642001

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PROJECT NAME: COMSTAFF PROPRIETARY LIMITED

TITLE: PROGRESS REPORT ON THE HUSKISSON AREA

EL 5/63 PART 5

AREA NAME/S, STATE 1:250,000 SHEET NO/S & COORDINATES: 1:250 000 Burnie sheet SK 55-03

COMMODITY/IES: Ni, Co, Sn

TEXT PAGES NO: 4

PLAN NOS: TAS/2/1586, TAS/2/3112

TABLE NOS:

APPENDICES:

AUTHOR/S: G F Pigott

DATE: 26 November 1982

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

642002

C O N T E N T S

PROGRESS REPORT ON THE HUSKISSON AREA

EL 5/63 PART 5

1. PREVIOUS WORK CARRIED OUT IN THE AREA

Original attention in this area was focussed on the Huskisson Ultramafic Complex. Grid lines were established over the complex, soil sampled and mapped. A nickel anomaly of + 8 000 ppm coincident with cobalt of + 600 ppm was realised over the eastern sector of the Complex. Trenching and diamond drilling of the anomaly was carried out, but no economic sulphide mineralisation was intersected.

1971-1972 - A regional programme of stream sediment sampling, geological mapping and access road construction was completed. A number of low order zinc and lead anomalies were realised with values of >450 ppm Zn and 225 ppm Pb. Grid lines were established to follow up the anomalies which were soil sampled and mapped. No significant anomalies were recorded.

1972 - The asbestos potential of the Huskisson Ultramafic Complex was examined without economic mineralisation being indicated.

1975 - The area was included in an airborne input electromagnetic-magnetic survey which delineated a series of conductors within the Huskisson Ultramafic Complex and also along the eastern contact with the Crimson Creek Formation.

1975-1978 - The input anomalies were followed up by establishment of grids which were soil sampled, mapped, surveyed with ground magnetics and Crone EM. In all cases the conductors proved to be unassociated with economic concentrations of sulphide mineralisation.

2. GEOLOGY

The geology of the Huskisson area as summarised below was compiled at a scale of 1:10 000 from mapping by Comstaff geologists and A V Brown of the Tasmanian Geological Survey.

The area is underlain by a wide range of sedimentary and igneous rock types spanning a time range from Upper Proterozoic to Quarternary. The distribution of rock units is shown on Plan TAS/2/3112.

Proterozoic

Quartz sandstones and siltstones interbedded with carbonaceous phyllite and shale underlie the north east sector of the area. Although weathered, the rocks exhibit multiple cleavages and poly phase folding with secondary mica developed along the cleavage and bedding planes. These rocks are assigned to the Upper Proterozoic Ramsay Group which, to the north, includes units of dolomite and dolomitic siltstone.

Cambrian

Crimson Creek Formation - The dominant rock sequence in the area is comprised of units assigned to the Crimson Creek Formation. The rocks are well exposed along the access tracks, in creeks and in costeans at the FAH grid. The dominant rock type is volcaniclastic lithic wacke with minor tuffaceous horizon of basaltic composition, interbedded with laminated siltstone and mudstone. Bedding dips steeply, both to the east and west, while facing directions are all westward. Cleavage bedding relationships suggest a synclinal axis to the west while minor folds plunge steeply to the north. Basaltic lavas have not been mapped nor have any carbonate rocks been noted.

The youngest rock unit of the Crimson Creek Formation include horizons of carbonaceous shale and quartz sandstone interbedded with the typical basaltic volcaniclastic lithic wackes. Such rocks are more typical of the Dundas or Huskisson Groups.

Igneous Rocks - The Huskisson Serpentinite forms the major intrusive body in this area. It is a deformed layered ultramafic complex comprised primarily of dunite, lessor peridotite and minor pyroxenite. Cumulate layering is well developed but is not continuous and proves difficult to trace from outcrop to outcrop.

...3

Emplacement of the ultramafic complex is considered to have occurred in the early Middle Cambrian along a pre existing line of weakness (A V Brown 1980). The eastern contact with rocks of the Crimson Creek Formation is a sheared fault zone.

Minor sills of basic-intermediate composition intrude the Crimson Creek Formation east of the Huskisson ultramafic complex. Emplacement of these bodies, predominantly gabbroic in composition, resulted in local induration of the intruded sedimentary rocks.

Huskisson Group - Graded turbiditic lithicwacke, siliceous sandstone, laminated siltstone and shale outcrop east of the tenement. These rocks are in faulted contact with the Ramsay and Crimson Creek rock sequences. Clasts and tuffaceous layers of acid volcanic material define these rocks as belonging to the Middle Cambrian Huskisson Group which is correlatable with the upper part of the Dundas Group.

Ordovician

Deeply weathered fossiliferous Gordon Limestone is in faulted contact with the Huskisson Serpentinite to the west. It is exposed in Con Lynch Creek and the Huskisson River. The basal Ordovivian conglomerate is not exposed in this area. Therefore the fault, along which the ultramafic complex is emplaced, cuts out the Cambrian Dundas Group and the Ordovician Owen conglomerate.

Silurian

The fossiliferous Eldon Group conformably overlies the Gordon Limestone to the west. The basal unit is a fossiliferous equivalent of the Crotty Quartzite. It is leached, calcareous, quartzose sandstone with interbedded green shale and conglomerate.

This is overlain in turn by a succession of interbedded siltstone, mudstone and quartz sandstone. A unit of flaggy calcareous siltstone grading into silty limestone, which is highly fossiliferous, is thought to be a correlate of the Amber Slate, outcrops to the south along the Pieman Dam Road.

...4

This could underlie part of this area but is not exposed.

Devonian

Units equivalent to the Florence Quartzite and the Bell Shale outcrop west of the tenement and occupy the synclinal axial zone of the Huskisson Syncline.

Tertiary

A small isolated outlier of weathered alkali olivine basalt caps a hill east of the Huskisson Serpentinite.

Quarternary

Glacially derived clay, silt, sand and tillite form a widespread masking cover over the Ordovician - Silurian rocks west of the Huskisson Serpentinite.

3. GEOCHEMISTRY AND GEOPHYSICS

A review of the stream and soil geochemistry has yet to be completed. The Input data is also to be re-examined in the framework of the geology now available. New information on the area is also available from the 1:50 000 aeromagnetic survey recently flown under the auspices of the Mines Department. It is clear that the western contact of the Huskisson Ultramafic Complex and the region underlain by the Ordovician-Silurian rock sequences have not been adequately prospected. Reappraisal of this area must take into consideration the presence of carbonate rocks within these Middle Palaeozoic sequences and the close proximity to a major fault delineated by the Ultramafic Complex.

G F PIGOTT

REFERENCES

Brown, A V 1980 - Some aspects of the geology of the Mt Lindsay-Dundas areas, western Tasmania. Tasmania Dept of Mines Unpublished Report 1980/42

Pigott, G F 1977- Final Report on follow up work on Input Anomaly FAH. Comstaff Pty Ltd. Unpublished Report No 7843.

Pigott, M 1972 - Huskisson Asbestos Project, 1971/1972 Summer Field Season Report. Comstaff Pty Ltd. Unpublished Report.

Wallis, D 1971 - Huskisson Regional Report, Summer 1970/71. Comstaff Pty Ltd, Unpublished Report.

LIST OF PLANS

Plan	Description	Scale
TAS/2/1586	Location of Comstaff Leases in Tasmania	1:2 500 000
TAS/2/3112	EL 5/63 Area 5 Huskisson Geological Plan	1:10 000

APPENDIX 1

642009

CENTRAL MINERALOGICAL SERVICES

Date: 15th February 1972

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
F 4523
Ferruginous Quartzose Argillite

Job No. CMS 72/2/4 Date Received: 2/2/72

Reference Letter dated 1st February 1972

Sample No. F 4523

Nature of Sample: Hand specimen

DESCRIPTION **SECTION No.**8314

a. Hand Specimen:

Brown, fine-grained sediment.

Microscopic:

This sediment is strongly ferruginous and most of the details are obscured by the limonite-goethite pervading the rock.

The rock appears to be a ferruginous clay, with embedded quartz fragments and patches of quartz aggregates. Some of the quartz is quite massive and may be vein-material; it occasionally shows outlines suggestive of replacement of rhombohedral carbonate.

The rock is bedded or layered; these structures are contorted and buckled, possibly due to slumping.

There is no real evidence to suggest a tuffaceous origin or component.

In addition to abundant goethite-limonite, manganese-oxide also occurs as interlayered films and also in crosscutting veinlets.

The environment of deposition was probably an oxidising one; the rock is probably partly chemical, partly detrital.

HW. Fander, M.Sc.

642010

CENTRAL MINERALOGICAL SERVICES

Date: 15th February 1972

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
F 4525
Recrystallised (oxidised) Pyritic Chert

Job No. CMS 72/2/4 Date Received: 2/2/72

Reference Letter dated 1st February 1972

Sample No. F 4525

Nature of Sample: Hand specimen

DESCRIPTION **SECTION No.** 8316

a. Hand Specimen:

Massive, fractured quartz with goethite pseudomorphs after pyrite.

Microscopic:

This rock is actually a pyritic chert.

It is composed of microcrystalline chalcedonic quartz, with numerous shrinkage cracks, patches, and veins of clear mosaic quartz along joints. Goethite also follows the jointing.

Euhedral goethite pseudomorphs are scattered through the rock and are clearly derived from primary pyrite (i.e. syngenetic pyrite). The original pyrite must have developed in the chert prior to consolidation, because of the intricate crystal-structure shown.

H.W. Fender, M.Sc.

642011

CENTRAL MINERALOGICAL SERVICES

Date: 15th February 1972

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
F 4527
Orthoquartzite

Job No. CMS 72/2/4 Date Received: 2/2/72

Reference Letter dated 1st February 1972

Sample No. F 4527

Nature of Sample: Hand specimen

DESCRIPTION **SECTION No.** 8318

a. Hand Specimen:

Iron-stained, porous quartzite.

Microscopic:

This is a well-cemented orthoquartzite. It is composed virtually entirely of evenly-sized quartz grains, mostly in the medium-sand range (0.25 - 1.0 mm). The cement is secondary quartz in optical continuity with the framework grains; grain-boundaries are still visible due to thin films or coatings. These show that the original grains were subangular to subrounded and well sorted. Occasional grains of oxide opaques and detrital zircon are seen. The rock is rather featureless and no other observations of significance were made.

H.W. Fender, M.Sc.

642012

CENTRAL MINERALOGICAL SERVICES

Date: 15th February 1972

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
F 4529
Brecciated Ferruginous Siltstone

Job No. CMS 72/2/4 Date Received: 2/2/72

Reference Letter dated 1st February 1972

Sample No. F 4529

Nature of Sample: Hand specimen

DESCRIPTION **SECTION No.** 8320

a. Hand Specimen:

Fine-grained brown sediment with parallel, thin green chloritic veins.

Microscopic:

This may be termed a ferruginous silt-stone, with crosscutting quartz-chlorite veins. There is some mild brecciation also.

The rock is composed of very fine quartz grains in an argillaceous, ferruginous matrix. It is bedded, and contains darker streaks, lenses and layers (more ferruginous), with some indication of graded bedding and minor crumpling and slumping.

The rock is penetrated by patches of quartz and cut by zoned veins of quartz-chlorite. Brecciated areas consist of rock fragments set in quartz and chlorite-vein material.

H.W. Fender, M.Sc.

642013

CENTRAL MINERALOGICAL SERVICES

Date: 15th February 1972

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
F 4531
Sericitic, Micaceous Quartzite.

Job No. CMS 72/2/4 Date Received: 2/2/72

Reference Letter dated 1st February 1972

Sample No. F 4531

Nature of Sample: Hand specimen

DESCRIPTION **SECTION No.** 8322

a. Hand Specimen:

Very pale, micaceous, arenaceous sediment.

b. Microscopic:

This is an indurated sericite-quartzite, very obviously derived from a granitic source.

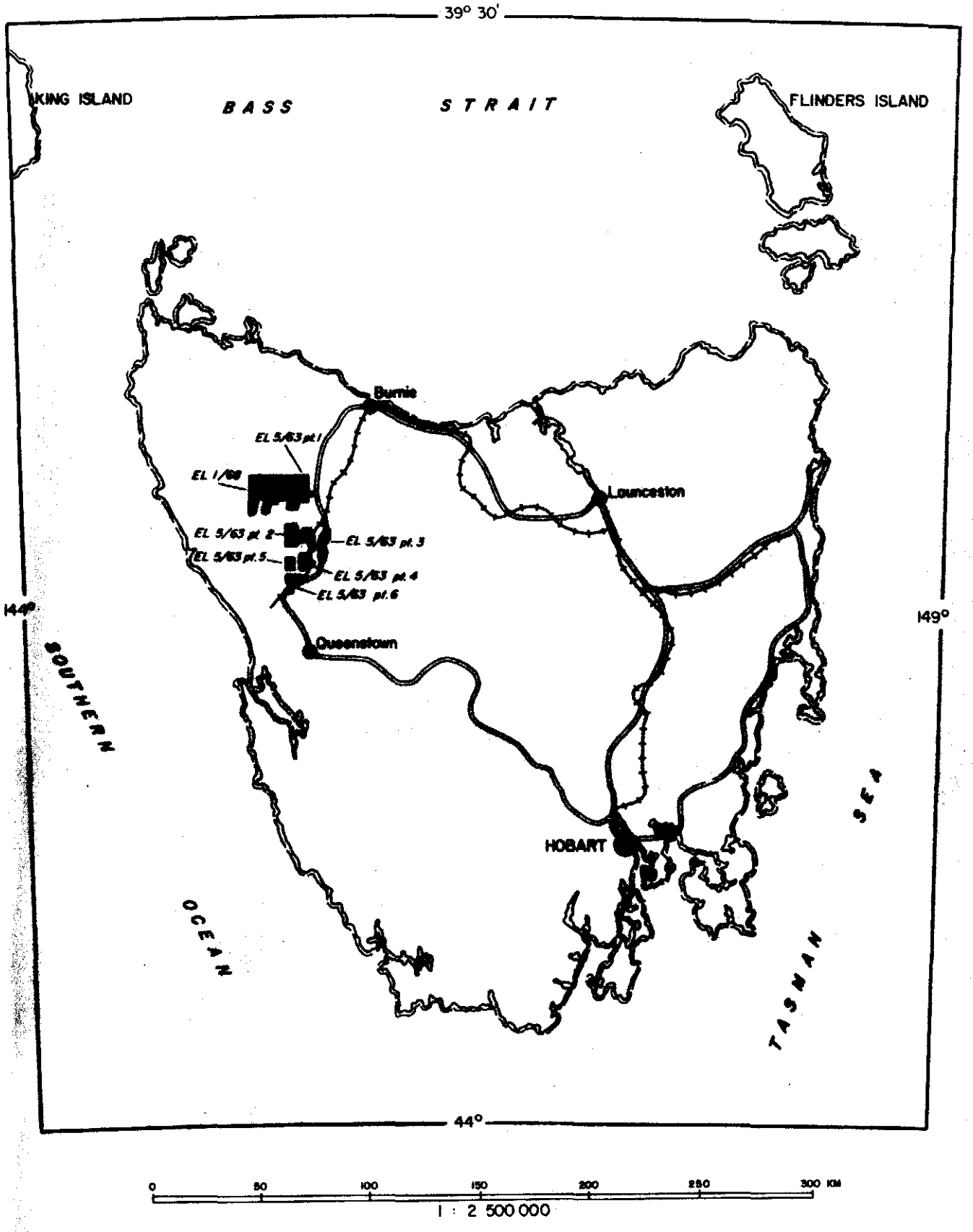
It consists of rather poorly-sorted and sized subangular quartz fragments, ranging in size from 0.03 mm to 0.3 mm, and of small patches of sericite (representing altered feldspar). Contorted flakes of muscovite are present and seem to be randomly orientated. Bedding is apparently absent in this rock.

The matrix/cement is fine sericite and secondary quartz.

Detrital heavy minerals occur; the most conspicuous is tourmaline (mostly green and brown), and zircon is present as small subhedral crystals.

H.W. Fander, M.Sc.

642014



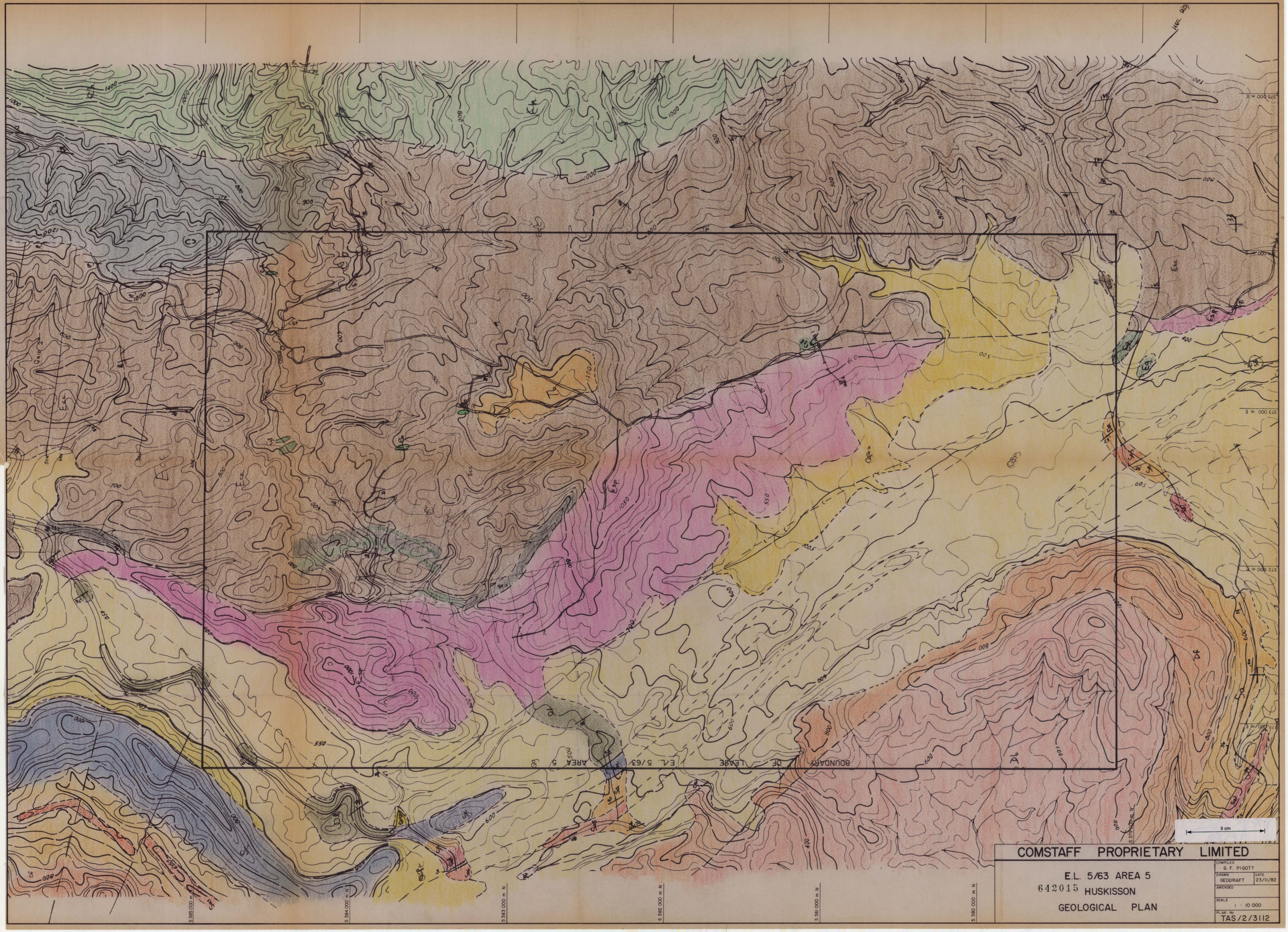
Major roads
Major railways
Major towns
Comstaff lease areas

5 cm

COMSTAFF PROPRIETARY LIMITED

LOCATION OF COMSTAFF LEASES IN TASMANIA

DRAWN [illegible] DRAFT 7/71 | COMPILED | SCALE 1 : 2 500 000 | TAS/2/1586



COMSTAFF PROPRIETARY LIMITED

E.L. 5/63 AREA 5

642015 HUSKISSON

GEOLOGICAL PLAN

COMPILED	G. F. PIGOTT
DRAWN	GEODRAFT
DATE	23/11/82
AMENDED	
SCALE	1 : 10 000
PLAN No.	TAS/2/3112