Northern Gold N.L. *Incorporated in the Northern Territory* A.C.N. 009 620 937

229 Stirling Highway, Claremont, 6010 P.O. Box 298, Claremont, Western Australia, 6010
Telephone (09) 383 4321 Fax (09) 383 4270

EL 7116

FINAL REPORT

To 3rd December 1991

Pine Creek SD-5208 Pine Creek 14/6-II, 5270.2

Compiled for Northern Gold NL
by Dr. Gregor Partington
December 1991

SUMMARY

Northern Gold N.L conducted a first pass exploration program over EL 7116 to test the area for gold and base metal mineralisation. No significant results were obtained from the license and it was surrendered.

CONTENTS

FIGURES

TABLES

1 INTRODUCTION

1.1 Title

1.2 Location and Access

EL 7116 is situated 5 km north west of Pine Creek (Fig. 1) and was acquired to test for mineralised splays from the Pine Creek Shear Zone similar to the structures which host the Enterprise gold mine and the Union Reefs gold mine, immediately east of the tenement. Access to the tenement is via a track to Union Reefs east from the Stuart Highway approximately 10 kilometres north west of Pine Creek and is restricted to four wheel drive vehicles within the tenement due to the rugged nature of the terrain.

1.3 Previous Exploration

Previous work on the tenement was carried out by McGrane, Niddrie and Shields, who are local prospectors (McGrane et al, 1988) and consisted of limited quartz vein sampling and extensive loaming which identified a small low grade alluvial/colluvial resource to the north of the tenement area. No systematic modern low-level regional reconnaissance has been carried out over the area. The aims of this years work was to structurally map the tenement with the aid of enhanced geophysical data placing emphasis on possible splay structures from the Pine Creek shear zone and locating hanging-wall reverse shears on asymmetric antiforms and to carry out some limited BLEG stream sediment sampling to test for the source of the alluvial/colluvial resource discovered to the north of the tenement.

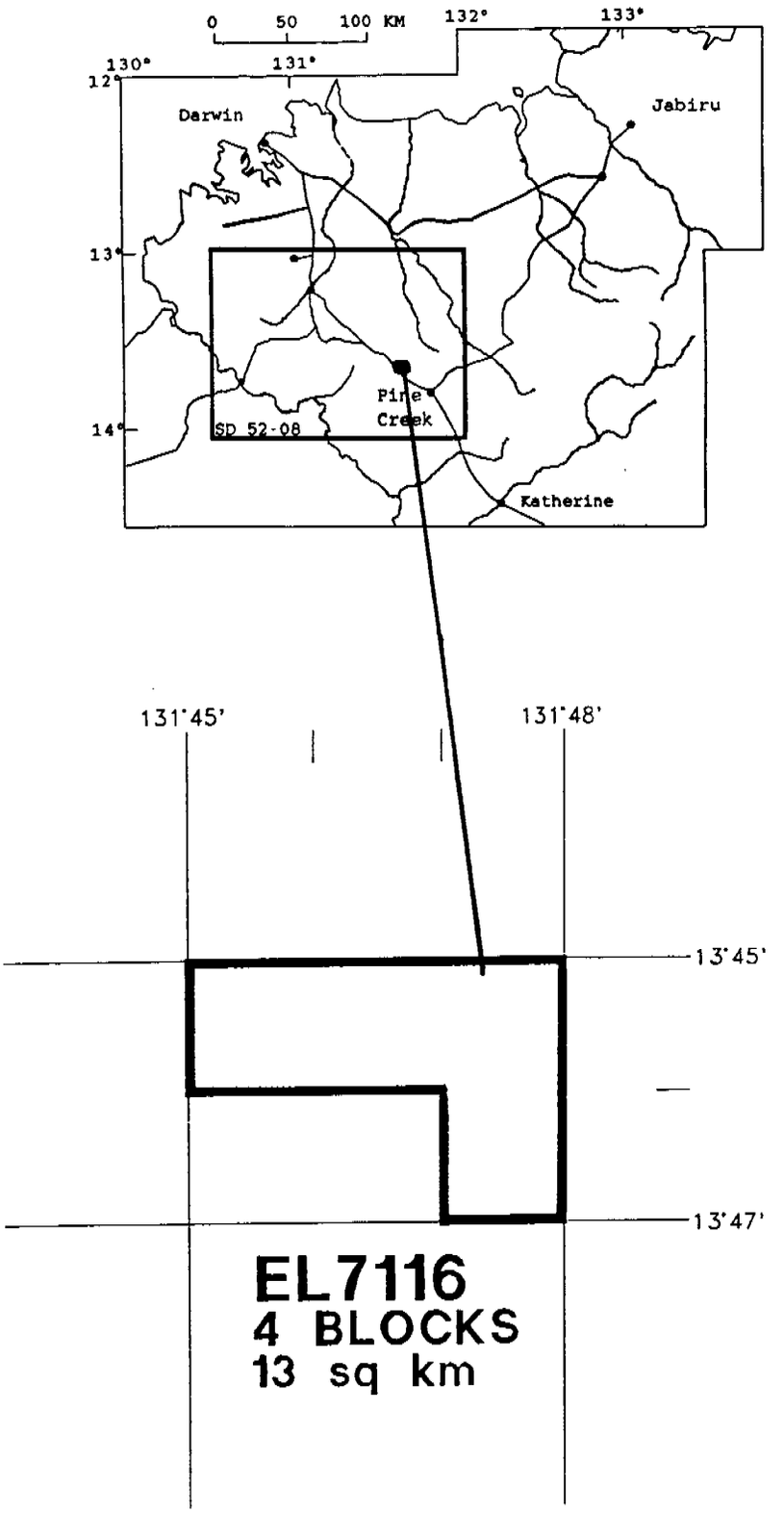

0 50 100 KM
132°
133°
130°
131°
12°
Darwin
Jabiru
13°
Pine Creek
SD 52-08
14°
Katherine
131°45'
131°48'
13°45'
13°47'
EL7116
4 BLOCKS
13 sq km

Figure 1

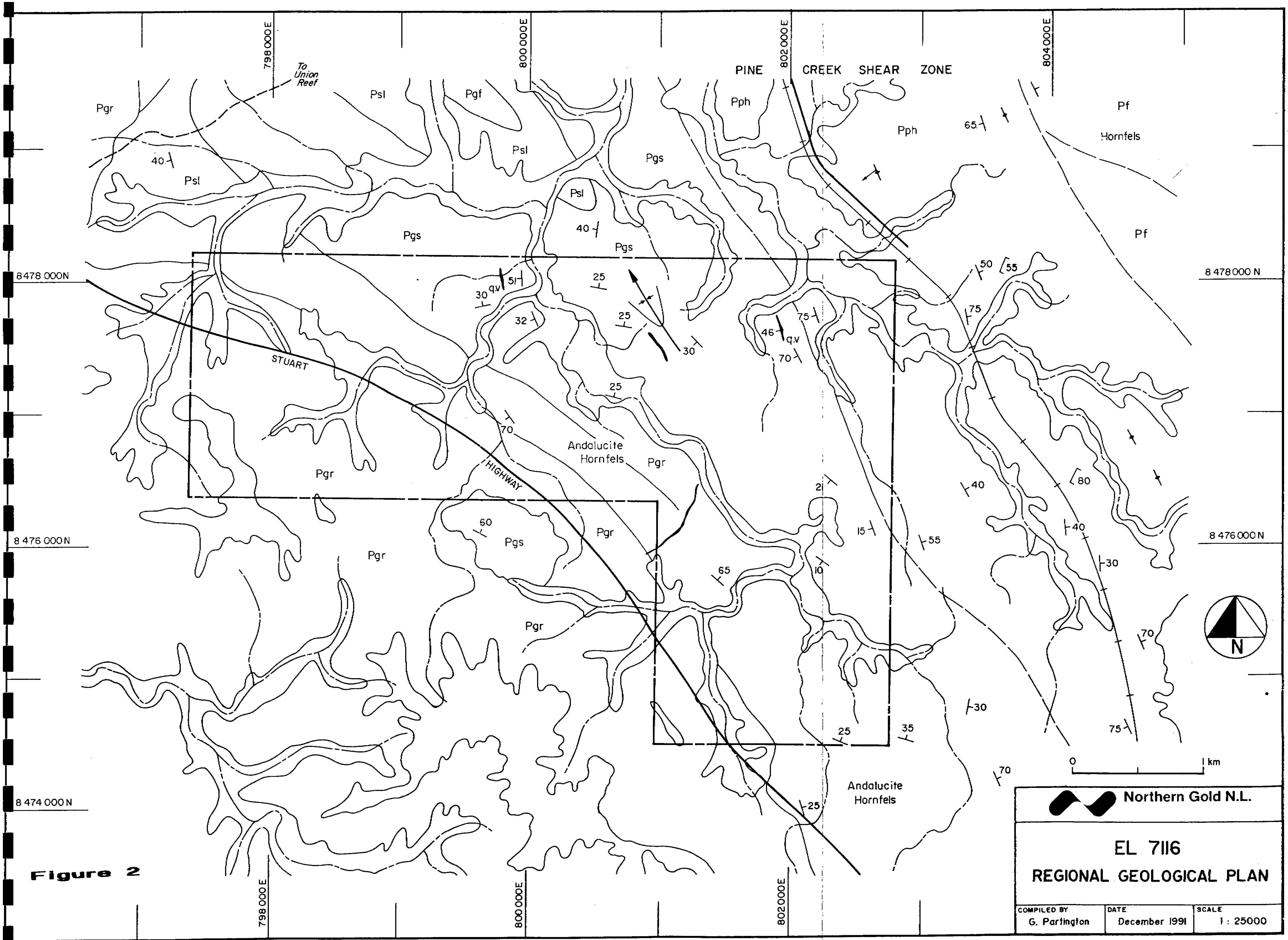
2 GEOLOGY

2.1 Regional Geology

EL 7116 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. The prefix meta is implied but ommitted from all lithological descriptions. The sequence has been intruded by pre-orogenic dolerite sills and a 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 laterite overlie the Pine Creek Geosyncline lithologies.

2.2 Local Geology

The main lithologies in the tenement are the Table Top granite, the Allamber Springs granite and the Burrell Creek formation, which comprises medium to fine grained feldspathic greywacke, siltstone and mudstone (Fig. 2). All sedimentary lithologies have been hornfelsed in the vicinity of the granite contacts and commonly contain cordierite and/or andalusite. Regional metamorphism has reached upper greenschist facies and is overprinted by the contact metamorphism. The sediments have been folded by at least two folding episodes (Fig. 2). F1 has produced tight upright to overturned folds which trend 352 degrees and plunge 26 degrees to the north west. A pervasive cleavage which trends 356 degrees and dips 78 degrees to the southwest is axial planar to these folds. Narrow reverse shears on the western limb of F1 anticlines are present in the central part of the tenement (Fig. 2). The F1 folds and associated structures have been refolded by a series of east-west trending open folds which have been designated F2. Both folding events pre-date granite intrusion.



798 000 E
800 000 E
802 000 E
804 000 E
8 478 000 N
8 476 000 N
8 474 000 N
To Union Reef
PINE CREEK SHEAR ZONE
Pgr
Psl
Pgf
Pgs
Pph
Pf
Hornfels
q.v
STUART HIGHWAY
Andalucite Hornfels
N
0
1 km
Northern Gold N.L.
EL 7116
REGIONAL GEOLOGICAL PLAN
COMPILED BY
G. Partington
DATE
December 1991
SCALE
1 : 25000

Figure 2

The eastern boundary of the tenement is marked by a regional scale high strain zone which comprises phyllite, after greywacke and siltstone, and which forms a distinctive northwest trending anastomosing foliation (Fig. 2). This foliation is associated with a vertical stretching lineation and intrafolial folds with fold axes which generally parallel the stretching lineation. This high strain zone is taken to mark the western boundary of the Pine Creek Shear Zone.

3 EXPLORATION COMPLETED

Northern Gold completed a first-pass exploration program designed to test the area for gold and base metal mineralisation. This involved a literature search of open file reports in the Department of Mines, interpretation of geophysical data, geological mapping, rock chip sampling and stream sediment sampling over the area of EL 7116.

3.1 Geological Reconnaissance

No splay structures from the Pine Creek shear zone, anticlinal structures with associated quartz veining or quartz stockwork zones with widespread alteration were identified during the mapping.

3.2 Rock Chip Sampling

A total of 3 rock-chip samples were collected from quartz veins (15503-15505). These were analyzed for Au only. Assay results and sample locations are given in Appendix 1. No anomalous rock-chip samples were identified.

3.3 Stream Sediment Sampling

A total of 23 stream sediment samples were collected from internal creeks and their tributaries through the tenement. About 2 kg of sediment sieved to -6mm was collected at each sample site. The stream sediment samples wer submitted to Analabs in Darwin for BLEG Au analysis only. Results from this program are presented in Appendix 2 and locations and results for Au shown on Figures 3 and 4. No stream sediment anomalies were identified.

798000E
800000E
802000E
804000E
8478000N
8476000N
8474000N
15727
15728
15729
15730
15731
15732
15733
15734
15735
15736
15737
15738
15739
15740
15741
15742
15743
15744
15746
15745
15747
15749
15748

Northern Gold NL		
EL 7116 Stream Sediment Sample Locations		
SCALE 1: 20000	DATE 16/12/91	SHEET 1 of 1
	REF No.	
	Plotted with MICROMINE	

Figure 3

798000E
800000E
802000E
804000E
8478000N
8476000N
8474000N

+3.39
+1.1
+0.56
+0.23
+0.69
+0.15
+0.24
+0.43
+0.19
+0.3
+1.25
+0.17
+0.24
+0.15
+0.31
+3.0
+L
+0.21
+0.2
+L
+0.58
+0.32
+0.34

Northern Gold NL

EL 7116
Stream Sediment Sample
Results, Au ppb

SCALE	DATE	SHEET
1: 20000	16/12/91	1 of 1
	REF No.	
	Plotted with MICROMINE	

Figure 4

4. CONCLUSIONS

Exploration conducted on EL 7116 failed to identify any areas of significant mineralisation and the tenement has been relinquished.

5. REFERENCES

Mcgrane, S., Niddrie, J.H. and Shields, J.W., 1988. First annual report Exploration Licence 4764 Mcminns Bluff area N.T.. N.T.G.S. report CR88/102.

5. EXPENDITURE

Expenditure on EL 7116 during the anniversary year totalled $7,423. Details of this expenditure are listed below as Table 1.

Assays	$290
Consumables	$60
Field Expenses	$710
Imaging	$1,000
Mapping and Aerial photography	$300
Report & Plan Preparation	$300
Motor Vehicle Costs	$278
Staff Salaries and wages	$3,000
SUBTOTAL	$5,938
10% N.T. Administration	$594
15% Head Office Administration	$891
TOTAL	$7,423

Table 1.

APPENDIX 1

SAMPLE	northing	easting	Au ppm
15501	8482020	798530	0.01
15502	8481890	798670	L
15503	8477572	801789	0.15

APPENDIX 2

Sample	NORTHING	EASTING	Au ppb
15727	8478100	800297	3.39
15728	8477932	799927	0.23
15729	8477788	800382	0.15
15730	8477401	800151	0.19
15731	8477035	800624	0.17
15732	8476946	800934	0.24
15733	8476715	801113	0.31
15734	8476801	801402	0.15
15735	8476620	801438	3.00
15736	8476366	801355	L
15737	8476105	801546	0.21
15738	8476057	802093	0.20
15739	8475825	801947	L
15740	8475391	802139	0.58
15741	8475422	802510	0.32
15742	8475042	802366	0.34
15743	8478151	802093	1.10
15744	8478002	802071	0.56
15745	8477776	801593	0.24
15746	8477912	802234	0.69
15747	8477522	801789	0.43
15748	8477178	802321	1.25
15749	8477357	802290	0.30