SUMMARY

In compliance with Section 34 of the Mining Act, North Flinders Mines Limited submits this annual report covering exploration on tenements held in the Tanami district.

Exploration activity undertaken by North Flinders Mines Limited on Exploration Licences 2366, 2367, 2369, 2370, 4529, 6859, 6938 and 7122 is described. 'Project Area' status has been granted to NFM in relation to these tenements, with an anniversary date of 28th February applying. The agreed reporting date for all licences is 28th March for unrelinquished ground.

1. INTRODUCTION

This report summarises the work carried out on EL's 2366, 2367, 2369, 2370, 4529, 6835, 6859, 6938 and 7122 by North Flinders Exploration (NFE) during the period 23/3/91 to 28/2/92.

The EL's were combined into a single Project Area by agreement with officers of the Department of Mines and Energy, confirmed by the Director of Mines in a letter dated 9th October, 1990.

The first four chapters of this report provide background information on NFE's exploration activities in the Tanami district.

Regional studies are covered in Chapters 5, 6 and 7, and individual prospects within the expanded Project Area are discussed in Chapters 8 to 27. Location, previous exploration, work undertaken during 1991 and results of that work are detailed for each prospect.

Work undertaken includes the following:

- Mapping and rock chip sampling
- Regional laterite sampling survey
- Vacuum and rotary airblast (RAB) drilling
- Reverse circulation (RC) and diamond drilling of defined exploration targets
- Costeaning
- Ground geophysical surveys
- Maintenance of infrastructural support for field operations

The principal commodity sought by NFM in its Tanami exploration is gold. The aim of the Company is to replace and expand the current resource base on which its present mining operation is based.

Positive exploration results for the year to February 1992 are summarised below:

- There have been substantial increases in the gold resources associated with the Callie, Fumarole and Villa deposits. These lie within MLS 154 (entirely surrounded by EL 2367) so are not subject to this report.

- Diamond, reverse circulation and rotary airblast drilling at East Ptilotus (EL 2369) continues to intersect gold mineralisation of potentially economic tenor.

- Reconnaissance exploration of EL 6859 and EL 7122 has located geochemical anomalism worthy of comprehensive follow up activity during 1993.

2. LOCATION, ACCESS, INFRASTRUCTURE AND SURVEY CONTROL

2.1 Location

The tenements are located approximately 600km north-west of Alice Springs in the Granites - Tanami region of the Northern Territory (see accompanying plan). The licences are situated on ground covered by 1:250,000 map sheets SF 52-3, The Granites, and SF 52-4, Mount Solitaire.

2.2 Access

Access to the area is by air or via the Tanami Highway. A basic network of pre-existing and newly formed tracks links individual prospect areas to the two major NFE camps at The Granites and Dead Bullock Soak (DBS). A twenty person (approx.) capacity camp was established at DBS to accommodate the exploration team assessing the DBS mineralisation and to provide a base for regional exploration of the surrounding areas. A formed road connects DBS with The Granites.

2.3 Infrastructure

Prior to the presence of NFE in this part of the Tanami, infrastructural support was almost completely lacking. Supplies are trucked or flown to The Granites camp from Alice Springs. Both camps are serviced by telephone and FAX VHF/Microwave links and water is provided by two remote borefields. One borefield lies 35km east of The Granites and the other 10km north-east of Dead Bullock Soak. Power is locally generated at both exploration bases. The nearest settlements are the Rabbit Flat roadhouse 50km to the north-west on the Tanami Highway and Tanami Downs homestead 60km to the west. The nearest town is Yuendumu some 250km south-east of The Granites on the Tanami Highway.

2.4 Survey Control

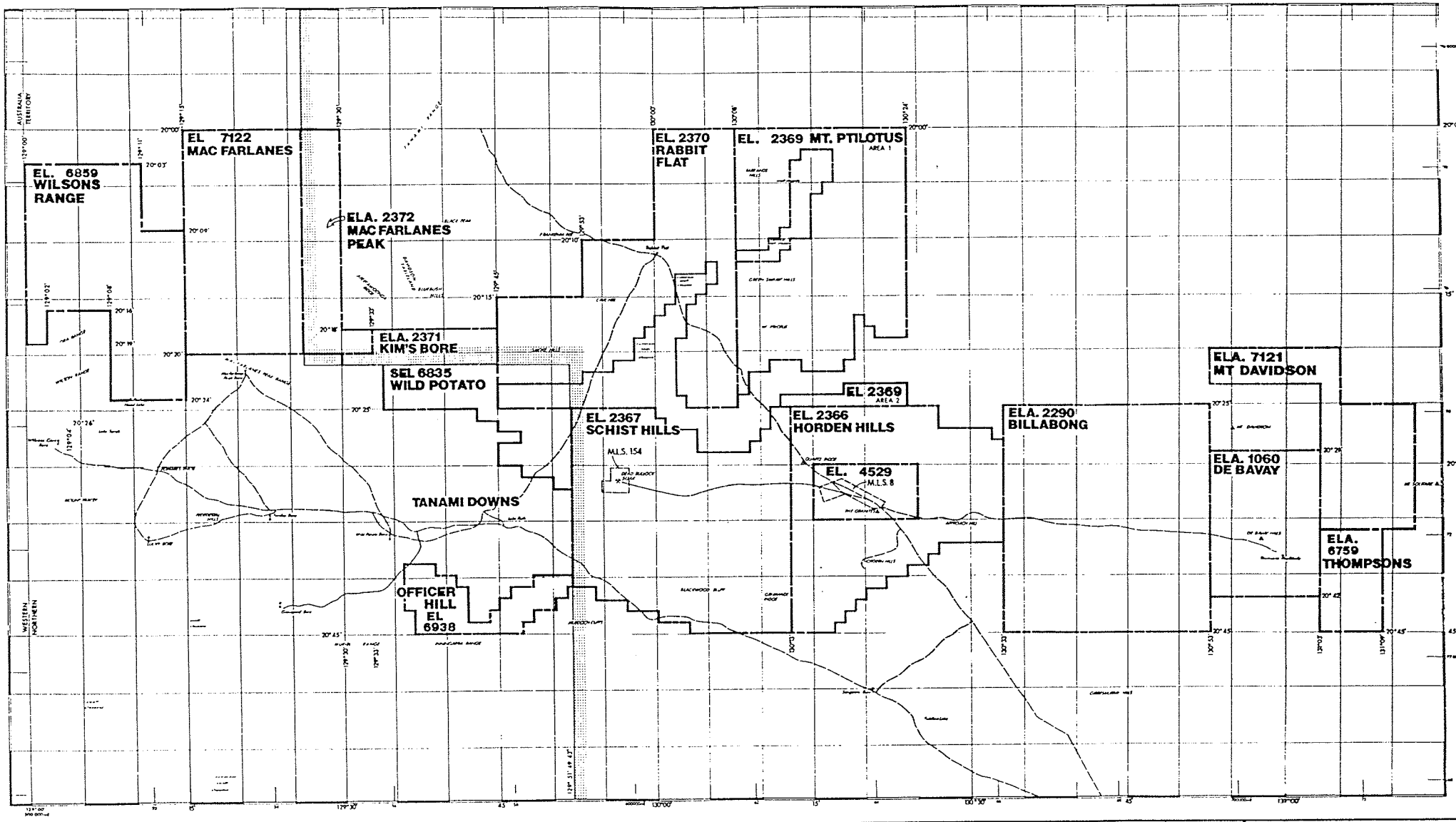
Survey control has been established in the current EL's by NFE's surveyor and by contract surveyors.

Surveys fall into two categories:

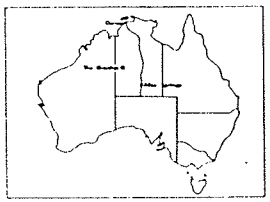
1. Initial survey control - for photo/mapping control and early reconnaissance work.

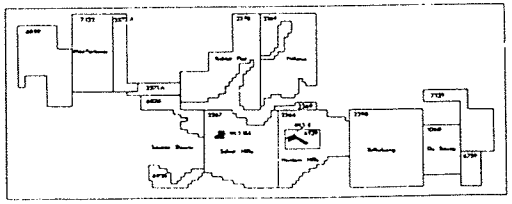
2. Grid establishment - for sampling, drilling and mapping programs.

All survey marks have been tied to the Australian Map Grid with trigonometrical survey station control. Extensive use is made of Global Positioning System equipment by staff engaged in regional exploration.



LOCATION MAP





LEGEND

NORTH FLINDERS MINES LIMITED

Tanami Reconnaissance : Northern Territory

EL LAYOUT

Fig. 2-1

Drg. No. 20-1

3. PREVIOUS EXPLORATION

Following the discovery of gold in the region in 1900 at a number of locations, both the Tanami and The Granites prospects were worked intermittently up to about the 1960's. The only reported exploration during this time involved limited programs of diamond drilling around The Granites deposits carried out by Anglo Queensland Mining Pty. Ltd. during the 1940's and by Northern Mining Development NL in the early 1950's. During the late 1960's and early 1970's Geopeko Ltd. carried out preliminary exploration including several diamond drill holes apparently targeted on major aeromagnetic anomalies throughout the region. At least three of the holes were located at The Granites, and while mineralisation was encountered it was not considered sufficient to warrant further work.

Following negotiations with traditional landowners North Flinders Mines Ltd. was granted access to the area now covered by MLS8 in 1983 and commenced a detailed exploration programme that ultimately led to the development and commissioning of the currently producing Granites Gold Mine.

Within a year of granting the first four EL's in 1988, comprehensive regional airborne geophysical, reconnaissance mapping, geochemical sampling and vacuum drilling programs commenced.

This initial exploration led to the identification of two mineralised areas (Dead Bullock Soak and Lennards Ridge) where work was concentrated for the remainder of the year. No encouraging mineralisation was located at Lennards Ridge, however, at DBS potentially economic grades of gold were intersected in several reverse circulation drill holes in October/November, 1988. Ensuing exploration has delineated 6.6 million tonnes of ore grade material within this area. Production from DBS (covered by ML S154) is now supplementing mill feed from The Granites (ML S8).

4. EXPLORATION OBJECTIVES AND METHODS

It is well established that the Mount Charles Beds host virtually all the know gold mineralisation in The Granites-Tanami region. The emergence of North Flinders' major mining operation at The Granites has reinforced this understanding. Consequently it has been a Company objective to secure exploration licences over areas covering as much of the prospective stratigraphly as becomes available. However, the recent discovery of the high grade, vein hosted Callie gold resource in lithologies beneath those traditionally prospected for gold concentrations has shown other styles of mineralisation should also be considered. Exploration techniques and the interpretation of results have consequently undergone some modification.

Because the expanded Project Area is now so extensive and characterised by very little outcrop, a suitable targeting method is required. NFE's regional reconnaissance programs rely heavily on a high quality airborne magnetic survey (as the host lithologies to gold mineralisation are likely to be magnetic) and on regional sub-surface geochemical sampling (as known gold occurrences lie within clear cut anomalous areas of gold/arsenic enrichment in soils). Other techniques employed include reconnaissance mapping and rock chip sampling of outcrop, multi-element geochemical sampling of soils, use of ground-based electomagnetics to map target lithologies under cover, and vacuum, RAB, RC and diamond drilling.

5. REGIONAL EXPLORATION

5.1 Published Information

The Granites - Tanami Block has been mapped by the BMR as part of a project covering the region with the results of this work presented in BMR Bulletin 197 (Blake et al 1979). A subsequent description of the geology of The Granites Gold Field by Mayer was published by the Australian Institute of Mining and Metallurgy in the Geology of the Mineral Deposits of Australia and Papua New Guinea (1990).

The Granites - Tanami Block consists of Proterozoic sediments, volcanics and granite. Detailed geology and structure is poorly understood due to the lack of outcrop throughout the entire region.

The Block has been divided into the Tanami Complex of probable Lower Proterozoic age consisting of a series of sedimentary and volcanic dominant formations. These have been intruded by a number of Lower and Mid Proterozoic granites and overlain unconformably by Mid and Upper Proterozoic platform sediments.

The most economically prospective lithological unit is comprised by The Mount Charles Beds (and possibly its equivalents) of the Tanami Complex. This formation, consisting of complexly interbedded siltstones, shales, cherts with lesser greywacke, quartzite, Fe-rich chemical sediments and basic volcanics has been subjected to at least mid-greenschist facies grade metamorphism. It is complexly folded with typically 2-3 structural events being apparent. The formation has a typically high iron content, often in the form of magnetite. The formation also hosts most of the known gold occurrences in the region.

5.2 Regional Reconnaissance Mapping by NFE

Reconnaissance mapping of the Tanami EL's at 1:25,000 scale has been in progress since the beginning of 1989. It is effectively complete for the longest standing exploration licences (2366, 2367, 2369, 2370) and ongoing over the remaining tenements. The primary objective of this work is to systematically build up an understanding of the geology (including lithotypes, stratigraphy and structure) of the Tanami EL's that will assist in the regional exploration effort. The program encompasses:

1. Mapping all rock outcrops on the EL's using available airborne colour or infra-red photography.
2. Compiling fact (outcrop) geological maps at 1:25,000 scale by transferring mapping on air photographs directly onto suitable basemaps.
3. Combining and integrating the information with remote sensing data and new drilling results in areas of no outcrop to produce interpretive 1:25,000 geological maps.
4. Supplementing 1:25,000 scale regional mapping with additional information gleaned from prospect mapping.
5. Producing both fact and interpretive geological maps at 1:100,000 scale based on the 1:25,000 mapping, for regional overview purposes. These are supplied with this report.

5.3 Plans

Drawing No.	Title	Scale
60-729	Fact Geology, Sheet 1	1:100,000
60-730	Fact Geology, Sheet 2	1:100,000
60-731	Fact Geology, Sheet 3	1:100,000
40-736	Exploration Coverage, Sheet 1	1:100,000
40-737	Exploration Coverage, Sheet 2	1:100,000
40-738	Exploration Coverage, Sheet 3	1:100,000

6A. REGIONAL GEOCHEMICAL SURVEY - VACUUM DRILLING

6A.1 Introduction

All non-outcropping parts of the Project Area (with the exception of EL 6859 - Wilson's Range and portions of EL 7122 - Macfarlanes) have been tested where possible by a reconnaissance vacuum drilling program. Holes have been collared on a 2km x 2km grid (or closer) with samples collected for assay and identification from weathered bedrock at the base of each hole and Bulk Leach Extractable Gold samples taken from material immediately below transported cover. Shallower infill sampling of lag and lateritic material has also been undertaken.

It was noted that the north-east portion of EL 2369 had not been tested by this regional sampling exercise, and this was remedied in 1992.

The reconnaissance vacuum program was completed over an area of approximately 160km^2 in the north east corner of EL 2369. The regional airborne magnetics signature is subdued and has therefore been interpreted to reflect granite.

6A.2 Work Undertaken

63 vacuum drillholes were completed in the north east corner of EL 2369 on a 1.8km x1km AMG grid. The table below summarises this work.

Drainage channels/deep alluvial cover (>18m) hindered the success of the program. Approximately one third of the area was too deep for vacuum rig bedrock sampling. See Figure 6.2 for location of deep alluvial cover.

SUMMARY OF WORK COMPLETED - RECONNAISSANCE VACUUM DRILLING		
Number of Holes	63	(LSV1269 - LSV1332)
Total metres advanced	511	
BOH Samples	39	
BCL Samples	65	

Bulk cyanide leach (BCL) and bottom of hole (BOH) samples were collected from all holes.

The BCL sample was collected immediately below surficial transported material. BOH samples were collected in recognisable bedrock, but where this was not reached, colluvium at the bottom of hole was sampled.

BCL samples (5kg) were submitted to Rapley Wilkinson Laboratories for Au (0.01 ppb detection limit). Cu (0.01ppm detection limit) and Ag (0.01 ppb detection limit) analyses. BOH samples were submitted to Analabs for Au (method 334. 1ppb detection limit) and As (method 115.5 ppm detection limit) analyses.

6A.3 Results

No Anomalous gold (>1ppb) BCL results were received.

See the table below for bottom of hole results.

MAXIMUM BOTTOM OF HOLE RESULTS : RECONNAISSANCE VACUUM DRILLING		
GOLD		
Hole No.	Au	Rock Type
LSV1271	8ppb	Granite
ARSENIC		
Hole No.	As	Rock Type
LSV1269	85ppm	Granite

Regional airborne magnetics reveal that there is little magnetic variation in the area.

The area consists almost entirely of muscovite/biotite granite. Vacuum hole LSV1270 in the western part of the area intersected a dioritic phase. Since there is no magnetic signature, the extent of this dioritic phase is uncertain but it is probably only small.

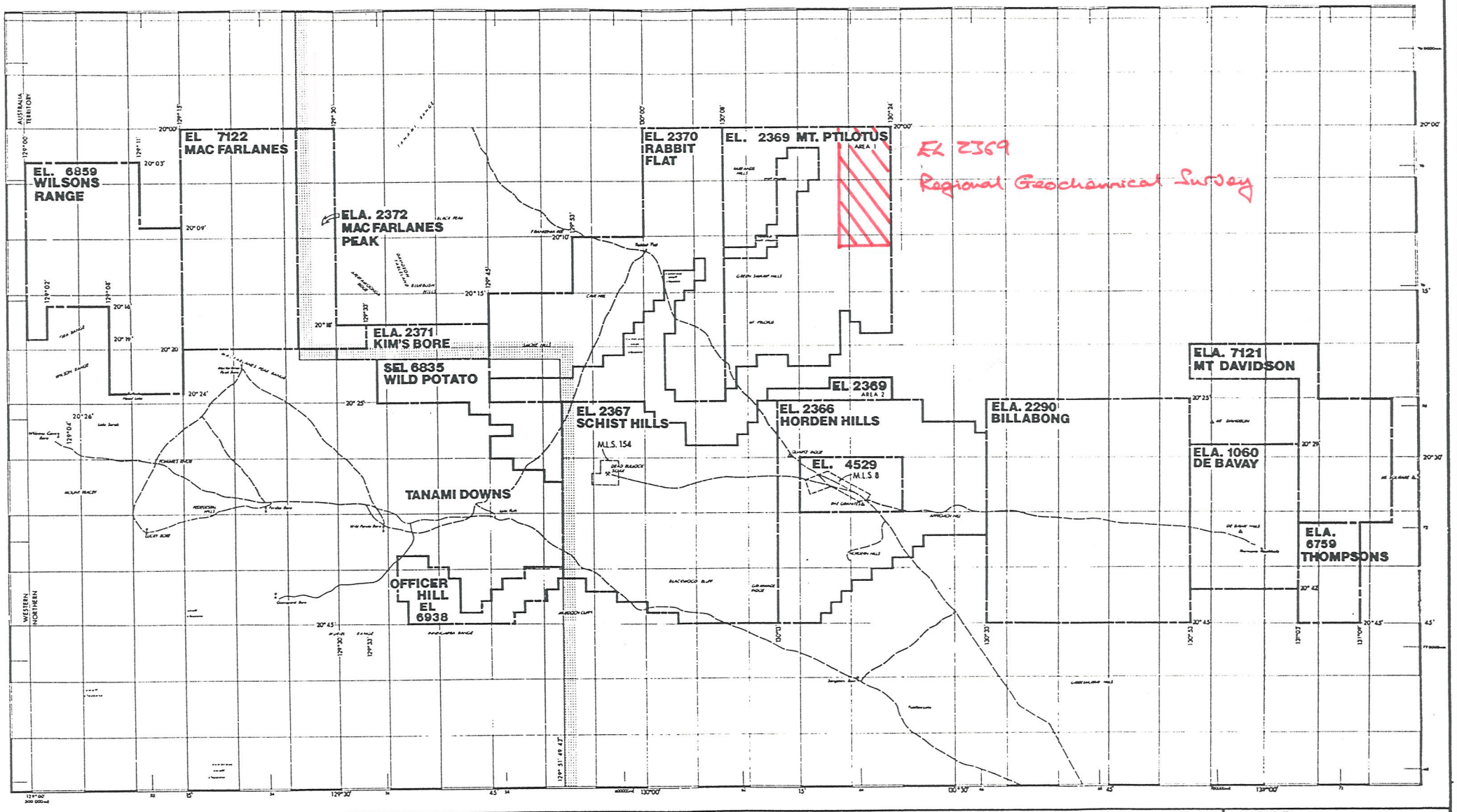
The two anomalous (Au, As) BOH granite samples (separate) appear in holes immediately either side of the dioritic phase.

The northern BOH anomaly of 8ppb (granite) lies on the southern extent of a weak north west trending linear and immediately south of an airborne radiometric potassium anomaly.

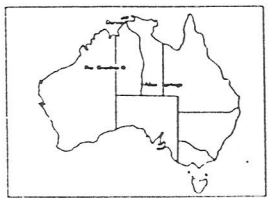
The arsenic BOH anomaly of 85ppm (granite) south of the diorite appears more significant when an Anomaly 16 arsenic anomaly of 120ppm (schist) is taken into account. These two results align on a north west trend parallel to the interpreted structural trend of Anomaly 16. This region is also coincident with an airborne radiometric potassium anomaly (granite related?).

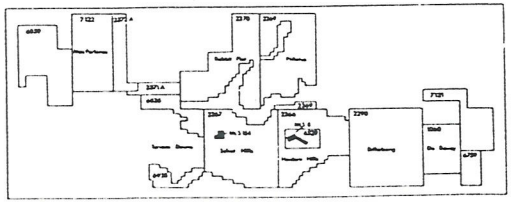
6A.4 Plans

All plans relating to the regional vacuum drill sampling program are presented as text figures.



LOCATION MAP





LEGEND

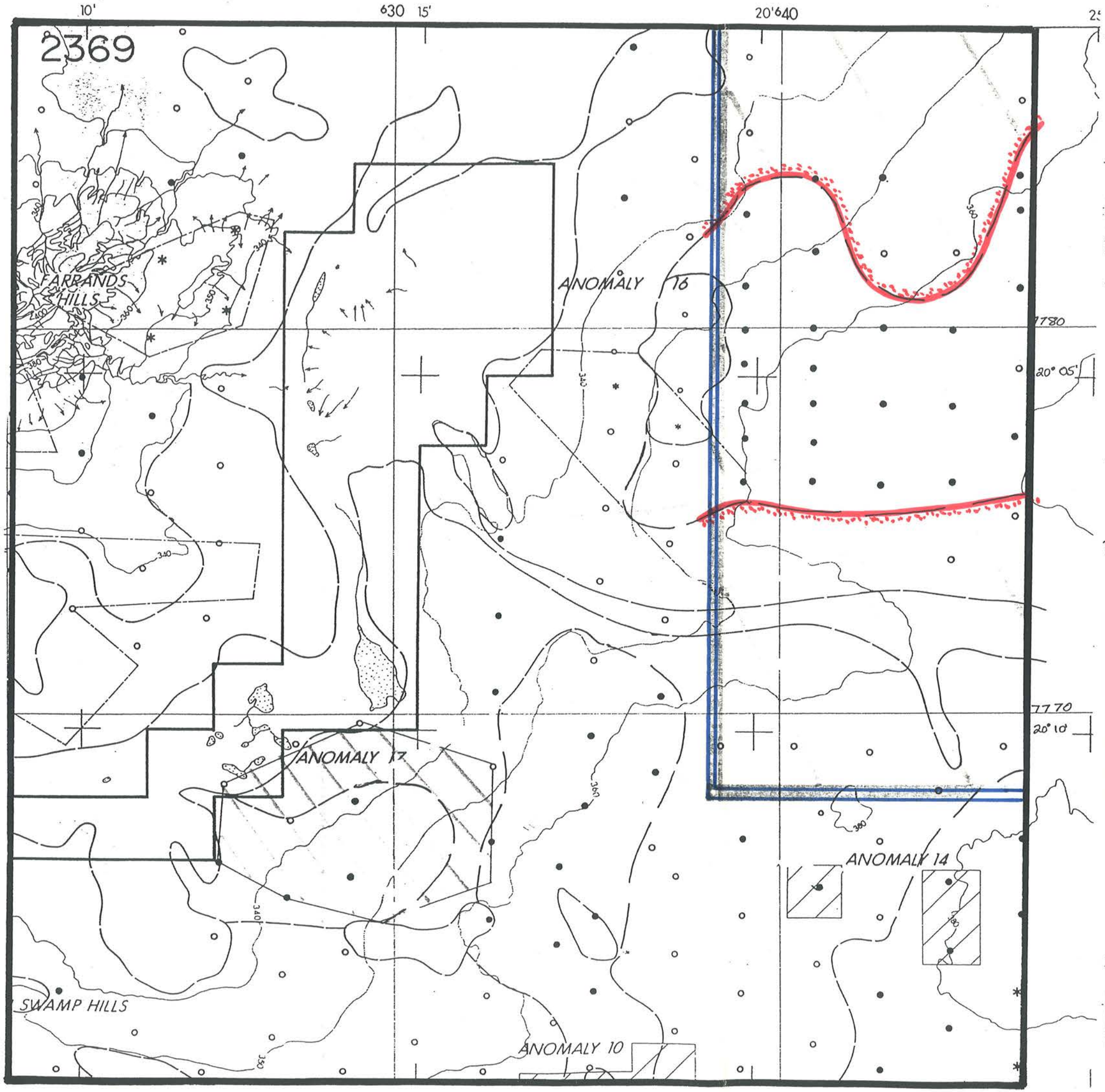
NORTH FLINDERS MINES LIMITED

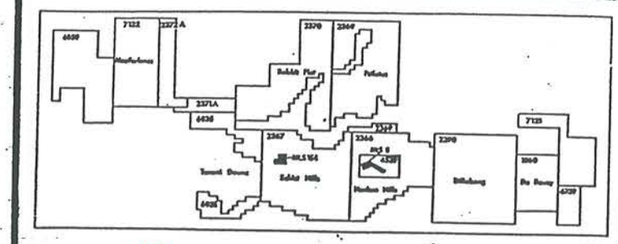
Tanami Reconnaissance : Northern Territory.

EL LAYOUT

Fig 6.1

Drg No. 20-1





Alluvial cover >18m

Reconnaissance Vacuum coverage 1992

Anomaly 16

Anomaly 17

SCALE 1:100 000

NORTH FLINDERS MINES LIMITED

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AMG GN MN 4°06'

Tanami Reconnaissance: Northern Territory

LOCATION MAP
Regional Geochemical Survey

Fig. 6.2

6B. REGIONAL GEOCHEMISTRY SURVEY - SURFACE LAG SAMPLING

6B.1 Introduction

Wilson's Range EL 6859 covers 750km^2 and forms the western most NFM tenement. It is located 140 km west north west of the Granites Gold mine. See Figure 6B.1 for location map.

EL 6859 was granted to NFM in June 1990 with the first relinquishement due in June 1994.

Access to the area is via Dead Bullock Soak, Tanami Downs Homestead, and Macfarlanes camp (150km).

Previous work in the area by NFM includes reconnaissance 1:25000 mapping and 1:25000 aeromagnetic interpretation.

Twelve mineral claims were pegged by prospectors in 1987, these were subsequently relinquished soon after granting of EL6859 to NFM in 1990. Apparent work completed by the prospectors includes gridding and surficial soil sampling.

6B.2 Work Undertaken

A total of 399 lag samples were collected on a 1.8km x 0.5km AMG grid covering 70% of EL 6859. At each lag sampling site (where lag was present) 100 grams of the -5mm +2mm fraction was sieved and collected in plastic bags. These samples were despatched to Genalysis in Perth for multielement analysis. These elements include:

Element	Au	Fe	Co	Cu	Zn	As	Se	Mo	Ag	Sn	Sb	W	Pb	Bl	U
Detection	1ppb	0.01%	1ppm	1ppm	1ppm	5ppm	0.2ppm	0.5ppm	0.1ppm	1ppm	0.5ppm	1ppm	2ppm	0.5ppm	0.1ppm
Method Code	B/ETA	A/OES	B/AAS	B/AAS	B/AAS	A/0ES	AP/MS	A/MS	B/AAS	A/MS	A/MS	A/MS	A/AAS	A/MS	A/MS

A total of 23 rock chip samples were collected over the northern outcrop areas. Sampling concentrated on east west stockwork veins. Samples were analysed by Analabs for gold (detection 1ppb, method GG334) and arsenic (detection 5ppm, method GA115).

This work is summarised in the table below:

WILSON'S RANGE - SUMMARY OF WORK COMPLETED IN 1992		
SAMPLE TYPE	TOTAL SAMPLE NOs	SAMPLE NOS.
LAG	399 SAMPLES	219118-219150 219201-219500 219765-219789 219902-219942
Rock Chip	23 samples	313117 - 313138

6B.3 Results

Rock Chip

Rock chip sampling (23 samples) concentrated on east-west stockwork veins with a maximum gold result of 3ppb. Arsenic values noted in the table below are elevated and considered marginally anomalous. Additional rock chip sampling over the EL is required to assess whether quartz veins in the area have a high arsenic background or whether discrete elevated arsenic zones exist.

ANOMALOUS ROCK CHIP > 5ppb AU or >60ppm As		
Sample No.	Au (ppb) No Anomalous Au results	As (ppm)
313129	1	70
313131	2	70

It is difficult to make an interpretation on the basis of these rock chip results as the sample density is low. When systematic bedrock identification is completed (vacuum program) the full lithological context of these results may aid their appraisal.

Lag Sampling

Preliminary scanning of the assay data for anomalous thresholds suggest that the elements Gold (Au), Arsenic (As), and Antimony (Sb) show a significant range in the data above values considered anomalous.

Subject to a more detailed statistical analysis of the data, the other elements do not appear to have populations which reach anomalous thresholds.

The following values were used to define anomalous thresholds; gold >4ppb, arsenic >70ppm, and antimony >12ppm.

Applying these thresholds to the data a significantly sized arsenic anomaly, with coincident antimony anomalism exists. This also includes a spot gold value of 7ppb.

These geochemical lag anomalies are coincident with interpreted magnetic horizons and the horizons extend beneath alluvial cover. In this area lag sampling was not completed, leaving the arsenic and antimony anomalies 'open'.

A spot gold anomaly of 32ppb with a coincident anomalous arsenic result exists in the far north of the area, adjacent to the north west extension of the 'Dead Bullock Soak Fault'.

On a regional scale the north south trending arsenic anomlay lies within a north west trending structural corridor, bound to the north by the 'Dead Bullock Soak Fault' and to the south by the 'Grimwade Ridge Fault'. The Dead Bullock Soak gold deposits are contained within this corridor.

Discussion

The lag program at the end of the season covered 70% of EL6859. It is expected to be completed early in the 1993 season.

Since systematic surface lag sampling is only a recent addition to NFM reconnaissance exploration programs, only a limited data base is available for comparison (i.e. Macfarlanes EL 7122, and an orientation lag programme completed in 1992 over the Granites, Dead Bullock Soak, Schist Hills, Ptilotus, and Anomaly 2).

SUMMARY OF LAG ORIENTATION PROGRAMME				
PROSPECT	GOLD		ARSENIC	
	Width of Anomaly	Peak Value	Width of Anomaly	Peak Value
Granites (500m spacing)	>2.5km	24ppb	>2.5km	114ppm
DBS (100m spacing)	>0.7km	104ppb	>0.7km	560ppm
Ptilotus (100m spacing)	0.3km	10ppb	>1.5km	1300ppm
Anomaly2 (500m spacing)	<0.5km	560ppb	1.5km	170ppm

The orientation work shows a strong correlation between gold and arsenic with an antimony association at Ptilotus and Dead Bullock Soak prospects.

The Wilson's Range arsenic anomaly is considered significant (width 2-5km, peak value 400ppm) in comparison with arsenic anomalies from the orientation programme. At Ptilotus and Anomaly 2 the lag anomalies are less than 500 metres wide and infill sampling of 500m x 100m over the current arsenic anomaly (20km strike) will be required for suitable appraisal.

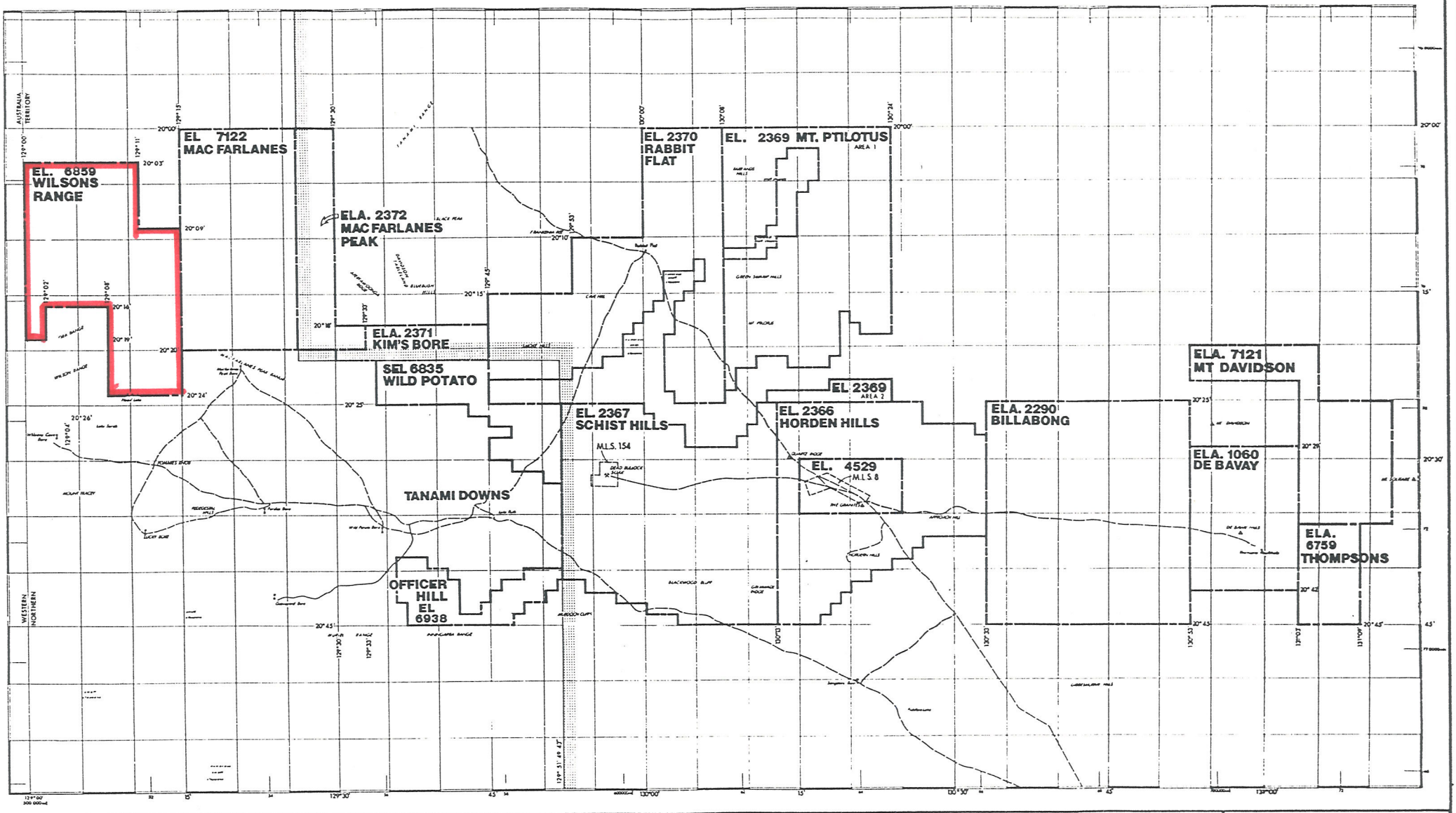
Earlier mapping has shown that the basement lithologies of the area are dominated by greywackes and siltstones interpreted as part of the Lower Proterozoic Killi Killi Beds. These sediments are considered to be equivalent to the Madigan Beds of the main NFM tenement area to the south east. In most cases the rocks have been strongly sheared and contain a pervasive north south cleavage. Granite outcrops west of the tenement, with an interpreted (geophysical) granite (not outcropping) in the south east of the EL. A more detailed geological appraisal of the area will be completed when rock chip sampling is completed over the area.

Airborne magnetic interpretation identified a number of northwest-trending magnetic units and regional lineaments.

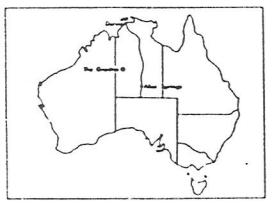
Inspection of the relinquished mineral claims in the central part of the area reveals that they are situated in a major drainage channel over a transported? laterite profile. It appears that the previous holders conducted a surficial soil sampling programme on a 100mx 100m grid. The target for their exploration appears to have been a magnetic anomaly which highlights a major north west trending fold axial zone. Since this geophysical target is covered by transported laterite conventional geochemical surface sampling is not a suitable sampling medium for appraising this region.

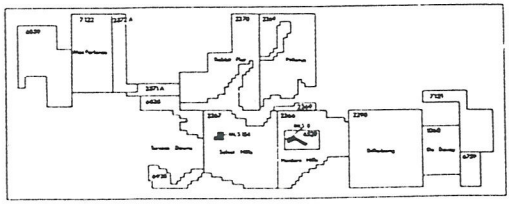
6B.4 Plans

All plans relating to the Wilson's Range lag and rock chip sampling program are presented as text figures.



LOCATION MAP





LEGEND

NORTH FLINDERS MINES LIMITED

Tanami Reconnaissance : Northern Territory

EL LAYOUT

Fig. 6B.1

Drg No. 20-1

500000E

510000mE

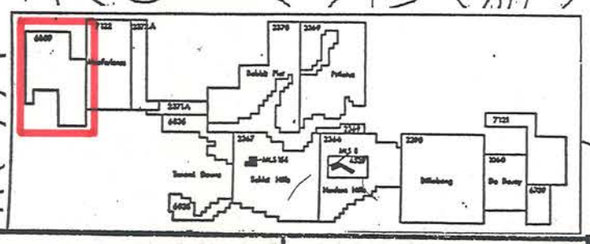
520000mE

7780000mN

7770000mN

7760000mN

7750000mN



NORTH FLINDERS MINES LIMITED

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4°06'

Tanami Reconnaissance: Northern Territory

WILSONS RANGE - EL 6859

AEROMAGNETIC CONTOURS

1:100 000

Fig. 6B.2

EL. 6859

EL. 7122

ELA. 2372

ELA. 2371

EL. 6835

7785000 N

7770000 N

7755000 N

7740000 N

7725000 N

510000 E

525000 E

540000 E

555000 E

REFERENCE

- MAGNETIC UNIT
- PROMINENT MAGNETIC LINEAMENT
- MAGNETIC LINEAMENT
- GOLD ANOMALY (VACUUM DRILLING)
- LAG TRAVERSES
- RELINQUISHED MINERAL CLAIMS
- Arsenic Anomaly-Lag
- Antimony Anomaly-Lag
- Au Gold Anomaly-Lag

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NORTH FLINDERS MINES LIMITED

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APPROVED		
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4°06'

Tanami Reconnaissance: Northern Territory

WILSON RANGE

AEROMAGNETIC INTERPRETATION

(From Aerodata 1:500000 1st Derivative)

Fig. 6B.3

SCALE 1:250000

7. REGIONAL GEOPHYSICS

During 1992 there was no need to add to the existing airborne magnetics and radiometrics database. Existing high quality and image-processed surveys already cover NFE's Tanami exploration licences. Airborne magnetic data were used throughout the year to focus ground-based exploration activity.

Some reprocessing of radiometric data was undertaken to provide better anomaly definition.