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ANNUAL REPORT

YEAR ENDING 28 AUGUST, 1989

EXPLORATION LICENCE 6098

BAN BAN SPRINGS, N.T.

Compiled by Golden Plateau N.L.
September, 1989

CONTENTS

LIST OF PLANS

1. INTRODUCTION

Exploration Licence 6098 was granted on 29 September 1988 to Golden Plateau N.L. for a term of two years. Exploration was conducted by Golden Plateau N.L. during the first year of title.

The tenement consists of two blocks, each one minute square, and covers approximately 6.5 square kilometres commencing six kilometres NNW of Ban Ban Springs Homestead (Figure 1). The area is located on Burnside 1:50000, Batchelor 1:100000 and Pine Creek 1:250000 topographic maps. The area is also subject to Ban Ban Springs Pastoral Lease.

Previous investigations include base metal exploration by Geopeko and gold exploration by W R Grace and Western Mining Corporation. Open file reports of this activity are available at the Department of Mines and Energy, Darwin.

Exploration during the first year of title was directed at gold and included detailed geological mapping and the commencement of a rock chip sampling programme.

The tenement also falls within a regional air magnetic and radiometric survey completed for Golden Plateau N.L.

2. CONCLUSIONS AND RECOMMENDATIONS

Geological mapping and preliminary airmagnetic interpretation indicate the licence is mainly underlain by Gerowie Tuff which has been extensively intruded by Zamu Dolerite. Several northwest and northeast trending faults and lineaments pass through the area. These could be loci for gold mineralisation.

It is recommended that reconnaissance rock chip and drainage geochemistry is completed to determine gold distribution throughout the licence.

Further work will depend on the outcome of this reconnaissance.

3. CURRENT EXPLORATION

3.1 Geology & Geochemistry

EL 6098 is located in the central part of the lower Proterzoic Pine Creek Geosyncline. Dating indicates that deposition took place about 1900 Ma ago on an Archaean (c2500Ma) basement (Needham et.al, 1988). The Pine Creek geosyncline contains an almost entirely sedimentary depositional pile estimated to be about 10km thick (Needham et.al., 1985). Sediments pass from fluviatile at the base to shallow and deeper water marine (turbidite) environments at the top. The orogenic development of the Pine Creek geosyncline was punctuated by mafic and felsic magmatism, mainly evident from plutonic rocks. The orogenic stage spanned the interval from 1870 to 1780 Ma (Needham et.al, 1988). These features are widely interpreted to imply initiation of the Pine Creek Geosyncline as an intracratonic rift system which subsequently widened and deepened before undergoing a convergent stage which caused orogenesis (Stuart-Smith et.al., 1980; Etheride et.al., 1985; Needham et.al., 1988).

The Pine Creek Geosyncline is major gold and uranium province which also contains many minor tin, lead-zinc and copper mineral occurrences. Most of these metalliferous deposits were probably formed by late-stage magmatic fluids associated with post orogenic granitoids (Palfreyman 1984; see also Needham and Roarty, 1980).

The geology of the tenement block is dominated by volcaniclastic sediments and cherts intruded by meta dolerite sills. This unit is the Gerowie Tuff which occupies the central position in the South Alligator Group and at this location about half the volume of the unit is intruded by Zamu Dolerite (Map 2) The two units comprise over 90% of the tenement.

About one kilometre south of EL 6098 a granite pluton, the Burnside Granite, forms the core of structural dome. The sequence faces north, away from the dome, and includes quartz sandstones of the Koolpin Formation and siltstones and shales of Mount Bonnie Formation. These lithologies lie respectively below and above the Gerowie Tuff and are the stratigraphic lowest and highest units within the Licence boundary.

The tenement lies outside of the belt of known gold occurrences which are found to the south of the Burnside Granite (BMR 1:100000 Batchelor-Hayes Creek).

Results of mapping EL 6098 provide general agreement with the Bureau of Mineral Resources (BMR) stratigraphy. The units are described in more detail below.

Koolpin Formation

Rocks of the Koolpin Formation (South Alligator Group) are exposed on the flanks of the Burnside Granite structural dome (BMR 1985 map) and form the base to the sequence held under EL 6098.

The Formation is represented by quartz sandstones in the southern part of the Licence along with a thin unit of schist and phyllite immediately east of the Licence.

On a regional scale the main rock types are graphitic and white mica schist and phyllite, spongy ironstone (gossan) and 'clean' metaquartzite. Associated with some quartzite layers are bedded zoisite - plagioclase (?) calc-silicate rocks. The inferred depositional environment is a sediment and oxygen starved basin (Needham et.al., 1988) or possibly a shelf onto which small volumes of probably mature detritus were sporadically introduced.

Gerowie Tuff

This unit conformably overlies the Koolpin Formation (Needham et.al., 1980) cropping out around the Burnside Dome and occupies the greater part of EL6098.

It comprises a atuffaceaous grey-black chert with lesser tuffaceous (?) white shale. Regionally the Gerowie Tuff is widely distributed and is interpreted as a sequence of water-lain felsic tuffs (See Crick et.al, 1978, Stuart-Smith et.al., 1980).

Zamu Dolerite

Sill-like mafic intrusions of the Zamu Dolerite are the oldest (meta-) igneous rocks recognised in the area. They are generally metadolerite with an amphibole plagioclase assemblage in which a sub - ophitic texture is well preserved. Layering at up to 1m scale, conformable with that of the enclosing stratigraphy, is evident over a 10m interval som 2km south of the southern boundary of the EL block. This is defined by intervals of different grainsize and mafic/felsic mineral content. A distinctive mafic lithotype crops out next to the Burnside Granite, southwest of EL 6098. It is massive, green, fine grained mafic rock, apparently rich in epidote, amphibole and pyrrhotite. This lithotype probably reflects hydrous retrogression/metasomatism related to the Burnside Granite.

Mount Bonnie Formation

The Mount Bonnie Formation appears to be conformable with, and gradational into, the underlying Gerowie Tuff. On a regional scale the Formation is mudrock dominated and this is the case in the northwestern and northeastern areas of EL 6098.

The Formation is commonly finely banded with centimetre scale grading occasionally observed.

Metamorphisim

The regional metamorphic grade in this area is probably lower amphibolite facies as suggested by the amphibolite-plagioclase assemblage which forms Zamu Dolerite. On a regional scale, metamorphic grade increases towards the Burnside Granite. Given the presence of a domal structure centred on the Burnside Granite, this grade increase may simply reflect increasing burial depth.

Folding

The axes of three north-trending open folds are mapped within EL 6098 (Map 2). The two anticlines and one syncline plunge to the north and the axes are parallel to a regional fold direction.

Regional mapping evidence adjacent to the Burnside Granite contact and outside the licence area provided evidence of rotation of the granite block or its precursor. However, it is likely that this did not play a significant part in the generation of these folds and the major effect of the block was to cause a northerly plunge as a result of up-doming.

Faulting

Two dominant fault directions occur on a regional scale, northwest - southeast and northeast - southwest. These tend to show dextral and sinistral displacements of up to 2km respectively. This suggests a conjugate relationship as a fault set formed in an east-west compressional fold.

A number of photolineaments with these orientations are mapped within the licence (Map 2). Displacement or repetition of stratrigraphy is only evident on two rather discontinuous northwest trending features. While these are both undoubtedly faults, the remaining and more continuous features are better described as lineaments on the basis of evidence available within the Licence.

Rock Chip Sampling

A programme of rock chip and drainage sampling was plannaed to be undertaken simultaneously with mapping. This sampling was interrupted by the onset of thunderstorm activity in November after only four samples had been collected from the tenement and adhacent area. All samples were analysed for gold to 1ppb Au detection using acid digest, solvent extraction and graphite furnace AAS techniques by Amdel/Classic Comlabs Laboratories in Darwin.

Sample locations and gold values (3 x 0.002 ppm Au and 1 x 0.003 ppm Au) are shown on the geological map (Map 2).

3.2 Geophysics

A regional airborne magnetic/radiometric survey was flown by Aerodata between November 1987 and January 1988. Data were processed into contour plans, Map 3, which also shows survey specifications. Data were also processed into a variety of black-and-white and colour-enhanced images with which to supplement available geology.

3.3.1 Magnetics

Contoured magnetic data (Map 3) broadly reflect the distribution of rock types shown by geological mapping (Map 2).

Within EL 6098 the magnetic data can be divided into a regular northern set and a very noisy southern set. The southern set is essentially coincidental with Zamu Dolerite outcrop although it should be noted that Zamu Dolerite mapped on the northern tenement boundary does not have a similar noisy signature. Gerowie Tuff and the limited amount of Mount Bonnie Formation within the icence are represented by featureless magnetic data.

The lineaments and faults described above are defined by breaks in magnetic features probably the result of alteration of magnetic minerals along these zones.

3.3.2 Radiometrics

Potassium data reveal positive anomalies associated with K-rich felsic igneous rocks or their derivatives. The Gerowie Tuff within EL 6098 is associated with significant positive anomalies.

There are no anomolies associated with thorium or uranium data. These data were not processed into contour map form.

4. EXPENDITURE

Geological consulting	4,500
Geophysical surveys and data processing	4,000
Drafting and reporting	2,500
Administration	1,500
	$12,500

5. REFERENCES

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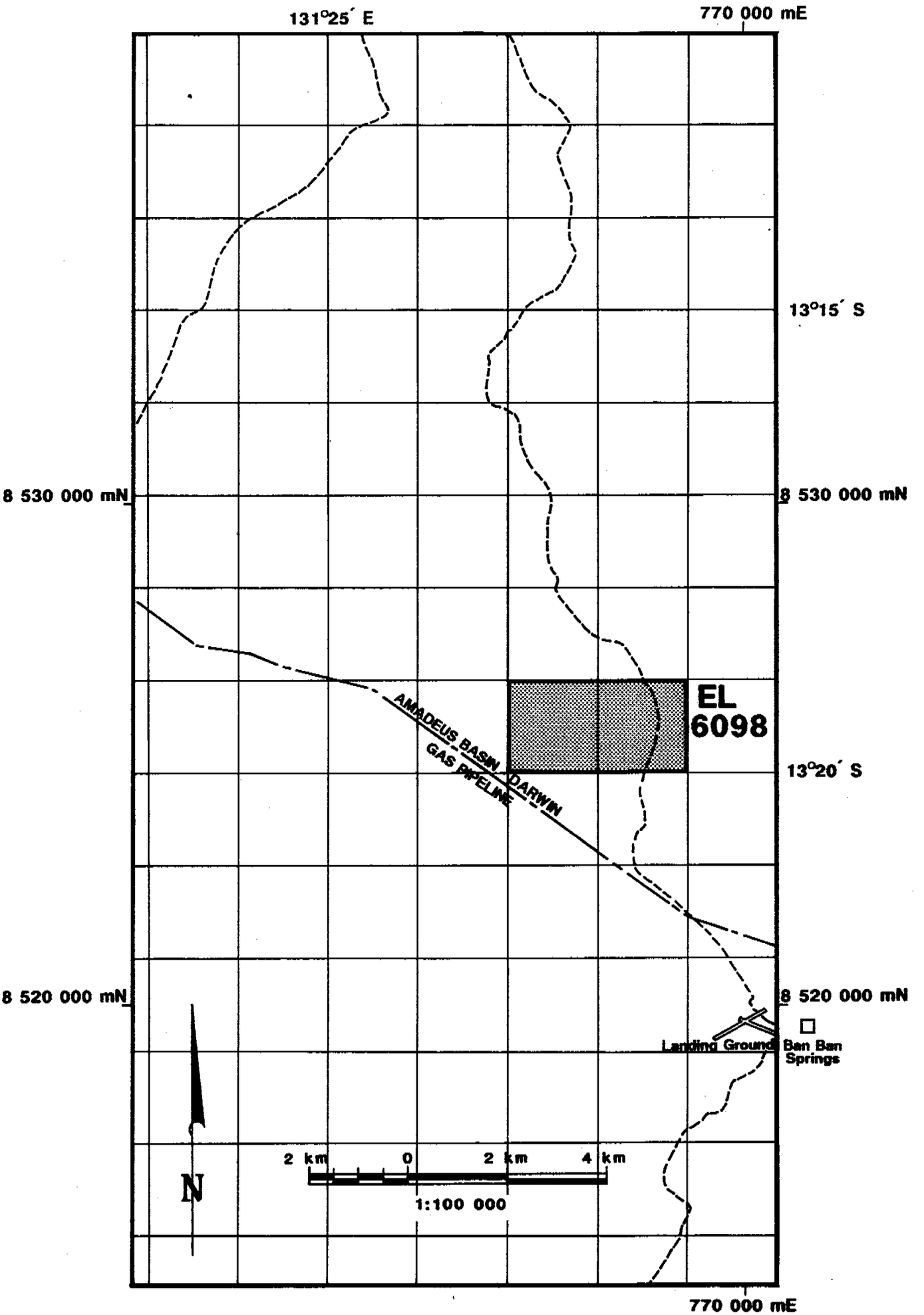
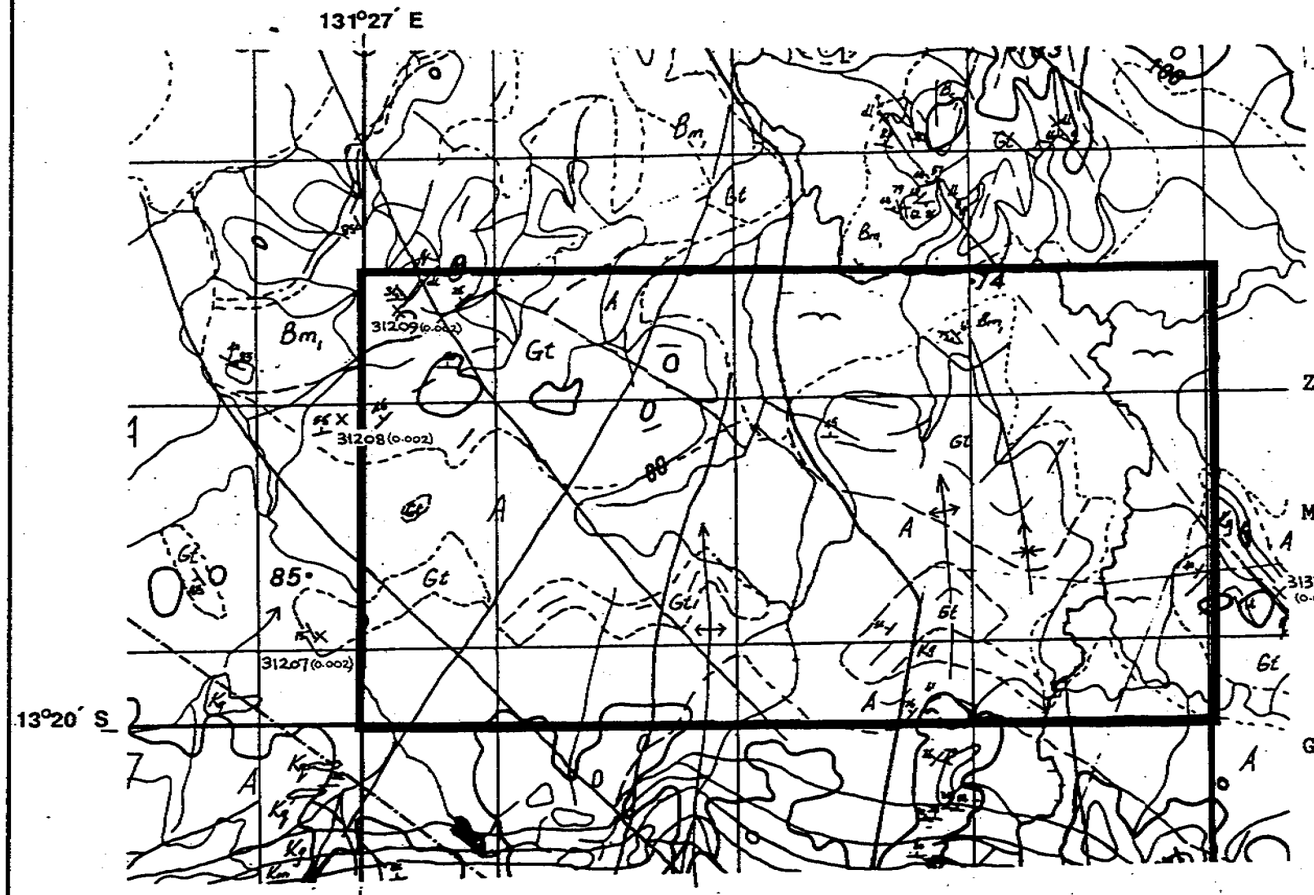


Locality Map

PINE CREEK EL 6098

Part of Batchelor Tenement Map 14/2



LEGEND

Alluvium

Quartz vein

d - discordant
h - high level
l - low level
f - fold hinge associated
c - concordant
p - roughly planar
s - saddle reef
- other

Up — Burnside granite (with pegmatite dyke)

ZAMU DOLERITE — A — Amphibole metadolerite

MT BONNIE FM — Ch Bif / Bm gy / ss — Siltstone/mudstone + subordinate sandstone, (including slates, metasiltstones and sandstones), characterised by presence of interbedded cherty or bif layers. Contains thick units of graphitic slate (gr) and sandstone (ss) as well as chert (ch) - bif.

GEROWIE TUFF — ss / Gt — Volcaniclastic (meta) sediments, chert. Top arbitrarity chosen below the lowest thick (50m) non-siliceous sandstone or mudrock unit. Contains sandstone lens (ss) near top.

KOOLPIN FM — Kq — Quartz sandstone/quartzite

Kg — Graphitic schist/phyllite/slate/siltstone/shale, gossan ± clean quartz sandstone interbeds.

Cu/Au — Copper/Gold occurrence

3S — Bedding orientation

2S — Slaty/spaced cleavage/schistosity orientation ($?S_2$)

3S — Crenulation cleavage orientation ($?S_3$)

Jt — Joint/fracture orientation

Vn — Vein wall parallel layering (foliation/growth layering) orientation

Sedimentary way up

Current direction (uncorrected) from flute cast

Airphoto interpreted bedding trend

Geological contact — defined / inferred

Photolinearment/fault — defined / inferred

Outcrop - alluvium boundary

Gas pipeline

Fold plunge (third generation antiform indicated)

x 31201 (0.005) — Rock chip sample number (gold value in ppm Au)

N

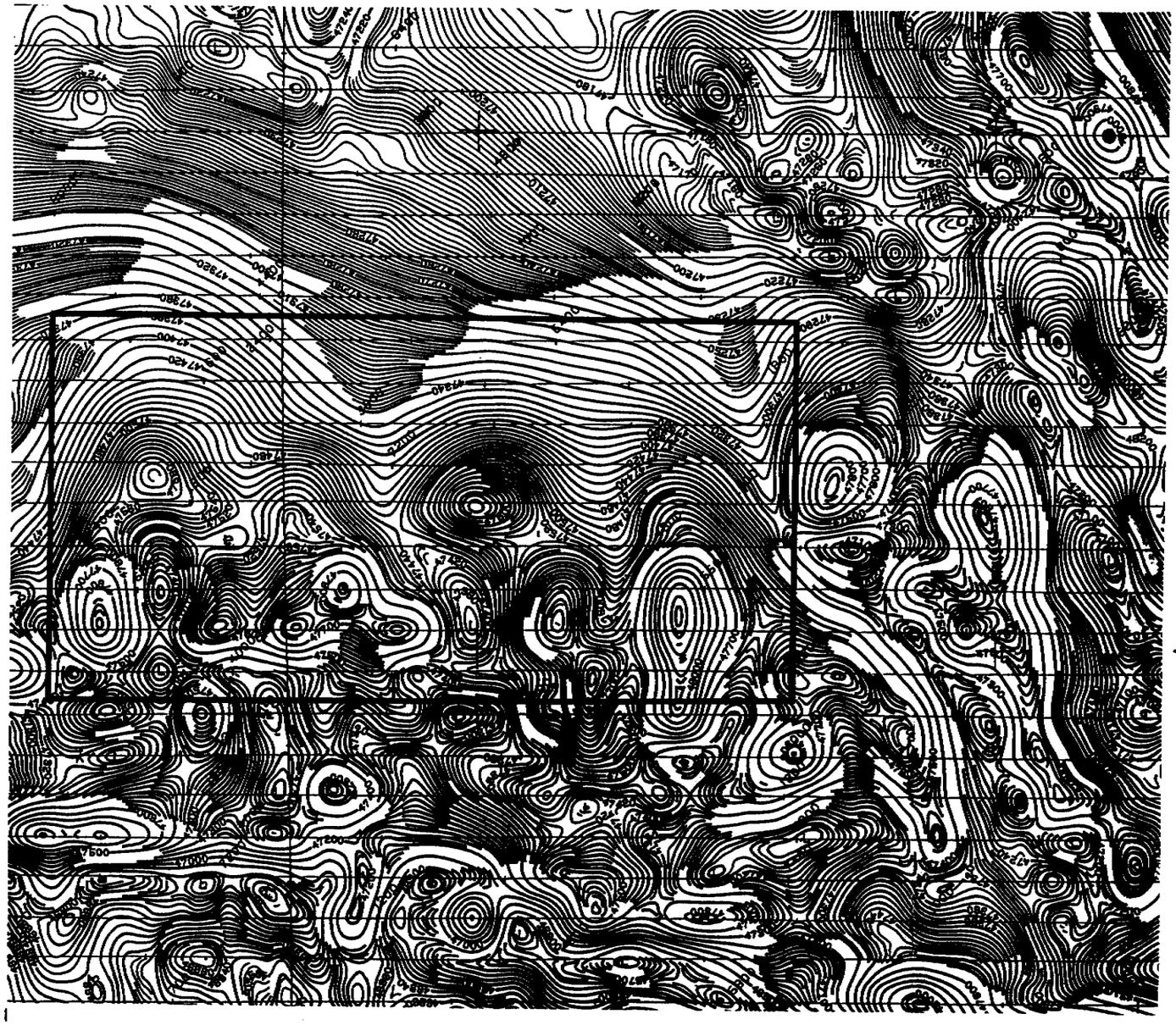
0 1 km 2 km

SCALE 1 : 25000

GOLDEN PLATEAU

PINE CREEK EL 6098

765 000 mE



765 000 mE

8525000 mN

MAGNETICS EL 6098

AIRCRAFT

VH-EXH ROCKWELL SHRIKE COMMANDER 500S

MAGNETOMETER

SPLIT BEAM CESIUM SCINTREX V201

RESOLUTION	0.01 nanoTesla
CYCLE RATE	0.2 seconds
SAMPLE INTERVAL	14 metres

SPECTROMETER

256 CHANNEL EXPLORANIUM GR800B

VOLUME	33.56 litres
CYCLE RATE	1.0 seconds
SAMPLE INTERVAL	70 metres

DATA ACQUISITION

8 CHANNEL WATANABE MC 6700 CHART RECORDER
HEWLETT PACKARD 9000 SERIES COMPUTER
AERODATA DIGITAL ACQUISITION SYSTEM

FLIGHT LINE SPACING

TRAVERSE LINES	200 metres
TIE LINES	5000 metres

FLIGHT LINE DIRECTION

TRAVERSE LINES	090 - 270 degrees
TIE LINES	180 - 360 degrees

SURVEY HEIGHT

MEAN TERRAIN CLEARANCE - 70 metres

NAVIGATION AND RECOVERY

Using SYLEDIS UHF positioning system

DATA PROCESSING

REGIONAL FIELD	IGRF MODEL 1985 REMOVED
BASE VALUE ADDED	46900 nanoTesla
GRID CELL SIZE	70 metres
CONTOUR INTERVAL	2 nanoTesla
PARALLAX CORRECTION	0.7 fiducials

50 fiducial interval

N

Scale 1 : 25000

1 km 0 1 km

GOLDEN PLATEAU NL

PINE CREEK EL 6098