

TITLE	FINAL REPORT EXPLORATION LICENCE 5721 MOUNT SAUNDERS NORTHERN TERRITORY
PERIOD	3 FEBRUARY 1988 to 12 JANUARY 1990
TENEMENT HOLDERS & OPERATORS	UNION REEFS GOLD NL 11TH FLOOR 28 THE ESPLANADE PERTH
AUTHOR	M G MULRONEY
DATE	MARCH 1990

1:250,000 Pine Creek SD52-8  
1:100,000 Pine Creek 5720

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1. Northern Territory Department of Mines
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DRAWING  
NUMBER

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SCALE

EG 15-4

Location Plan

1:2,140,000

EG 15-3

Interpretative Geology

(approx) 1:25,000

## Summary

Exploration Licence 5721 was granted on 3 February 1988 for a period of three years.

Exploration carried out during the first year included a literature review and an aerial photograph interpretation of the tenement area.

Following this work, potential joint venture partners were sought to continue the exploration of the area. No favourable responses were forthcoming.

The Exploration Licence was surrendered on 12 January 1990.

1. INTRODUCTION

This report covers the exploration completed over Exploration Licence 5721 during the period of tenure. The tenement was originally acquired to explore for gold mineralisation associated with favourable structures adjacent to the granite-metasediment contact. Exploration completed included an extensive literature review and an aerial photogeological interpretation of the tenement.

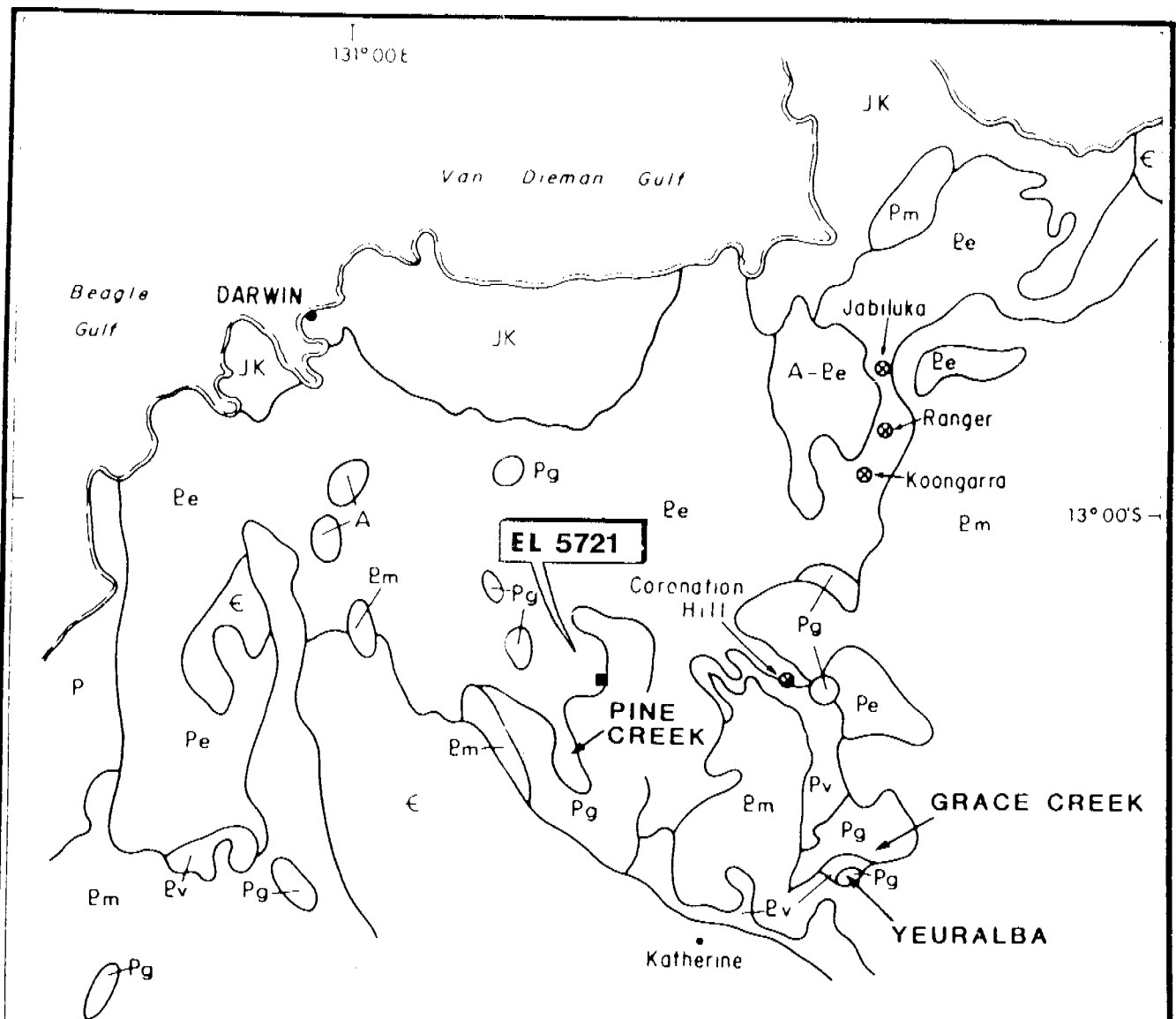
2. LOCATION AND ACCESS

The Exploration Licence is located approximately 175 kilometres southeast of Darwin and approximately 25 kilometres northeast of Pine Creek. Access is via the sealed Stuart Highway from Darwin to Pine Creek, then via the sealed Kakadu Highway to the Mary River homestead turnoff. This unsealed road passes through the eastern portion of the Exploration Licence approximately 11 kilometres south-southwest of the Mary River homestead. Access to the remainder of the tenement area is by station tracks and cleared fencelines.

3. TENURE

<u>Tenement Number</u>	<u>Area</u>	<u>Date Granted</u>	<u>Period</u>
EL5721	3 blocks (10km <sup>2</sup> )	3-2-88	3 years

The Exploration Licence was surrendered on 12 January 1990.



### LEGEND

MESOZOIC	JK	Sediments
PERMIAN	P	Sediments
LOWER PALAEOZOIC	€	Sediments
MIDDLE PROTEROZOIC	Pm	Shelf sediments, felsic to mafic volcanics
EARLY PROTEROZOIC POST OROGENIC IGNEOUS ROCKS	Pg	Granite
	Pv	Volcanics, minor sediments
EARLY PROTEROZOIC	Pe	<u>Pine Creek Geosyncline sediments and volcanics</u>
ARCHAEAN	A	Basement rocks

## PINE CREEK GEOSYNCLINE

PLAN NO EGI5-4.

#### 4. ENVIRONMENT AND ECOLOGY

This region has a monsoonal climate with an average rainfall of 1,500mm per year, which is precipitated between December and May. From June to September, high temperature and little rain prevail resulting in high evaporation rates.

The average mean temperature is 27°C. Day temperatures are high throughout the year with maximum summer temperatures in excess of 40°C common.

Prevailing winds are the southeast trade winds for the dry season and the northwest monsoon for the wet season.

Relative humidities average 40% to 75% respectively during these periods. The area is subject to tropical cyclonic effects.

Drainage patterns are a combination of closely spaced dendritic and broad open swales. Surface water is not permanent and the drainage systems flow only during the monsoon season.

The vegetation consists predominantly of wet season grasses and eucalyptus woodlands.

#### 5. PREVIOUS WORK AND PRODUCTION

No evidence of previous mining activity has been located within the tenement. Alluvial gold was discovered in the Frances Creek area, located approximately seven kilometres to the northwest of the tenement in 1926. Mining of quartz lodes commenced in 1936-1937 when two shafts were sunk. No further production occurred until 1963-1965 when an exploration shaft and adit were developed but failed to intersect the main lode. Total lode gold production was 4.77 kilograms from 457 tonnes of ore at an average grade of 10.45g/t. No evidence of previous exploration activity within the tenement has been located to date.



## 6. REGIONAL GEOLOGY

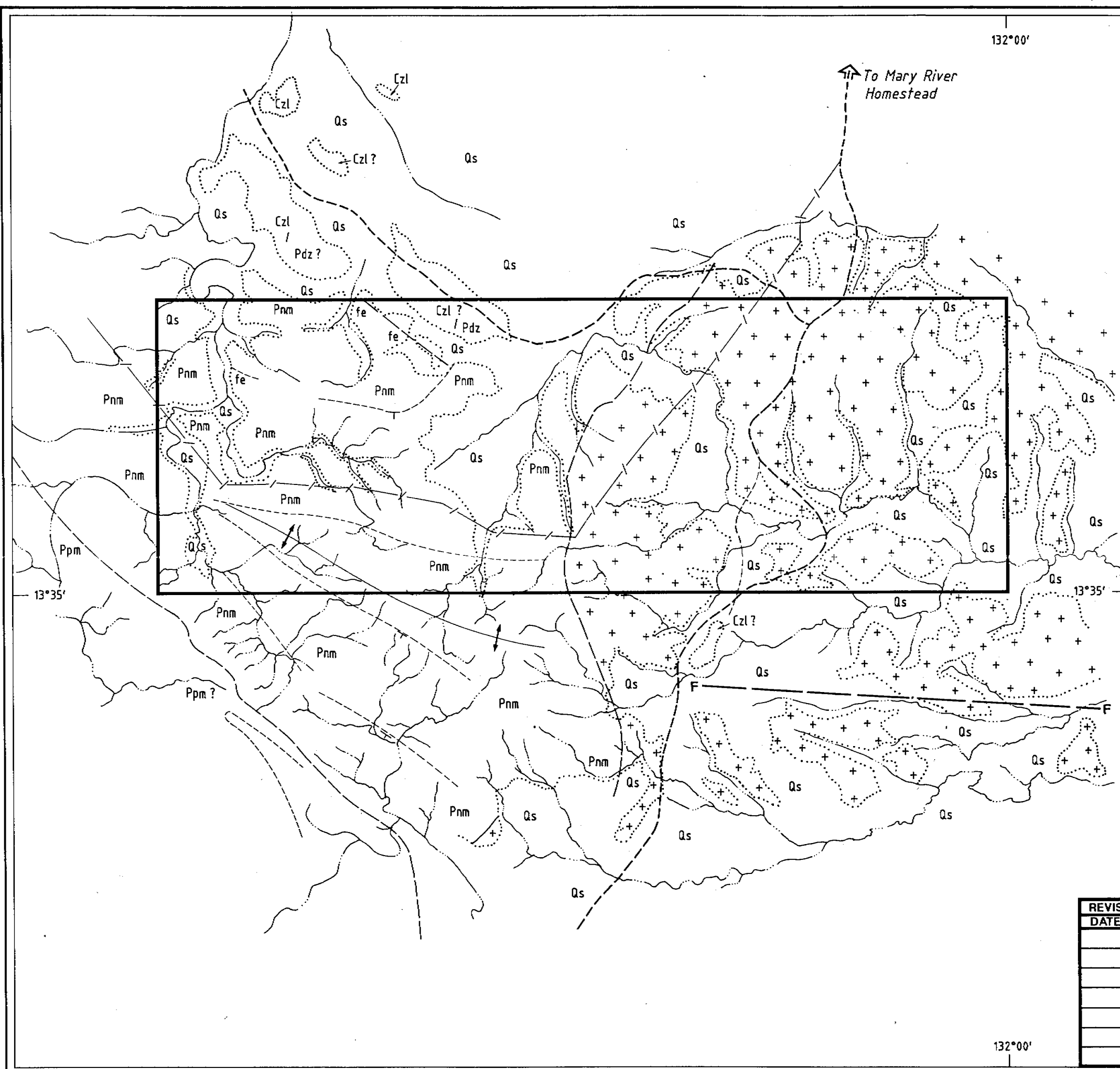
Exploration Licence 5721 lies in the central part of the Pine Creek Geosyncline. The geosyncline consists of a succession of Lower Proterozoic basinal metasediments underlain by Archaean granite and gneiss basement. The sedimentary rocks consist of mainly shale, siltstone, quartzite with rare chert, limestone and ironstone. The metasediments have been intruded by pre-orogenic sills of Zamu Dolerite and by the syn-orogenic Allamby Springs granite.

The mineralisation at the adjacent Frances Creek area is hosted by the sediments of the Mundogie Sandstone. The gold mineralisation occurs in ferruginous quartz veins within the sheared and brecciated shale interbeds in quartzose sandstone and conglomerate (P G Stuart-Smith et al 1987).

## 7. WORK COMPLETED

During the first year of tenure, a thorough literature review of all previous exploration within the area covered by the tenement was undertaken. In addition a photogeological interpretation using colour aerial photographs and enlargements was undertaken to initially define potentially favourable lithologies and/or structures within the area. The work indicated that the tenement was underlain by metasediments of the Masson Formation and Mundogie Sandstone that had been intruded by the Allamby Spring Granite. A number of probable anticlinal features were also located (Mulroney 1989).

Based on the results of the work carried out during the initial investigation, which indicated that the area had some 'grass roots' potential, the decision was taken to seek joint venture participation for the project. This decision largely reflected the desire on the part of Union Reefs Gold NL to focus its activities in the immediate Union Reefs prospect area.



REVISIONS		EASTERN GOLD N.L.		
DATE	BY	ORIGINATOR	EL 5721 Interpreted Geology	
		MGM		
		DRAWN		
		VJW		
		DATE	SCALE 1:25,000    DWG. No. EG 15 - 3    REV.	
		Feb. 1989		

8. DISCUSSION

Discussions were held with a number of potential joint venturers however no suitable responses were received. In the absence of a suitable joint venture partner, the Exploration Licence was recommended for surrender.

## References

STUART-SMITH P G, NEEDHAM R S, BAGAS L and WALLACE D A, 1987  
1:100,000 Geological Map Commentary Pine Creek, Northern Territory, BMR and NTGS.

MULRONEY M G, 1989  
First Annual Report Exploration Licence 5721, Eastern Gold NL,  
Unpublished Company Report