Northern Gold NL

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EL 9485
1998 FINAL REPORT

5th June 1996 to 29th May 1998

Burrundie (14/6-IV) 1:50,000 scale map sheet

Title Holders:- Northern Gold N.L. and Camelot Northern Territory Limited

Managed by:- Northern Gold N.L.

OPEN FILE

August 1998

Author:- N. Mottram

SUMMARY

EL 9485 is located approximately 12 kilometres east of Hayes Creek on the Burrundie (14/6-IV) 1:50,000 scale map sheet.

The tenement lies within an area of highly faulted north - west to south - east trending anticlinal and synclinal formations. The folded units of the Koolpin Formation have been intruded by sills of Zamu Dolerite throughout the tenement. Wildman Siltstone outcrops through the centre of the tenement along a north - west to south - east trending anticlinal fold axis.

EL 9485 was covered by EL 3138, which included EL 7025. The licence was granted to Geopeko Ltd. in 1981. Geopeko carried out regional stream sediment sampling and follow up detailed soil sampling in 1982. Anaconda Australia took over the tenement in 1984 and relinquished the area in 1985. The ground was subsequently obtained by CSR Exploration as EL 4817. CSR entered into a joint venture with Cyprus Minerals Australia in 1987 and carried out an airborne magnetic survey, stream sediment sampling and rock chip sampling.

The licence was granted to Northern Gold N.L. and Camelot Northern Territory Limited on the 5th of June 1996 for a period of six years. The tenement is managed by Northern Gold N.L. EL 9485 was surrendered on the 29th of May, 1998.

Northern Gold N.L. completed a work programs involving digital data acquisition and manipulation to assess the regional structure and determine the best method of exploration to be used on the licence.

The covenant for the 1997/98 year of tenure was $7,500 and the expenditure totaled $7,685.

The expenditure from the grant date to the surrender date totaled $14,805.

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1.0 INTRODUCTION

EL 9485 is located approximately 12 kilometres east of Hayes Creek on the Burrundie (14/6-IV) 1:50,000 scale map sheet. The tenement, which consists of 11 graticular blocks, 33 square kilometres in area, lies between latitudes 13°32' south and 13°37' south and longitudes 131°35' east and 131°38' east (Figure 1). EL 9485 is situated within Pastoral Lease No. 815, Mary River West, held by Equest Pty. Ltd. and Pastoral Lease No. 903, Douglas, Tovehead Pty. Ltd.

Access is via the Stuart Highway to Emerald Springs.

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131°25'
CREEK
131°30'
131°35'
131°40'
MCKINLAY RIVER
131°46'
13°20'
13°25'
13°30'
EL9485
13°35'
HAYES CREEK
STUART HIGHWAY
13°40'
13°45'
13°50'
13°55'
DARWIN
JABIRU
BATCHELOR
ADELAIDE RIVER
MAP REGION
PINE CREEK
-131°
-132°
-133°
-13°
-14°

NORTHERN GOLD N.L.

EL 9485
TENEMENT LOCATION DIAGRAM

Figure 1

Date 18/5/1987	
Author N SOCIC	
Office Adel River	
Drawing	
Scale 1:250000	Projection Longitude / Latitude (AGD 66)

0 2.5 5 10
kilometres

2.0 GEOLOGY

2.1 Regional Geology

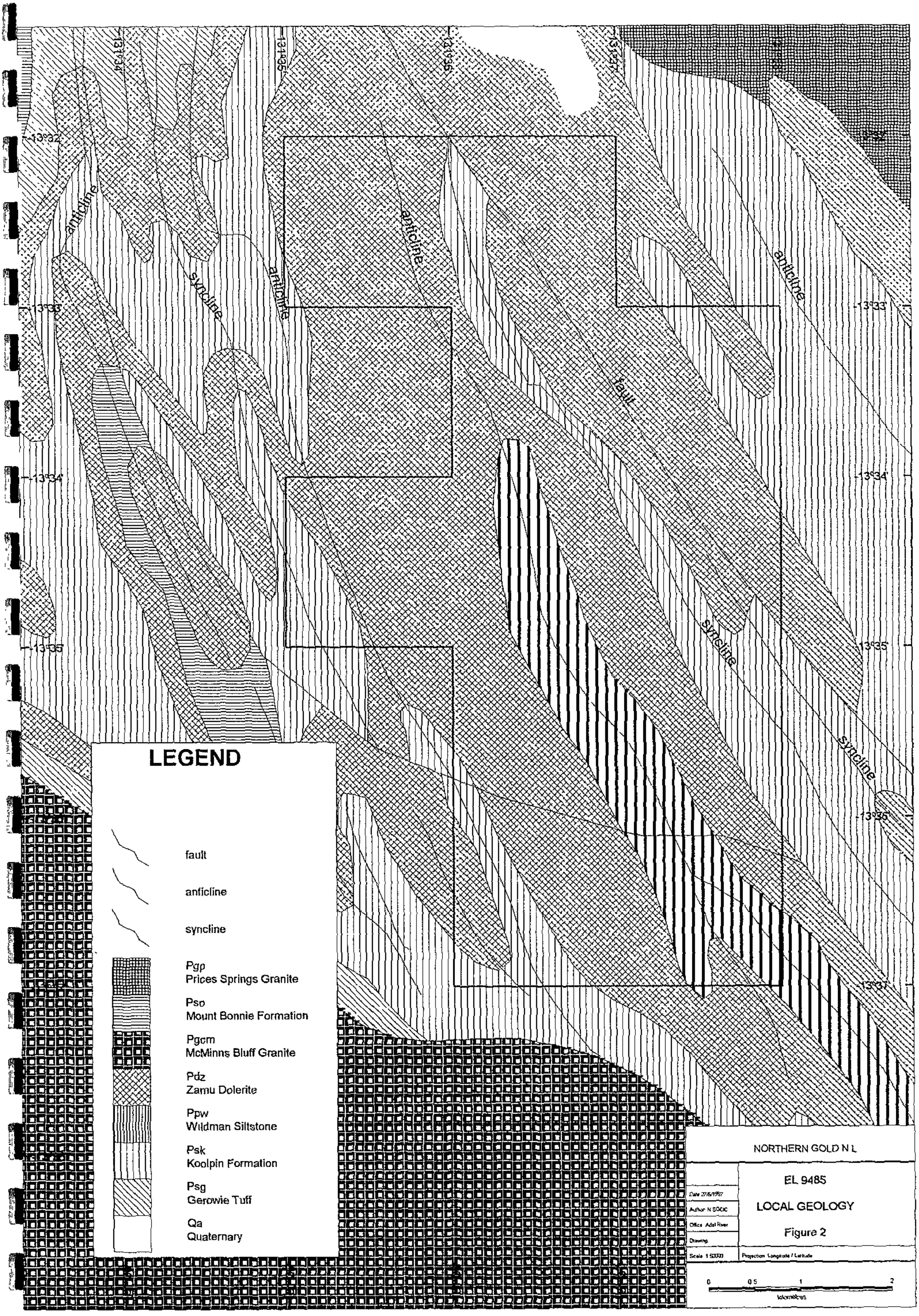
EL 9485 is situated within the Pine Creek Geosyncline, a tightly to isoclinally folded sequence of mainly pelitic and psammitic Lower Proterozoic sediments with interlayered tuff units. All the lithologies in the area have been metamorphosed to low, and in places, medium grade metamorphic assemblages. For the purpose of this report, the prefix meta- is implied, but omitted from the rock names and descriptions.

The sequence has been intruded by pre-orogenic dolerite sills of the Zamu Dolerite, and a large number of late syn-orogenic to post orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata, as well as Cainozoic sediments and laterites, overly the Pine Creek Geosyncline.

2.2 Local Geology

EL 9485 lies within an area of highly faulted anticlinal and synclinal formations. Both the faulting and folding show north - west to south - east trends (Figure 2).

The folded units of the Koolpin Formation have been intruded by sills of Zamu Dolerite throughout the tenement. Wildman Siltstone outcrops through the centre of the tenement along a north - west to south - east trending anticlinal fold axis (Socic, 1997).


anticline
syncline
anticline
fault
anticline
syncline
syncline
-13°32'
-13°33'
-13°34'
-13°35'
-13°36'
-13°37'
131°34'
131°35'
131°36'
131°37'
LEGEND
fault
anticline
syncline
Pgp
Prices Springs Granite
Pso
Mount Bonnie Formation
Pgcm
McMinns Bluff Granite
Pdz
Zamu Dolerite
Ppw
Wildman Siltstone
Psk
Koolpin Formation
Psg
Gerowie Tuff
Qa
Quaternary
NORTHERN GOLD N L
EL 9485
LOCAL GEOLOGY
Figure 2
Date 27/5/1997
Author N SOOK
Office Adel River
Drawing
Scale 1:50000
Projection Longitude / Latitude
0
0.5
1
2
kilometres

3.0 PREVIOUS EXPLORATION

Previous work within EL 9485, was mainly completed over old exploration licences.

EL 9485 was covered by EL 3138, which included EL 7025. The licence was granted to Geopeko Ltd. in 1981. Geopeko carried out regional stream sediment sampling and follow up detailed soil sampling in 1982 (Nicholson and Radford, 1982). Anaconda Australia took over the tenement in 1984 and relinquished the area in 1985 (Kavanaugh, 1984).

The ground was subsequently obtained by CSR Exploration as EL 4817, which consisted of 21 graticular blocks. CSR entered into a joint venture with Cyprus Minerals Australia in 1987 and carried out an airborne magnetic survey followed by a limited stream sediment sampling program, targeting dolerite-hosted sulphide related disseminated gold mineralisation. Cyprus carried out detailed rock chip and stream sediment sampling programs targeting strata bound bold/base metal deposits in the Koolpin Formation and epigenetic gold deposits in the Zamu Dolerite. The control of EL 4817 was passed on to Hudspeth and Co. in 1989 as part of the Australia-wide split up of interests between Cyprus Gold Australia and Arimco N.L. (CR90/274).

4.0 EXPLORATION COMPLETED

4.1 1996/97 Exploration

Northern Gold N.L. completed a work program based on digital data acquisition and manipulation, during the 1996/97 year of tenure. Landsat Imagery, SPOT Imagery and AGSO mapping were obtained and used in conjunction with aerial mapping and site visits to determine the best method of exploration to be used on the licence (Socic, 1997).

GIS and satellite imagery were used to log soil types, indicating that the region comprises mainly lateritised lower saprolite.

Satellite imagery was also used to interpret the structural geology of the region (Figure 3).

Interpretation of the GIS and remote sensing imagery shows the Zamu Dolerite dominating the tenement, outcropping along low north - west to south - east trending ridges. The Wildman Siltstone is indicated by the darker shade of grey trending north - west to south - east through the centre of the tenement (Socic, 1997).

4.2 1997/98 Exploration

During the 1997/98 exploration season Northern Gold N.L. completed a work program involving magnetic data acquisition and manipulation, and digital terrain modelling. The data was obtained and used in conjunction with aerial mapping, site visits and previous digital data interpretations.

4.2.1 Geophysics

Northern Gold N.L. purchased multiclient aerial geophysics from World Geoscience. The data covers areas not previously held by Northern Gold N.L. It is presented as a south - west, sun shaded residual plot in Figure 4.

EL 9485 lies within the area covered by the survey.

The survey specifications are listed in Table 1.

The results of the geophysics were used primarily as imaged processed data for regional interpretation of exploration concepts. This data highlighted folded dolerite units and faulting present within the tenement.

778500 mE
780000 mE
781500 mE
783000 mE
784500 mE
786000 mE
8503500 mN
8502000 mN
8500500 mN
8499000 mN
8497500 mN
8496000 mN
8494500 mN
8493000 mN
8491500 mN

NORTHERN GOLD N.L

EL 9485

SATELLITE IMAGE MAP

Figure 3

Date 20/8/1998	
Author N Mottram	
Office ADELAIDE	
Drawing	
Scale 1:50000	Projection AMG Zone 52 (AGD 66)

0 0.5 1 2
kilometres

777500 mE

780000 mE

782500 mE

785000 mE

787500 mE

8507500 mN

8505000 mN

8502500 mN

8500000 mN

8497500 mN

8495000 mN

8492500 mN

8490000 mN

NORTHERN GOLD N.L.

EL 9485

MAGNETIC IMAGE MAP

Figure 4

Date: 20/8/1998

Author: N Mottram

Office: ADEL RIVER

Drawing:

Scale: 1:50000

Projection: AMG Zone 52 (AGD 66)

0 0.5 1 2

kilometres

Table 1 **Aerial Geophysical Survey Specifications**

Aircraft	Rockwell Strike Commander 500S
Magnetometer	Scintrex V201 Split Beam Caesium Vapour
	Resolution: 0.04 nanoTesla
	Cycle Rate: 0.2 second
	Sample Interval: 14 metres
Spectrometer	256 Channel Geometrics Exploranium GR800B
Processed Channels	Total Count 0.4 - 3.01 MeV
	K_{40} 1.37 - 1.56 MeV
	Bi_{214} 1.67 - 1.86 MeV
	Ti_{208} 3.02 - 6.00
	Cosmic 3.02 - 6.00
	Volume: 33.56 litres
	Cycle Rate: 1.0 second
	Sample Interval: 70 metres
Data Aquisition	Hewlett Packard 9000 Series Computer:
	Aerodata Digital Data 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	70 metres - mean terrain clearance
Navigation	Syledis UHF Positioning System

4.2.2 DTM Studies

A contour map of the region was compiled, showing the slope vectors of the terrain, indicating possible dispersion directions of mobile elements (Figure 5).

778500 mE
780000 mE
781500 mE
783000 mE
784500 mE
786000 mE
8503500 mN
8502000 mN
8500500 mN
8499000 mN
8497500 mN
8496000 mN
8494500 mN
8493000 mN
8491500 mN

NORTHERN GOLD N L

EL 9485
CONTOUR MAP SHOWING
SLOPE VECTORS

Figure 5

Date 20/8/1999
Author N Mottram
Office ADELAIDE RIVER
Drawing
Scale 1:50000
Projection AMG Zone 52 (AGD 66)

0 0.5 1 2
kilometres

5.0 EXPENDITURE

Expenditure over EL 9485, from the grant date to the surrender date, totaled $14,805. Details of this expenditure are listed in Table 2 and Table 3.

Table 2 **EL 9485 1996/97 Expenditure**

COSTS	AMOUNT
Report Compilation	370
Tenement Management	540
Data Review	390
Drafting and Computing	310
Photocopying	165
Stationary and Office Expenses	60
Computing	75
Motor Vehicle Expenses and Fuel	150
AGSO Mapping	525
Satellite Imagery & Manipulation	1,580
GIS Manipulation	785
Salaries and Wages	1,240
Subtotal	**6,190**
Administration @ 15%	930
TOTAL	**$7,120**

Table 3 **EL 9485 1997/98 Expenditure**

COSTS	AMOUNT
Report Compilation	350
Tenement Management	490
Data Review	335
Photocopying	105
Stationary and Office Expenses	50
Computing	70
Motor Vehicle Expenses and Fuel	115
Geophysics	1,230
GIS Manipulation	680
DTM Manipulation	2,010
Salaries and Wages	1,250
Subtotal	**6,685**
Administration @ 15%	1,000
TOTAL	**$7,685**

6.0 REFERENCES

CR90/274 (1990). ARIMCO N.L. EL 4817 Depot Creek. Relinquishment report ending 1990 for the NTDME.

KAVANAGH, M.E. (1984). Anaconda Australia Limited : EL 3138, Annual Report for the third year of tenure. Northern Territory Geological Survey, Open File Report CR85/063.

NICHOLSON, P.M. & RADFORD, N.W. (1982). Geopeko Ltd. : EL 3138, Annual Report for first year of tenure. Northern Territory Geological Survey, Open File Report CR87/17.

SOCIC, N., (1997). EL 9485, 1996/97 Annual Report, 05/06/96 to 04/06/97. Unpublished report by Northern Gold N.L. for the NTDME.