EXPLORATION LICENCE 9543

MOUNT MASSON

Pine Creek 1:250,000 map sheet area, DS-52-8
Mount Mason 1:50,000 map sheet area, 5271-2

ANNUAL REPORT

FOR THE PERIOD ENDING 14TH SEPTEMBER, 1997

CORPORATE DEVELOPMENT PTY. LTD.
A.C.N. 009 610 271

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1.0 SUMMARY

During this year literature searching followed by initial field programme of 1: 10 000 geological mapping and prospecting was carried out.

At the nearby Touheys Mines, gold mineralisation occurs in oxidised quartz veins within discrete zones apparently controlled by structure within the Wildman Siltstone. The Touheys deposits represent a typical mesothermal style mineralisation; a style that appears to be controlled by strike slip shearing; and either parasitic folds or dextral wrench faults. Exploration has been directed towards evaluating the Wildman Siltstone for repetitions of this style of mineralisation and also the Mundogie Sandstone for brittle fracture controlled gold mineralisation within a coaxial shear system. (Follow up of stream sediment bleg results led to finding the Watts West project south of the Touheys South Mine.)

Interest has also been directed towards iron ore deposits in the area. Corporate is endeavouring to acquire enough iron ore tonnage in the region to warrant setting up a mining operation of an export programme.

Although little is known about the iron ore resources within EL9543, a field trip has found indications of potential ore bodies in the area and further investigation is warranted.

2.0 TENURE

Exploration Licence 9543 was granted to Corporate Development on 15th August, 1996 for a period of two years (figures 1 and 2)

The Licence covers an area of being 23 sq. kms. being 7 blocks on the Mount Mason Sheet.

The Expenditure Covenant for the first year of the title is $6,000-.

3.0 PREVIOUS EXPLORATION

Successful exploration in this area has led to mining at Frances Creek for iron ore in the 1960's; at Touheys, gold deposits in the late 1980's and currently alluvial gold mining is taking place at McKeddies on the eastern boundary of the licence. The Mount Masson area is approximately 20kms ENE of Mt. Wells tin mine (7935700E, 8505400N).

The Touheys North Mine, 5 kms west of the licence is an east-west quartz system of some 190m that varies in width between 1.5 and 0.3m with an average mined grade of 5.98g/t Au. The Touheys South mine consists of a narrow (up to 1.4m) quartz vein system that has a 300m mineralised strike length and is supergene enriched at the water table (Jettner 1995). To August 1993 these pits had produced 8,955 tonnes at a grade of 8.4g/t Au.

4.0 REGIONAL GEOLOGY

The Mt. Masson area of Mount Wells district lies in the central portion of the Paleo-Proterozoic Pine Creek Geosyncline, a macroscopic structure of 66,000 sq. kms. In the Katherine to Darwin region. This province consists essentially of Early Proterozoic fluviatile and basinal sediments (with minor bimodal volcanics) that on lapped small exposures of Archaean inliers. Ongoing sedimentation changed to flyschoid sedimentation. The regional stratigraphy is shown in table 1.

During the waning stages of the deposition, igneous dykes and sills were intruded. The sediments were then folded and metamorphosed to Lower Greenschist facies grades metamorphism in the central part of the basin. This led to the development of the Top End Orogeny (1879-1855 Ma), when syn - to post tectonic granitoid plutons and dolerite lopoliths were emplaced.

Extensive granite emplacement (1850-1855 Ma) took place after the main deformation events as evident by the super position of contact over regional metamorphic fabrics (figure 3).

The tectonic history suggests four phases of deformation;

D1 and D2 are related to metamorphic development produced bedding and foliated regional folds.

D2 developed shallow dipping low angle shear zones in response to crustal shortening during basinal compression.

D3 and the development of F3 folds that are tight to very tight N-S trending folds and refolded S1/S2 folds.

D4 a final folding episode that refolded F3 folds along an E-W axis producing open folds with steep dipping axial planes.

4.1 Stratigraphy

The licence area is underlain by sediments of the Lower Proterozoic MASSON FORMATION and the NAMOONA GROUP that is unconformably overlain by the MUNDOGIE SANDSTONE and the WILDMAN SILTSTONE of the MOUNT PARTRIDGE GROUP.

The continental tholeiite of the Zamu Dolerite is an intrusive sill, particularly at the MASSON FORMATION - MOUNT PARTRIDGE unconformity. Structure is dominated by an open north plunging anticlinal fold, the core of which has been intruded by the Meso-Proterozoic Cullen Granite.

Siltstone, slates and phyllites form the MASSON FORMATION. The MUNDOGIE SANDSTONE comprises coarse to pebbly felspathic quartz sandstone, quartzite and arkose, and contains a major pelitic lens.

The WILDMAN SILSTONE is predominantly a pelitic unit, with sandstone lenses, up to 750m thick. It consists of two members, both cropping out in the licence. The lower member (400m) is poorly exposed being thinly bedded bleached white to grey carbon rich siltstone and shale with minor ferruginous horizons. The upper member (350m) is thinly bedded pelite, often carbon rich and sandstone that can be sericitic.

These Early Proterozoic rocks have been subjected to regional Greenschist metamorphism (map 1).

4.2 Structure

Structural mapping suggests four separate deformations have occurred. The first deformation (D1) resulted in the lithology's being isoclinally folded about sub-horizontal N to NE trending fold axes (F1).

The folds are asymmetric, verge to the W, and in part may be overturned. An example of this style of folding is the overturned tight to isoclinal fold with a sheared fold hinge marked by quartz reefs trending NNW from the McKeddies Gold Mine. A closure in the quartzite is seen 3km north of the mine.

These folds are associated with a steeply E dipping penetrative regional cleavage (S1). Cleavage bedding relationships suggest these folds are widespread in the tenement (map 1). This event produced strong layer parallel or sub-parallel S1 axial plane schistosity or planer fabric.

F1 folds are deformed by two later shearing events. D2 shear zones trend NNE and are steeply E dipping and layer parallel. They are up to 100m wide, being defined by a schistose foliation (S2). The S2 foliation contain a dominant near vertical mineral lineation perpendicular to boudin necks observed in quartz veins.

Numerous tension fractures with ferruginous quartz veins occur in these shears.

This foliation was disrupted by a third structural episode. D3 shear zones are up to 500m wide, produced a dominant shallow dipping (30') low angle cleavage with well developed N-S foliation (S3) defined by CS fabrics and a sub horizontal mineral lineation (L2). These features indicate dextral movement of a wrench shear system and are better developed to the west of the licence eg the Mt. Wells to Mt. Ringwood Shear.

Throughout the general area are faults that cut the stratigraphy at oblique angles; particularly the 120' set being stronger than the 030' set. Both these directions manifest themselves in the creek morphology. These faults form conjugate sets which were mainly brittle in character forming extensional faults and fractures, and propagating quartz veining. Shear features of rock failure are common, particularly feather fractures, step like breaks, imbricated fractures and slickensides. These features are observed on the quartz reefs that trend dominantly either at 160', as axial shears, or 120' as oblique faults. They indicate the important of the strike slip movement. These features and movements are likely to be post the quartz sulphide mineralisation.

The evolving stress field that led to four deformations and pre-, syn- and post-granitoid intrusion is reflected in the multiple phases of vein quartz. They are:-

1: compression F1 which created pre-quartz mineralisation primary tensile fractures.
2: compression of the WSW - ENE direction (F2), which produced shear structures a reverse faults and strike - slip faults, tensile riedal fractures and en echelon folds and faults.
3: basement uplift or basement fault activity causing tensile openings of existing structures to form conjugate faults.

5.0 EXPLORATION MODELS

The Touheys North, 12'23.5, 131'47,95" and South, 13'24.7", 131'47.8" deposits are found in a similar stratigraphic position, near the top of the Lower Wildman Siltstone and approximately 50m below a pyrite rich greywacke unit. This bedding shear zone is marked by semi continuous exposures of vein quartz and sericitic rich quartz and siltstones.

It appears the gold mineralisation is controlled by a post ductile deformation brittle fracture pattern with the mineralogy being controlled by lithology and suitable structure. At Touheys North the auriferous quartz reef trends 300', and dips 25' to 40' north, and is located on a parasitic fold, formed during shearing.

Touheys South is within a ballooned portion of a dextral wrench shear and the quartz vein system feathers north and south of the deposit. At Touheys South the mineralised shear is slightly discordant to bedding, dipping about 45' west and trending 160'. This ballooning may be due to a dilational jog between two active contemporaneous faults.

Gold mineralisation at the McKeddies Mine, 13'26.7", 131'51.3", is concentrated on the contact between dolerite and carbon rich siltstones; or within quartz reefs in the overturned anticlinal core. Adjacent to these quartz reefs, chlorite alteration has occurred in the dolerite. Where north west (120') trending dextral faults cross cut the north - south structures enrichment of mineralisation of mineralisation has occurred.

Iron ore mineralisation at the Nearby Millers iron/manganese deposit is contained in the Masson formation which are tightly folded with axial traces trending and gently plunging to the north west (R. Friesen, FIMCO, 1972)

The iron ore deposits sought within EL 9543 are expected to have similar characteristics; anticlinal and synclinal structures are to be targeted for undiscovered mineralisation.

6.0 WORK COMPLETED

During the first year, following literature searches and data acquisition, geological mapping at 1:10,000 scale and prospecting of prospective horizons.

A study of the structural controls for gold and iron ore mineralisation is considered important to finding blind targets and evaluating the known mineralised zones.

Gold mineralisation was emplaced in the early shear zones during D1 isoclinal fold development. Mineralisation within this system was then remobilised and concentrated with the development of cross cutting shear zones, particularly the 110-120' ones leading to further dilation coinciding with the earlier deposits.

Prospecting the licence located numerous quartz reefs, ferruginous quartz veining (often in brittle fractures within the sandstone and quartzite and ferruginous/hematite zones).

7.0 EXPENDITURE

Literature Searches	$1,175-
Field work and Consumables	$1,690-
Geologist	$1,580-
Drafting	$ 770-
Admin, etc.	$ 840-
	$6,055-

8.0 PROPOSED EXPLORATION PROGRAMME

Field trips	$2,000-
Drafting	$1,000-
Admin, etc.	$1,000-
Geology	$ 500-
	$4,500-

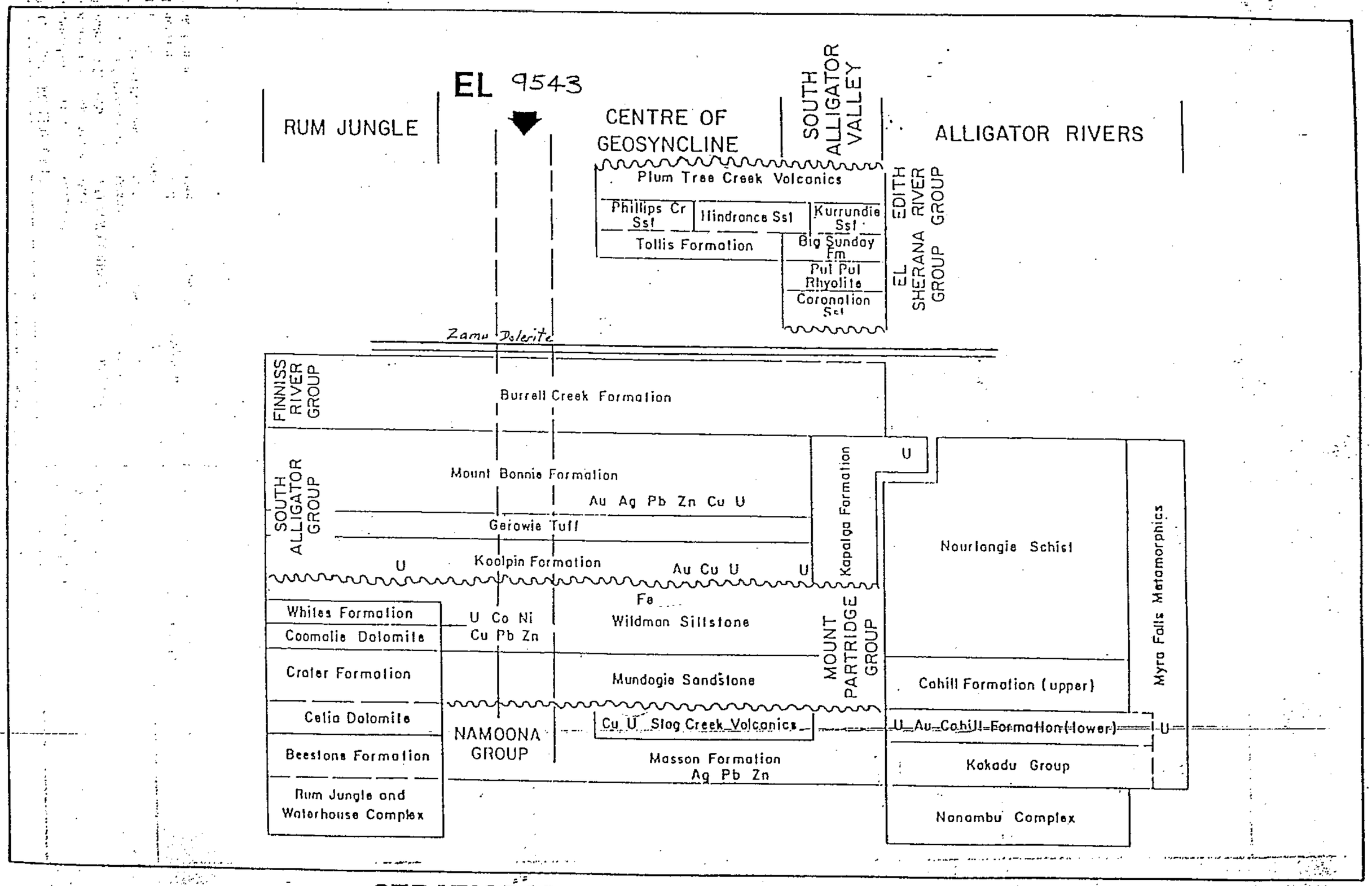
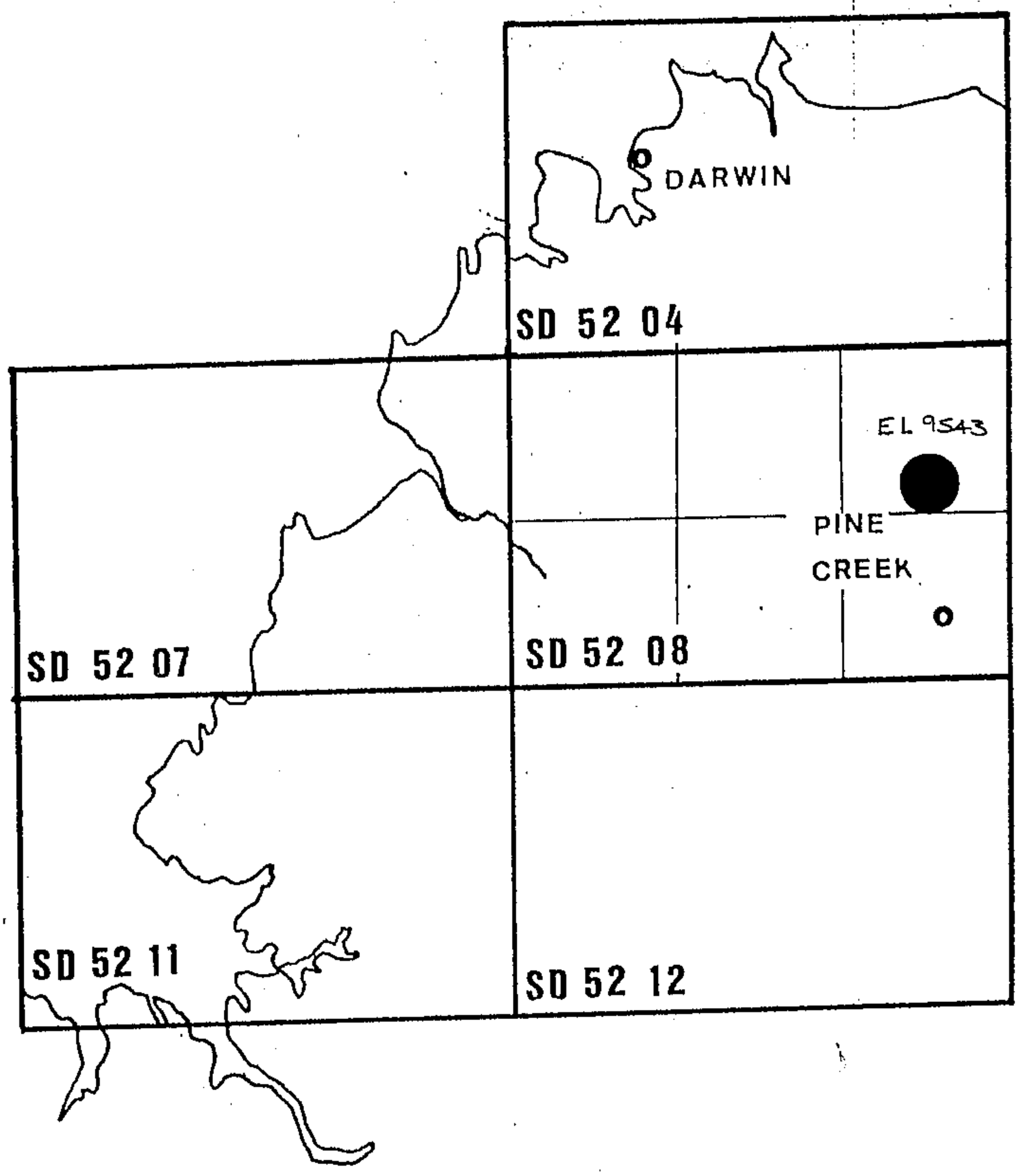


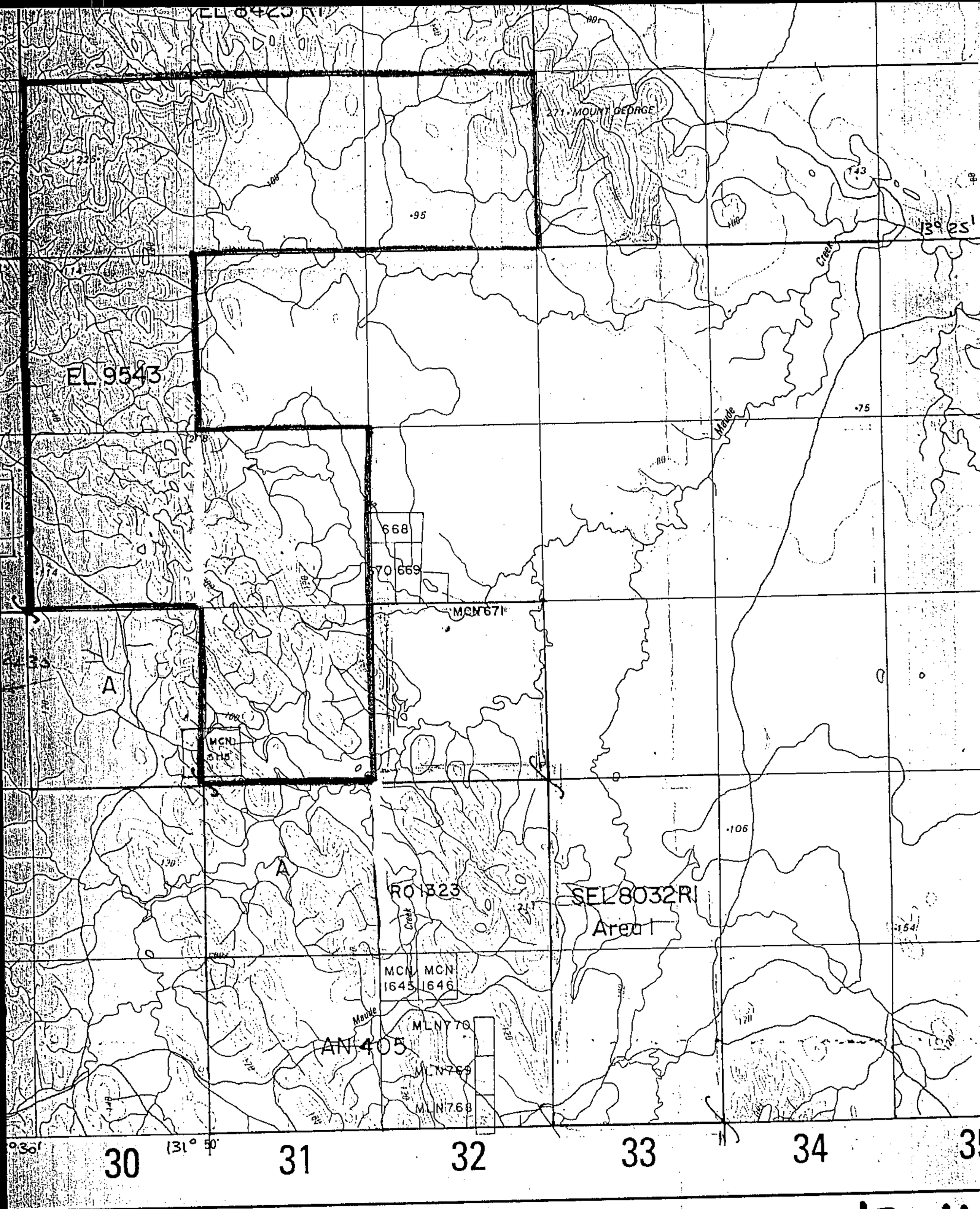
TABLE 1 STRATIGRAPHY OF THE PINE CREEK GEOSYNCLINE



EXPLORATION LICENCE

Mount Masson Area
Tenure Location Map

Figure 1



SCALE 1:50 000

14/3-11

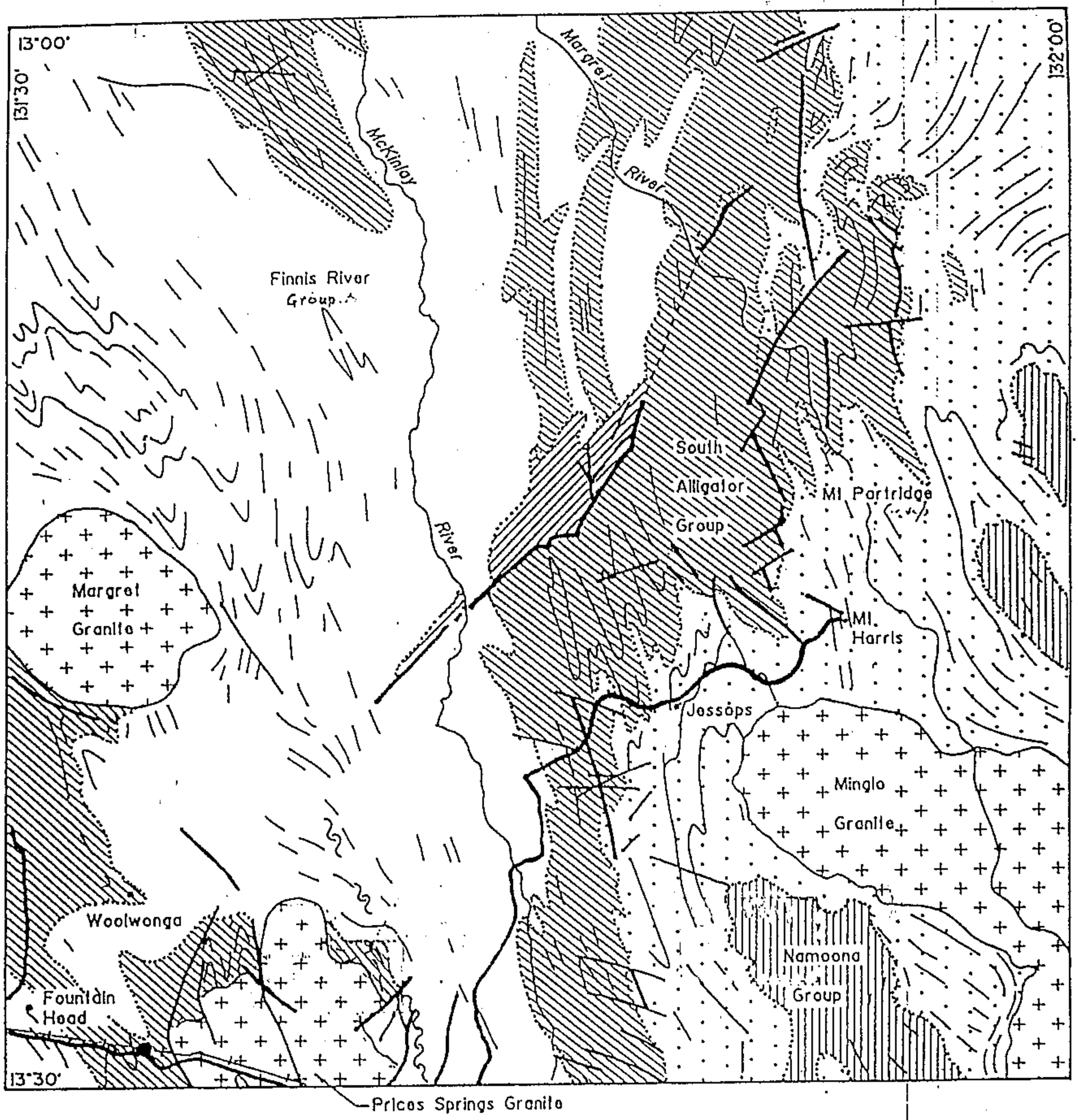
Kilometres 1 0 1 2 3 4

USTRALIAN GEODETIC DATUM 1966
AUSTRALIAN HEIGHT DATUM
MERCATOR PROJECTION

FULL LATITUDE AND LONGITUDE VALUES ARE SHOWN AT THE SHEET CORNERS, WITH EVERY 5' VALUE BEING LABELLED AROUND THE
10 000 METRE INTERVALS OF THE UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 52 (AUSTRALIAN MAP GRID) ARE ALSO SHOWN EX
CONTOUR INTERVAL 20 METRES.

MT MASSON

FIGURE 2



Namoona Group - Masson Formation

Mt Partridge Group - Wildman Siltstone and Mundogie Sandstone

South Alligator Group - Koolpin Formation, Gerowie Tuff, Mt Bonnie Formation

Finnis River Group - Burrell Creek Formation

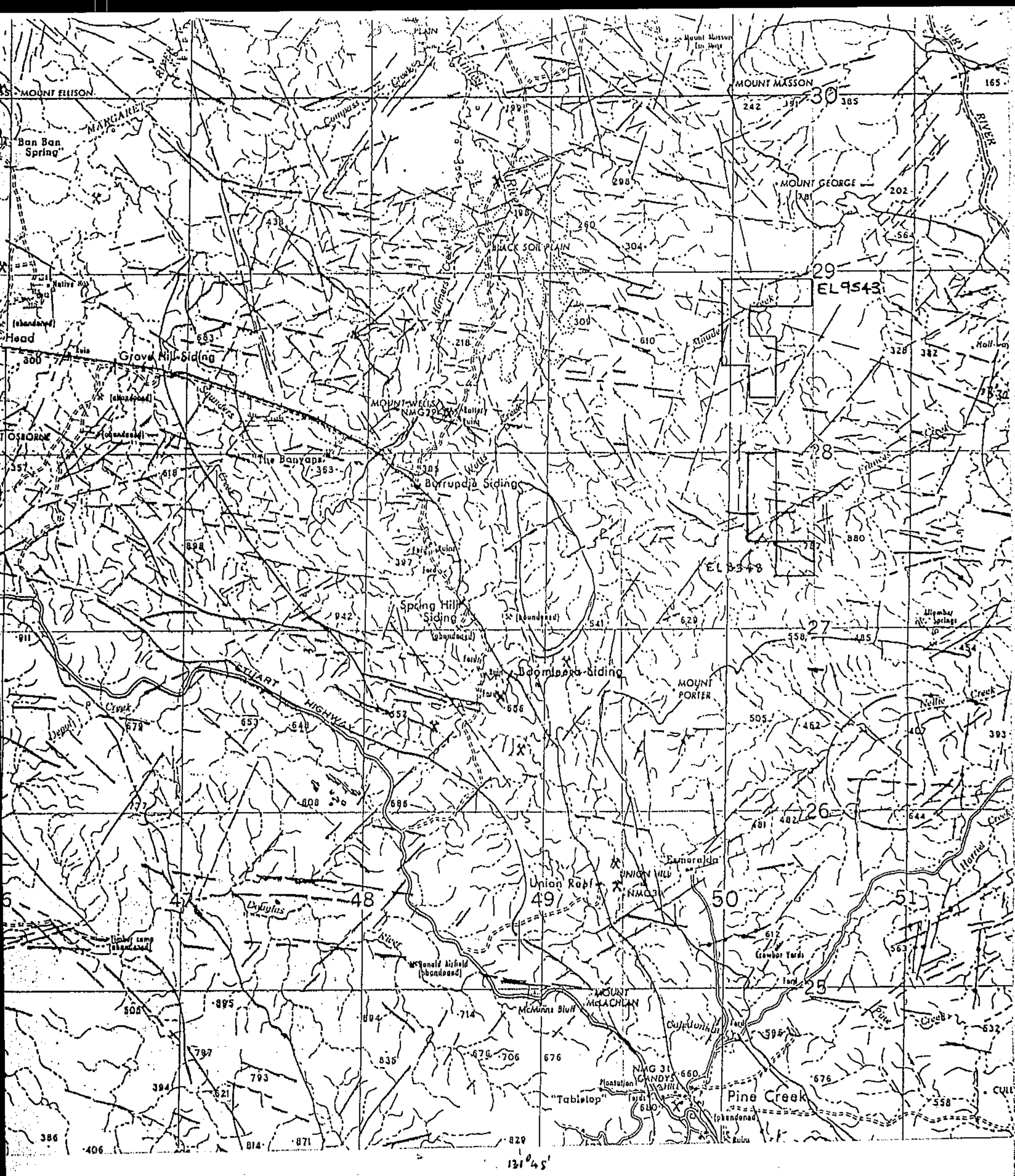
Cullen Batholite - Prices Granite, Minglo Granite, Margret Granite

Katherine River Group - Kombolgie Formation

Major shear zone

Fault

Figure 3 REGIONAL GEOLOGY - McKINLAY RIVER



LANDSAT INTERPRETATION

Mt WELLS - FRANCES CREEK

SCALE 1:250,000

FIGURE 5

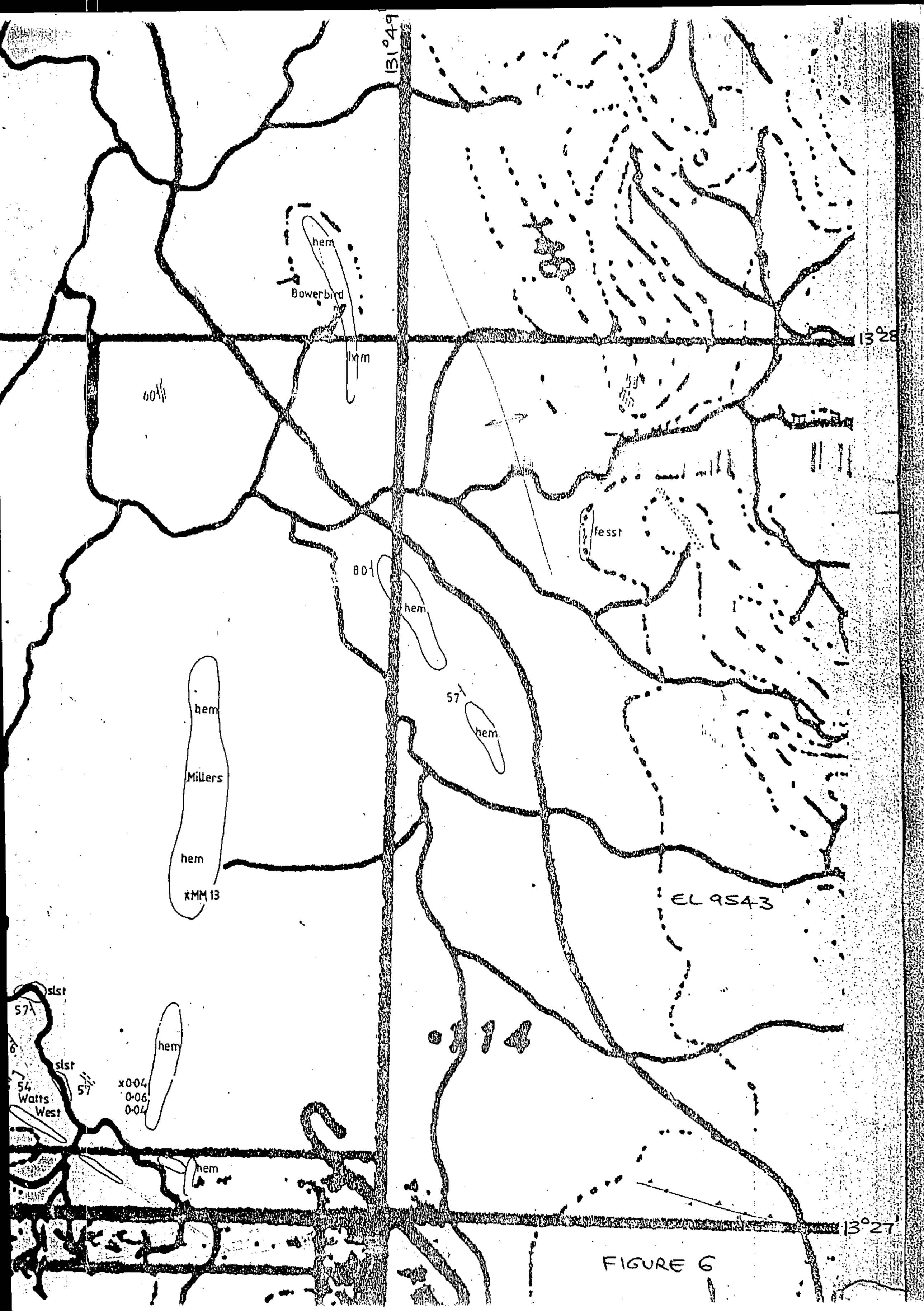

131°49'
13°28'
13°27'
hem
Bowerbird
hem
60
fesst
80
hem
57
hem
hem
Millers
hem
xMM 13
EL 9543
slst
57
slst
54
Watts
West
57
x0·04
0·06
0·04
hem
hem

FIGURE 6

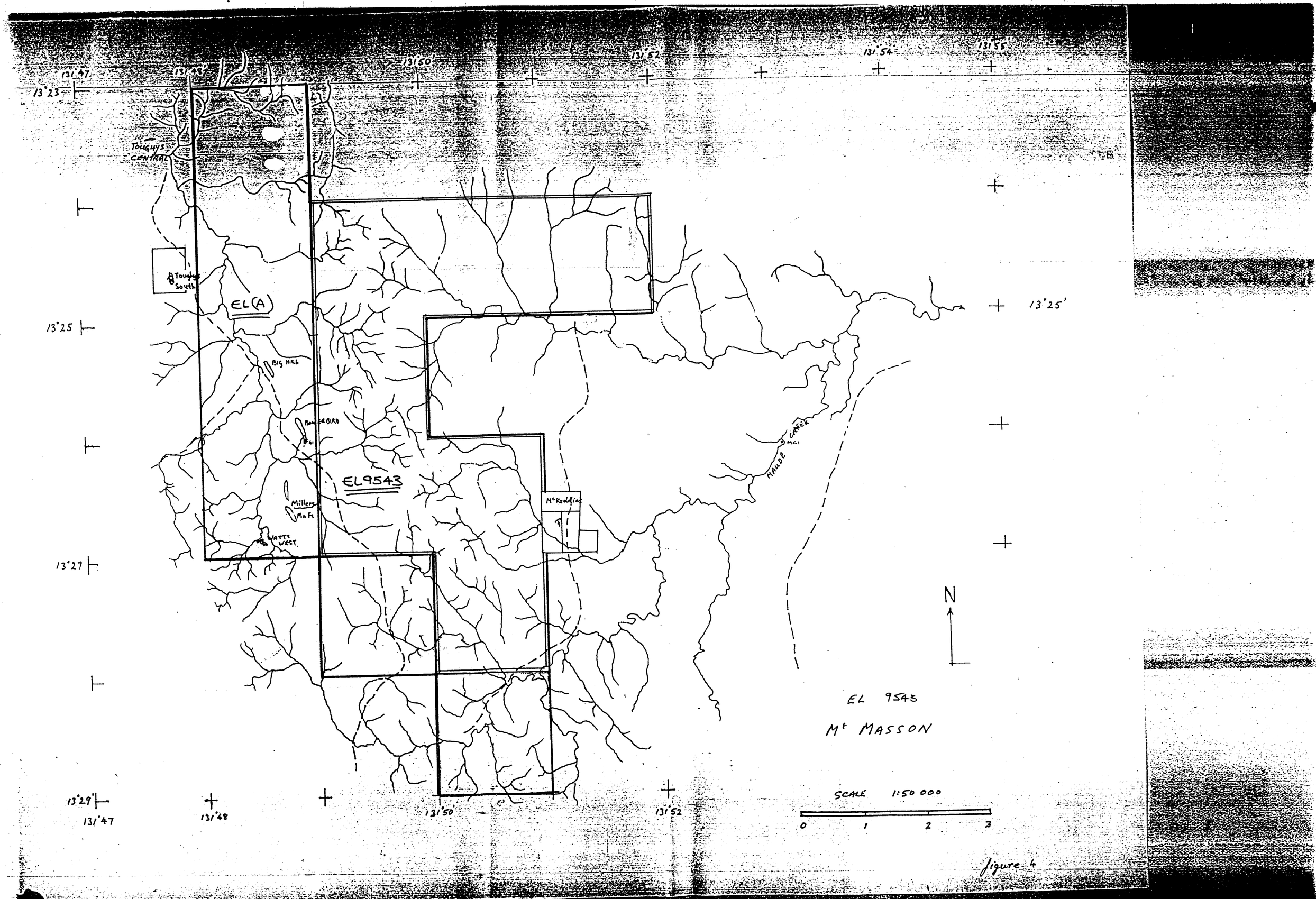

131°47'
131°48'
131°50'
131°52'
131°54'
131°55'
13°23'
13°25'
13°27'
13°29'
TOUGHYS CENTRAL
Toughys South
EL(A)
BIG HILL
BOOMERANG
EL9543
Millers Mt Fe
WATTS WEST
McKeddies
GAFER
MCI
HALLDE
N
EL 9543
Mt MASSON
SCALE 1:50 000
0
1
2
3

figure 4