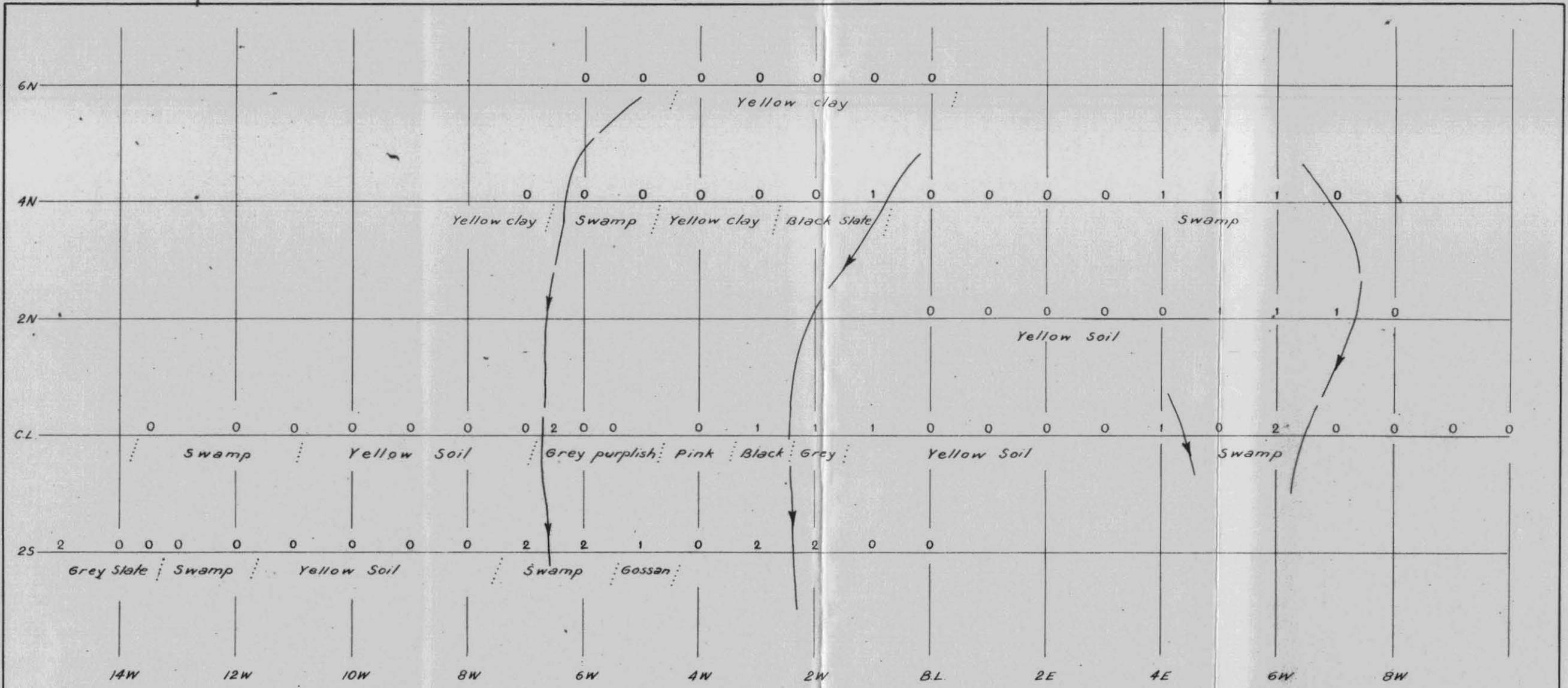
The black slate occurring west of the Renison Bell tin field is considered to be similar to the host rocks of the anomaly, and have not, as yet, been tested for tin or nickel.

Soil samples to confirm the results of the survey already undertaken, and to establish the presence of these two metals will be submitted to the S.A. Mines Department for spectrographic analysis.

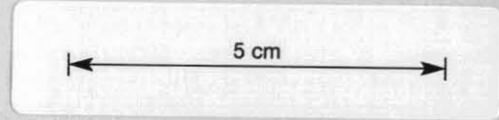
Further geochemical interests in the area will depend on these results.

13th April, 1960.

E. Muceniekas,
Geochemist.



- 0 - NO MINERALIZATION
- 1 - 1/2 ml. DITHIZONE
- 2 - 1 ml. DITHIZONE



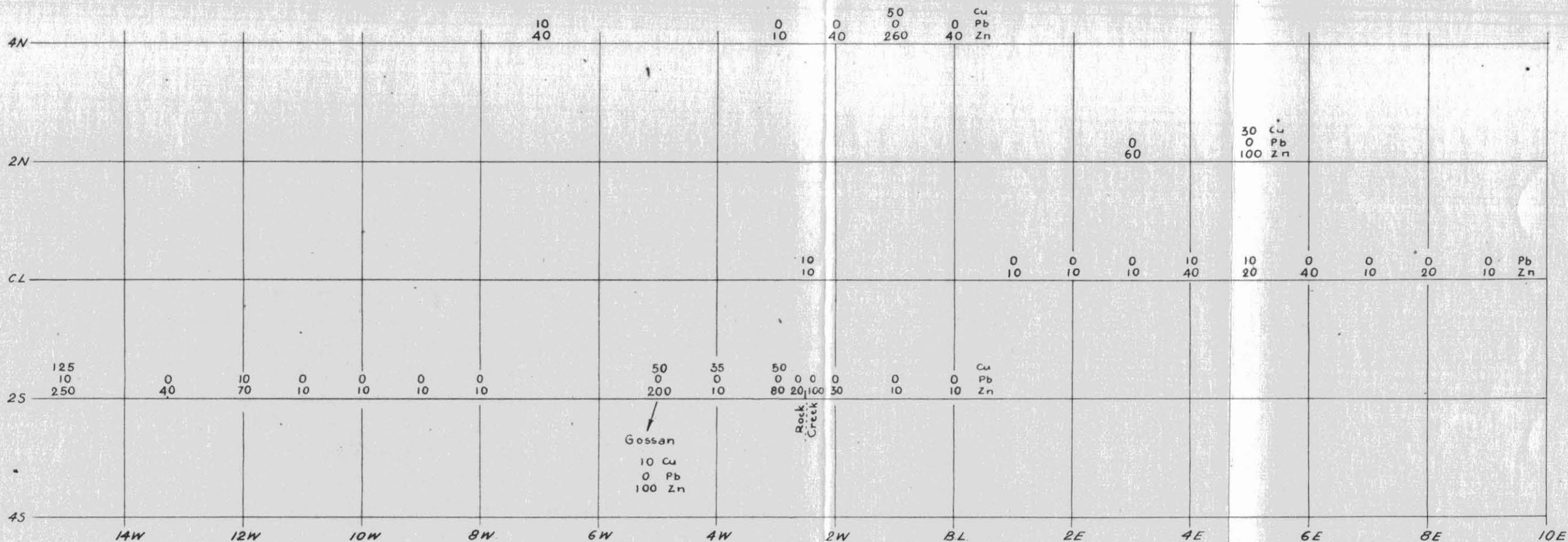
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CUNI AREA

GEOCHEMICAL FIELD RESULTS

SOIL TESTS FOR Cu, Pb, Zn MINERALIZATION ALONG GEOPHYS. GRID.

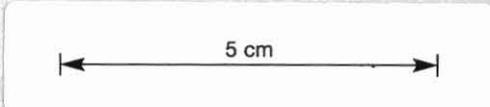
E. Muceniekas, April 40	SCALE: 1 inch = 200 feet	PRP/7/100
		PLAN N ^o T 662



Gossan
10 Cu
0 Pb
100 Zn

Rock
Creek

RESULTS IN PARTS PER MILLION



RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED			
CUNI AREA GEOCHEMICAL RESULTS			
SOIL SAMPLES ANALYSED FOR Cu, Pb, Zn MINERALIZATION			
E. Muceniekas, April 1960	SCALE: 1 inch = 200 feet	PRP/7/100	PLAN No T663