

**EXPLORATION LICENCE 8545**  
**ANNUAL REPORT FOR THE PERIOD 29/03/94 to 28/03/95**

Map : 14/6-1 Union Reef  
Blocks : 26/47, 27/47, 27/48 , 27/49

CR 95 / 329

Author : Stuart Henson.  
Date : March 1995.  
Report # : 01 8545.  
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## **SUMMARY**

Exploration Licence 8545 was granted on the 29/03/94 to Stuart Henson for a period of four years, with a first year expenditure covenant of \$4500.

The tenement covers an area of 13 square kilometres and is located some 27kms north-north-west of the Pine Creek Township.

The tenement is underlain by interbedded siltstone, shale and greywacke of the Early Proterozoic Burrell Creek Formation of the Finniss River Group, and lies in the central portion of the Pine Creek Shear Zone, a structure which hosts major gold mineralisation at Pine Creek and Union Reefs.

Work to date has consisted of research, mapping, geochemical sampling for gold and base metal mineralisation, soil and stream sediment sampling for alluvial gold deposits.

No economical deposits have been identified to date, however some anomalous sample results require following up and several areas require further work to establish whether sufficient tonnage exists, to support a viable alluvial gold mining operation.

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## **1.0 INTRODUCTION**

Exploration Licence 8545 was granted on the 29/03/94 to Stuart Henson for a period of four years, with a first year expenditure covenant of \$4500. The licence covers an area of some 13 square kilometres.

The aim of the exploration program is to locate economical gold and base metal mineralisation, and search for alluvial gold deposits.

This report details the work completed and results obtained on Exploration Licence 8545 for the period 29/03/94 to 28/03/95.

## **2.0 LOCATION AND ACCESS**

The licence area consists of four graticular blocks, these are identified as 26/47 27/47 27/48 27/49 on the N.T Department of Mines and Energy Tenement Map, 14/6-1 Union Reef.

The tenement is located some 27kms north-north-west of the Pine Creek Township (See figure 1).

Access to the tenement is from the Stuart Hwy via the Spring Hill Rd or via the Mount Wells Rd. Several vehicle tracks from the Mount Wells Rd to the Union Extended Mine and abandoned alluvial workings provide limited access to the north and south of the tenement.

## **3.0 GEOLOGY**

The majority of the tenement is underlain by interbedded siltstones, shales and greywackes of the Early Proterozoic Burrell Creek Formation of the Finnis River Group.

An Early Proterozoic McKinlay Granite is located in the north of the tenement. The intrusion of this pluton has formed a narrow semicontinuous ridge, rising over 100m along the contact area. Hornfelsing of rocks of the Burrell Creek Formation produced by the contact metamorphic effects of the McKinlay Granite is common near the granite boundary.

A north-north-westerly trending dark green/grey dolerite dyke associated with the eastern margin of the Pine Creek Shear Zone intrudes the Burrell Creek Formation in the south west of the tenement.

Evidence of shearing related to the Pine Creek Shear Zone can be found throughout the tenement.

## **4.0 MINERALISATION**

EL 8545 lies within the central portion of the Pine Creek Shear Zone, a structure that can be traced for a considerable distance to the north-west and the south-east. This structure hosts major gold mineralisation at Pine Creek and Union Reefs.

The central area of the licence encompasses MCN,s and MLN,s covering the Union Extended Gold Workings. The Union Extended Mine and several nearby mines were worked for hard rock gold late last century, for a total recorded gold production of 165 000 grams. In recent years the area supported an eluvial, alluvial gold mining operation.

Other known areas of mineralisation consist of alluvial gold and tin workings along the McKinlay River, most of these areas were worked in recent years and have a recorded gold production of 5300 grams.

## **5.0 PREVIOUS EXPLORATION**

Previous exploration over the area was conducted by Billiton Australia from 1988 to 1990, Stuart Henson from 1991 to 1993 and Dominion Gold Operations in 1993. Work consisted of geochemical stream sediment, soil and rock-chip sampling, results of this work located gold anomalous alluvials associated with the McKinlay River. Follow up work failed to outline any economical gold or base metal mineralisation.

## **6.0 WORK COMPLETED**

### **6.1 RESEARCH**

Initial work consisted of a research program to establish what structures, lithology's and environments within the licence area were inclined to host gold and base metal mineralisation. Information was obtained from the N. T. Department of Mines and Energy research facilities, from geologists, mining tenement, exploration reports and air photo interpretation.

Folding, faulting, shearing, and jointing were found to be controlling factors on quartz veining and associated gold and base metal mineralisation. High porosity sandstone with intervals of ferruginous or gossanous quartz veining was found to be the most favourable lithology for gold and base metal mineralisation.

Plain white vein quartz and the tightly foliated shales that cover most of the tenement was reported to be a poor host for gold and base metal mineralisation.

## 6.2 FIELD SURVEY

The research program was followed up by several field trips to the tenement to conduct reconnaissance surveying and mapping of the licence area.

The northern area of the licence was found to consist mostly of the McKinlay Granite Pluton. Some prospective areas for gold and base metal mineralisation were located along a semicontinuous ridge of the Burrell Creek Formation which has been formed, faulted and sheared by the intrusion of the McKinlay Granite. This ridge has returned anomalous gold and base metal results from EL 8037 located to the north of the tenement.

Three main areas of abandoned alluvial working and numerous smaller workings were located along the McKinlay River in the southern area of the licence these workings are confined to old river alluvials associated with the McKinlay River. No bed rock source for the gold has been identified although several prospective zones of quartz and ironstone veining were encountered in this area.

## 6.3 STREAM SEDIMENT SAMPLING - VISIBLE GOLD

To give a coarse gold stream sediment coverage of the licence and to locate possible alluvial gold deposits, thirty three 10kg -5mm mesh samples were taken from heavy material trap sites along or near various watercourses within the tenement. These samples were concentrated by hydraulic sluice and examined for visible gold. Sample locations and results are recorded on figure 3.

Fifteen samples returned some visible gold content, these being from the McKinlay River and its tributaries and associated alluvial workings.

Follow up sampling of alluvials along the McKinlay River outlined extensions of the gold deposits this is marked as the prospect area on figure 3.

At the abandoned workings sampling of several unprocessed areas of alluvials was carried out by sluicing approximately 1 cubic metre of alluvium and weighing the recovered gold. From the five areas sampled the following grades were obtained 0.4g, 0.2g, 0.2g, 0.3g, > 0.1g.

## 6.4 ROCK-CHIP SAMPLING

Two prospective areas for gold and base metal mineralisation located during the initial survey of the licence area were followed up by rock-chip sampling. At each sample site a 1kg composite rock-chip sample was taken and assayed for gold and base metal content by AAS. Sample locations and results are recorded on figures 4 and 5. Analysis was conducted by Amdel Laboratories Berrimah.

Area 1 is located in the southern blocks of the tenement and consists of several zones quartz ironstone veining ranging in size from 20cm to over 1 m in width. The quartz veining was thought to be a possible source for the alluvial gold in the area. Eight samples were taken from this veining. (samples 8545-01 to 8545-08)

All gold results were below back ground levels and only minor base metal readings were recorded.

Area 2 is located in the northern blocks of the tenement consisting of a semi continuous ridge of the Burrell Creek Formation which has been formed, faulted and sheared by the intrusion of the McKinlay Granite Pluton. Six samples were taken from zones of quartz veining and gossan within the Burrell Creek Formation near the Granite contact area. (samples 8545-09 to 8545-14)

All gold results were below back ground levels and only minor base metal readings were recorded, with the exception of sample 8545-12 which returned Cu 43ppm, Pb 770ppm, Zn 350ppm.

## **7.0 CONCLUSIONS**

No economically mineralised gold deposits been identified to date, however some areas of the McKinlay River and its alluvial workings require further work to establish grades and tonnage. Follow up work is required on the anomalous rock-chip sample 8037-12 located along the McKinlay Granite contact area.

## **8.0 PROPOSED FURTHER WORK**

Work for the period 29/03/95 to 28/03/96 will entail the follow programs

1 Mapping and rock-chip sampling of the northern tenement blocks along the McKinlay Granite contact area.

2 Sampling and evaluation of alluvial gold deposits associated with the McKinlay River and its alluvial workings.

It is anticipated that the programs will cost approximately \$4500 to complete.



## **9.0      EXPENDITURE STATEMENT**

STAFFING	\$ 1600
TENEMENT COSTS	\$ 370
RESEARCH	\$ 290
EQUIPMENT PURCHASES	\$ 330
ACCESS - SURVEYING - MAPPING	\$ 420
SOIL - STREAM - ROCKCHIP SAMPLING	\$ 550
ANALYSES	\$ 250
OVERHEADS	\$ 855
TOTAL EXPENDITURE	<u>\$ 4665</u>

( COVENANT \$ 4500 )

# EL 8545 LOCATION

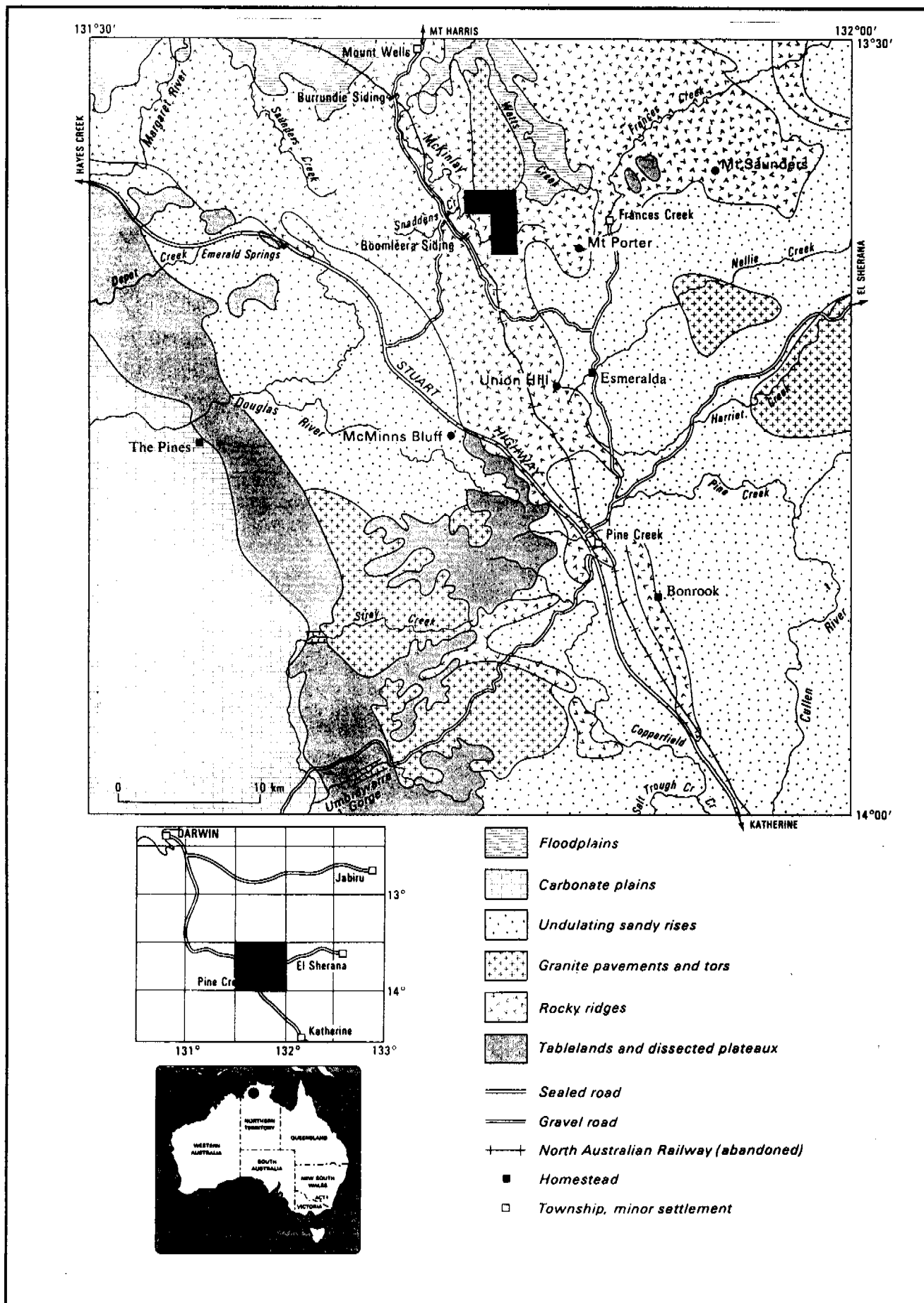
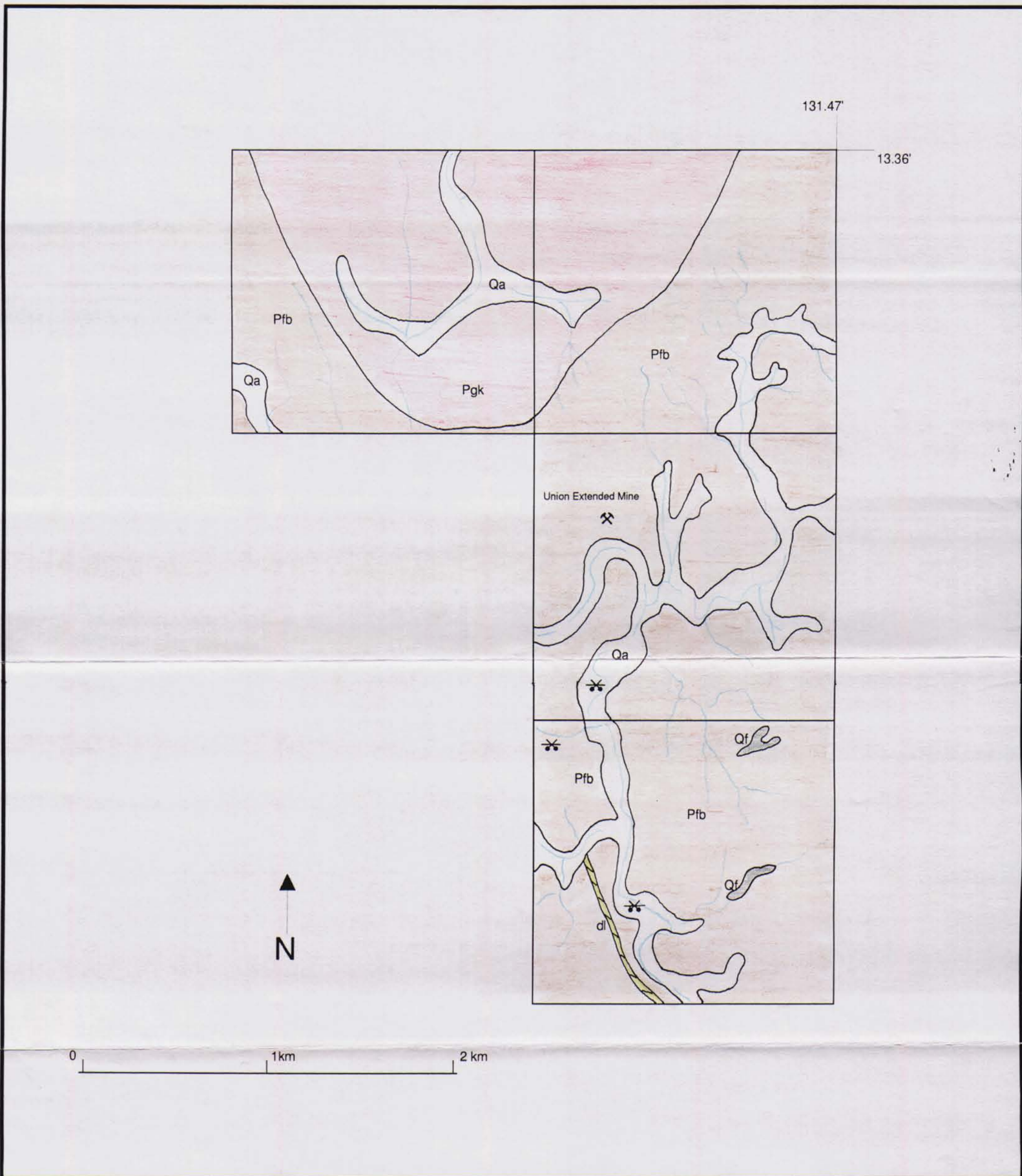


FIGURE 1



Pgk	McKinlay Granite
Pfb	Burrell Creek Formation
Qa	Quaternary - Sand, Silt, Clay
Qf	Quaternary - Black Humic Soil

#### Legend

dl	Dolerite Dyke		Mine (Au)
	Watercourse		
	Geological Boundry		
	Abandoned Alluvial Workings (Au)		

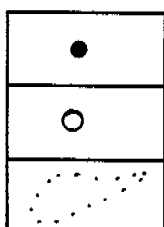
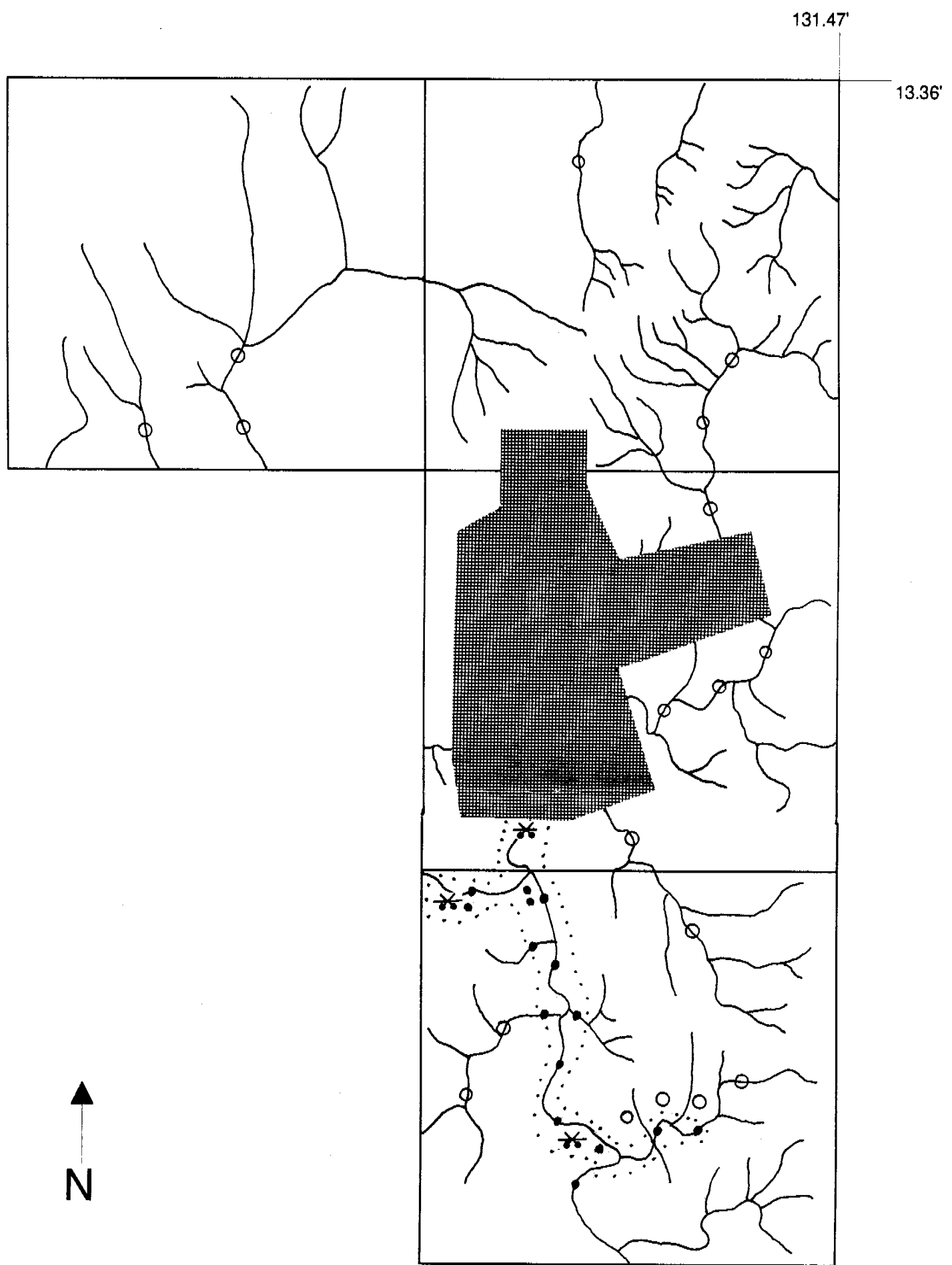
## EL 8545 Geology

Scale : 1: 25 000 (approx)

Date : February 1995

Author : S Henson

FIGURE 2

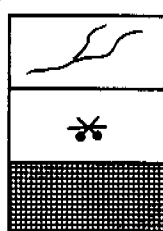


Sample Site - Visible Gold

Sample Site - No Result

Prospect Area

#### Legend



Watercourse

Abandoned Alluvial Workings

MCN's not held under EL8545

## EL 8545

### Soil and Stream Samples

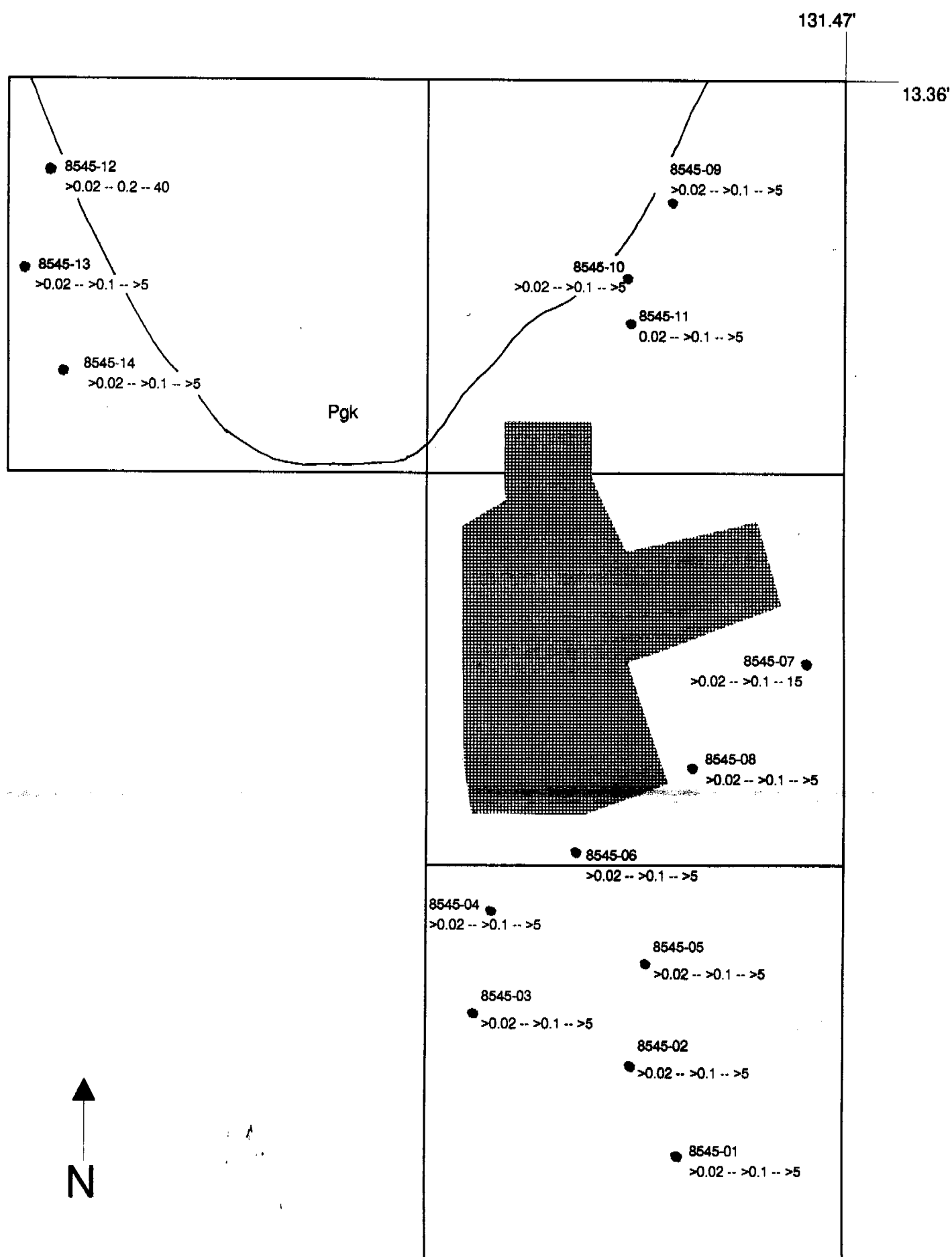
### Visible Gold

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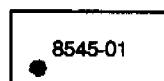
Date : February 1995

Author : S Henson

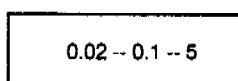
FIGURE 3



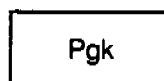
### Legend



Sample Number and Location



Result : Au ppm Ag ppm As ppm



Pgk McKinlay Granite



MCN's not held under EL8545

## EL 8545

AAS Rock-chip Samples

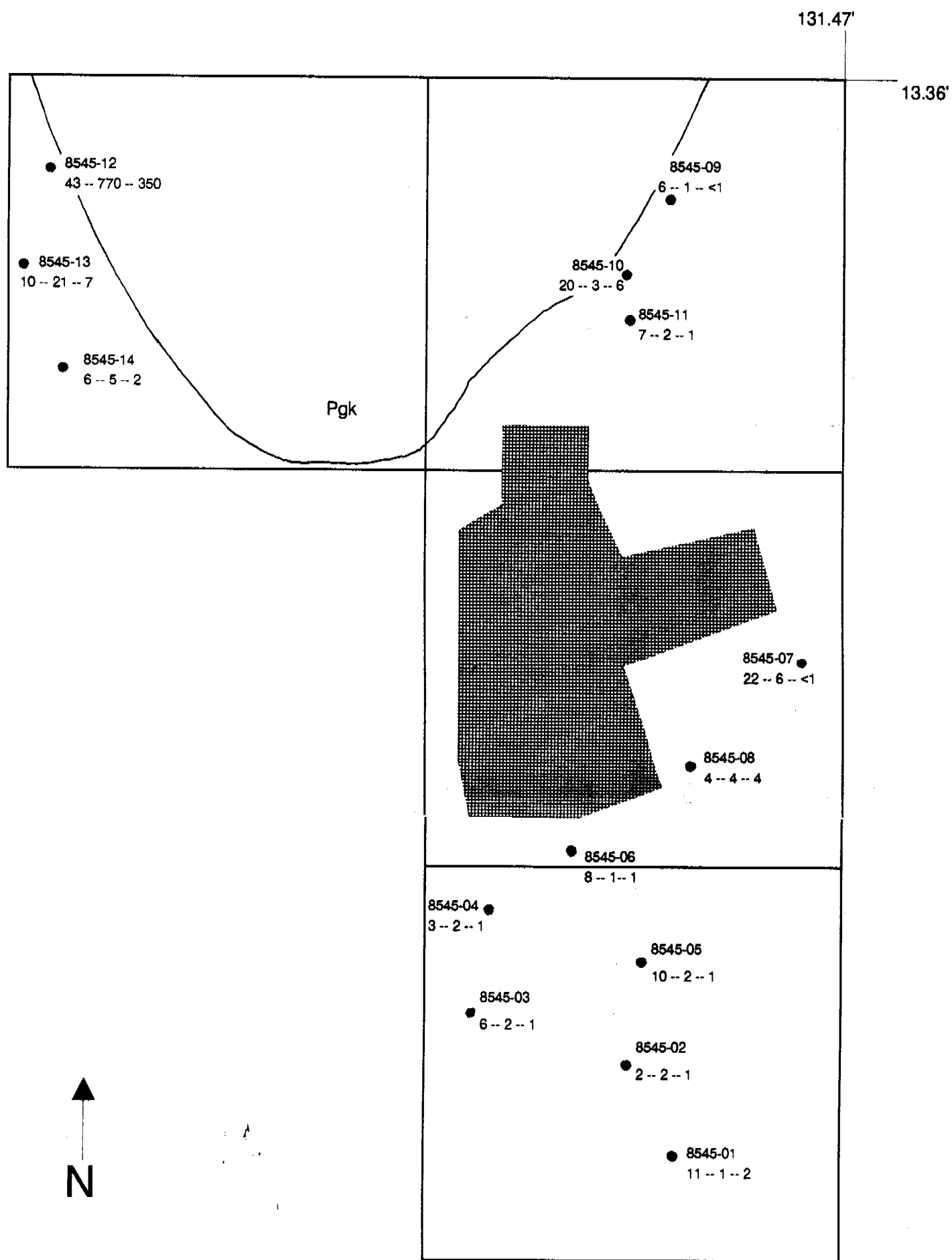
Au ppm Ag ppm As ppm

Scale : 1: 25 000 (approx)

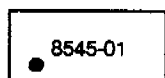
Date : February 1995

Author : S Henson

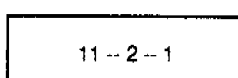
FIGURE 4



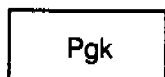
### Legend



Sample Number and Location



Result : Cu ppm Pb ppm Zn ppm



Pgk McKinlay Granite



MCN's not held under EL8545

## EL 8545

AAS Rock-chip Samples

Cu ppm Pb ppm Zn ppm

Scale : 1: 25 000 (approx)

Date : February 1995

Author : S Henson

FIGURE 5



Appendix 1     Rock-Chip Sampling - Analytical Report



21 Marjorie Street, Berrimah, Northern Territory  
Postal Address : P.O. Box 58, Berrimah, N.T. 0828  
Telephone: (089) 322 637 Facsimile: (089) 323 531

Mr. S. Henson  
P.O. Box 37151  
WINNELLIE

N.T. 0821

ANALYSIS REPORT :

Your Reference : 13999

Our Reference : 5DN0070

Samples Received : 24/02/95  
Number of Samples : 14

Results Reported : 28/02/95  
Report Pages : 1 to 1

This report relates specifically to the samples tested in so far as the samples supplied are truly representative of the sample source.

If you have any enquiries please contact the undersigned quoting our reference as above.

Report Codes:

N.A. -Not Analysed  
L.N.R. -Listed But Not Received  
I.S. -Insufficient Sample

A handwritten signature in dark ink, appearing to read 'R. Holtham', written over a horizontal line.

Approved Signature:

for

Mr Russell Holtham  
Manager - Darwin  
AMDEL LABORATORIES LIMITED  
A.C.N. 009 076 555





Job: 5DN0070  
O/N: 13999

Final

ANALYTICAL REPORT

SAMPLE	AuDup1	AuDup2	Cu	Pb	Zn	Ag	As
8545.01	<0.02	--	11	1	2	<0.1	<5
8545.02	<0.02	--	2	2	1	<0.1	<5
8545.03	<0.02	--	6	2	1	<0.1	<5
8545.04	<0.02	--	3	2	1	<0.1	<5
8545.05	<0.02	--	10	2	1	<0.1	<5
8545.06	<0.02	--	8	1	1	<0.1	<5
8545.07	<0.02	--	22	6	<1	<0.1	15
8545.08	<0.02	--	4	4	4	<0.1	<5
8545.09	<0.02	<0.02	6	1	<1	<0.1	<5
8545.10	<0.02	--	20	3	6	<0.1	<5
8545.11	0.02	--	7	2	1	<0.1	<5
8545.12	<0.02	--	43	770	350	0.2	40
8545.13	<0.02	<0.02	10	21	7	<0.1	<5
8545.14	<0.02	--	6	5	2	<0.1	<5

UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	0.02	0.02	1	1	1	0.1	5
SCHEME	AA7	AA7	AA7	AA7	AA7	AA7	AA7