

# OPEN FILE

EXPLORATION LICENCE 4995

ARLTUNGA

1:250,000 SHEET: ALICE SPRINGS SF 53 - 14

EXPLORATION REPORT FOR PERIOD 04-02-88 TO 24-10-88

LICENSEE: G.K. BOGIE

OPERATOR: WHITE INDUSTRIES LIMITED

P.A. Stidolph  
White Industries Limited  
November 1988

CR89/032

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SUMMARY

Exploration licence 4995 covers metamorphic and igneous rocks of the Arunta Block in the Ambalindum-Claraville area to the northwest of Arltunga. Since November 1987, Respighi Pty Limited, a fully owned subsidiary of White Industries Limited, has had an option to explore for gold over the tenement. This report describes the results of the second phase of exploration which was mainly done between February and April 1988.

The initial phase of exploration consisted of stream sediment geochemistry which indicated minor copper anomalies but no gold. Follow up secondphase exploration involved geological mapping and rockchip geochemistry.

No evidence of gold mineralisation was found and the country rocks are regarded as unlikely hosts for viable gold deposits. The option to continue work will not be exercised.

## INTRODUCTION

On 24 November 1987, Respighi Pty Limited entered into an option agreement with Geoffrey Kenneth Bogie, holder of E.L. 4995. The agreement gave Respighi the option of purchasing a 99% interest in E.L. 4995 up to the 24 October 1988, subject to various conditions as scheduled in the agreement.

E.L. 4995 is located on Ambalindum pastoral lease approximately 120 kilometres northeast of Alice Springs (Figures 1,2).

Respighi, which is a fully owned subsidiary of White Industries Limited, established a camp in January 1988 and commenced gold exploration with a reconnaissance stream geochemistry programme. This work showed several very minor copper and arsenic anomalies, but no gold was detected. Results are detailed in the annual report for 1987-88 (Stidolph, 1988).

At intervals between February and April, the geology of EL 4995 was mapped, with particular emphasis on areas which showed anomalous copper and arsenic values. Rockchip samples were collected from all possible hosts to gold mineralisation.

By the end of April, no areas of gold potential had been found, so all work ceased.

## GEOLOGY

The geology was mapped using 1 : 10 000 scale colour air photographs which were flown in May 1971. Also available were 1 : 25 000 scale colour air photographs flown in November 1987.

The area north of the Hale River was mapped by P.A. Stidolph, and that south of the river by P. Leslie. A map compiled from this work is shown in Figure 3.

South of the river, most outcrop consists of medium grained tonalitic gneiss of probable Early Proterozoic age, intercalated with granitic gneiss and some fine grained biotite gneiss and quartzo feldspathic gneiss. In many areas the gneisses are sheared or partly mylonitised. Epidote, actinolite and biotite schist occur along some of the deformed zones. Minor biotite-garnet gneiss is present.

The strike of the gneisses is mostly east-west, with a dip of around 40 degrees to the north. In parts, the gneiss is strongly rodded, with lineation which plunges to the north east.

North of the river, the low hills west of Claraville consist mainly of medium grained amphibolite composed of hornblende and plagioclase. A few small patches have a serpentinous appearance. The amphibolite is dissected by numerous irregular bodies of gneissose leucogranite and biotite granite, many of which enclose pegmatites. The pegmatites contain accessory muscovite and garnet. These gneissic zones are more strongly sheared than the amphibolite.

In the northwest, the Proterozoic basement is mainly fine grained biotite gneiss and minor amphibolite. In addition, there are several narrow zones of quartzite and magnetite quartzite, some with gossanous, limonitic or hematitic staining, boxworks and vugs.

Massive white quartz reefs intrude the gneisses in several areas, particularly in the south east where they follow a west-northwesterly trend.

Along the central part of the northern boundary, outcrops of flat-lying chalcidonic limestones occur as prominent hills or as low rises of chalcidonic rubble. This limestone represents the southern limits of the Hale River Basin which contains Tertiary sediments. Also present are areas of manganiferous ferricrete with minor silcrete.

Colluvial and eluvial gravels surround and overlie the quartz reefs. In addition, thick quartz-dominant gravel beds cover large tracts along the Hale River. On the north-central boundary of EL 4995, the gravels contain numerous rounded clasts of ferricrete and chalcedony derived from the nearby Tertiary deposits.

### GEOCHEMISTRY

In the initial stream sediment survey, which was described in the 1987-88 annual report, a total of 135 samples were collected. The main results were:

- a) No gold was detected in any of the samples.
- b) Copper assays had a median value of 18 ppm and a maximum of 45 ppm: the higher values were concentrated in two areas on the northern side of the Hale River, one in the low hills west of Claraville and the other about two kilometres north of Ambalindum Station.

- c) Most arsenic values were below detection limit of 20 ppm. Detectable values showed a general correlation with weak copper anomalies.

This work has been followed up by geological mapping and rockchip sampling. A total of 16 rockchip samples were submitted to Amdel Limited for analysis of gold by atomic absorption spectrometry. Each sample weighed approximately 3-4 kilograms and was pulverised to minus 200 mesh. Representative splits were digested with aqua regia, followed by extraction of precious metals into an organic solvent and AAS analysis.

The location of samples is shown in Figure 3 and a brief description of each is given in the appendix.

Geological mapping showed that the higher copper values west of Claraville are due to the presence of amphibolite. Several white quartz veins and quartz-carbonate zones were located but none of them contain gold.

To the north of Ambalindum, much of the underlying rock is obscured by gravels. However, the higher copper values appear to originate from several beds of gossanous or ferruginous quartzite or from amphibolite. Samples of quartzite were tested for gold, all with negative results. Samples of ferricrete also proved negative.

In the southeast of EL 4995, the west-northwesterly trending quartz reefs contain virtually no gold.

A grid was established over one of the quartz gravel beds to the north of Wipeout Mine (Figure 3), to see if any alluvial gold might be present. A total of 59 samples were collected from a depth of about 0.5 metres. Results, tabled in the appendix, are not encouraging.

### CONCLUSIONS

1. Geochemistry and geological mapping have revealed no evidence of gold mineralisation on EL 4995. Geochemical results were negative and the country rocks are regarded as unlikely hosts for viable gold deposits.
2. No other economic minerals were found. However the gossans and ferricrete in the north west quadrant were not tested for base metals and could be quite widespread beneath Cainozoic gravels. They are not of interest to Respighi Pty Ltd but further work by the tenement holder may be warranted.

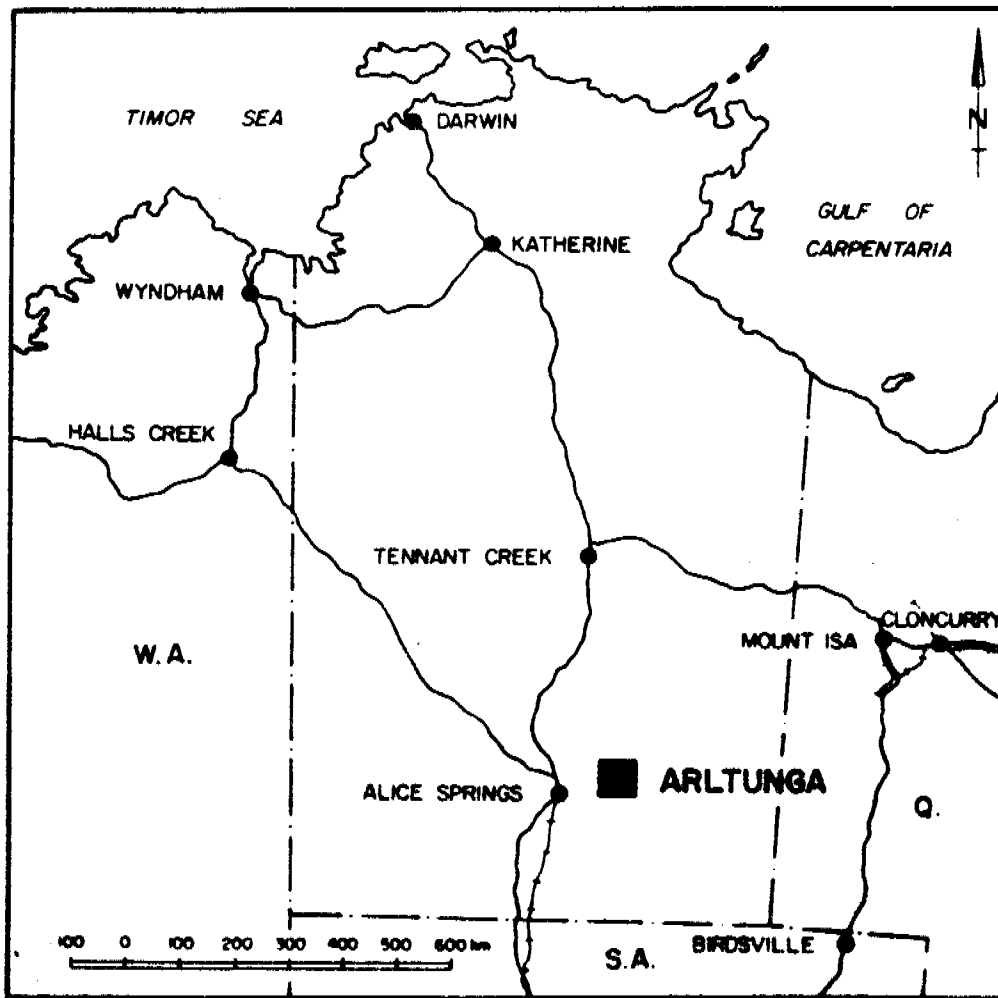
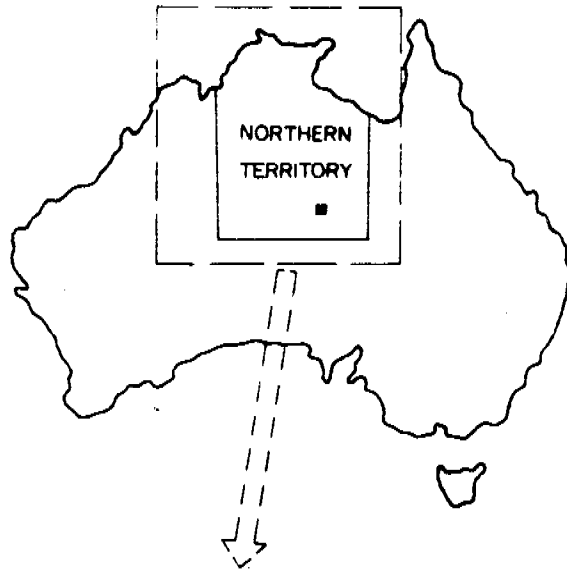
3. Results are not sufficiently encouraging to justify further work by White Industries. It is recommended that the option be terminated.


*P.A. Stidolph*

P.A. Stidolph  
Senior Geologist

**REFERENCE**

Stidolph, P.A. (1988) Exploration report for period 04-02-87 to 03-02-88, Exploration Licence 4995, Arltunga.

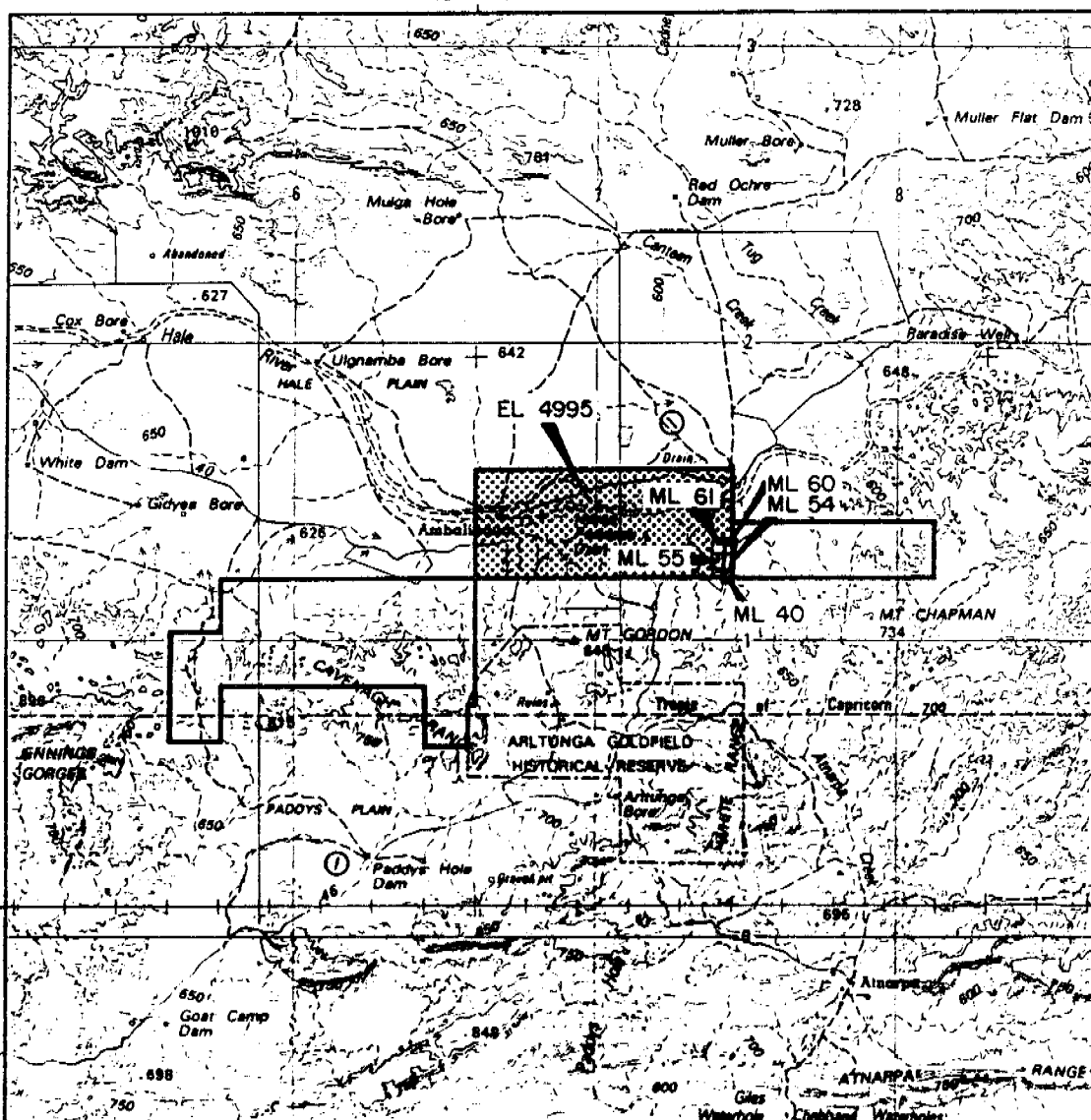


	WHITE INDUSTRIES LIMITED	
	ARLTUNGA PROJECT	
<b>LOCALITY PLAN</b>		
Scale: —	date: OCT 87	FIGURE 1



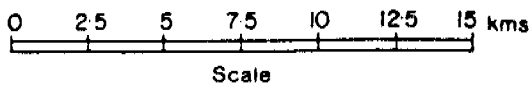
MINING DISTRICT : NORTHERN TERRITORY SOUTH  
 MAP REFERENCE : SF 53-14 ALICE SPRINGS  
 EL : 4995

134°40'



23°30'

ALICE SPRINGS  
107 kms




	WHITE INDUSTRIES LIMITED
	ARLTUNGA PROJECT
EL 4995	
scale: 1:250 000	date: FEB. '88

FIGURE 2

## ANALYSIS

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SAMPLE MARK	Au ppm	Au(ppm) REPEATS
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B3	<0.01	
B4	<0.01	
B6	<0.01	
B7	<0.01	
B9	<0.01	
B12	<0.01	
B13	<0.01	
B14	<0.01	
B15	<0.01	<0.01
B16	<0.01	
B17	<0.01	
B18	<0.01	
B19	<0.01	
B20	<0.01	
B22	<0.01	
B24	<0.01	

METHOD : PM1/3

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Analysis code PM1/3

Report D1288/88

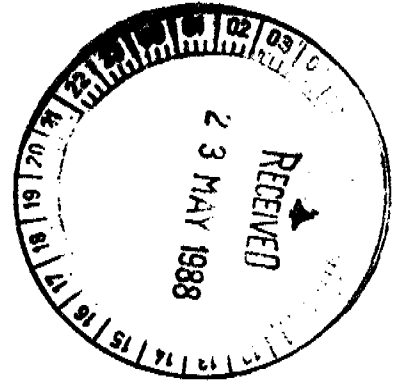
Page G1

Results in ppm

Sample Au

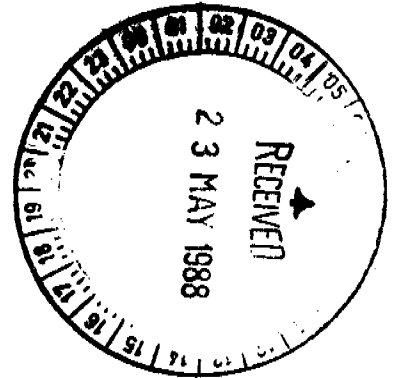
B29 0.04

Detn limit (0.01)



## Results in ppm

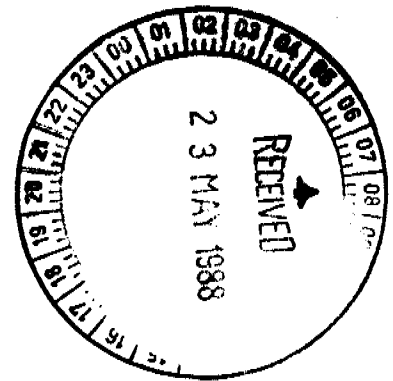
Sample	Au
Soil AL 1 -80#	<0.001
Soil AL 2 -80#	<0.001
Soil AL 3 -80#	<0.001
Soil AL 4 -80#	<0.001
Soil AL 5 -80#	<0.001
Soil AL 6 -80#	<0.001
Soil AL 7 -80#	<0.001
Soil AL 8 -80#	<0.001
Soil AL 9 -80#	<0.001
Soil AL 10 -80#	<0.001
Soil AL 11 -80#	<0.001
Soil AL 12 -80#	0.003
Soil AL 13 -80#	0.002
Soil AL 14 -80#	<0.001
Soil AL 15 -80#	<0.001
Soil AL 16 -80#	0.002
Soil AL 17 -80#	<0.001
Soil AL 18 -80#	0.004
Soil AL 19 -80#	0.004
Soil AL 20 -80#	<0.001
Soil AL 21 -80#	<0.001
Soil AL 22 -80#	<0.001
Soil AL 23 -80#	<0.001
Soil AL 24 -80#	<0.001
Soil AL 25 -80#	0.002
Soil AL 26 -80#	<0.001
Soil AL 27 -80#	<0.001
Soil AL 28 -80#	<0.001
Soil AL 29 -80#	<0.001
Soil AL 30 -80#	<0.001
Soil AL 31 -80#	0.002
Soil AL 32 -80#	<0.001
Soil AL 33 -80#	<0.001
Soil AL 34 -80#	<0.001
Soil AL 35 -80#	<0.001
Soil AL 36 -80#	<0.001
Soil AL 37 -80#	<0.001
Soil AL 38 -80#	<0.001
Soil AL 39 -80#	<0.001
Soil AL 40 -80#	<0.001
Detn limit	(0.001)



Results in ppm

0

Sample	Au
Soil AL 41 -80#	<0.001
Soil AL 42 -80#	0.012
Soil AL 43 -80#	<0.001
Soil AL 44 -80#	<0.001
Soil AL 45 -80#	<0.001
Soil AL 46 -80#	<0.001
Soil AL 47 -80#	<0.001
Soil AL 48 -80#	<0.001
Soil AL 49 -80#	<0.001
Soil AL 50 -80#	<0.001
Soil AL 51 -80#	<0.001
Soil AL 52 -80#	<0.001
Soil AL 53 -80#	<0.001
Soil AL 54 -80#	<0.001
Soil AL 55 -80#	<0.001
Soil AL 56 -80#	<0.001
Soil AL 57 -80#	<0.001
Soil AL 58 -80#	<0.001
Soil AL 59 -80#	<0.001
Detn limit	(0.001)

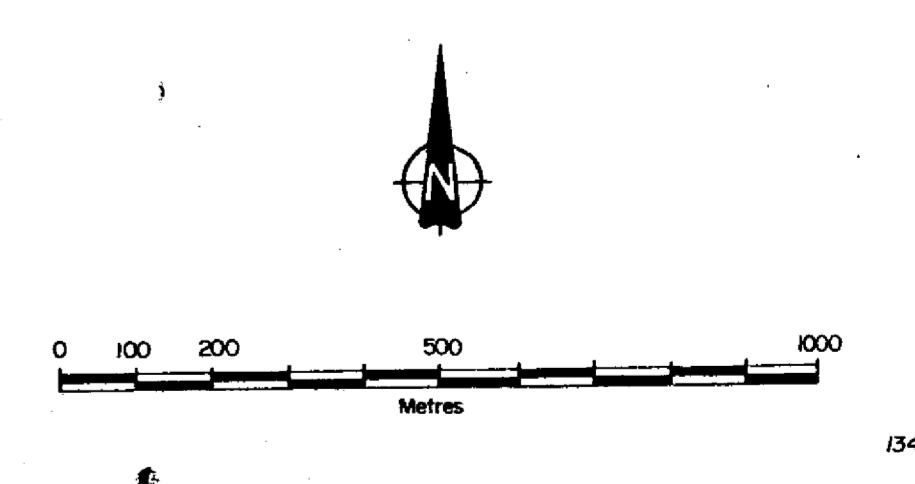






**LEGEND**

<p><b>CAMBRIAN</b></p> <ul style="list-style-type: none"> <li> Alluvial Soil</li> <li> Unconsolidated Gravels, mostly Quartz</li> <li> Cambrian Limestone</li> <li> Quartz Reef</li> <li> Tonalitic Gneiss (1) with intercalated granitic Gneiss (2), Biotite Gneiss (3) and quartzofeldspathic Gneiss</li> </ul> <p><b>PROTEROZOIC</b></p> <ul style="list-style-type: none"> <li> Amphibolite</li> <li> Calc-silicate Rock, Carbonate Rock</li> <li> Quartzite</li> <li> Biotite Gneiss, fine grained</li> </ul>	<ul style="list-style-type: none"> <li> Road</li> <li> Track</li> <li> Fence</li> <li> Strike and Dip of foliation</li> <li> Plunge of Lineation</li> <li> Shear Zone</li> <li> Rock chip Sample Location</li> </ul>
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<b>WHITE INDUSTRIES LIMITED</b>	
<b>ARLTUNGA PROJECT</b>	
<b>E.L. 4995 - GEOLOGY</b>	
<b>CR 89/032</b>	
scale: 1:10000	date: Nov '88
drawn: H.L.J.	checked: —
DRG No. AR 023 FIG. 3	