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PROJECT NAME: COMSTAFF PROPRIETARY LIMITED

TITLE: STAGE REPORT ON THE RAMSAY GRIDS

CAI & CAG IN EL 5/63 PART 2

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TABLE NOS: 1

APPENDICES: 3

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AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

SUMMARY

Grids CAI and CAG, located in the southwestern portion of EL 5/63 Part 2, were primarily established to facilitate ground follow-up of two airborne E.M. "Input" anomalies, delineated in 1975.

Previous stream sediment work in 1971 and 1972 had already outlined the CAI area as being anomalous in Cu, Zn, and Ni. The extensive Ott Creek Grid was subsequently cut and sampled but work lapsed owing to the remoteness of the area for ground based follow-up work.

However, with the discovery of an "Input" E.M. anomaly in the area, helicopter assisted ground follow up was instituted and the first CAI grid of 3 lines was cut, humus sampled and C.E.M. surveyed in 1976. Fire destroyed the grid midway through operations and work ceased.

In 1981 the South Huskisson Road, a Comstaff four wheel drive track, was completed giving access to the areas of CAI and CAG.

Ground follow-up comprising of grid cutting, surveying, auger sampling, magnetic and P.E.M. surveying and geological mapping was commenced in 1981 and completed in 1982 over consecutive summer seasons.

Grid CAG established over Cambrian Crimson Creek Formation sediments and minor basic intrusives contained no ground P.E.M. response or significant magnetic anomalies and the "Input" E.M. anomaly was attributed to surficial conductivity. The geochemical anomalies are erratically distributed or appear to be related to lithological differences. No further work is recommended at CAG.

Grid CAI also established over Cambrian Crimson Creek Formation sediments with attendant basic intrusives and intermediate - basic extrusives was located with its northwestern corner inside the Meredith Granite's contact metamorphic aureole. A conductor coincident with that defined in 1976 was outlined on all but the southern line by the P.E.M. survey, without coincident geochemical (except Pb), magnetic or geological expression. As similar unsubstantiated E.M. anomalies have been diamond drilled elsewhere on the tenement with little success a low priority has been given to D.B.Trussell's (A.A.A.Ltd, Senior Geophysicist) drill hole proposal.

However limited soil and rock sampling is recommended to define the coincident Sn - As soil anomaly in the north west portion of the grid and the Pb soil anomaly coincident with E.M. anomaly.

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Plan	Description	Scale
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TAS 2/2912	Ramsay Area, Regional Geology, CAG	1:10 000
TAS/2/2028	Ramsay Area, Photogeological Interpretation South Sheet	1:10 000
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STAGE REPORT ON THE RAMSAY GRIDS CAI & CAG

IN EL 5/63 PART 2

1. INTRODUCTION

This stage report outlines the investigations carried out over Grids CAG and CAI during 1981 and 1982. The grids are located in the Ramsay Area, E.L. 5/63, Part 2. (Plan TAS/2/1586). These grids were established to facilitate ground follow-up of two airborne E.M. "Input" anomalies.

Introductory general sections on location, access, previous work and regional geology are followed by geological, geophysical and geochemical details of the individual grids. The report is concluded by discussions and recommendations.

2. LOCATION AND ACCESS

The two grids lie in the southwestern corner of E.L. 5/63 Part 2 (Plan TAS/2/2613). This part of the E.L. (Exploration Licence) is approximately 20 kilometres south west of Waratah. Access is by either one of two four wheel drive tracks. The first, the Ramsay Road, leaves the Waratah-Savage River Highway 8 kilometres south west of Waratah. It joins the other road, the South Huskisson Road, approximately 17 kilometres from the highway, in the area of grid CAI. Grid CAG lies 3 kilometres back down the South Huskisson Road.

The alternative route, the South Huskisson Road, branches off the Hatfield Road (an Associated Forest Holdings logging road) approximately 25 kilometres from the Murchison Highway. It crosses the Huskisson River, then progresses 1.3 kilometres to Grid CAG and a further 3 kilometres to Grid CAI.

The South Huskisson Road traverses Grid CAI and a short (200 metre) walking track links it to Grid CAG.

3. PREVIOUS WORK

During the 1969-1970 field season an investigation of the alluvials in Webb Creek was carried out. Webb Creek drains areas of both grids, (Plan TAS 2 1799).
The investigations included deep augering, pitting, minor stream sediment sampling and geological mapping

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Robison (1970) identified three sequences of rocks;

(i) Western tuffaceous sequence - acid tuff, mudstone, siltstone, shale.

(ii) Arenaceous sequence - quartzite, siltstone, quartz conglomerate.

(iii) Eastern tuffaceous sequence - micaceous tuff, mudsto tuff.

He concluded:-

".....the absence of gold and osmiridium, and virtual absence of tin in the concentrates obtained from the auger holes and pits, together with the fact that the creeks entering the swamp are not carrying appreciable amounts of these minerals indicate it is most unlikely that a workable alluvial deposit is present here".

During the summer season, 1971-1972, a programme of geological mapping and stream sediment sampling, partly in follow up to that carried out during 1969-1970, was instituted in the Ramsay area. (Rugless, 1972).

The stream sediment work identified an anomalous area (R6) which contains the modern CAI grid area. The anomalous elements were as follows:-

	Anomalous Threshold	Peak Value
Copper	80 ppm	120
Zinc	260 ppm	430
Nickel	120 ppm	170

Reconnaissance stream geological mapping outlined an "interbedded succession of fine greywackes, siltstones, mudstones and shales", striking approximately north-south and dipping westwards. The area was given a very high priority rating for follow up gridding.

Gridding was carried out in the 1972/73 summer season and called the Ott Creek Grid. The grid was drafted as a "perfect" grid i.e. all lines were assumed to be perfectly straight, to cross at exactly 90^{o} and of equal length with flanking lines. Samples were taken at 50 feet intervals. The grid was very large with 51.1 line Km and 1700 samples being taken. The modern CAI grid would have lain approximately in the western middle section. Some of the geochemical soil result patterns appear to be similar to those found on the modern CAI grid despite different sampling techniques. No interpretation of the soil sample results could be located. Peak values from the grid in the vicinity of the modern CAI Grid are as follows:-

Pb - 170 ppm
Zn - 230 ppm

Cu - 170 ppm
Ni - 130 ppm

Limited geological mapping outlined a N-S regional striking sequence of mudstones, siltstones, tuffs, shales and basalts with a hornfels occuring near the Meredith Granite contact.

No interim or final report was produced for the Ott Creek area.

In 1975 the Ramsay area was flown utilising the Input electromagnetic (E.M.) system. The two Input anomalies at present under discussion were outlined as follows:-

Anomaly	CAI	CAG
Flight Line	234 AW	228 AW
Fiducial	015.68	121.63
Channels	6	4
Ratio	8/1.4	1.5/0.2
Altitude (m)	130	155
Magnetic Amplitude (nT)	160	30
Indicated Source	Bedrock Fair	Surficial Poor

CAI was the first to be followed up in 1976. Access was gained by helicopter. Grid cutting, soil sampling, ground E.M. and magnetic surveys were carried out before fire destroyed the grid. The old CAI grid can be located reasonably accurately using the surviving Ott Creek flags from which the old CAI grid was controlled. Further verification is indicated by the co-incidence of the ground E.M. anomalies and certain geochemical soil sample result patterns.

The geochemical soil sample results can be summarised as follows:-

Element	Mean (ppm)	Mean + $2\sigma_{(ppm)}$	Peak Value (ppm)
Pb	58	122	210
Cu	74	116	160
Zn	85	195	530
Ba	108	514	1500

The ground E.M. response was well defined on the two northerly lines 5120N and 5000N but weak and poorly defined on the southern line 4880N.

The magnetic response was found to be relatively erratic and did not provide any more information concerning the E.M. response.

The conclusions were summarised as follows:-

(i) Regional dips to west
(ii) Close to Meredith granite
(iii) Within pyritiferous halo
(iv) Zinc and Copper anomalies coincident with conductor, lead slightly transgressive, Barium displaced.

This work as with the Ott Creek work was never reported formally in a final or interim report.

Completion of the South Huskisson Road in 1981 allowed four wheel drive access to the areas of CAI and CAG and the work herein reported was instituted.

4. REGIONAL GEOLOGY

The interpreted distribution of the major lithologies are presented on Plans TAS/2/2910 & 2912. This information is a summarised form of the detailed geology from the 1:5 000 series plans and 1:2 500 detailed grid geology plans.

The approximate chronostratigraphic position of the major lithologies are summarised in Table 1. (from Pigott, 1980).

4.1 Rock Units

4.1.1 Ramsay Group (Pre Cambrian - Cambrian)

This rock unit is interpreted to constitute the basement of the area. Although no outcrop was recorded in the gridded areas the group has been mapped to the northeast in the Ramsay River and further to the east on the Associated Forest Holdings, Hatfield Road and possibly in Webb Creek to the south.

The group has been split into two sub units, the upper only being relevant to the general area under examination. The Upper Ramsay group has been tentatively correlated with the Success Creek Group at Renison Bell on petrological and structural grounds.

The lithologies represented in the Upper Ramsay Group are carbonaceous pelite, acid volcanomict lithic sandstone, quartzite and fine quartz conglomerate and siltstone.

It is envisaged that these were among the first sediments laid down in the subsiding Dundas Trough derived dominantly from the flanking Metamorphic

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TABLE 1

AGE	NAME	UNIT	THICKNESS	LITHOLOGIES
Quarternary		Alluvium	0 - 10 m	Boulder and cobble gravel, sand
Tertiary		Basalt	0 - 25	Alkali olivine basalt; basal gravel, sand.
			unconformity	
Upper Devonian to Lower Carboniferous		Meredith Granite		
			intrusive	
Lower Cambrian	Crimson Creek Formation	Greywacke Sequence	800 - 1200+ m	Basic to intermediate volcaniclastic greywacke, tuff, siltstone; argillite; pelite (possibly dolomitic); chert; conglomerate; minor basic sills, dykes, lavas.
			unconformity	
Upper Proterozoic	Ramsay Group	Sandstone/Shale Sequence	800+ m	Carbonaceous sandstone, phyllite and shale; micaceous sandstone, siltstone; conglomerate; breccia; carbonate.

Pre Cambrian Cratonic block.

4.1.2 Crimson Creek Formation (Cambrian)

This rock unit is interpreted to conformably overlie the Upper Ramsay Group. It is the dominant component of the regional geology in the south west corner of the Ramsay Area. It is unfossiliferous and appears to mark the onset of considerable intermediate - basic volcanic derived input into a deepened Dundas Trough. The sedimentary lithologies represented are tuffaceous lithicwacke, tuffaceous siltstone and mudstone. The enviroment of deposition appears to be off the continental shelf and where outcrop is good, evidence of density and normal currents can be found in sedimentary structures such as graded bedding, rip up clasts, eroded basal surfaces, flame structures, basal loading and current bedding.

Intermediate and basic igneous rocks are commonly associated with the Crimson Creek Formation. They appear to fall into two main groups. The first is probably contemporaneously intrusive, and is made up of predominantly porphyritic micro-gabbro-dolerite and possible lamprophyre. The second is formed of flow basalt and andesite. Identification of these rock types is particularly difficult owing to uralitisation, metasomatism and contact metamorphic effects.

The formation's regional strike is generally north west and the beds dip steeply to the west or are rarely overturned to the east. Minor faulting is common.

4.1.3 Meredith Granite (Late Devonian - Early Carboniferous)

Although outcropping Meredith granite is probably over two kilometres from the nearest grid its effects are often prominent. A full description can be found in the Interim Report on the Ramsay Area, 1980, By G.F.Pigott.

4.1.4 Quarternary Alluvium

The creeks and streams of the area are generally deeply incised and of high gradient hence little alluvium has collected. The noteable exception is Webb Creek on the southern lease boundary which was examined for its osmiridium, gold and tin potential. (Robison, 1970).

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4.2 Structure

The area is marginal to the western limb of the major Just in Time Anticline and eastern limb of the northern extension of the Huskisson Syncline. Hence the majority of rocks face west although overturning to the east does occur. This deformation was probably related to the Tabberabberan Orogeny producing the main northwest to north, north west trend.

Faulting in the area is quite common although largely inferred. It is also unclear whether this faulting is due to orogenesis or the emplacement of the Meredith Granite massif. The photogeological interpretation Plan TAS/2/2028 is included for reference.

4.3 Metamorphism and Regional Alteration

Contact metamorphic effects extend out in a halo from the edge of the Meredith Granite encompassing the northwest portion of grid CAI but do not reach CAG. These effects are mainly confined to recrystallisation sometimes with silicification, developement of mica and rarely cordierite.

Metasomatic alteration is slightly more common than contact metamorphic effects at CAI and non existent at CAG. Uralitisation and saussuritisation are the most common forms of metasomatic alteration. Resultant products such as fibrous actinolite and tremolite can be seen in hand specimen.

5. GRID CAG

5.1 Geology

The results of geological investigations are presented on detailed and interpretative geological plans. (TAS/2/2563 and TAS/2/2564 and on the composite sections (TAS/2/2832 - 2835).

5.1.1 Sedimentary Rocks

The sedimentary rocks encountered over the CAG grid area make up at least 95% of the float material. Only two small outcrops were noted on the grid.

The sedimentary sequence is made up of alternating micaceous - sericitic lithicwacke and predominantly feldspathic sandstone siltstone units.

The micaceous-sericitic rocks are distinctive with muscovite grains up to 2mm, averaging less than 1mm, constituting up to 10% of the rock. The hosts are both the major types of coarse sediment present, i.e. fine lithicwacke and fine sandstone, with or without a tuffaceous component. These micaceous sediments are often marked by a brick red tinge to the usual brown weathering. There appears to be less fine grained sediments i.e. siltstone and mudstones associated with this unit than others. On the South Huskisson Road close by to the north there is a highly weathered rock, made up of coarse brown mica (up to 20 mm) quartz and clay altered material. It is possible that this is a very weathered granitoid and the micaceous - sericitic sediments are metamorphically related.

Interbedded with the above is a unit of predominantly fine lithicwacke with siltstone and mudstone. Closely related to this are the predominantly tuffaceous lithicwackes. These two units make up the bulk of the rocks along the South Huskisson Road and the central portion of the grid. Structural control from good outcrop along the road indicate these rocks are also along strike. The lithicwackes are fine-medium grained and poorly sorted with the tuffaceous component often being conspicuously coarser that the matrix. Siltstone and mudstone make up a significant proportion of these lithicwacke units.

A small, predominantly feldspathic siltstone,with significant quartz,unit was outlined along the major NNE - SSW ridge toward the eastern margin of the grid. This unit is distinctive by its "cleaness" i.e. a lack of significant lithic and very fined grained components and the appearance of significant fine detrital quartz. These rocks are usually pale grey and well sorted.

All these sedimentary units are interpreted as components of the Crimson Creek Formation which makes up the bulk of the rocks in the Ramsay area.

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Mines Department Geologist, A.V.Brown, who has been carrying out regional mapping in the area, concurs with this classification.

5.1.2 Volcanic Rocks

There appears to be small pods of intrusive basic volcanic rock on the eastern margin of the grid. These basic rocks are dark green with well developed white-colourless feldspar laths, fine-medium grained, equicrystalline, often magnetic and when fresh are very hard. These rocks are described by C.M.S. (Central Mineralogical Services. Appendix 1) as dolerites. They are rarely altered to a chlorite - leucoxene - apatite - goethite assemblage. Very fine cassiterite was possibly identified in one of these highly altered rocks, unfortunately assay results did not substantiate that conclusion, although it did contain anomalous fluorine (2978 ppm), (Appendix 2).

5.1.3 Structure

Owing to the development of thick soil profiles over relatively gentle topography only two outcrops were encountered, neither of which supplied structural information. Therefore the interpreted structure relies on that delineated along the South Huskisson Road some two hundred metres to the north. This information together with the talus distribution over the grid suggests a NNW - SSE striking sedimentary sequence. The sequence appears to be steeply dipping with some tight overturning. There is a suggestion of a minor anticline through the middle of the grid.

5.2 Geophysics

5.2.1 Electromagnetic Surveys (Plans TAS 2 2832-2835)

The 1975 airborne "Input" E.M. (Electromagnetic) survey defined anomaly CAG as being four channel and having a "poor" surficial source.

During January, 1982, a ground follow up survey was completed using a Crone P.E.M. instrument with 100 metre transmitter-receiver separation, 40 metre station spacing, horizontal coil configuration and a time base of 20 ms.

One low amplitude response was detected on the

northernmost line, L5240N. It was suggested that this response was due to a deep conductor. Therefore, L5240N was resurveyed utilising a transmitter-receiver separation of 160 metres and a station spacing of 40 metres for deeper penetration. This also had the effect of lowering the received signal strength to noise ratio. However no anomalous response was observed.

D.B.Trussell, A.A.A.Ltd, Senior Geophysicist, concludes: "The input anomaly must have been due to surficial conductivity".

5.2.2 Ground Magnetic Survey

Results of the ground magnetic survey are presented as a contoured total magnetic field plan of the grid (TAS/2/2572) and as individual line profiles on the composite profiles (TAS/2/2832-2835).

The survey was completed using a Geometrics proton precession magnetometer, with the sensor being back packed. Measurements were taken every 20 metres along the grid lines and where the difference between successive measurements exceeded 50 nT an intermediate reading was taken.

The contour pattern exhibited by the ground magnetic plan (TAS/2/2572) exemplifies the north-south strike of the basement rocks. The somewhat "striped" appearance would also be expected from a steeply dipping sequence.

The erratic nature of the profiles is typical of that encountered over rocks of the Crimson Creek Formation. This has been attributed to relatively high amounts of detrital magnetite in the sediments. There appears to be no significant anomalies that depart from this regional pattern that could be attributed to a buried body.

5.3 Soil Geochemistry

The results of the C - Horizon soil sampling programme carried out at 20 metre intervals along the four grid lines are summarised in plan form (TAS/2/2870 - 2876) and are also plotted on the composite sections (TAS/2/2832 - 2835).

5.3.1 Sn (Plan TAS/2/2875)

Peak Value 15 ppm

Av. Value	7.7 ppm
Anomalous Threshold Value	10.8 ppm
No.of Anomalous Values	2.

Owing to the low value of the anomalous samples it is very unlikely that there is any economic concentration of Sn in the gridded area. Furthermore the anomalous values may have been generated by the reading of the laboratory results. Between 3 and 10 ppm all intermediate readings are taken whereas above 10 ppm readings are rounded to 5 ppm. That is with only a few values greater than 10 ppm the population distribution would be distorted as readings available would be:-

3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, etc.

5.3.2 W (Plan TAS/2/2876)

Peak Value	25 ppm
Av. "	3 ppm (graphically derived)
Anomalous Threshold Value	23.2 ppm
No. of Anomalous Values	1

The one anomalous value of 25 ppm is only just so and because of its solo and isolated nature is considered to be insignificant. It must also be remembered that any anomaly restricted to L4880N is also downgraded by the fact that the southern boundary of E.L.5/63, Part 2, is less than 100 metres to the south.

5.3.3 Cu (Plan TAS/2/2870

Peak Value	167 ppm
Av. "	64 ppm
Anomalous Threshold Value	118 ppm
No. of Anomalous Values	1

The one isolated spot anomalous value of 167 ppm would appear to be insignificant in aiding to define an economic concentration of Cu.

Although not anomalous, enhanced values occurring towards the eastern ends of the lines, usually with coincident Ni and Zn appear to be related to the microgabbro-dolerite mapped in the vicinity.

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5.3.4 Pb (Plan TAS/2/2871)

Peak Value	159 ppm
Av. "	19 ppm
Anomalous Threshold Values -	Pop. 1. 28.7 -113.
	Pop. 2 > 113
No. of Anomalous Values	Pop. 1. 16
	Pop. 2. 1

The distribution of anomalous soil samples in Pb is erratic except for one relatively consistent zone in the northwest portion of the grid. This zone is coincident with a unit of micaceous lithicwacke - sandstone and probable downslope movement of Pb from the same. The anomalous values average 49 ppm which may indicate higher background in lead than the rest of the sediments and are not considered economically significant.

The anomalous samples at the eastern end of L 5000N are probably associated with the intrusive basic volcanic rocks found in the same vicinity.

5.3.5 Zn (Plan TAS/2/2872)

Peak Value	440 ppm	
Av. "	82 ppm	
Anomalous Threshold Values	Pop 1.	108 ppm
	Pop. 2.	372 ppm
No. of Anomalous Values	Pop. 1.	24
	Pop. 2.	1

The Zn results delineate a zone along the eastern margin of the grid. The remainder of the anomalous results (6) are generally erratic.

The eastern Zn zone is coincident with enhanced Cu and Ni values most probably associated with the basic intrusive rocks observed along the eastern margin of the grid.

5.3.6 Ni (Plan TAS/2/2873)

Peak Value	158 ppm
Average Value	46 ppm
Anomalous Threshold Values	Pop. 1 78.0 ppm
	Pop. 2 149.0 ppm
No. of Anomalous Values	Pop. 1 6
	Pop. 2 1

The anomalous samples in Ni are confined to the eastern margin of the grid and are coincident with the anomalous zones delineated by Zn and Cu.

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It would appear that the presence of intrusive basic rocks in the same vicinity adequately explains this anomalous zone in Cu, Ni, Zn and possibly Pb.

5.3.7 As (Plan TAS/2/2874)

Peak Value	21 ppm
Average Value	5 ppm
Anomalous Threshold Value	15 ppm
No. of anomalous Value	9

The anomalous As sample distribution is once again erratic and generally not coincident or related to the Sn results. The smaller number of anomalous samples precludes any identification of an anomalous economically significant dispersion pattern.

5.4 Rock Geochemistry (Appendix 2)

Three rock samples were collected for geochemical assay. A limonitic veined siltstone from adjacent to one of the basic intrusive bodies contained enhanced Cu and Zn, probably scavenged by the Fe and Mn derived from the intrusive.

The rock sample (T 9982) in which C.M.S. tentatively identified, cassiterite was also analysed for various elements including Sn. It contained 10 ppm Sn which is not enhanced but did contain 2978 ppm F which is enhanced. The high F is probably associated with the apatite present.

6. GRID CAI

6.1 Geology

The results of geological investigations are presented as a detailed geological plan (TAS/2/2441) and summarised in a geological interpretation plan (TAS/2/2442). The interpreted geological data is also presented on the composite profiles (Plans TAS/2/2836 - 2841).
Outcrop over the grid was extremely poor.

6.1.1 Sedimentary Rocks

Sedimentary lithologies constitute at least 95% of the gridded area. These have been divided into two units. The first and most widespread

is an interbedded tuffaceous sandstone-lithicwacke with siltstone - mudstone unit. These rocks are usually weathered, brown, massive, poorly sorted and soft.

The second, recognised sedimentary unit, is an interbedded predominantly lithicwacke with siltstone - mudstone unit. It is very similar to the tuffaceous unit, but lacks the obvious tuff component and was probably laid down in a period of volcanic quiescence.

Thin section work carried out by C.M.S. (Appendix 1) indicates that these sediments are of the Crimson Creek Formation, essential components being intermediate volcanic lithic grains, plagioclase, angular quartz and magnetite.

6.1.2 Volcanic Rocks

The volcanic lithologies outlined over the grid area have been divided into two simple units.

The first is an extrusive intermediate - basic volcanic unit. The rocks are now composed of chlorite, leucoxene, quartz and magnetite. They sometimes show flow banding and contain amygdales with chlorite - carbonate cores. The composition varies between andesitic and basaltic. Red - brown iron oxide staining is common in more weathered float.

The second unit appears to be intrusive rather than extrusive, however, the two are probably genetically related. This unit could be subdivided further into basalts - dolerites - microgabbros and lamprophyres. The second group is common throughout the Crimson Creek Formation whereas the first has only been described at CAI. The intrusive phases contain chlorite, leucoxene, oxidised chlorite and altered phenocrysts of augite and hornblende (Appendix 1).

Metamorphism and Alteration

The northwest portion of the grid as outlined on the geological interpretation plan (TAS/2/2442) lies within the contact metamorphic aureole of the Meredith Granite. Inside the aureole the rocks, when fresh, are often hornfelsed and metasomatised. Alteration or introduced phases include chlorite, leucoxene, quartz, actinolite,

pyrrhotite and pyrite.

It is apparent that these rocks, because of their geographical relationship to the granite, have been in a zone of flux with respect to deuteric and possibly hydrothermal fluids.

The only other alteration noted was fine quartz veining with limited attendant limonite developement in the sedimentary float on grid line 5000N between 5250E and 5270E. For assay data refer to the section on rock geochemistry.

6.1.4 Structure

The interpreted underlying structure is based almost completely on excellent control along the South Huskisson Road which runs through the western portion of the grid. To augment this information there are the magnetics, electromagnetics, topography and two outcrops in the southeastern corner.

The dip of the strata appear to be uniformly steep, however, there is considerable fluctutaion in the strike from east-west to north-south. Generally, however, the regional strike is NNW - SSE which compares favourably with that delineated in other Ramsay areas.

There are probably more faults in the gridded area than indicated, however for simplicity's sake, only the main ones are shown that are demanded by major discrepancies in the magnetics, etc. The E.M. conductor (see Geophysics) appears to be aligned with the regional strike and from its form appears to indicate that it is plunging to the south.

6.2 GEOPHYSICS

6.2.1 Electromagnetic Surveys

The line profile results of the 1982 electromagnetic survey are presented on the composite profiles (Plans TAS/2/2836 - 2841).

The main survey was carried out in January, 1982, using a Crone, Pulse Electromagnetic, instrument with a transmitter receiver separation of 100 metres, station spacing of 40 metres, horizontal

coil configuration and 20 m.sec. time base. The one main response may be summarised as follows:-

Line	Position	Dip	Dip Direction	Conduct.	Depth (m)
4760N	No Conduct.	-	-	-	-
4880N	5070E	45°-60°	West	good	40-50
5000N	5020E	"	"	"	40-50
5120N	4990E	"	"	"	40-50
5240N	4970E	> 70°	East	V.good	> 50
5360N	4980E	"	"	"	"

To further define the possible conductor, Line 5000N was surveyed using a Crone "Shootback" C.E.M. instrument with a transmitter - receiver separation of 100 metres and station spacing of 20 metres. This succeeded in accurately defining the depth to the top of the conductor as being 40 metres. As this is a substantial depth it is doubtful whether the response can be simply ascribed to conductive shales. There were no shales mapped in the central portion of the grid.

D.B.Trussell, A.A.A.Ltd Senior Geophysicist, could find no correlation between the magnetic data and the E.M. anomaly. However he recommends a drill hole inclined at 45° eastward to intersect 5000N, 5020E at a depth of 60 metres (Appendix 3). The strike of the conductor, however, is conformable with the geology and magnetics and both the E.M. and magnetics suggest a basement break between lines 5120N and 5240.

The results of Crone E.M. survey carried out in 1976 can be summarised as follows:-

Line	Position	Frequency	Definition	Conductivity	Approx.Mod. Co-ordinates
4880N	5000E	Medium	poor	weak	4930N/5130E
	5000E	High	very poor	"	"
5000N	4920E	Medium	poor	moderate	5050N/5030E
	4920E	High	moderate	"	"
5120N	4900E	Medium	"	weak	5160N/4990E
	4900E	High	good	moderate	"

When the position of the 1976 E.M. conductor is plotted out on the modern CAI grid, there is excellent correlation on old lines 5000N & 5120N but poor agreement where the conductor is poorly defined on old line 4880N.

Although the old CAI grid is positioned on points derived from Ott Creek Grid flags the geophysical agreement is very satisfactory.

6.2.2 Magnetics

The results of the ground magnetic survey are presented as a contoured total magnetic field plan, TAS/2/2449 and on the composite line profiles, TAS/2/2836-2841.

The survey was completed using a back packed Geometrics proton precession magnetometer. Measurements of the total magnetic field were taken evey 20 metres and if the difference between consecutive readings exceeded 50 nT an intermediate reading was taken.

The results were corrected for diurnal variation and plotted on a plan of the grid. D.B.Trussell, A.A.A.Ltd, Senior Geophysicist, contoured the resulting values. This contoured plan, TAS/2/2449, exhibits a strong NNW - SSE trend similar to that displayed by the geology. Superimposed on this trend are sharp breaks which probably indicate basement faults.

The sharp irregular profiles are typical of those over Crimson Creek Formation sediments owing to the variable amounts of magnetite present, often more than that contained in the volcanic rocks.

As previously stated from D.B.Trussell, "No correlation is evident between the magnetic data and the E.M. Anomaly".

6.3 Soil Geochemistry

C - horizon soil samples were collected at 20 metre intervals along all grid lines. The samples were analysed for Cu, As, Ni, Zn, and Pb by A.A.S and Sn and W by X.R.F. The results were statistically treated to identify anomalous threshold values. The anomalous results were then contoured on plan to delineate the position of the anomalous populations. These plans are presented as TAS/2/2878 - TAS/2/2882. The results are also presented on the composite profiles. (TAS/2/2836 - 2841).

6.3.1 Sn (Plan TAS/2/2882)

Peak Value	140 ppm
Average Value	14 ppm
Anomalous Thredhold Values	Pop. 1 12.8 ppm
	Pop. 2 31.1 ppm
No. of Anomalous Samples	Pop. 1 42
	Pop. 2 21

Two lines L 5000N and L 4880N of the old burnt out CAI grid were humus sampled for Sn some time after the main sampling programme. Those XRF results can be summarised as follows:-

No. of samples	57
Average	4 ppm
Anomalous Threshold Value	15 ppm
No. of Anomalous Samples	2

All the anomalous samples are compatible with the area delineated by the 1982 results. This area encompassing the north west segment of the grid is bounded on the south and west by faults indicated on geological and geophysical grounds. The anomaly is open to the north, although diminished.

The centre of the anomaly is confined within the metamorphic aureole of the Meredith Granite inside the fault block. It is possible that the fluids associated with the metasomatic alteration and hornfelsing which have introduced quartz, pyrite and pyrrhotite were slightly enhanced in Sn and As. This enrichment giving resultant background soil values of approximately 50 ppm. Further concentration specifically the relatively very high value of 140 ppm, is due to topographic concentration, which also accounts for the anomaly's continuation onto L 5120 and L 5000N and the concentration at the eastern end of L 5240.

The source of the anomalous Sn may be further defined to be associated with the volcanic rocks within the delineated fault block.

6.3.2 As (Plan TAS/2/2881)

Peak Value	470 ppm
Average Value	22 ppm
Anomalous Threshold Values	Pop. 1 22.8 ppm

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Anomalous Threshold Values	Pop.	2	39.0 ppm
	"	3	85.0 "
	"	4	118.0 "
No. of Anomalous Samples	Pop.	1	15
	"	2	23
	"	3	4
	"	4	1

The samples taken in 1976 were not analysed for arsenic. The large area anomalous in As shows remarkable agreement with that outlined by anomalous Sn samples. Similar source explanations apply.

6.3.3 W (Plan TAS/2/2448)

Peak Value	10 ppm
Average Value	B.L.D.
Anomalous Threshold Value	9 ppm
No. of Anomalous Samples	2

The samples taken in 1976 were not analysed for tungsten. The two anomalous W results are spotty and are considered insignificant and contouring superflous.

6.3.4 Pb (Plan TAS/2/2878)

Peak Value			168 ppm
Average Value			29 ppm
Anomalous Threshold Value	Pop.	1	40.6 ppm
	Pop.	2	139 ppm
No. of Anomalous Samples	Pop.	1	15
	Pop.	2	3

The humus samples collected over the old CAI grid were analysed for Pb and the results can be summarised as follows:-

No. of samples			99
Peak Value			210 ppm
Average			58 "
m + 2σ			122 "
Anomalous Threshold Values	Pop.	1	55 "
	Pop.	2	100 "
No. of Anomalous Values	Pop.	1	26
	Pop.	2	6

There is an excellent correlation between the 1976 anomalous population two and the 1982 anomalous populations.

The trend of the anomalies is strongly north-

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south which is in agreement with the geological and geophysical trends. Therefore the source is probably formational. Further, it is coincident with the position of the E.M. conductor, the only element which is consistently comformable. The only departure is on the most northerly line, however, the conductor is interpreted to be deep there, possibly down-faulted and hence the geochemical response may be masked.

The anomaly appears to be geologically controlled and may be due to Pb enhancement of a unit within the sediments indistinguishable by eye. Owing to the low anomalous values it is doubtful whether this unit contains economic concentration of lead. However, because of the coincidence of the anomaly with the E.M.conductor it cannot be totally ignored.

6.3.5 Zn (Plan TAS/2/2879)

Peak Value		250	ppm
Average Value		98	"
Anomalous Threshold	Pop. 1	235	"
	Pop. 2	132	"
No. of Anomalous Samples	Pop. 1	3	
	" 2	28	

The humus samples collected over the old CAI grid were analysed for Zn and the results can be summarised as follows:-

No. of samples	99	
Peak Value	530	ppm
Average Value	85	ppm
$m + 2\sigma$	195	"
Anomalous Threshold Value	90	"
No. of Anomalous Samples	31	

The coincidence of the anomalous areas in Zn between the 1976 and 1982 results is good and would be excellent if the 1976 grid was moved 60 metres to the west.

It is apparent that the WNW - ESE fault which confined the anomalous Sn areas to the north confines the anomalous Zn areas to the south. Within the southern block the smaller isolated anomalous areas conform reasonably well with known areas of volcanic rocks which can be expected to contain higher background values of Zn.

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6.3.5 Zn (Plan TAS/2/2879)

However the larger anomaly, more or less in the centre of grid approximately coincident with the anomalous Pb area, does not lend itself to a ready explanation on geological grounds. By screening out topographical concentration effects it appears that there could be a coincident Zn, Pb, E.M. anomaly in the region of 5050N - 5000E. It is evident from the geological plans that although no volcanic rocks were described in that area it is on strike from an intrusive body less than 100 metres to the north.

6.3.6 Ni (Plan TAS/2/2880)

Peak Value	156 ppm
Average Value	85 "
Anomalous Threshold Value	N/A
No. of Anomalous samples	"

The culmulative frequency graph of the statistically log treated Ni results does show the probable presence of two populations, the dividing point between these two heavily overlapping populations turns out to be the average value, 85 ppm.

The values are most probably related to the basic volcanic rocks especially the intrusives and some of the spot highs can thus be readily explained. However, some of the sediments have a high proportion of basic-intermediate lithic material which together with the strong topographic dispersion distortion blurs the definition of significant Ni anomalies.

The 1976 humus samples were not analysed for Ni.

6.3.7 Cu (Plan TAS/2/2443)

Peak Value	118 ppm
Average Value	65 "
Anomalous Threshold	N/A
No. of Anomalous Samples	N/A

The humus samples collected over the old CAI grid were analysed for Cu and the results can be summarised as follows:-

No. of Samples	99
Peak Value	160 ppm

Average Value	74 ppm
m + 2 σ	116 ppm
Anomalous Threshold Value	108 "
No. of Anomalous Values	4

The 1982 results failed to define any anomalously high Cu samples and hence were not contoured. However, the anomalous 1976 results which fall within the present CAI grid area are coincident with the two highest 1982 results 113 and 118 ppm. This zone, thus defined occuring on the eastern end of L 5120N, appears to be due to a basic intrusive body outlined by geological mapping.

Although the auger samples contained no anomalously high results, an anomalously low population was produced. The bulk of these samples were taken from the north east corner. This is probably a topographically produced anomaly as this area is unique on the grid, being relatively flat.

6.3.8 Ba

The 1976 humus samples were analysed for their Barium content. The results can be summarised as follows:-

No. of samples		99
Peak Value		0.15 %
Average Value		108 ppm
m + 2 σ		514
Anomalous Threshold Values	Pop 1	82 ppm
	Pop.2	190 "
	Pop.3	300 "
No. of Anomalous Values	Pop.1	16
	Pop.2	4
	Pop.3	4

The majority of the anomalous areas that lie within the modern CAI grid appear to be related to volcanic rocks outlined by geological mapping. However it is unusual for intermediate-basic volcanic rocks to have a higher background than sediments.

6.4 Rock Geochemistry

The two rock samples 5000N/5270E &5260E of the limonitic quartz veined siltstone were submitted for assay.

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The results are tabulated in Appendix 2. There appears to be no anomalous concentrations of any elements.

7. DISCUSSION AND RECOMMENDATIONS

7.1 Grid CAG

The geological information and geophysical data obtained over Grid CAG do not outline any anomalous situations that may indicate the presence of economic mineralisation. The failure to reproduce on the ground, the Input airbourne E.M. anomaly most probably implies that the anomaly was due to surficial conductivity. There is no doubt that the grid was positioned correctly as the grid lies adjacent to a major right-angle bend in the Huskisson River, providing excellent geographical control.

The possible presence of a very weathered granitoid to the north with associated highly sericitic sedimentary units is significant in a regional geological compilation and maybe important in deciding future areas of priority. It does not appear to be significant with respect to grid CAG.

The low grade nature of the few geochemical anomalies together with their distribution strongly suggests that they are correlateable with different background levels of the various rock types present with minor fluctuations associated with the basic intrusive bodies.

From the accrued data it appears that there is little of economic significance at grid CAG, therefore no further work is recommended.

7.2 Grid CAI

Geological investigations have not outlined any indications of mineralisation but have succeeded in relating the majority of anomalous geochemical responses to different lithologies and alteration assemblages.

Geophysical results from P.E.M. and C.E.M. surveys indicate that the grid has been correctly located as both surveys indicate a conductor in agreement with the airbourne Input E.M. anomaly.

The conductor is well defined and A.A.A.Ltd's Senior Geophysicist, D.B.Trussell, has recommended one diamond drill hole on the quality of the response.

The geochemical responses over the grid are generally sporadic and most often correlate with changes in lithology. The notable exception to this is the coincident Sn - As anomaly in the northwest portion of the grid. It has been postulated that this area is enhanced in Sn and As derived from the deuteric fluids associated with the metasomatic alteration of the rocks. As this is an unproved association a limited rock sampling programme is recommended.

One other geochemical response that remains partly unexplained is a linear Pb anomaly that is partly coincident with the P.E.M. anomaly. This Pb response is the only geochemical anomaly that appears to be associated with the E.M. anomaly. However, as the source on L 5000N is approximately 40 metres deep and probably deeper on the two northern lines it is possible that leakage maybe minimal. However, such a monoelemental anomaly is unusual if it is related to, mineralisation.

To follow up the Sn - As anomaly which is open to the north and the Pb anomaly, limited soil sampling and resampling respectively is recommended. Owing to the fact that the Ramsay Road lies close to the northern end of the grid, it would facilitate sampling for an extension of the Sn - As anomaly. This combined with the limited rock sampling should adequately indicate whether further intensive follow up work is warranted.

Resampling of the relevant section of L 5000N will attest to the reality of the Pb anomaly. However, even if the Pb anomaly stands, the E.M. is still unsubstantiated by geology, magnetics or any other element.

It is felt that a drill hole proposal would be premature at this stage as similar unsubstantiated E.M. anomalies have been drilled elsewhere on the tenement with little success. Until those drill holes are more understood diamond drilling is not recommended.

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8. SUMMARY

8.1 CAG

1. No further work.

8.2 CAI

2. Rock sampling of metasomatised and unmetasomatised sediments to test for enhanced Sn and As.
   (30 samples)

3. Soil sampling of 700 metres of the Ramsay Road to test the extension of the Sn - As anomaly. (40 samples)

4. Soil resampling over 200 metres of L 5000N to substantiate the Pb anomaly.
   (11 samples).

N.P.GREEN
June, 1982.

APPENDIX 1

REPORT CMS 82/1/4

Nine rock samples were received for petrological examination; thin-sections were prepared and are briefly described in the accompanying table.

Summary

Six of the rocks are igneous, and the other two are tuffs.

The igneous rocks are all more or less severely altered; in some, diagnostic textures and other features are well-preserved, enabling fairly precise classification; others, however, are almost unrecognisable, and interpretations are tentative. They comprise a series of basic rocks and associated/related ?lamprophyres. As well as showing the usual deuteric alteration, some rocks are also metasomatised. T 9982 carries a minor amount of ultrafine cassiterite as aggregates of single grains each < 10 μ in size. Assay verification is needed on this rock.

The igneous rocks may be broadly correlatable with the mafic-ultramafic complex at Serpentine Hill, and with the intersections in GDK 4 (report CMS 82/1/1).

The two tuffs are metasomatised, and are believed to represent the Crimson Creek formation; the source rocks were intermediate volcanics.

H.W. Fander, M. Sc.

Central Mineralogical Services

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
T 9980 CAG (014) (T.S. 40458) T/L 5400E/5150N	Dolerite. Small random/subradiating laths of fresh labradorite, with microgranular augite, interstitial glass and dendritic magnetite.	Random arrangement; verging on fine-grained. No flow-features.	Scattered altered ?olivine microphenocrysts. Younger pyrite patches.	Fine-grained basic intrusive; pyrite was introduced at a later stage, postdating olivine alteration.
T 9982 CAG (015) T/L 5400E/4980N	Mineralised, Chloritised Rock. Consists dominantly of massive ultrafine chlorite, with leucoxene throughout, and apatite. Patches of ultrafine cassiterite. Limonitised ?hornblende phenocrysts.	Poorly preserved ferromagnesian textures and breccia structures.	Spongy goethite after carbonate. Skeletal altered magnetite.	Severe alteration precludes exact identification, but believed to be altered mafic (?lamprophyric) type. Cassiterite < 10 μ.
T 9983 CAI (004) T/L 4819 N	Altered ?Basalt. Fine semi-opaque pale chlorite and very abundant leucoxene; chlorite-filled amygdales with leached carbonate cores.	Fine flow-banding; relict ?glassy textures; no phenocrysts.	Quartz veinlets. Leucoxenised magnetite crystals.	Thought to have been a flow-banded amygdaloidal basalt or similar igneous rock.
T 9984 CAI (005) T/L 4795 N	Altered ?Lamprophyre. Small random flakes of degraded biotite-vermiculite; interstitial fine quartz, leucoxene, oxidised chlorite; silicified phenocrysts (?augite).	Random fabric; biotite forms polygonal lattice. Fine-grained, porphyritic.	Altered ?hornblende phenocrysts. Apatite. Leucoxenised magnetite.	Lamprophyric nature inferred from interpreted mineral assemblage and fabric; minor intrusive, intermediate to basic.
T 9985 CAI (010) T/L 4925 N	Altered ?Basalt. Now composed of pale chlorite, microcrystalline quartz, abundant ultrafine leucoxene; limonite networks.	Vague preferred orientation; very poorly preserved textures, structures.	Irregular voids, possibly vesicles. Fine oxide opaques.	Believed to be igneous, based partly on negative evidence; inferred basic composition.
T 9987 CAI (018) 5120N/5276E	Altered Basalt. Random small laths of actinolite, silicified feldspar and carbonate pseudomorphs; interstitial pale chlorite (isotropic).	Fine-grained, well-preserved textures and fabric, typically basaltic.	Broad zones of felted actinolite needles. Altered ?augite phenocrysts.	Good relict features are diagnostic. Rock is altered, metasomatised, but not sheared.
T 9988 CAI (024) 5360N/4890E	Altered Andesite. Mainly subparallel felted needles of andesine, many semi-opaque patches of zoisite-epidote-actinolite and siderite.	Fine-grained, with preferred orientation; possibly pyroclastic textures.	Pervasive pyrrhotite-pyrite patches throughout. Accessory apatite.	Could have been a welded tuff rather than lava, of intermediate composition extensively metasomatised.
T 9989 CAI (026) 5360N/4949E	Metasomatised Tuff. Small altered fine-grained volcanic grains, plagioclase fragments, sub-angular quartz; abundant fine replacive actinolite throughout.	Relict clastic textures weak bedding and fine banding.	Fine magnetite, pyrrhotite accompanies actinolite. Abundant leucoxene.	Very probably Crimson Creek formation with later metasomatism. Andesitic composition.
T 9990 CAI (030) (T.S. 40466) 5240N/5063E	Metasomatised Crystal Tuff. Small bedded laths of plagioclase, altered vitric fragments, angular quartz, with pervasive fine actinolite, carbonate and chlorite.	Fine/medium-grained, bedded, with relict clastic textures preserved.	Fine pyrrhotite and magnetite. A few larger lithic volcanic grains.	Similar to T 9989, with clearer evidence of pyroclastic origin; intermediate igneous source.

APPENDIX 2

Location		Sn	Cu	Pb	Zn	F	Li	As	Ag	Mo	Bi	W	Description.	SAMPLE NUMBER	
CAG															
5000 N	5395 E	10	25	5	160	532		6	X			X	Mag, hd, gy-wh. m xtaline, qb	T 9979	CAG 009
5400 E	4986 N	8	100	15	750	408		28	X			X	gy, fine, lim. veined pseudo gossan-ss.	T 9981	014
5400 E	4980 N	10	70	10	225	2978		4	X			X	Altered mafic, cht-leucoxene-Apatite-hbld-clite-Mt-Cs?	T 9982	015
CAI															CAI
5000 N	5270 E	15	55	X	315	437		6	X			X	wthd, f, hd, ss-mt ± co. q.v. ± lim. selvage	T 9991	014
5000 N	5260 E	X	90	20	285	285		7	X			X	v. wthd. of above	T 9992	015

COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR CAG & CAI

ASSAYED BY Analabs DATE 16/3/82 PAGE 1 OF 1

APPENDIX 3

037

638038

AUSTRALIAN ANGLO AMERICAN LIMITED
A member of the Anglo American Corporation group

581 Little Collins Street.
Melbourne, Victoria, 3000
Cables: "Anmercosa" Melbourne
Telex: 30728
Telephone: 62 2141

15th March 1982

Mr G Pigott
Comstaff Pty Ltd
Mt Bischoff Road
WARATAH TAS

Dear Geof,

RE: RAMSAY CAI

The CEM anomaly on 5000N at CAI is due to a source at 40m depth. This can be seen by comparing the data with model results. (See attached profiles). The PEM more clearly defines the conductor, It occurs on

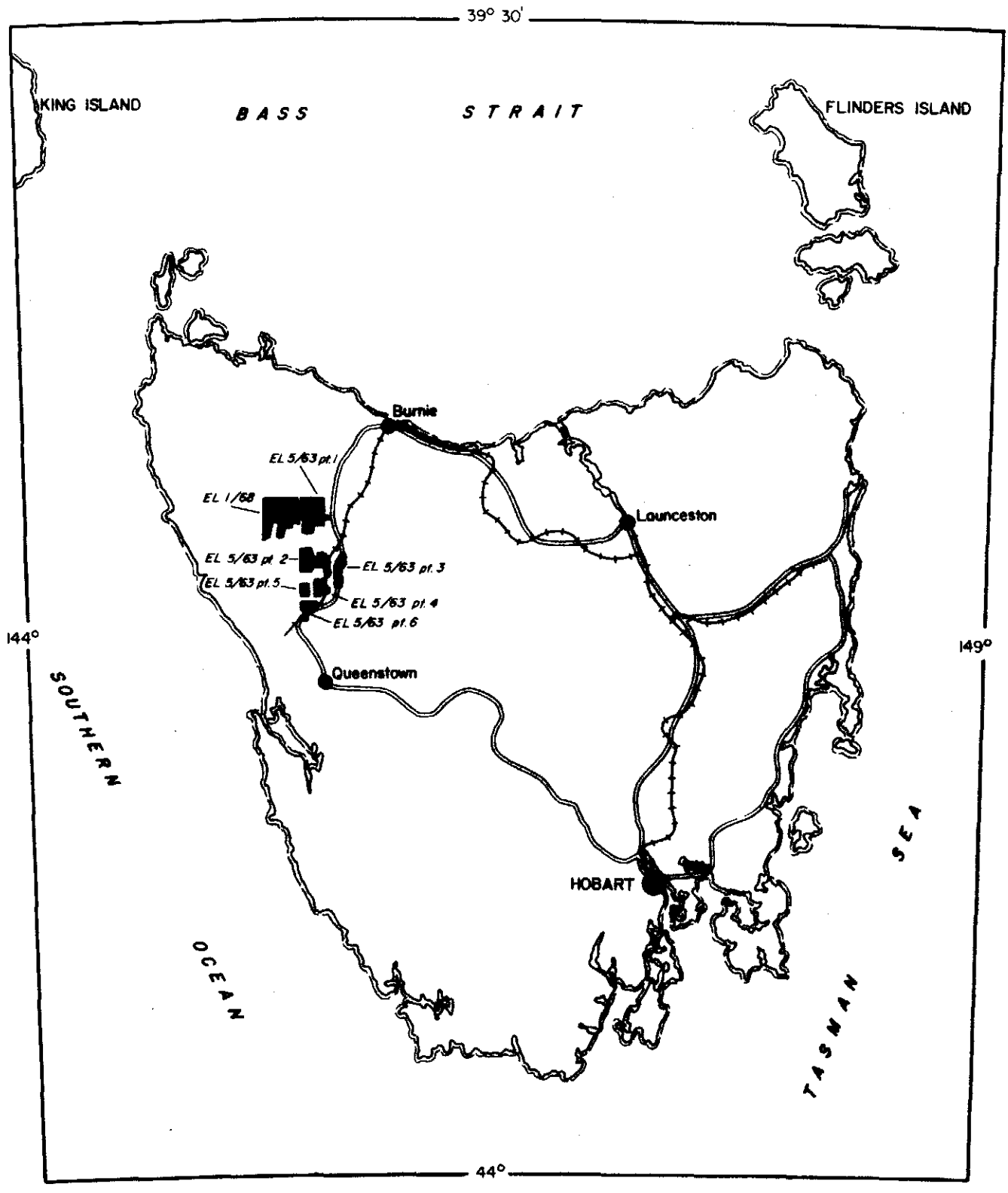
4880N at 5070E
5000N at 5020E
5120N at 4990E
5240N at 4970E
5360N at 4980E

There is no response on 4760N. The anomalies on 4880N, 5000N and 5120N are all similar. They indicate a west dipping (45°-60°) source. The depth of burial is 40-50m. The source has good conductivity. A hole drilled from the west inclined at 45 degrees to intersect 5020E, 5000N at a depth of 60m is recommended.

The character of the anomaly on 5240N and 5360N differs from that on the lines to the south. On 5240N and 5360N a steep easterly dip is indicated. The source may be deeper and more conductive on these two lines.

Sincerely,

D B Trussell
Senior Geophysicist
for B McBride
Chief Divisional Geologist
Research & Technical Services Division



Major roads
Major railways
Burnie Major towns
Comstaff lease areas

5 cm

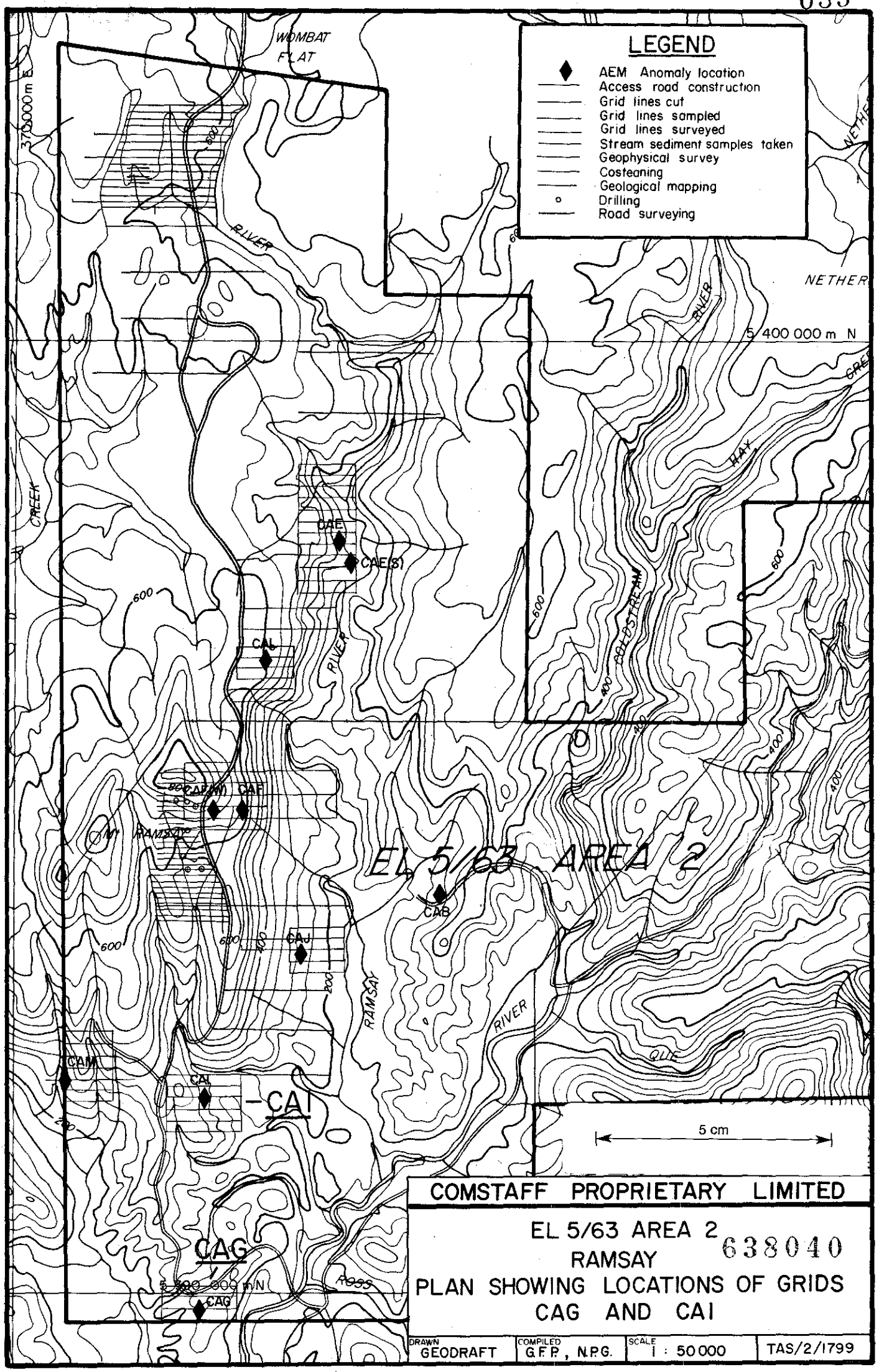
638039

83-1908

COMSTAFF PROPRIETARY LIMITED

LOCATION OF COMSTAFF LEASES IN TASMANIA

DRAWN	COMPILED	SCALE	
GEODRAFT 7/78		1 : 2 500 000	TAS/2/1986



COMSTAFF PROPRIETARY LIMITED

EL 5/63 AREA 2 638040

RAMSAY

PLAN SHOWING LOCATIONS OF GRIDS CAG AND CAI

DRAWN	COMPILED	SCALE	
GEODRAFT	G.F.P., N.P.G.	1 : 50 000	TAS/2/1799

5 396 000 m N

EL 5/63 AREA 2

BOUNDARY OF

MT. RAMSAY

RAMSAY CREEK

RAMSAY ROAD

GRID CAK

GRID CAJ

GRID CAM

SLIPPERY ROCK CREEK

SMITH ROAD

HATFIELD CREEK

HUSKISSON ROAD

HUSKISSON CREEK

WEBBS CREEK

ROSS CREEK

RIVER

QUE RIVER

L 5360 N

L 5240 N

L 5120 N

L 5000 N

L 4880 N

L 4760 N

L 4640 N

369 000 m E

5 391 000 m N

377 000 m E

TAS/2/2906	TAS/2/2907
TAS/2/2908	TAS/2/2909
TAS/2/2910	TAS/2/2911
TAS/2/2912	TAS/2/2913

N

83 - 1908

5 cm

COMSTAFF PROPRIETARY LIMITED

EL 5/63 AREA 2
RAMSAY

638041

BASE PLAN

001

COMPILED	GEODRAFT
DRAWN: GEODRAFT	DATE: 18/6/82
AMENDED	
SCALE	1 : 10 000
PLAN No	TAS/2/2910

5 391 000 m N

BOUNDARY OF EL 5/63 AREA 2

SOUTH ROAD

HUSKISSON RIVER

GRID CAG

L 5240 N

L 5120 N

L 5000 N

L 4880 N

PULP ROAD

ROSS ROAD

ROAD

ROAD

ROAD

PULP ROAD

CREEK

CREEK

CREEK

CREEK

'SILVER FALLS'

RIVER

ALFRED

WEBBS

HUSKISSON

369 000 m E

377 000 m E

5 386 000 m N

TAS/2/2906	TAS/2/2907
TAS/2/2908	TAS/2/2909
TAS/2/2910	TAS/2/2911
TAS/2/2912	TAS/2/2913

N

83-1908

5 cm

COMSTAFF PROPRIETARY LIMITED

EL 5/63 AREA 2

RAMSAY 638042

BASE PLAN 002

COMPILED	GEODRAFT
DRAWN	GEODRAFT
DATE	18/6/82
AMENDED	
SCALE	1 : 10 000
PLAN No.	TAS/2/2912

33/172

174

34/110

108

FOR LEGEND SEE PLAN TAS/2/2027

TAS/2/2026

TAS/2/2027

TAS/2/2028

TN

SHEET INDEX

83-1908

5 cm

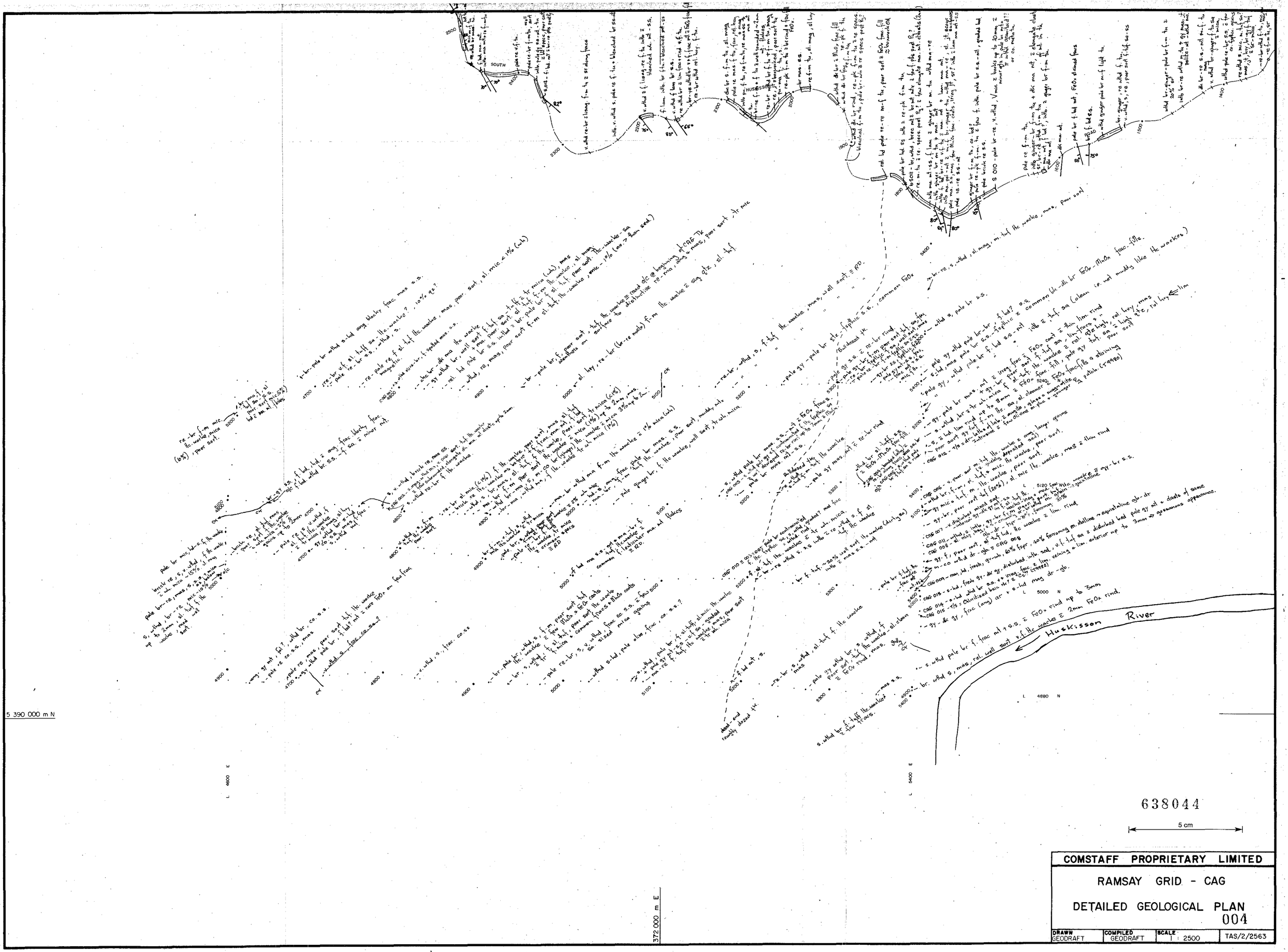
COMSTAFF PROPRIETARY LIMITED

RAMSAY AREA - CAA

PHOTOGEOLOGICAL INTERPRETATION

638043 003

COMPILED	M.C.H.
DRAWN	GEODRAFT
DATE	4/2/80
AMENDED	
SCALE	1 : 10 000
PLAN No.	TAS/2/2028

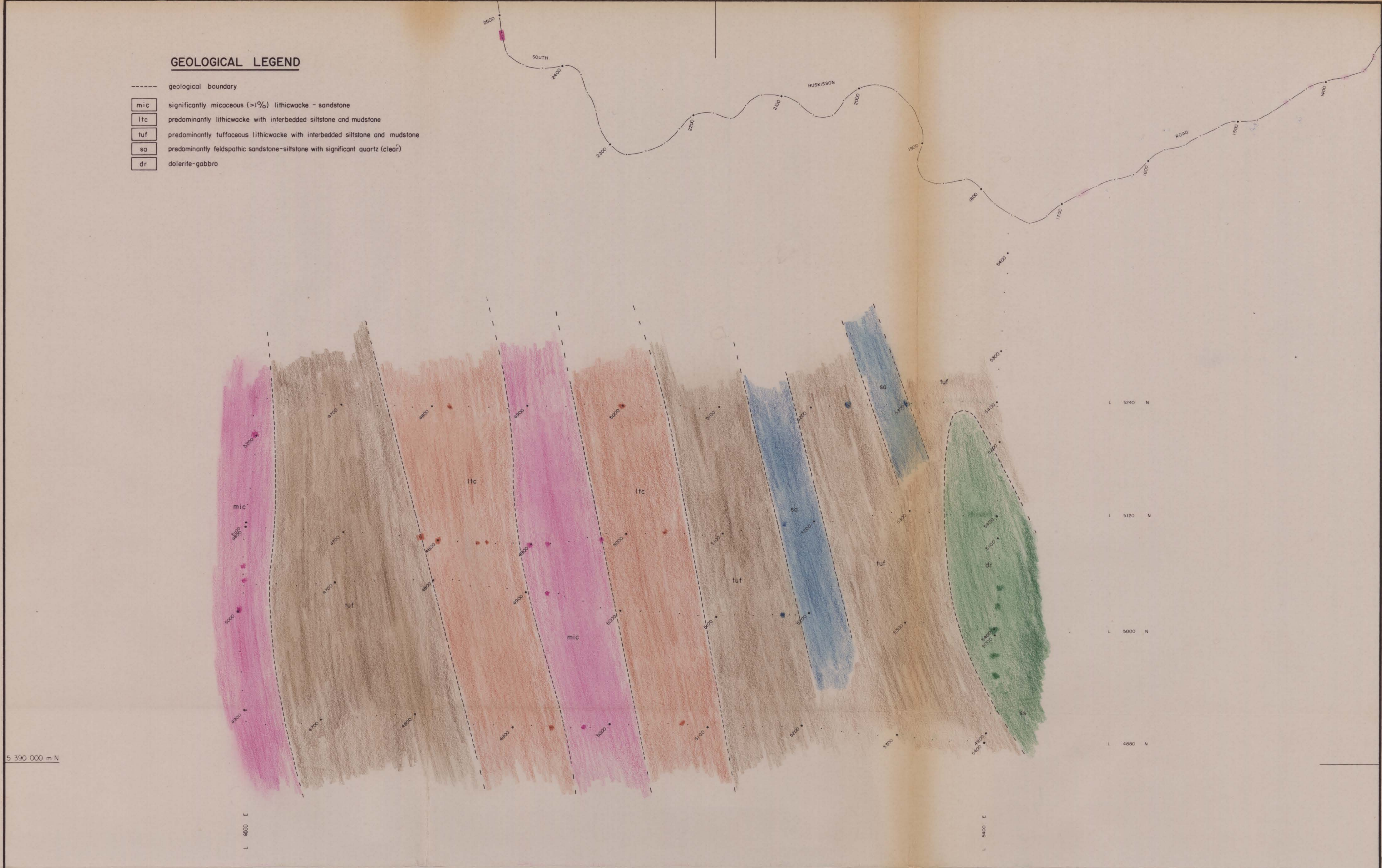


638044

COMSTAFF PROPRIETARY LIMITED			
RAMSAY GRID - CAG			
DETAILED GEOLOGICAL PLAN 004			
DRAWN GEODRAFT	COMPILED GEODRAFT	SCALE 1 : 2500	TAS/2/2563

GEOLOGICAL LEGEND

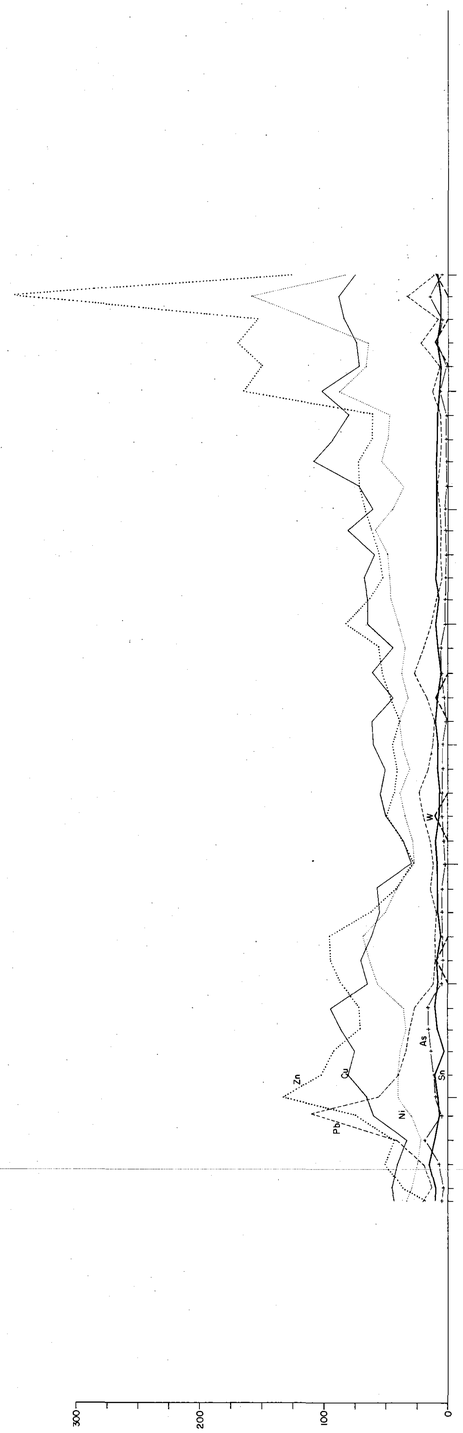
------	geological boundary
mic	significantly micaceous (>1%) lithicwacke - sandstone
ltc	predominantly lithicwacke with interbedded siltstone and mudstone
tuf	predominantly tuffaceous lithicwacke with interbedded siltstone and mudstone
sa	predominantly feldspathic sandstone-siltstone with significant quartz (clear)
dr	dolerite-gabbro



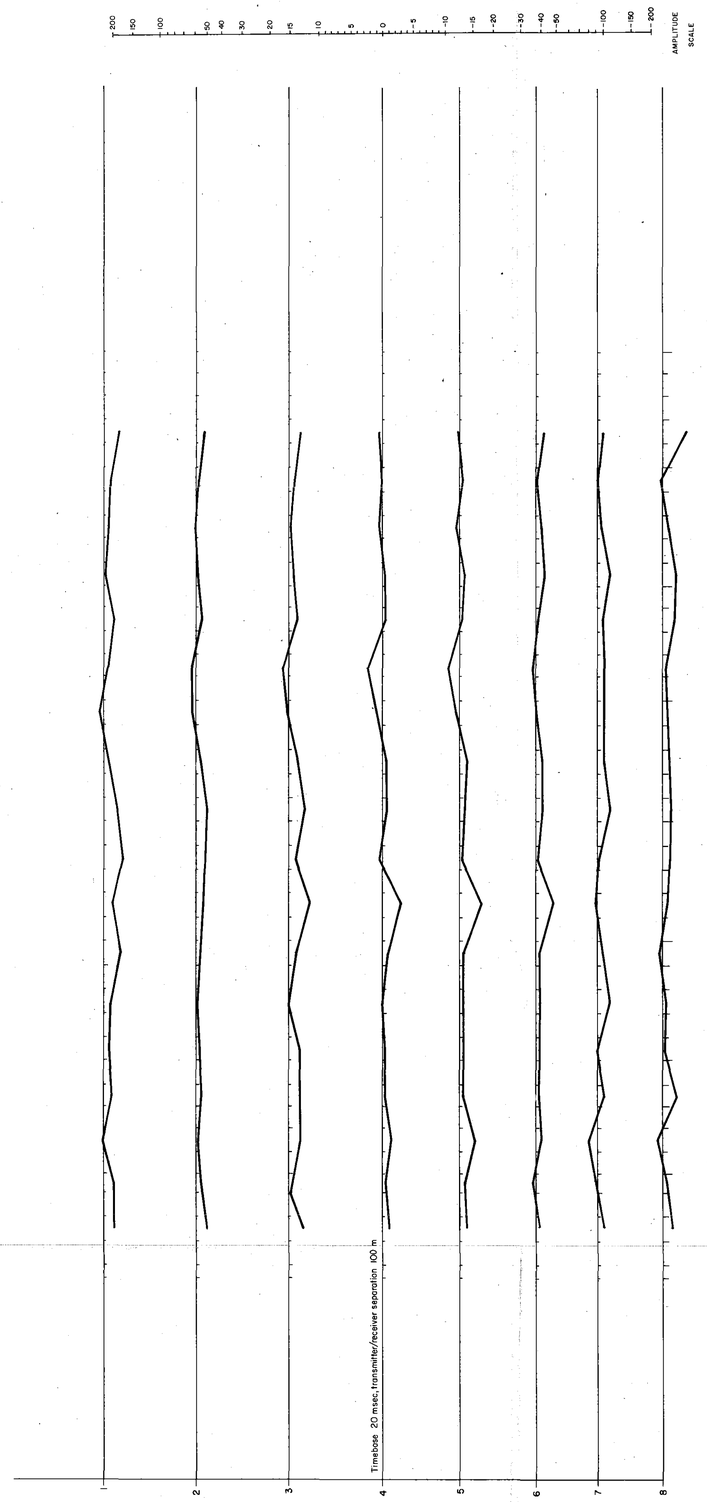
83-1908

638045

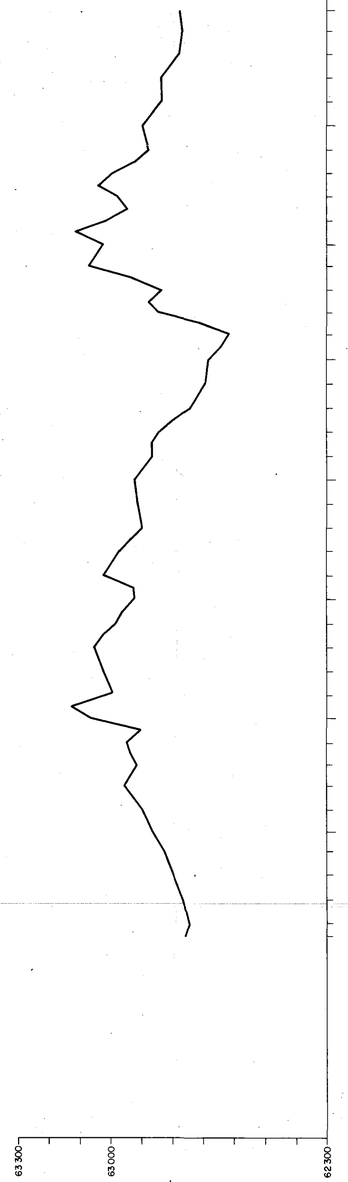
COMSTAFF PROPRIETARY LIMITED			
RAMSAY GRID - CAG			
GEOLOGICAL INTERPRETATION PLAN 005			
DRAWN GEODRAFT 7/82	COMPILED N.P.G.	SCALE 1 : 2500	TAS/2/2564



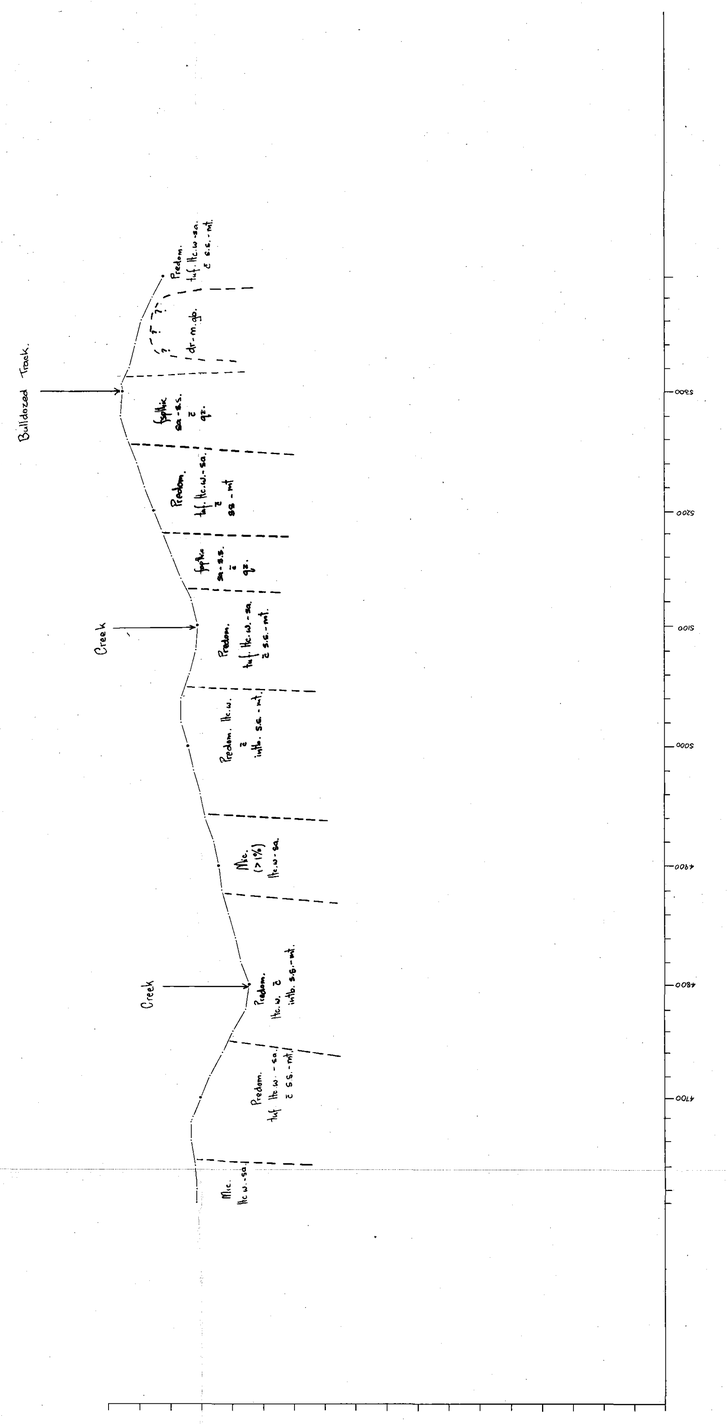
GEOCHEMISTRY ppm



PULSE ELECTROMAGNETICS



GROUND MAGNETICS nT



TOPOGRAPHY & GEOLOGY

638046

COMSTAFF PROPRIETARY LIMITED

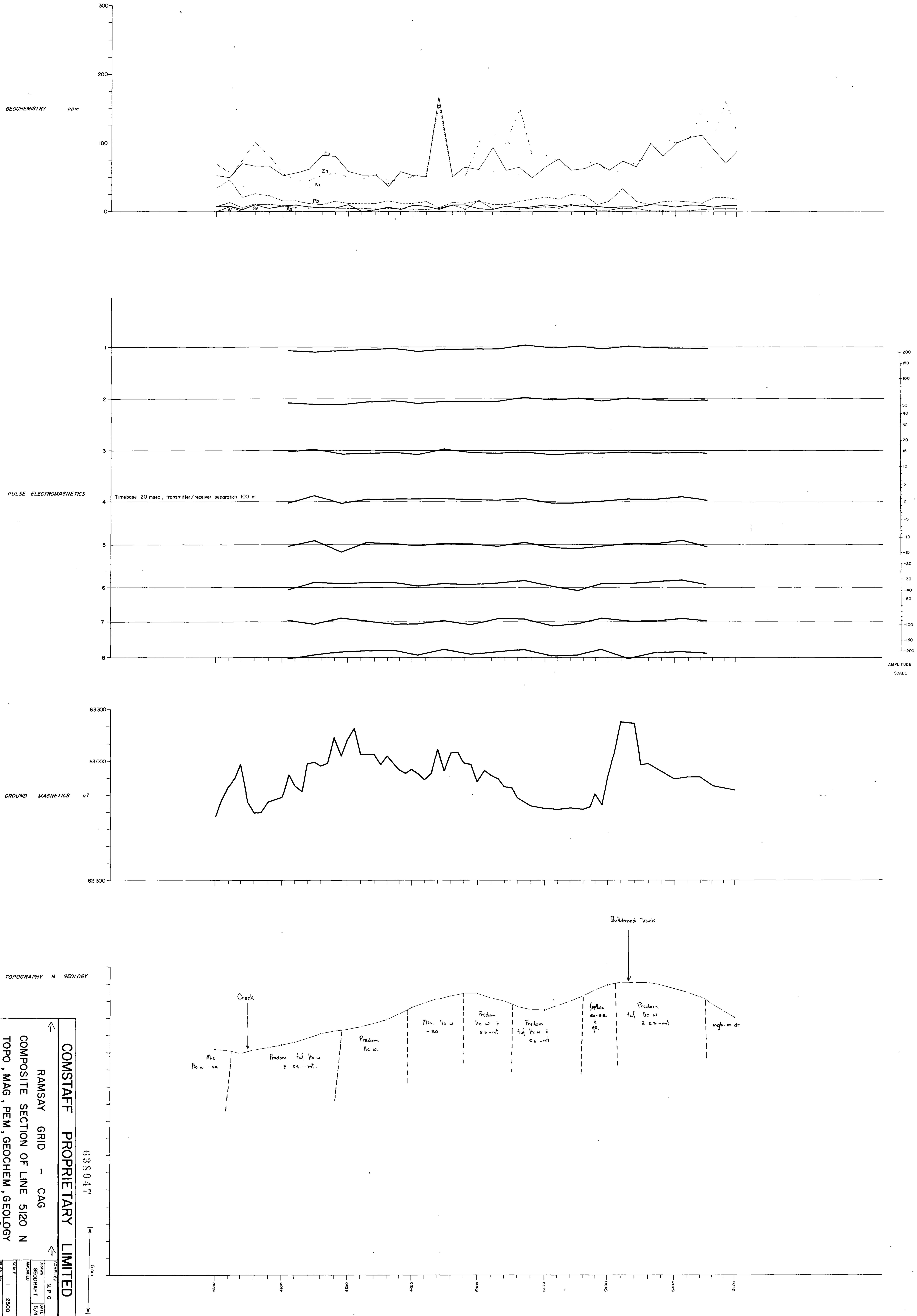
RAMSAY GRID - CAG

COMPOSITE SECTION OF LINE 5240 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

006

COMPILED	N. P. G.
DRAWN	GEODRAFT
DATE	5/3/82
AMENDED	
SCALE	1 : 2500
PLAN No.	TAS/2/2832



COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

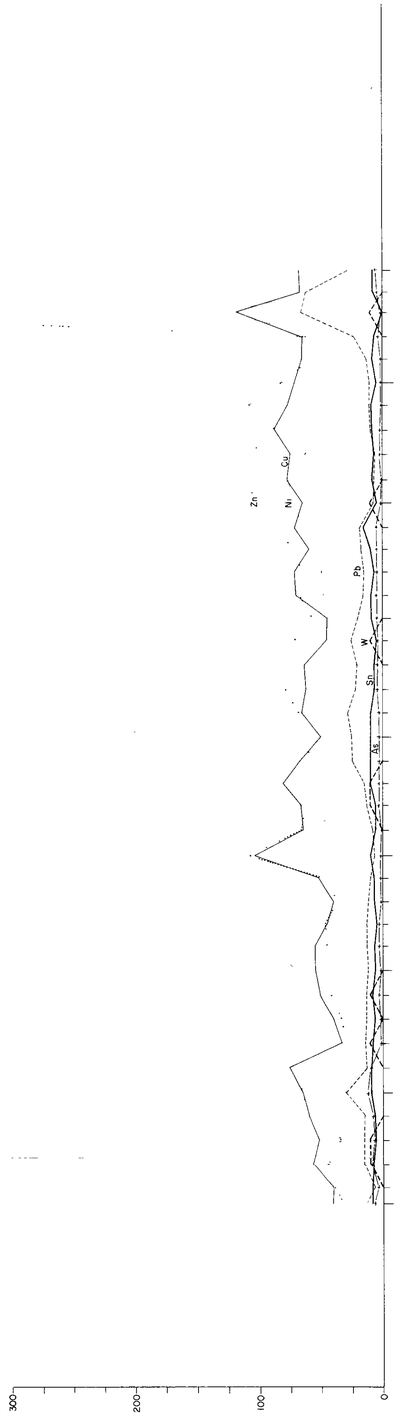
COMPOSITE SECTION OF LINE 5120 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

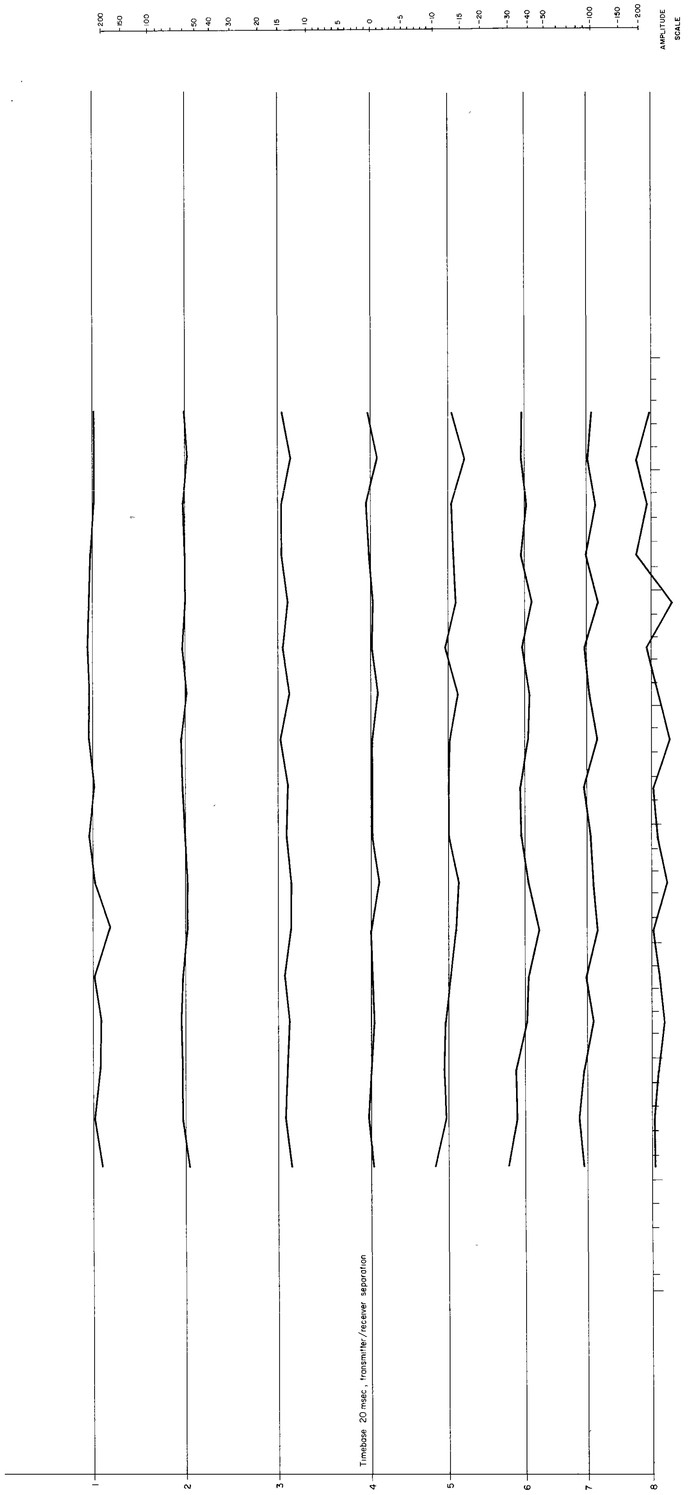
638047

007

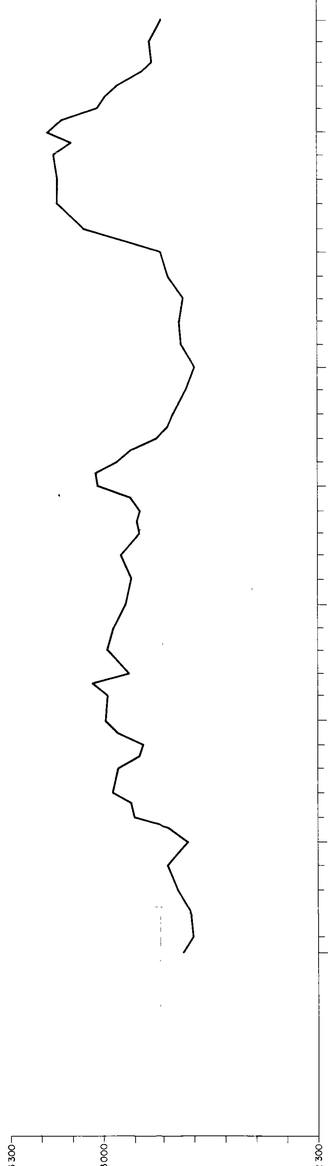
COMPILED	N. P G
DRAWN	GEODRAFT — DATE 5/4/82
AMENDED	
SCALE	1 : 2500
PLAN No	TAS/2/2833



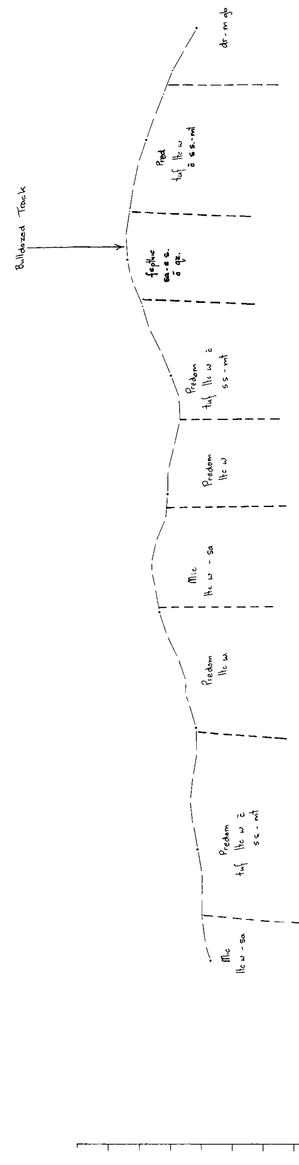
GEOCHEMISTRY ppm



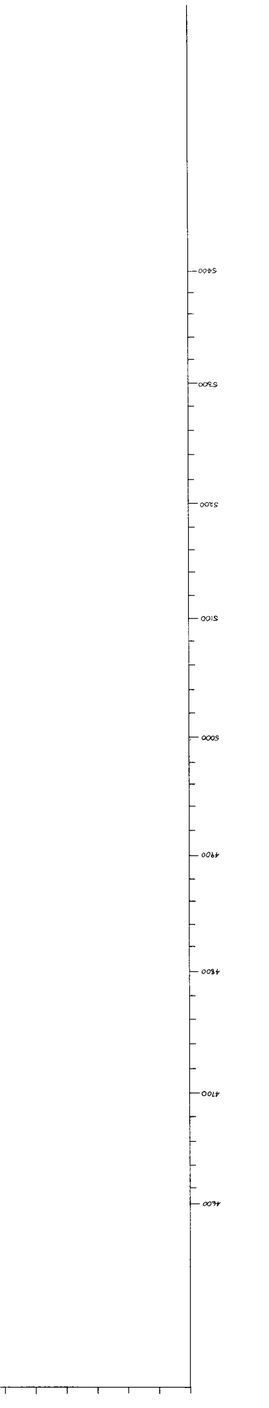
PULSE ELECTROMAGNETICS



GROUND MAGNETICS - ΔT



TOPOGRAPHY & GEOLOGY



638048

COMSTAFF PROPRIETARY LIMITED

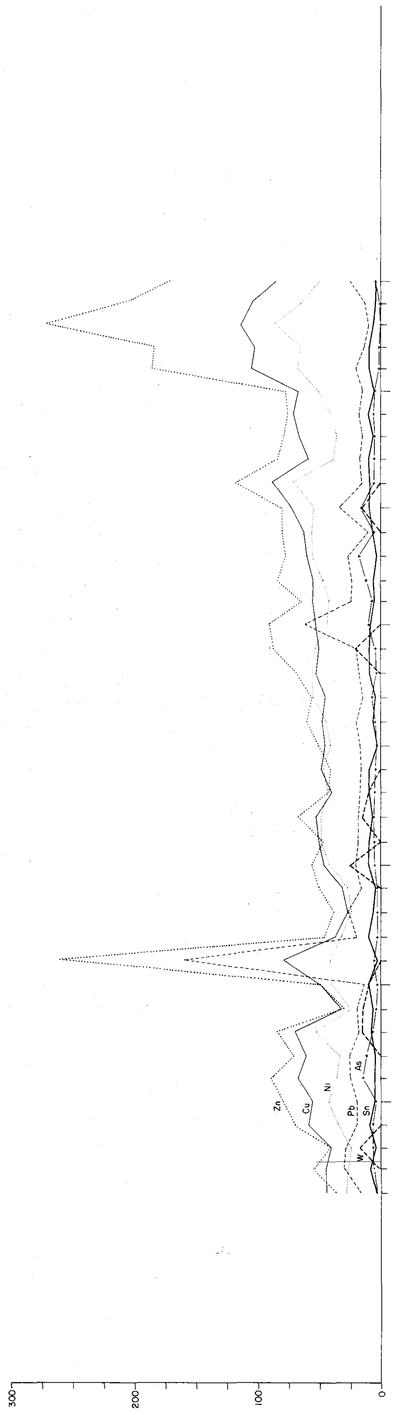
RAMSAY GRID - CAG

COMPOSITE SECTION OF LINE 5000 N

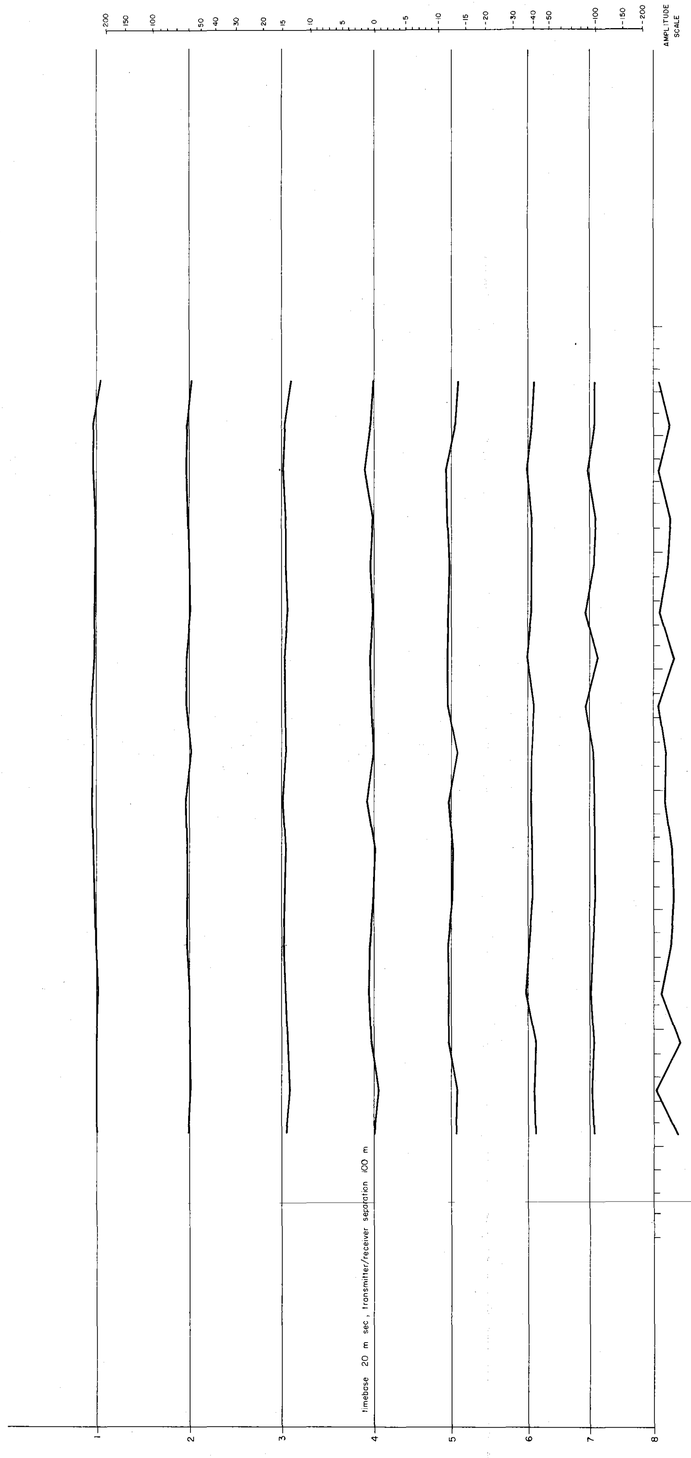
TOPO, MAG, PEM, GEOCHEM, GEOLOGY

COMPILED	N P G
DRAWN	GEODRAFT
DATE	5/3/82
AMENDED	
SCALE	1 2500
PLAN No	TAS/2/2834

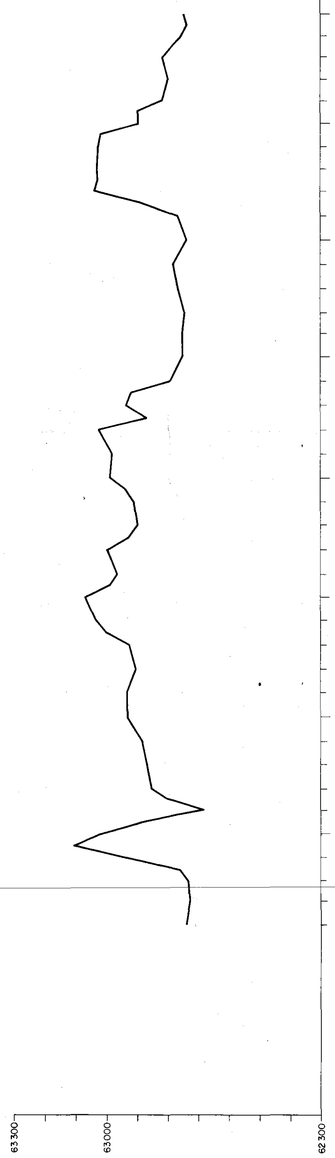
008



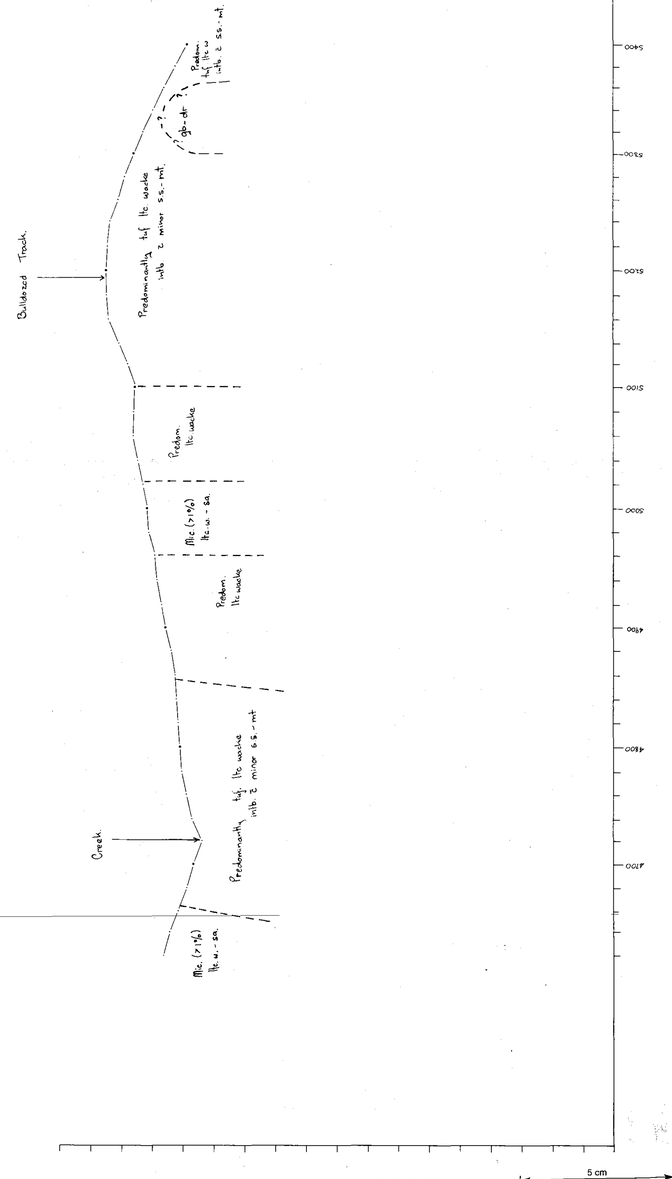
GEOCHEMISTRY ppm



PULSE ELECTROMAGNETICS



GROUND MAGNETICS nT



TOPOGRAPHY & GEOLOGY

638049

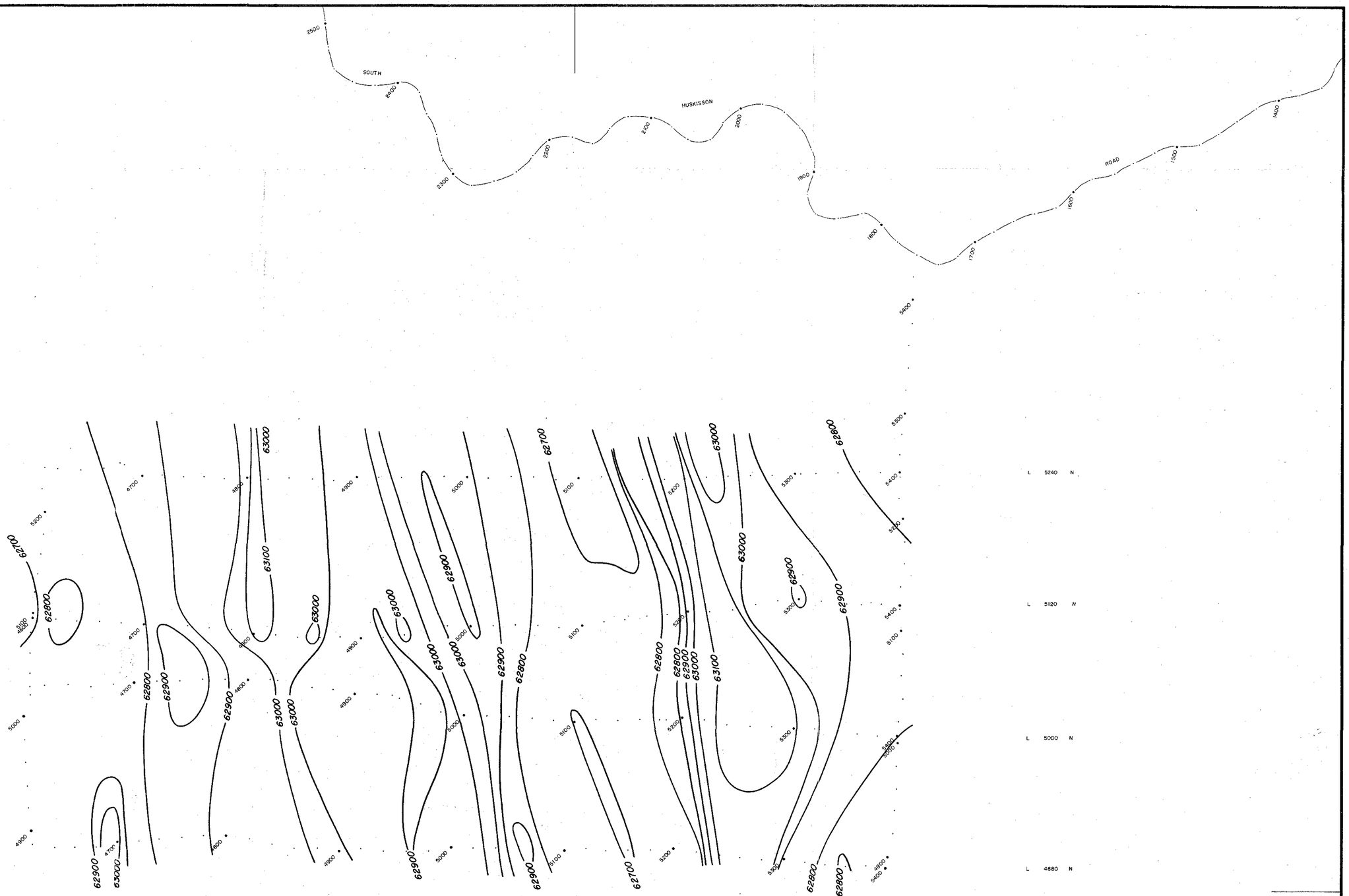
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

COMPOSITE SECTION FOR LINE 4880 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

COMPILED	N. P. G.
DRAWN	GEODRAFT
DATE	5/3/82
AMENDED	
SCALE	1 : 2500
PLAN No.	TAS/2/2835



NOTE:- contour values are nanoTesla's (nT)

638050

5 cm

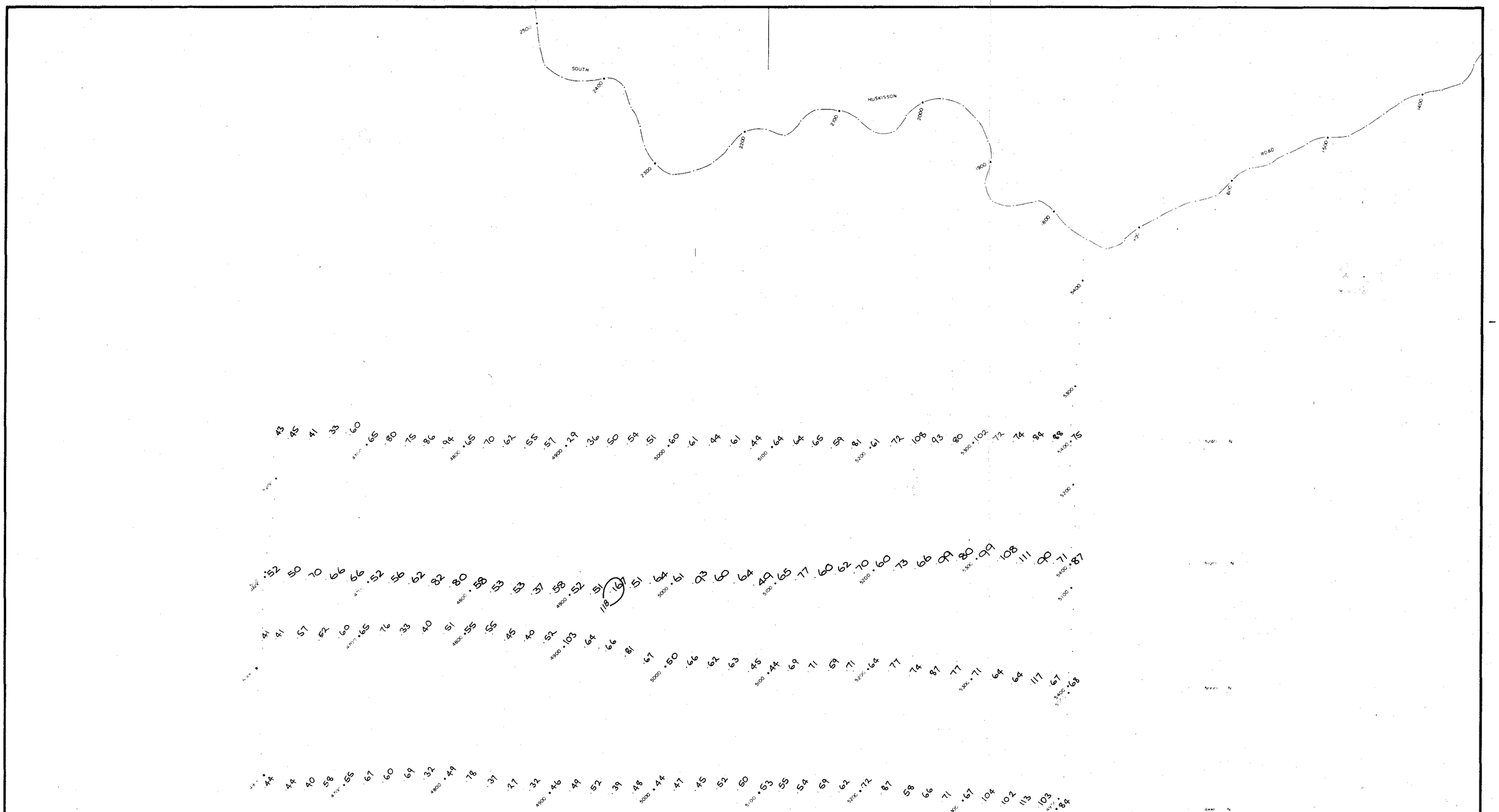
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GROUND MAGNETIC CONTOURS

010

DRAWN	COMPILED	SCALE	
GEODRAFT	N.P.G. 12/81	1 : 2500	TAS/2/2572



638051

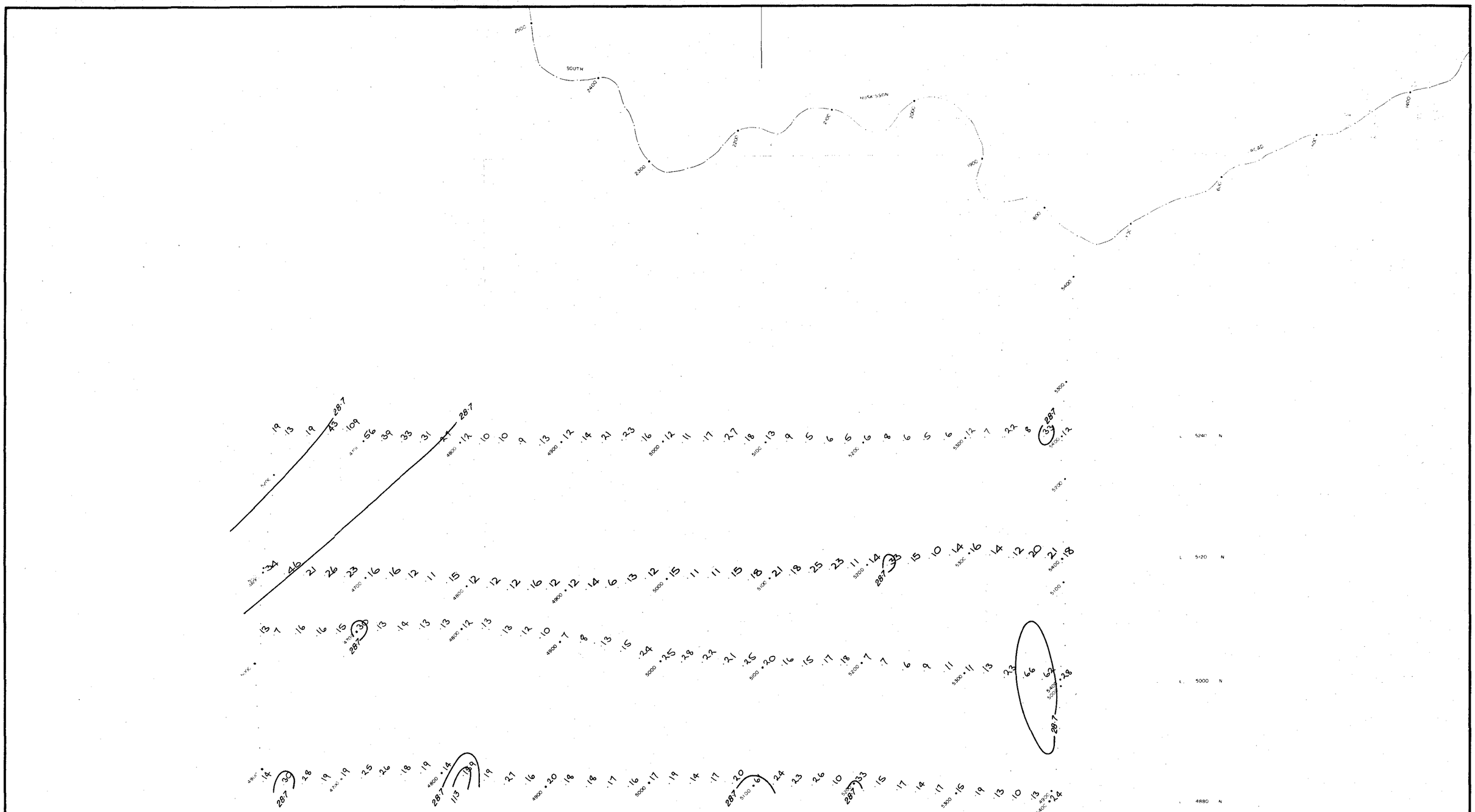
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

COPPER CONTOURS in ppm 011

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N.P.G.	1 : 2500	TAS/2/2870



5 040 000 m N

372 000 m E

638052

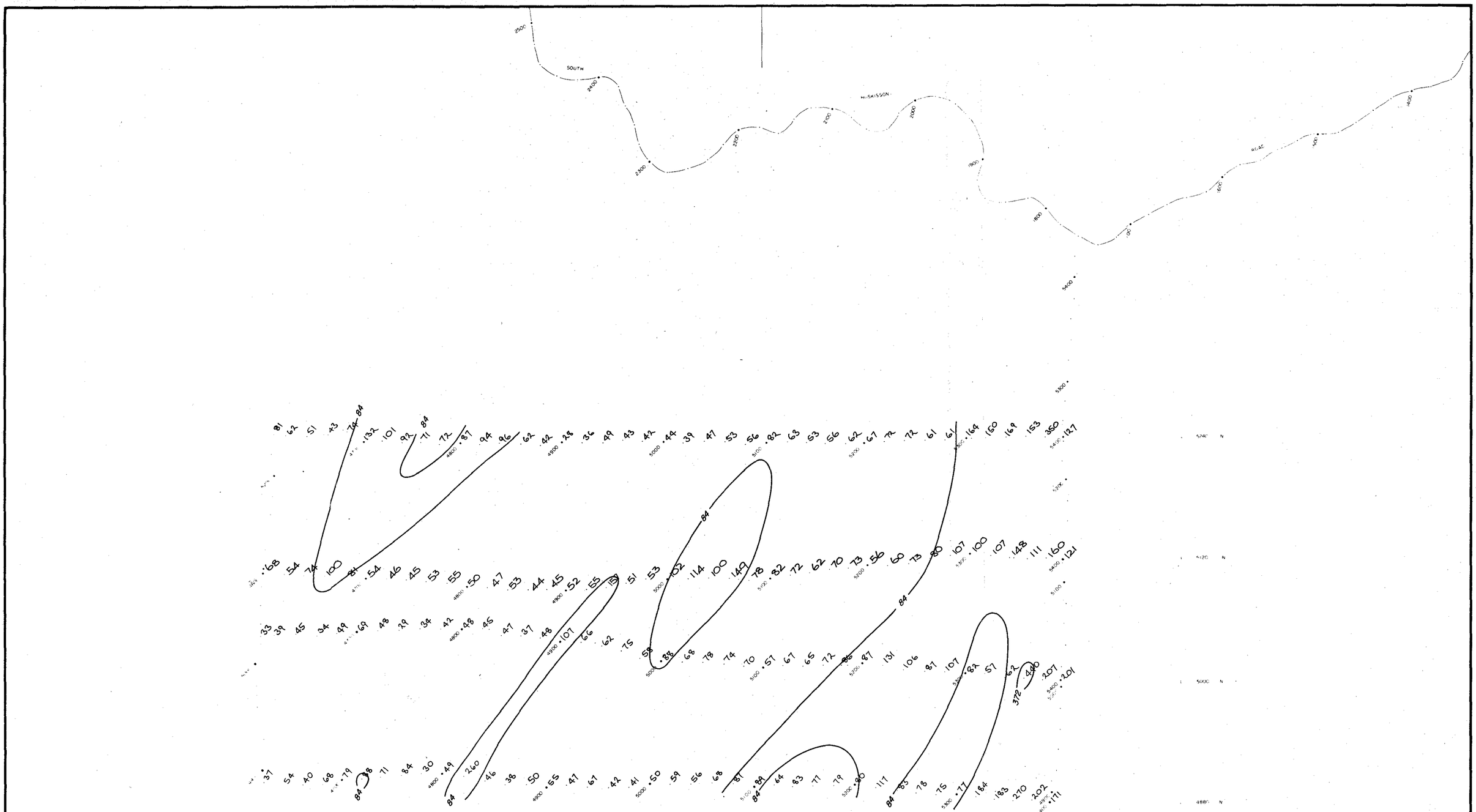
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

LEAD CONTOURS in ppm 012

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N.P.G.	1 : 2500	TAS/2/2871



638053

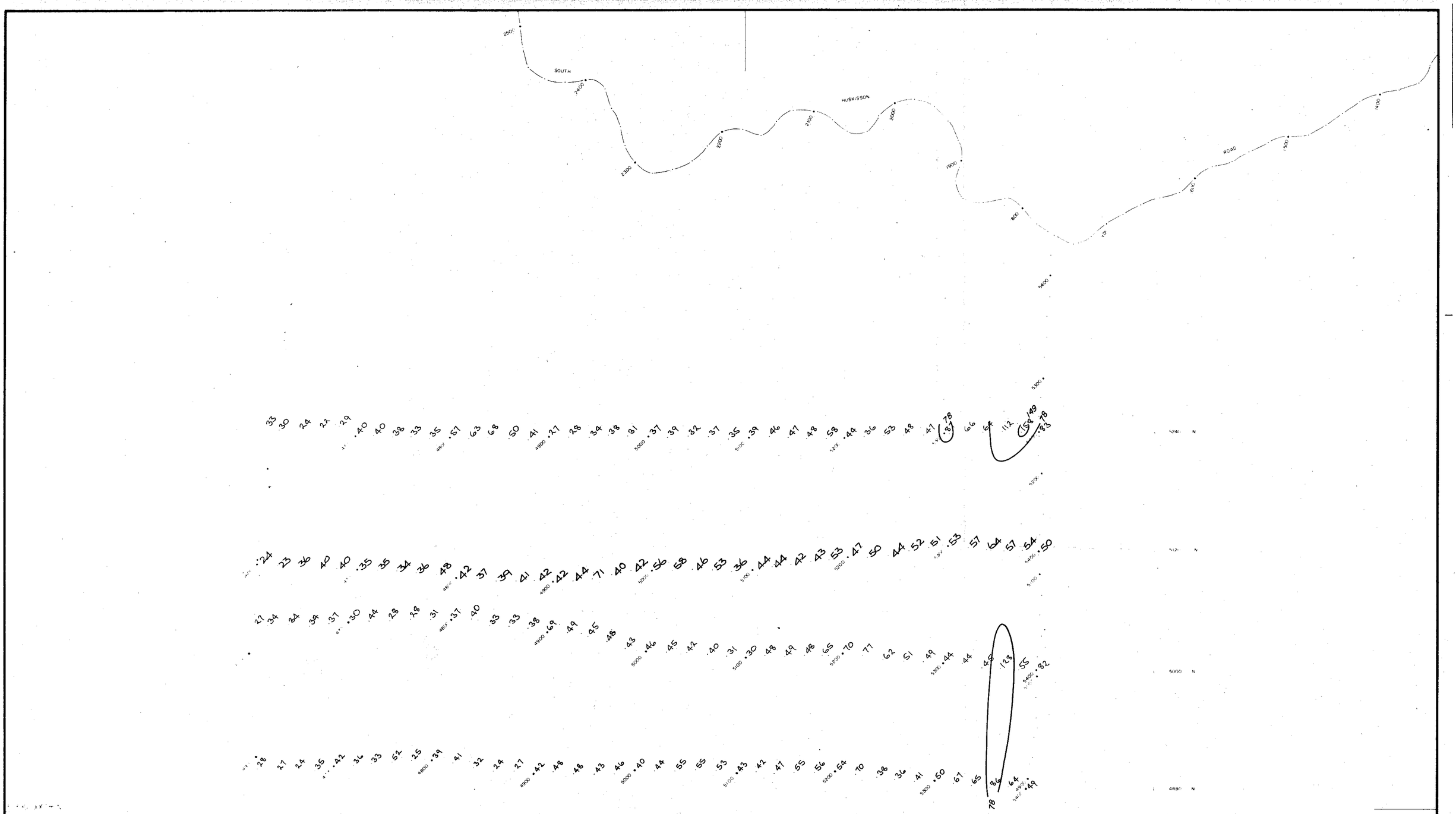
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

ZINC CONTOURS in ppm 013

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N.P.G.	1 : 2500	TAS/2/2872



5 cm

638054

COMSTAFF PROPRIETARY LIMITED			
RAMSAY GRID - CAG			
GEOCHEMICAL GRID AUGER SAMPLING			
NICKEL CONTOURS in ppm 014			
DRAWN GEODRAFT 3/82	COMPILED N. P. G.	SCALE 1 : 2500	TAS/2/2873

SOUTH

MUSKISSON

ROAD

372,000 m E

638055

5 cm

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

ARSENIC CONTOURS in ppm 015

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2874

SOUTH

HUSKISSON

5 390 000 m N

372 000 m E

5 cm

638056

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

TIN CONTOURS in ppm 016

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2875

SOUTH

HUSKISSON

638057

5 cm

372 000 m E

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAG

GEOCHEMICAL GRID AUGER SAMPLING

TUNGSTEN CONTOURS in ppm 017

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2876

638058

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

DETAILED GEOLOGICAL PLAN

018

DRAWN	COMPILED	SCALE	TAS/2/2441
		1 : 2500	

GEOLOGICAL LEGEND

- – – – Approximate geological boundary
- f —— Fault
- —— Strike of beds

tuf	Interbedded tuffaceous sandstone-lithicwacke with siltstone & mudstone
ltw	Interbedded predominantly lithicwacke with siltstone – mudstone
bv	Extrusive intermediate – basic volcanics
gb	Intrusive porphyritic microgabbro-dolerite-lamprophyre?

APPROXIMATE BOUNDARY OF HORNFELSING & METASOMATIC ALTERATION EFFECTS

HUSKISSON ROAD

SOUTH

Drainage

5 392 000 m N

372 000 m E

L 5360 N

L 5240 N

L 5120 N

L 5000 N

L 4680 N

L 4760 N

L 5320 E

5 cm

638059

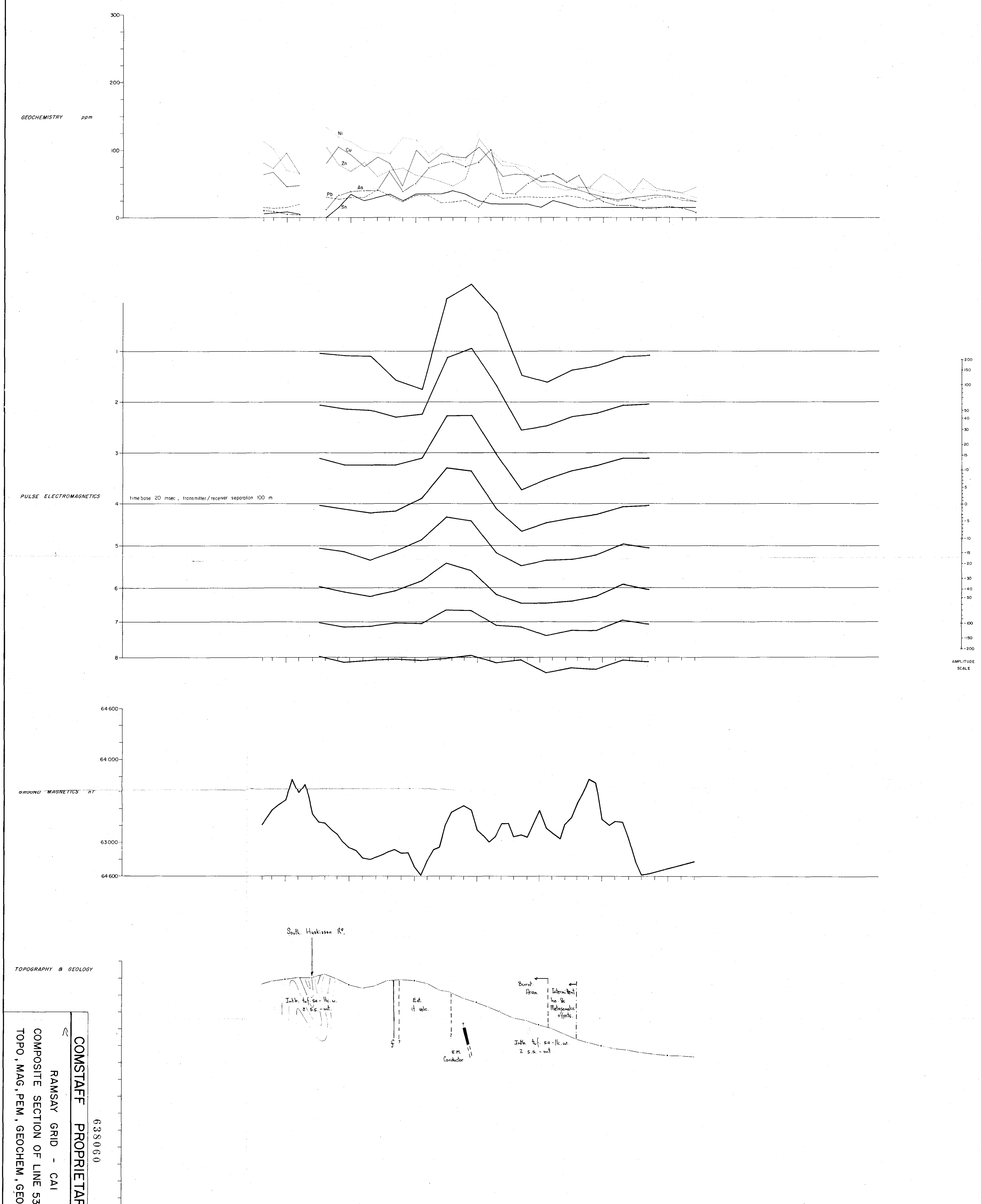
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

GEOLOGICAL INTERPRETATION PLAN

019

DRAWN	COMPILED	SCALE	
GEODRAFT 5/81	N. P. G.	1 : 2500	TAS/2/2442



638060

COMSTAFF PROPRIETARY LIMITED

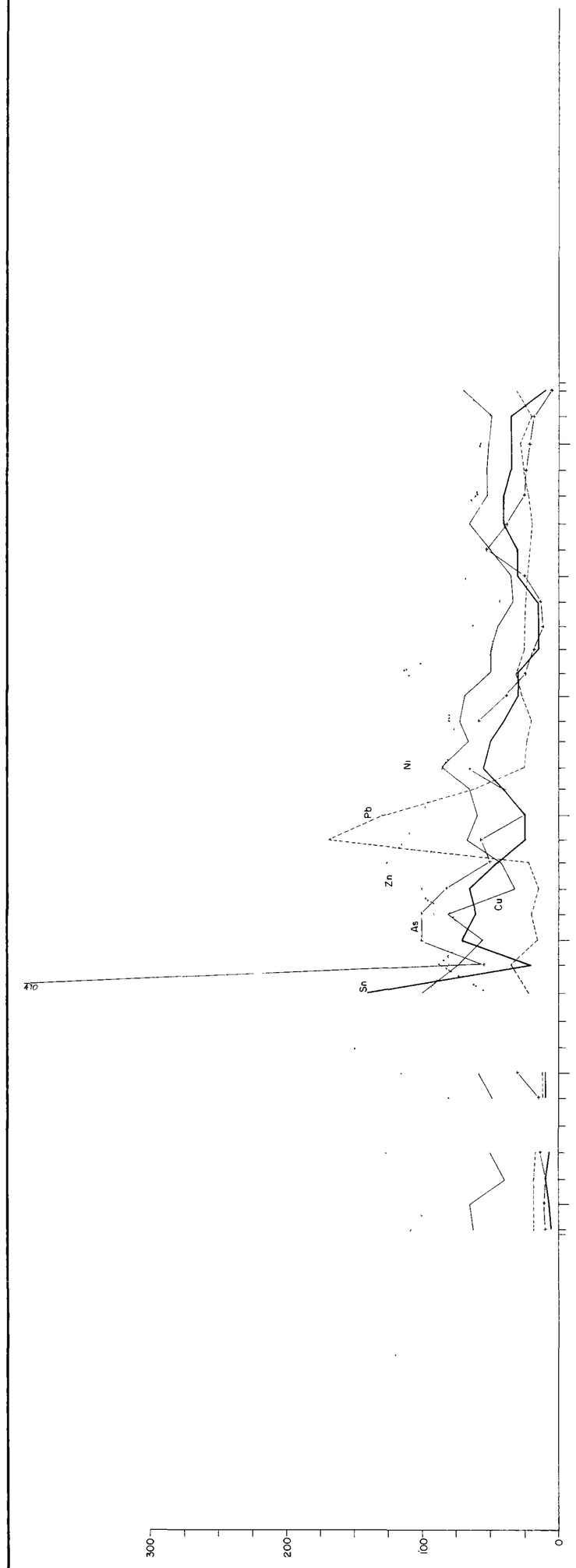
RAMSAY GRID - CAI

COMPOSITE SECTION OF LINE 5360 N

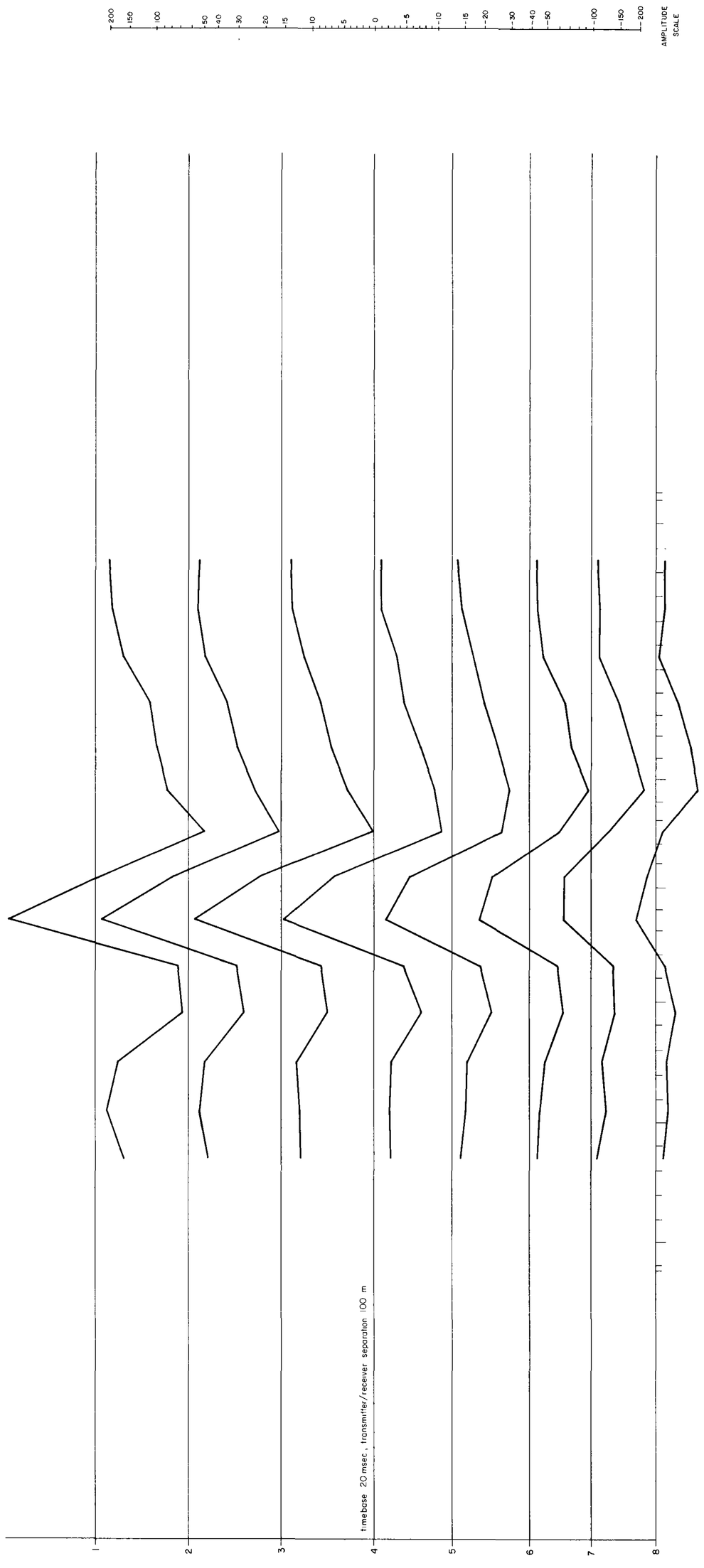
TOPO, MAG, PEM, GEOCHEM, GEOLOGY

020

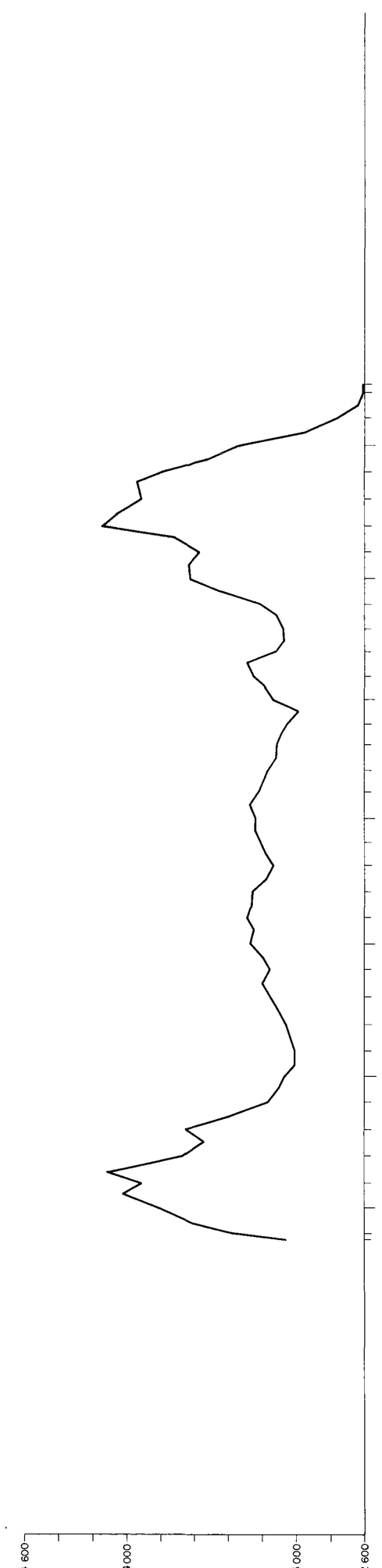
COMPILED	N.P.G.
DRAWN	GEODRAFT
DATE	5/3/82
AMENDED	
SCALE	1 : 2500
PLAN No	TAS/2/2836



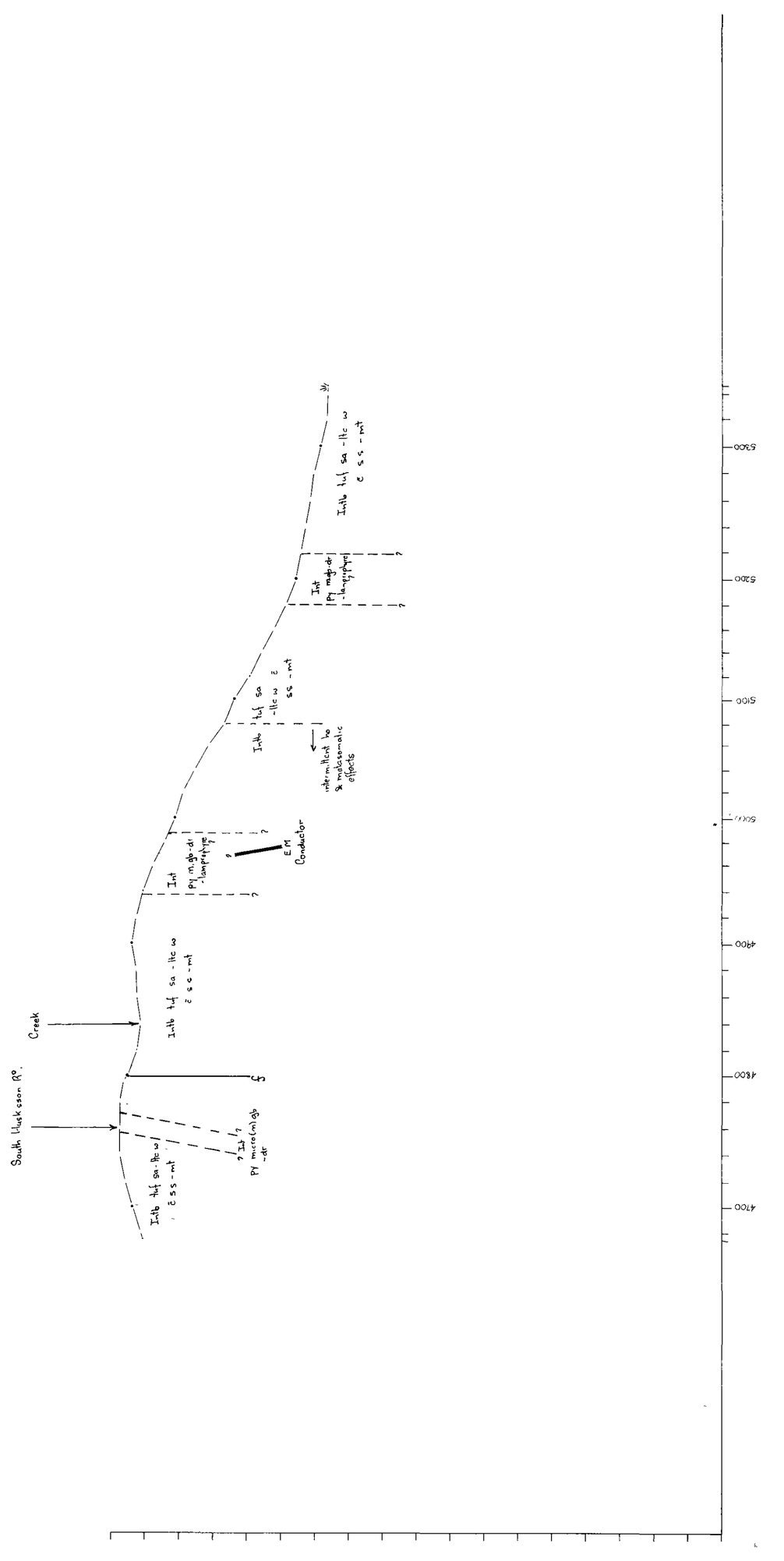
GEOCHEMISTRY ppm



PULSE ELECTROMAGNETICS



GROUND MAGNETICS nT



TOPOGRAPHY & GEOLOGY

638061

COMSTAFF PROPRIETARY LIMITED

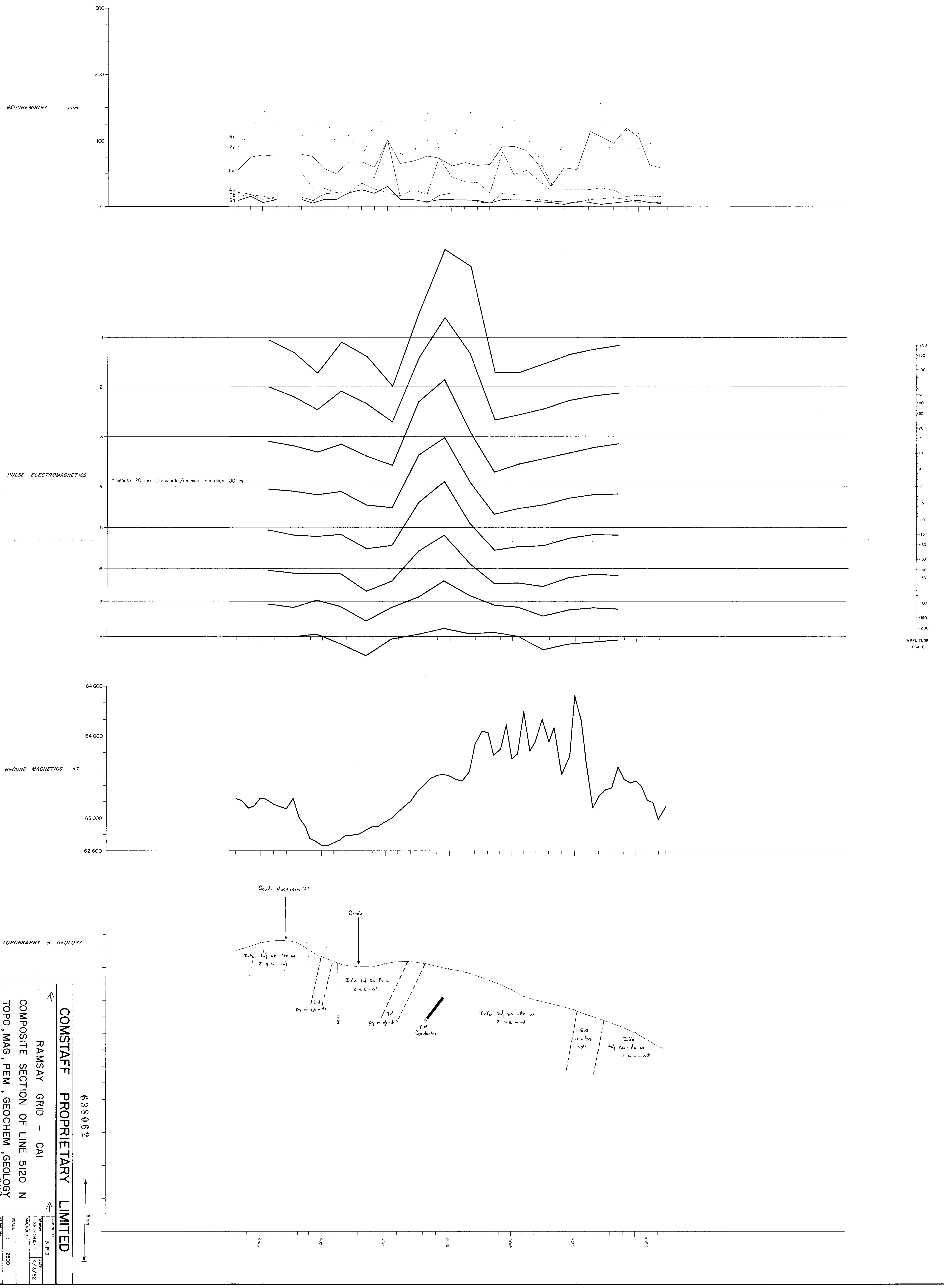
RAMSAY GRID - CAI

COMPOSITE SECTION OF LINE 5240 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

COMPILED	N P G
DRAWN	GEODRAFT
DATE	5/3/82
AMENDED	
SCALE	1 2500
PLAN No	TAS/2/2837

021



COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

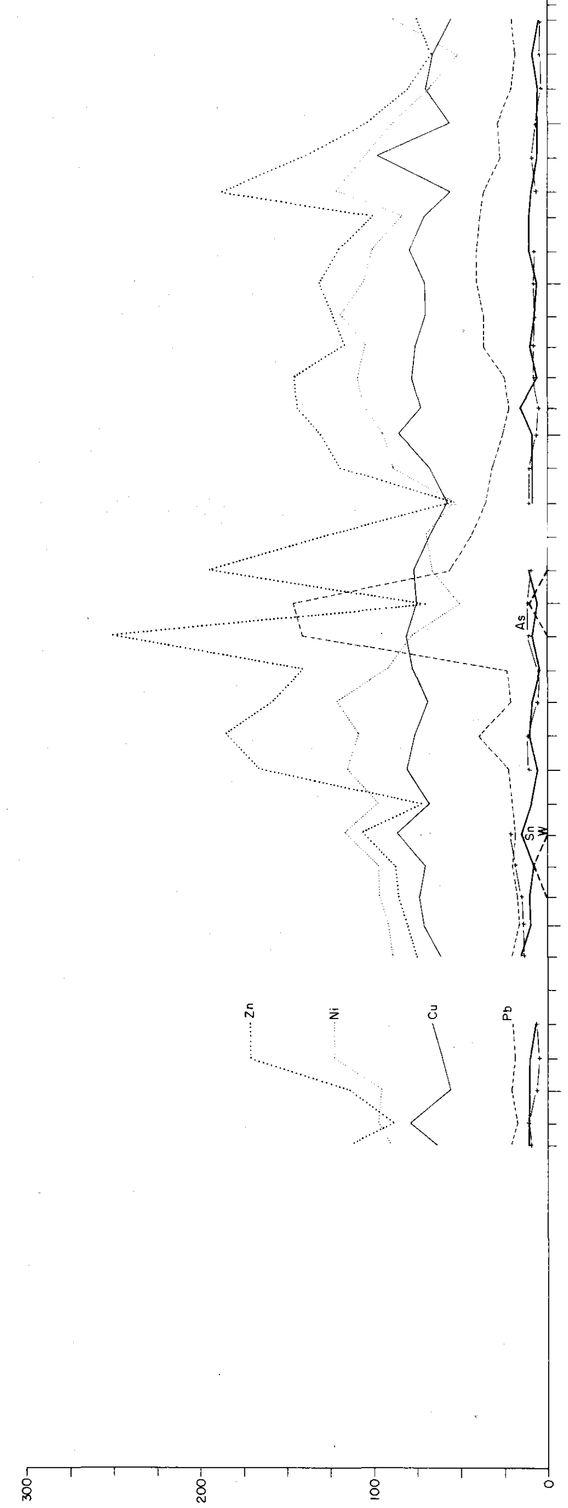
COMPOSITE SECTION OF LINE 5120 N

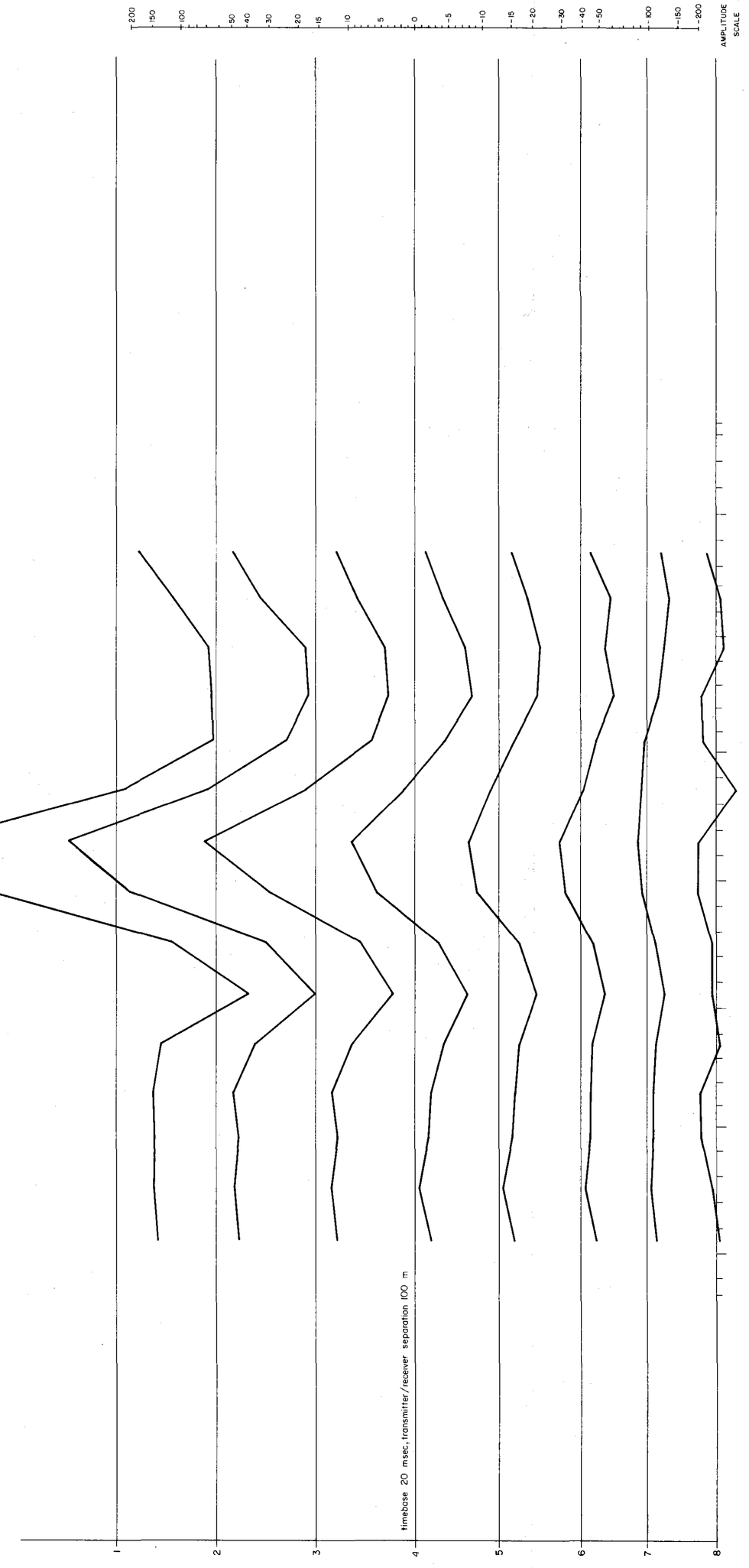
TOPO, MAG, PEM, GEOCHEM, GEOLOGY

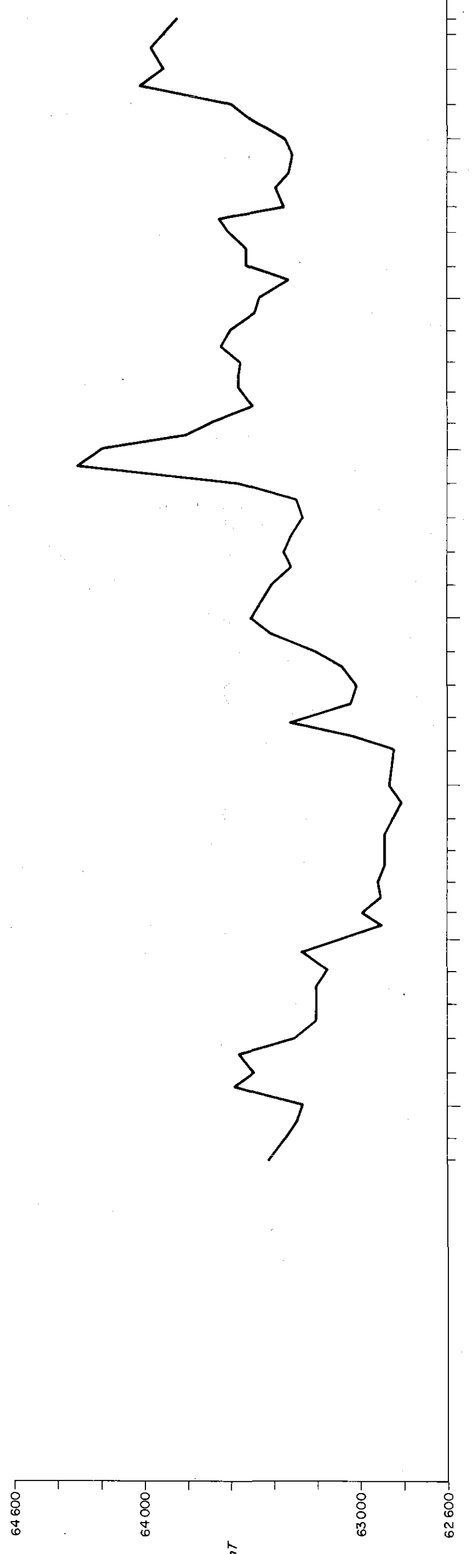
638062

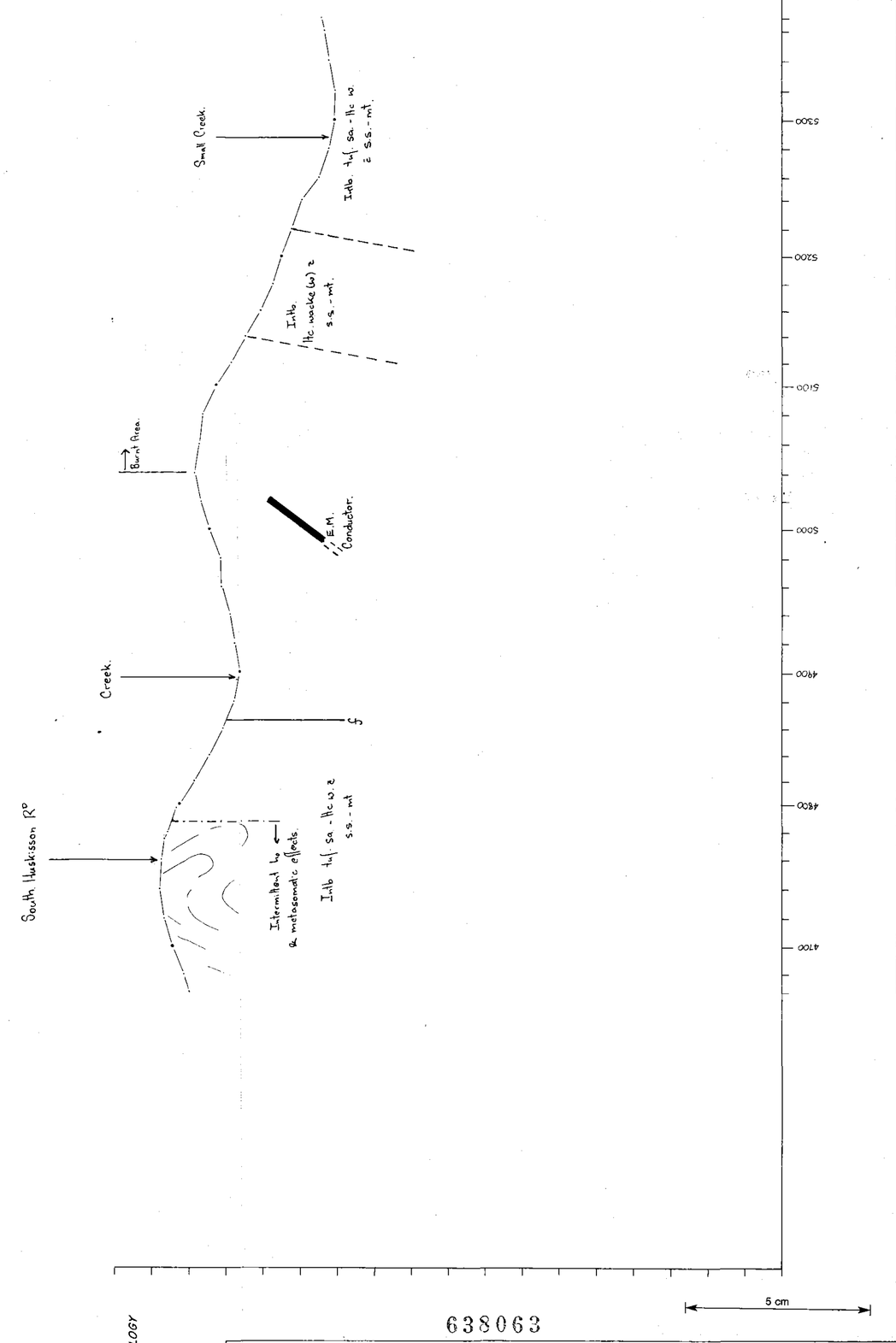
022

COMPILED	N P G	
DRAWN	GEODRAFT	DATE 4/3/82
AMENDED		
SCALE	1 : 2500	
PLAN No.	TAS/2/2838	









638063

COMSTAFF PROPRIETARY LIMITED

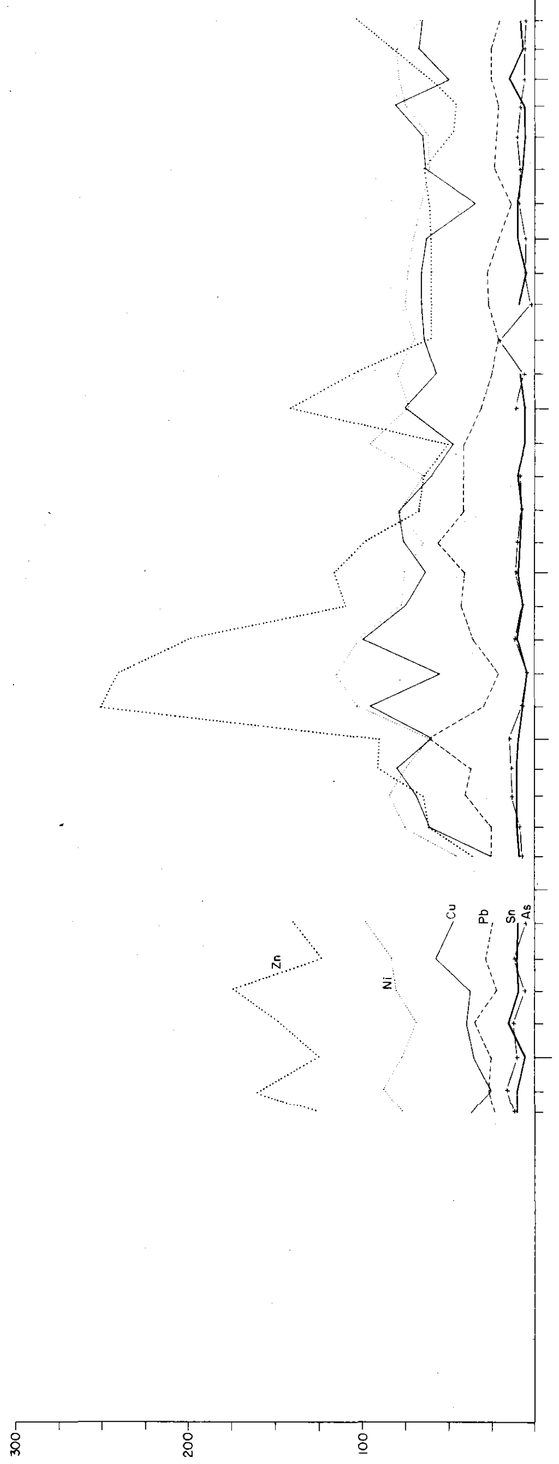
RAMSAY GRID - CAI

COMPOSITE SECTION OF LINE 5000 N

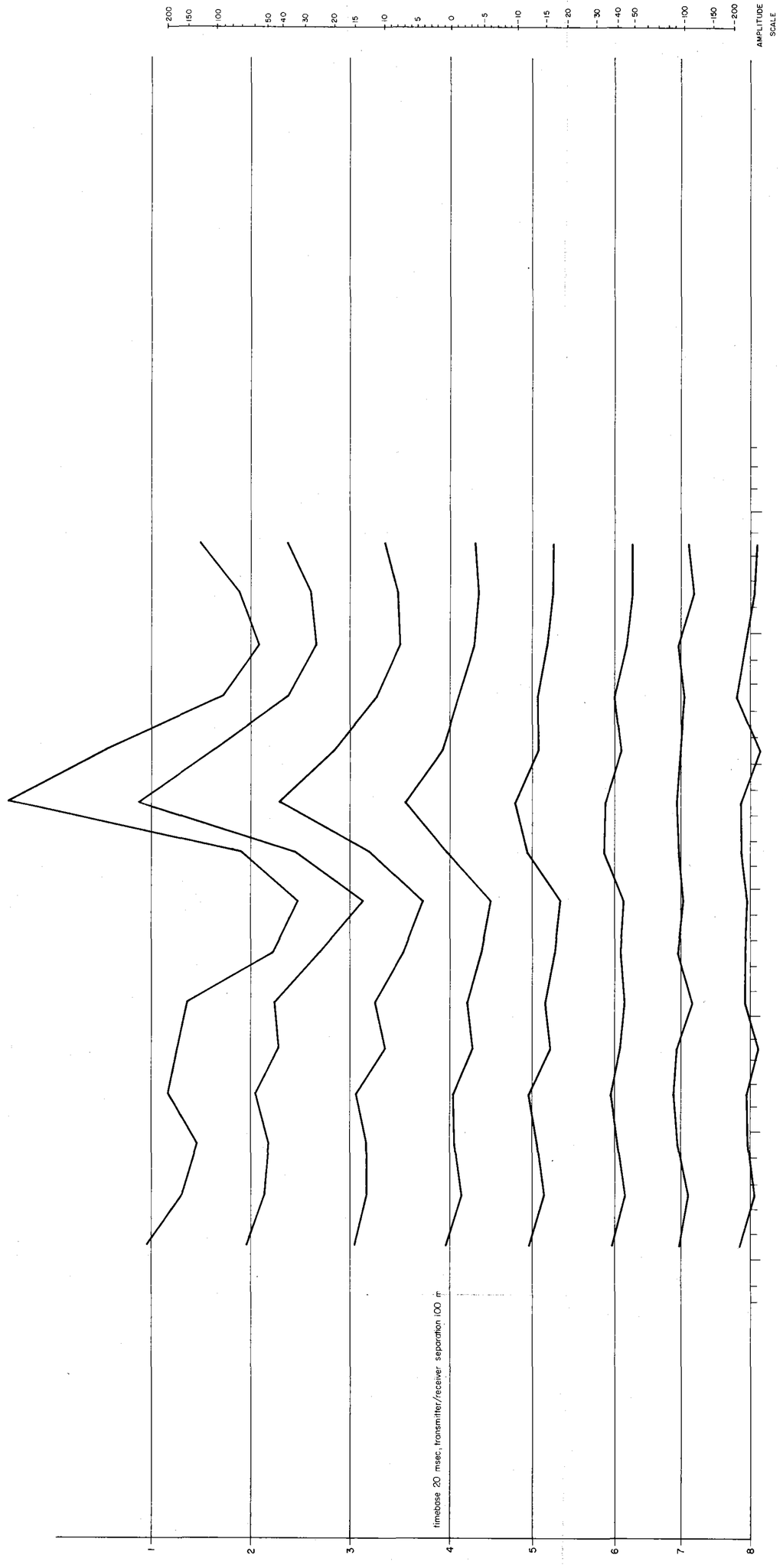
TOPO, MAG, PEM, GEOCHEM, GEOLOGY

023

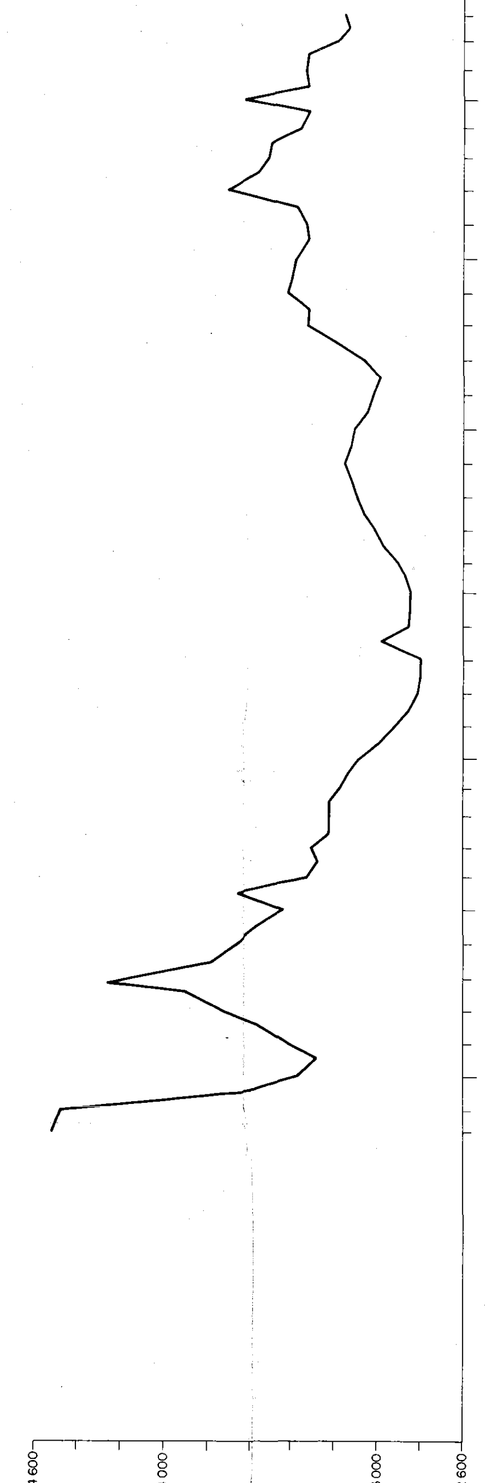
COMPILED	N.P.G.
DRAWN	GEODRAFT
DATE	4/3/82
AMENDED	
SCALE	1 : 2500
PLAN No	TAS/2/2839



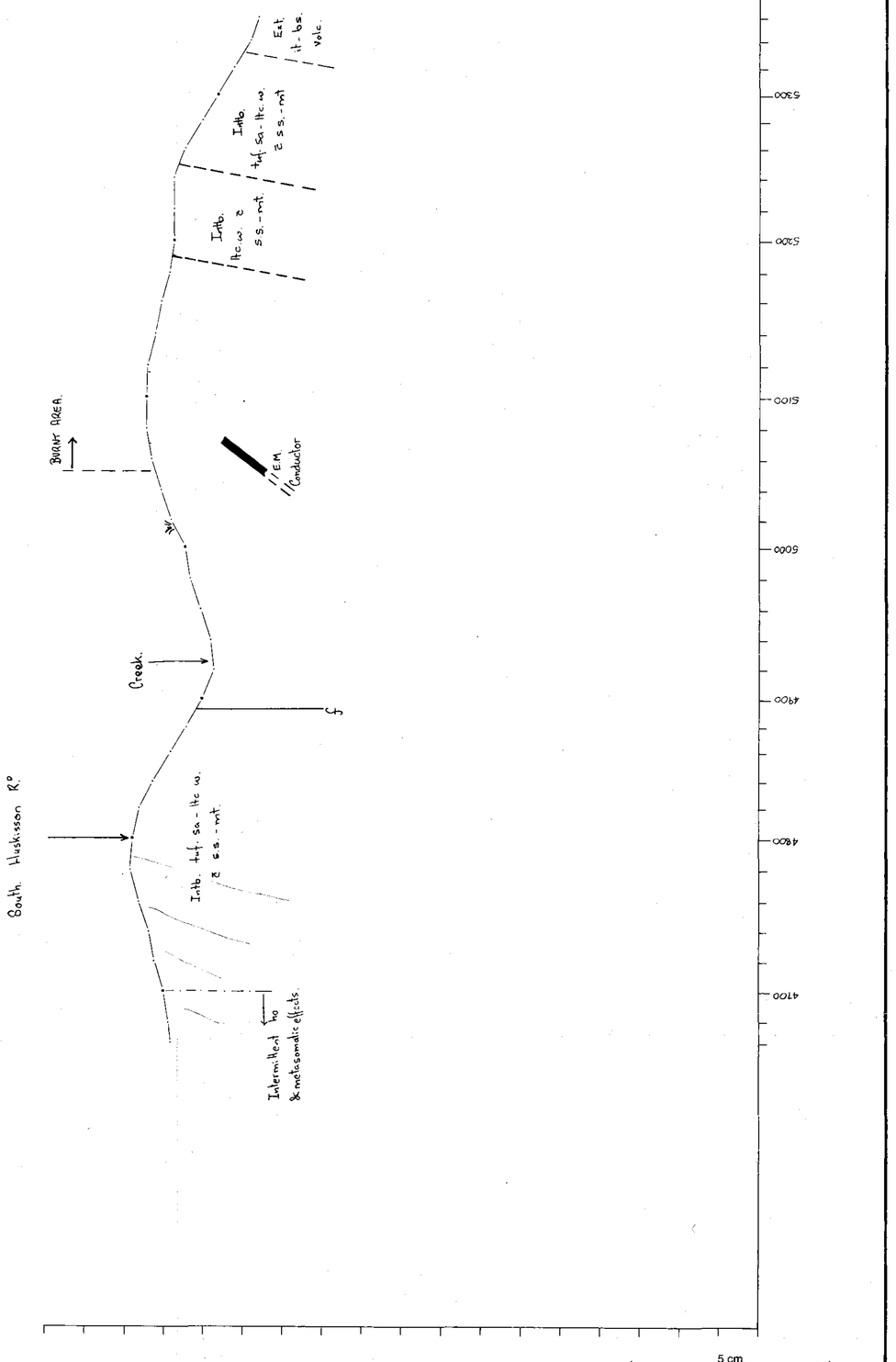
GEOCHEMISTRY



PULSE ELECTROMAGNETICS



GROUND MAGNETICS



TOPOGRAPHY & GEOLOGY

638064

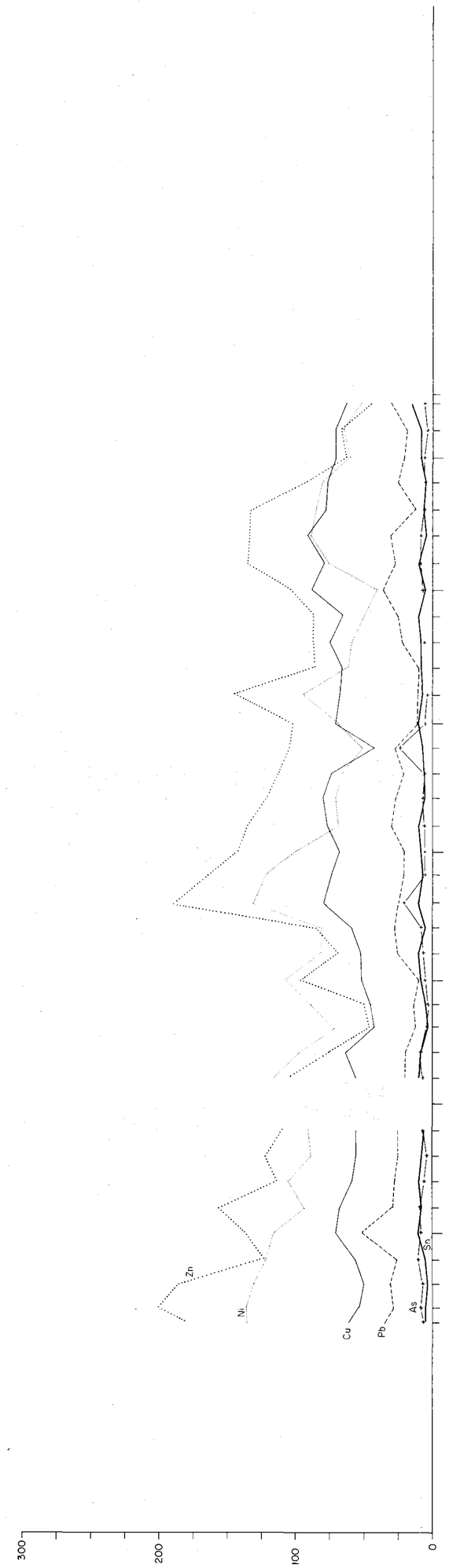
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

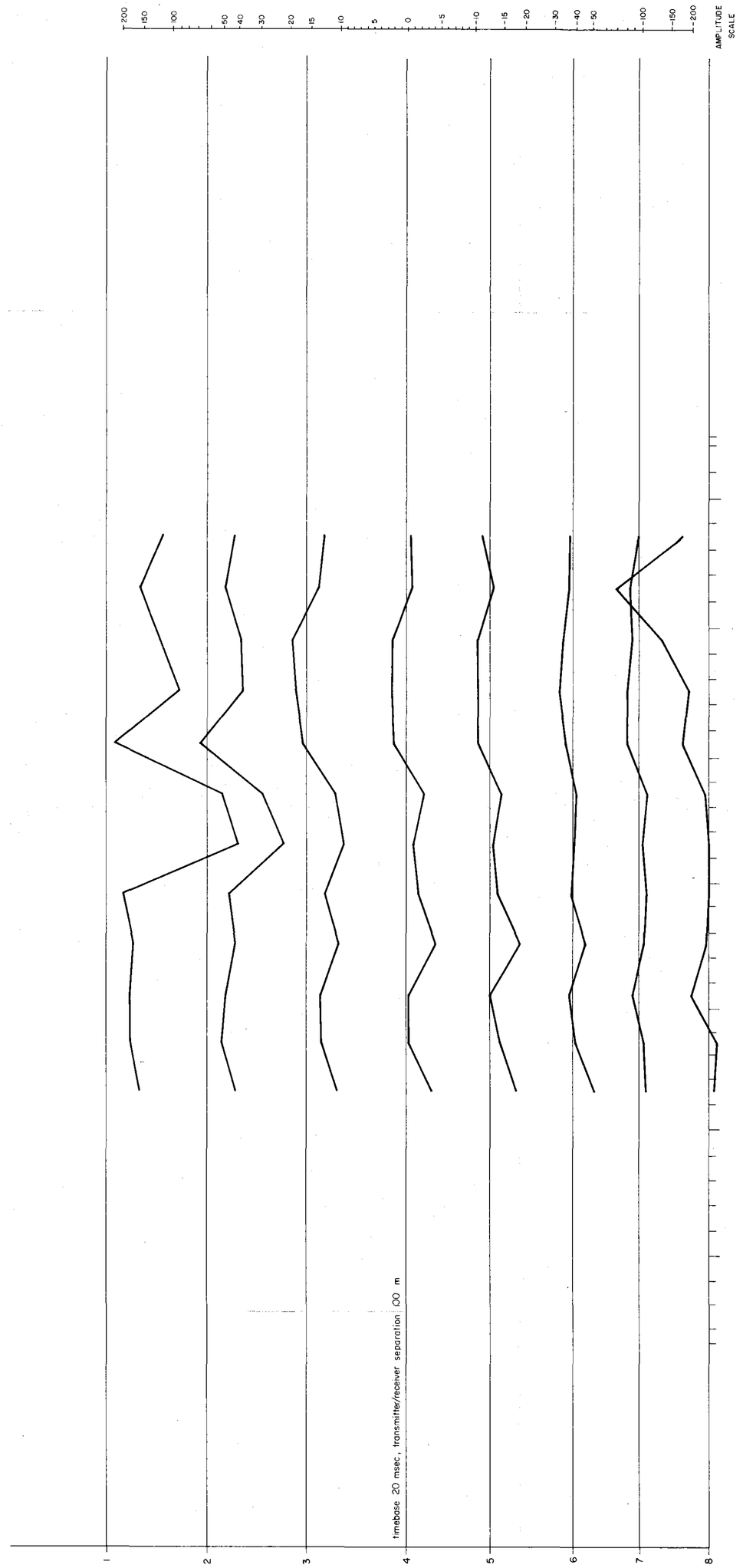
COMPOSITE SECTION OF LINE 4880 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

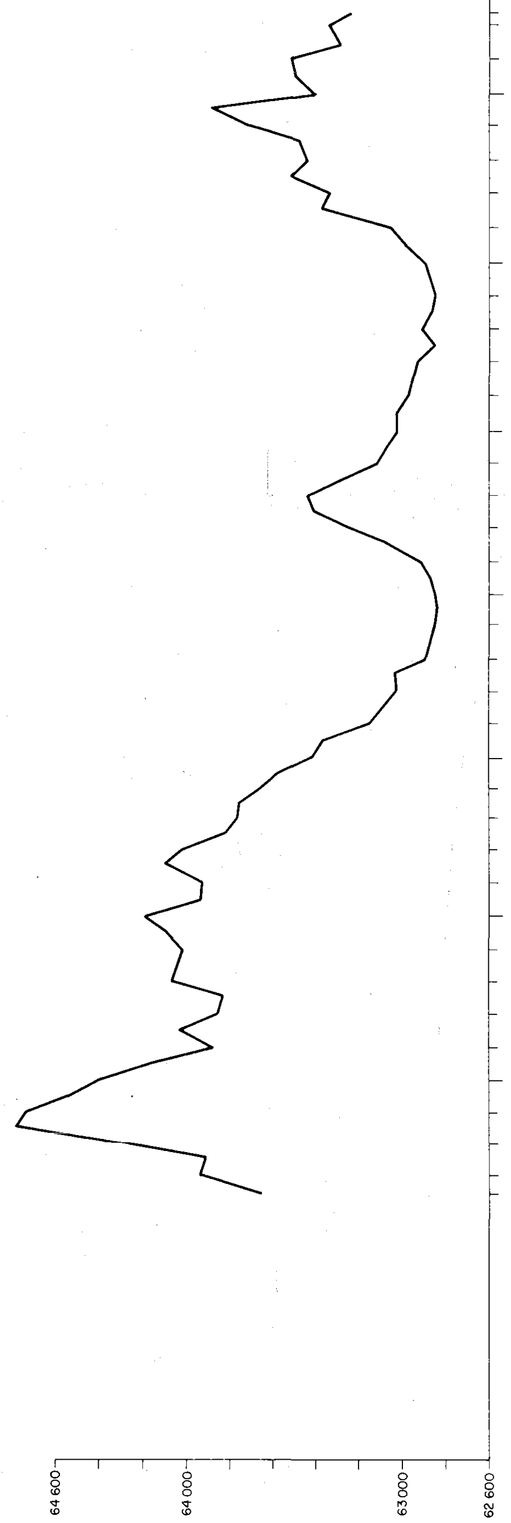
COMPILED	N. P. G.
DRAWN	GEODRAFT
DATE	4/3/72
AMENDED	
SCALE	1 : 2500
PLAN NO	TAS/2/2840



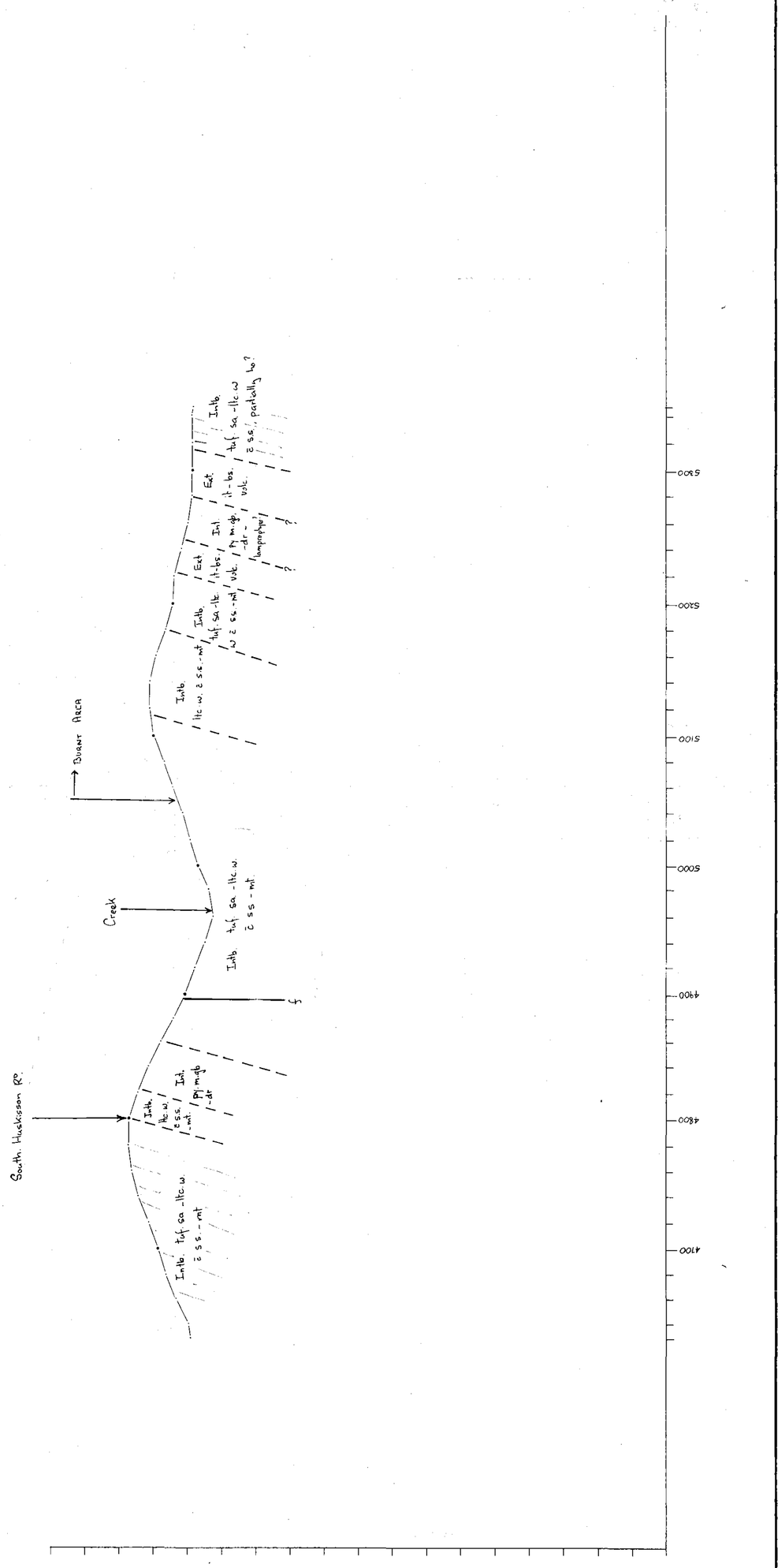
GEOCHEMISTRY ppm



PULSE ELECTROMAGNETICS



GROUND MAGNETICS nT



TOPOGRAPHY & GEOLOGY

638065

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

COMPOSITE SECTION OF LINE 4760 N

TOPO, MAG, PEM, GEOCHEM, GEOLOGY

COMPILED	G. F. P.
DRAWN	GEODRAFT
DATE	4/3/82
AMENDED	
SCALE	1 : 2500
PLAN No	TAS / 2 / 2841

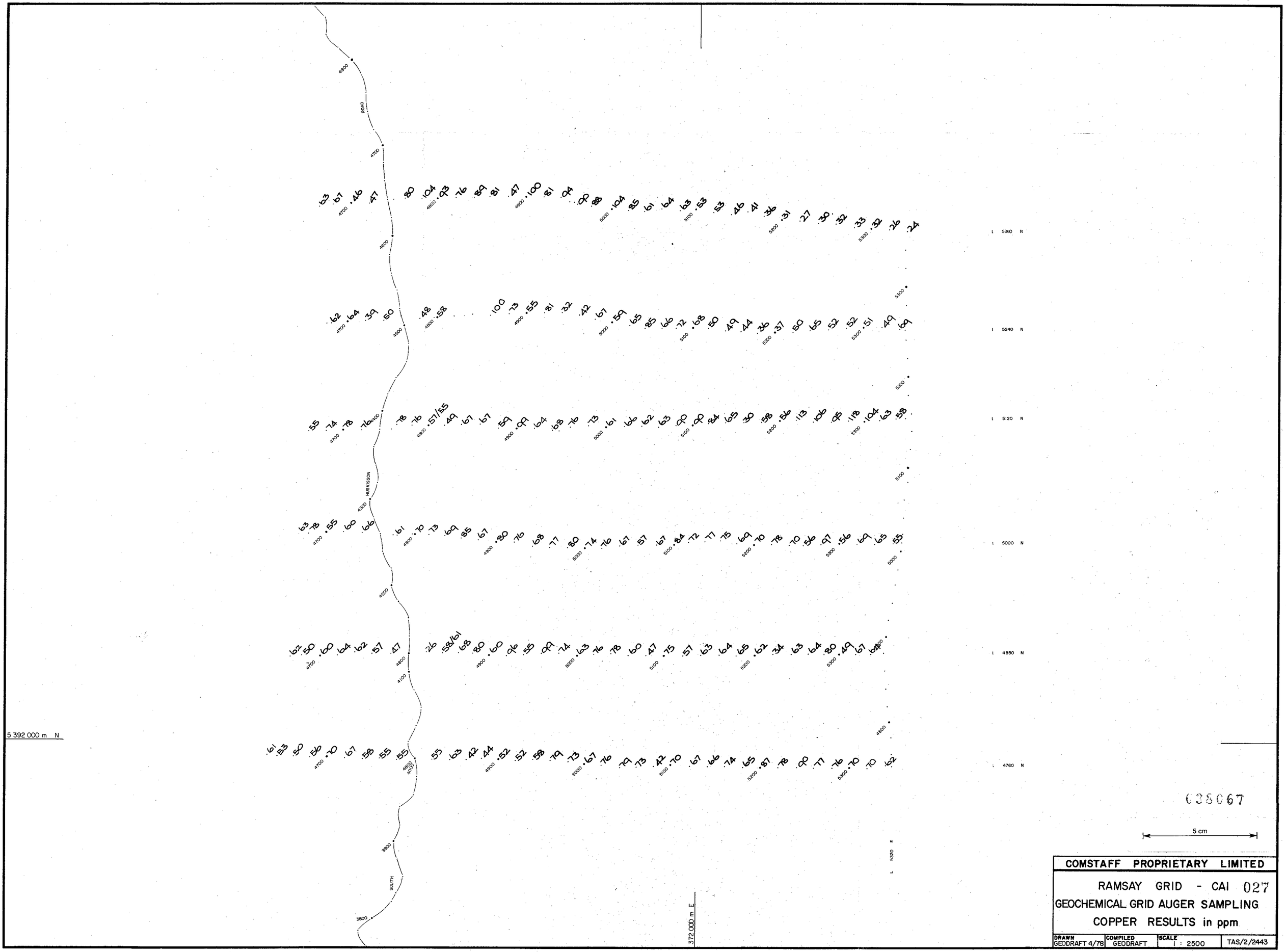
025

638066

NOTE:- contour values are in nanoTesla's (nT)

5 cm

COMSTAFF PROPRIETARY LIMITED			
RAMSAY GRID - CAI			
GROUND MAGNETIC CONTOURS			026
DRAWN GEODRAFT	COMPILED D.B.T. 12/81	SCALE 1 : 2500	TAS/2/2449



038067

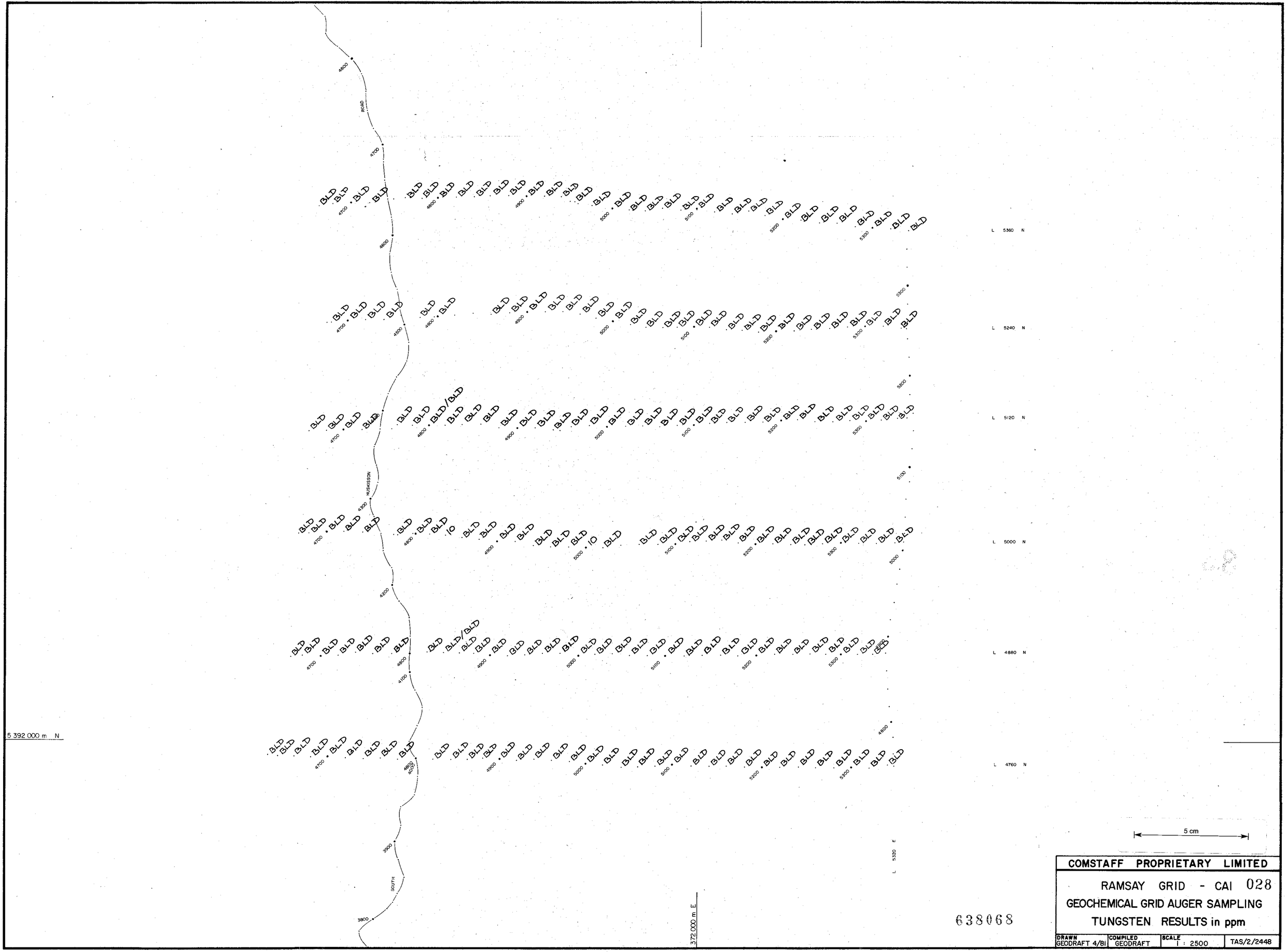
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI 027

GEOCHEMICAL GRID AUGER SAMPLING

COPPER RESULTS in ppm

DRAWN	COMPILED	SCALE	
GEODRAFT 4/78	GEODRAFT	1 : 2500	TAS/2/2443



5 cm

COMSTAFF PROPRIETARY LIMITED

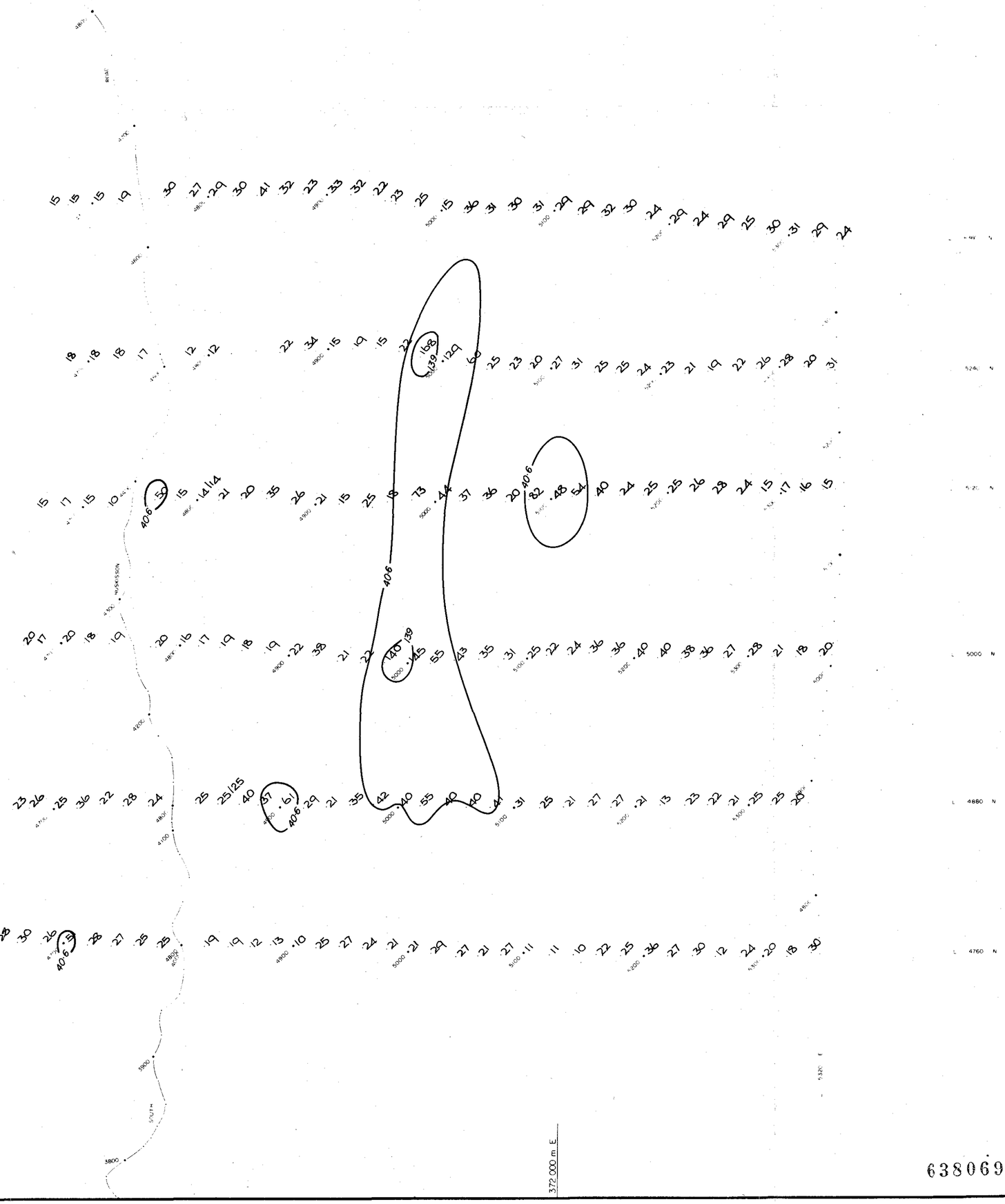
RAMSAY GRID - CAI 028

GEOCHEMICAL GRID AUGER SAMPLING

TUNGSTEN RESULTS in ppm

DRAWN	COMPILED	SCALE	
GEODRAFT 4/81	GEODRAFT	1 : 2500	TAS/2/2448

638068



5 cm

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

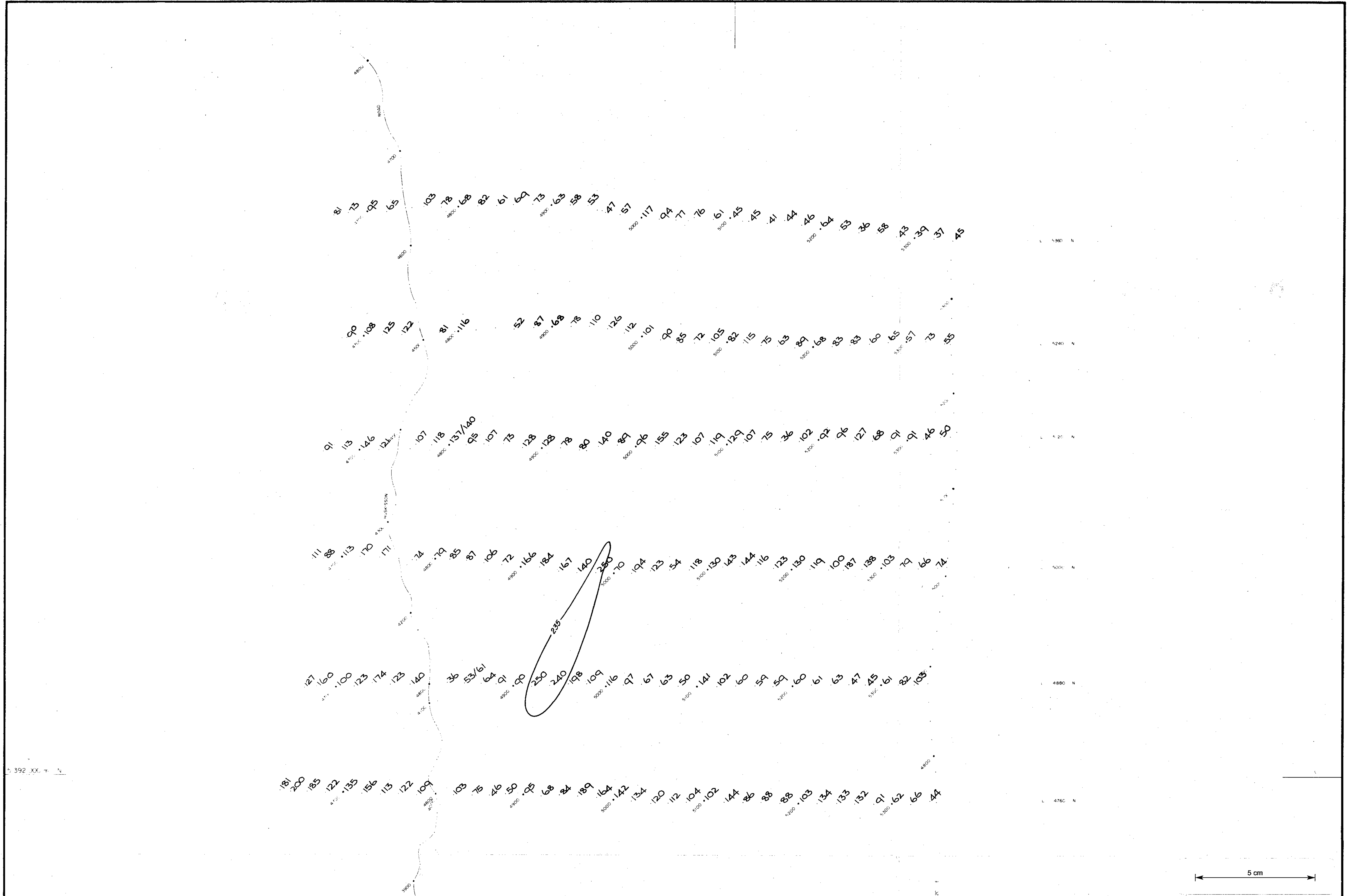
GEOCHEMICAL GRID AUGER SAMPLING

LEAD CONTOURS in ppm

029

638069

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2878



638070

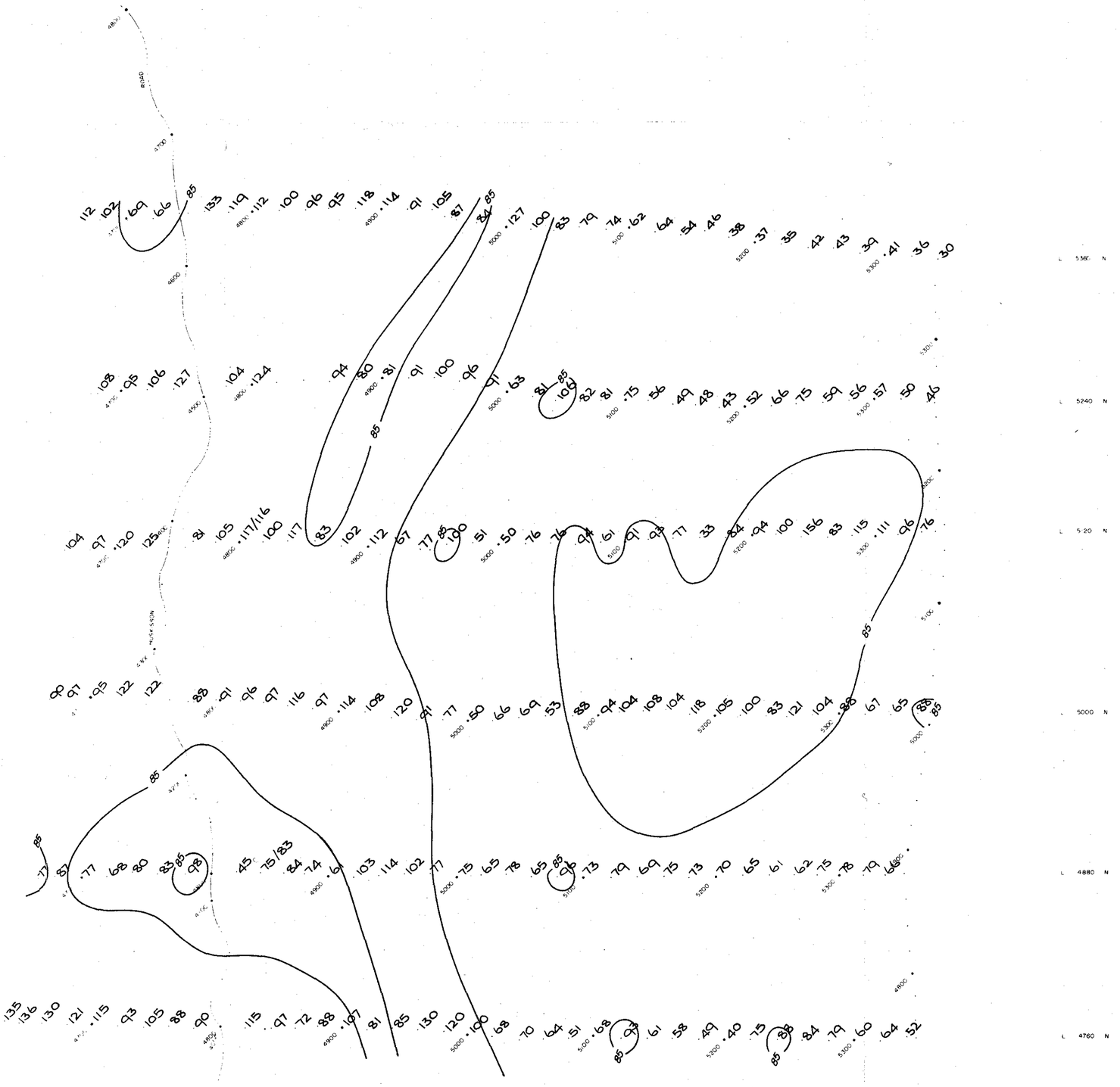
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAI

GEOCHEMICAL GRID AUGER SAMPLING

ZINC CONTOURS in ppm 030

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2879



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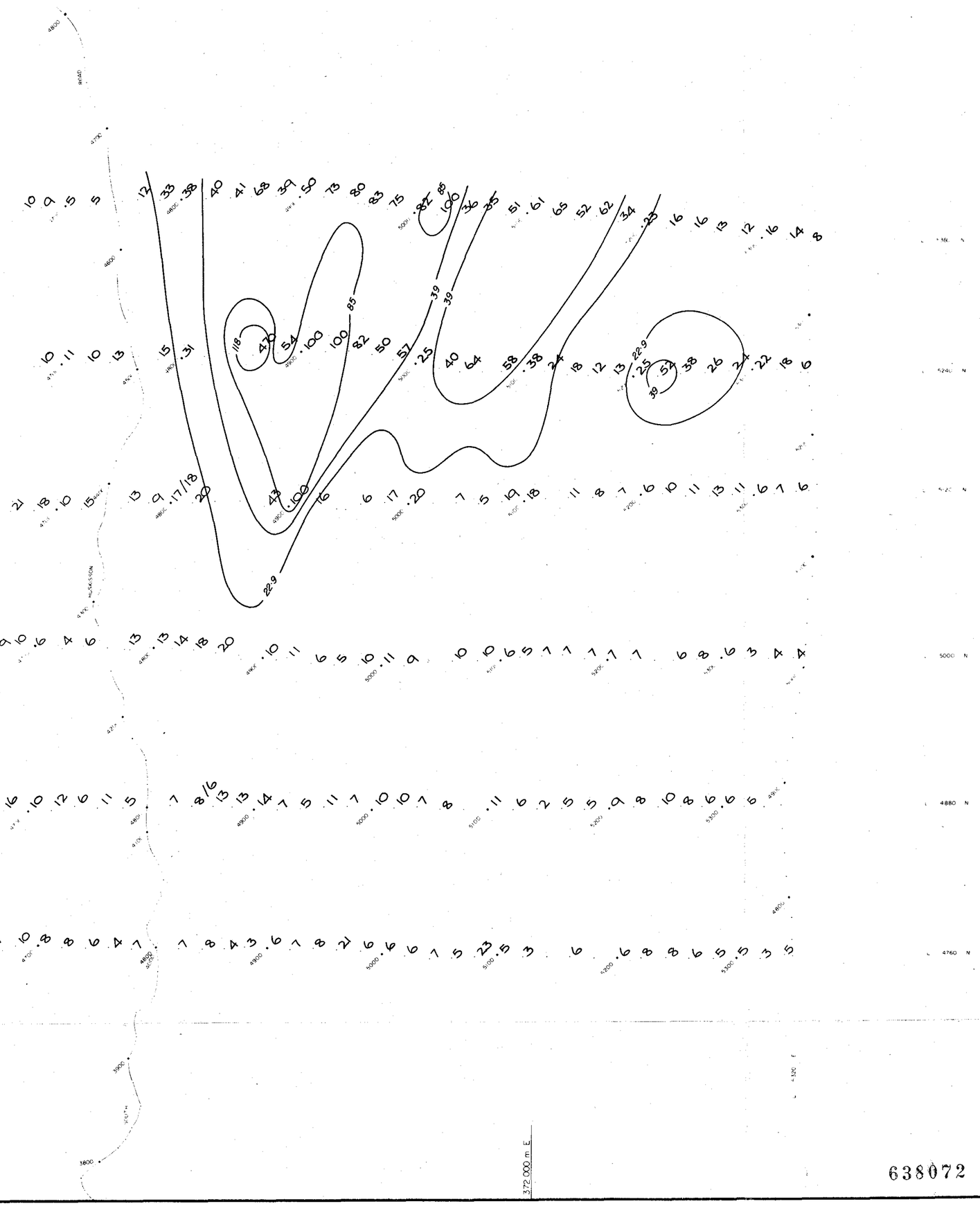
RAMSAY GRID - CAI

GEOCHEMICAL GRID AUGER SAMPLING

NICKEL CONTOURS in ppm 031

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N.P.G.	1 : 2500	TAS/2/2880

638071



5 cm

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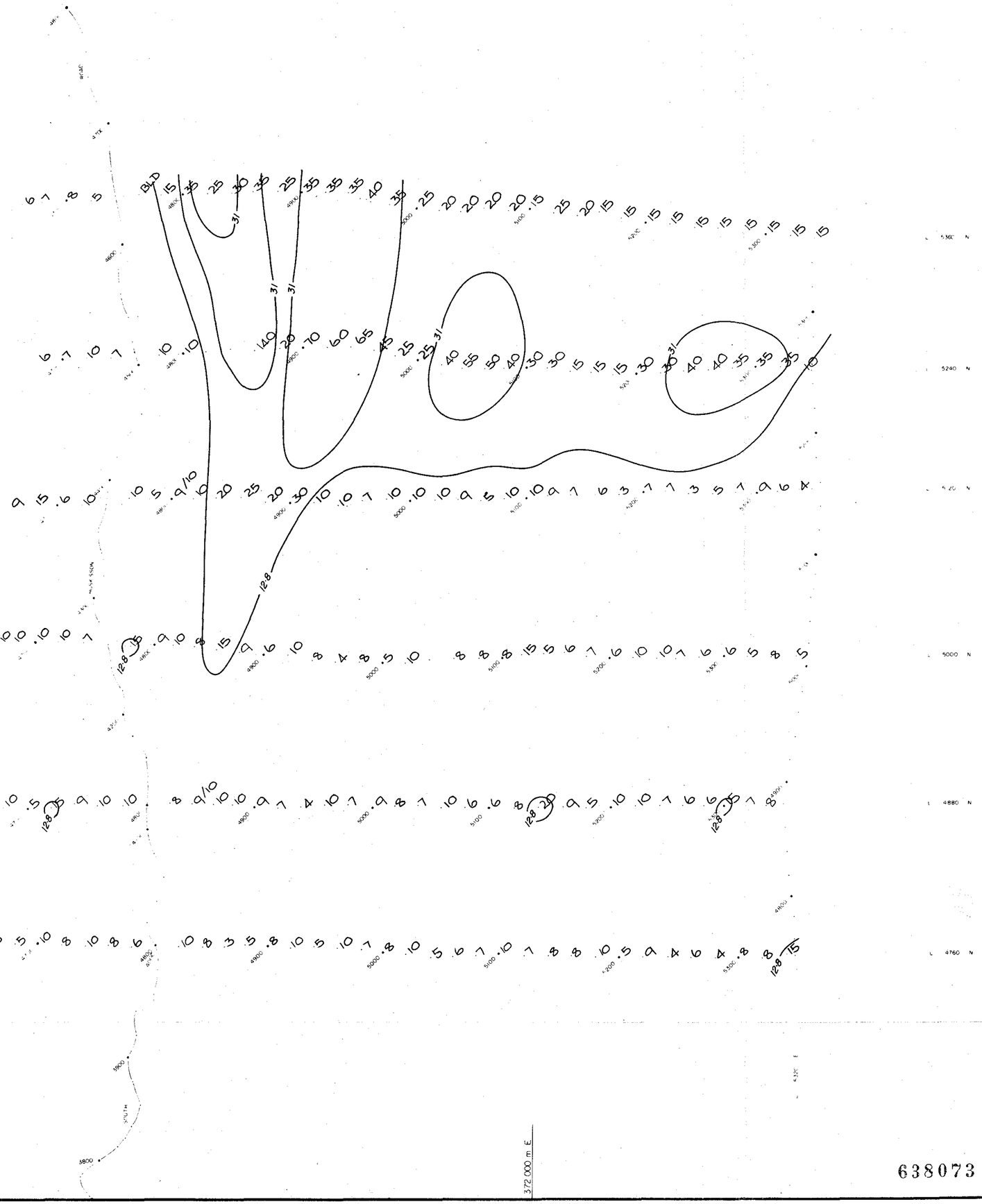
RAMSAY GRID - CAI

GEOCHEMICAL GRID AUGER SAMPLING

ARSENIC CONTOURS in ppm 032

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N.P.G	1 2500	TAS/2/2881

638072



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RAMSAY GRID - CAI

GEOCHEMICAL GRID AUGER SAMPLING

TIN CONTOURS in ppm 033

DRAWN	COMPILED	SCALE	
GEODRAFT 3/82	N. P. G.	1 : 2500	TAS/2/2882