

FINAL & RELINQUISHMENT REPORT

EXPLORATION LICENCE 104/87

JUKES PROPRIETARY

BY

AUSTMIN RESOURCES NL

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SUMMARY

Following a programme of follow-up rock chip sampling and re-assessment of earlier data, and in view of the results from sampling of the recently completed HEC tunnel in the Jukes Proprietary area, Austmin Resources NL has downgraded the area of Jukes Proprietary EL104/87 and has decided to withdraw.

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1. Introduction

Austmin Resources NL ("Austmin") tendered during late 1987 for the part of former EL39/66 that lies immediately south of the Mt Lyell leases. The company's intention was to focus on the known mineralisation at Jukes Proprietary ("Jukes") while extending the search north of Jukes in the hope of discovering a supplementary resource between Mt Lyell and Jukes. Subsequently Austmin only offered only a small block of ground around Jukes itself (Exploration Licence 104/87) and it was decided to further assess the Jukes prospect with a view to determining a "stand-alone" copper-gold resource. (Figure 1)

Around the time of acceptance of the EL the HEC had completed the construction of a tunnel under and to the south of Jukes. The preliminary report of the HEC geologist and Mines Department staff suggested that a wide section of altered and pyritised volcanics had been intersected. This news was considered favourable.

2. Geological Overview of the Exploration Licence

There are numerous copper prospects among the coalescing rhyolite lava domes which form the high ridge extending from Mt Jukes to South Darwin Peak. These prospects are of two associated types:

1. Cu-pyrite mineralisation in chloritised sediments in deformed remnants of very small basins on the margins of the domes.
2. Hematite-magnetite-Cu-pyrite stockwork-type mineralisation within the lavas.

Findons is an example of the former type, Prince Darwin an example of the latter. Jukes has both types in association.

Because of the significant gold values at Jukes, the alluvial/colluvial gold working in the Darwin Gap-Allans Creek area on the northern side of Mt Darwin, and reports of gold in the soil on intercolonial Spur, Austmin is paying particular attention to the gold potential of mineralisation on the Jukes-Darwin Ridge.

Generally, gold is absent or present in only trace amounts. However, reconnaissance sampling of the hematite-magnetite stockworks extensively developed on Mt Darwin, has yielded significant gold values - 5.9 g/t and 2.3 g/t - from typical iron oxide stockwork material. This has been confirmed by the work of Norgold Limited on EL6/85 ("Jukes-Darwin").

The Jukes prospect comprises disseminated copper-gold mineralisation within intensely chloritised 'basinal' rocks, which separate a series of post-mineral ignimbrites on the east from a pre-mineral rhyolitic endogenous lava dome on the west.

The 'basinal' rocks form a vertical zone 25-50m wide and 350-400m long at surface, lying against the dome.

They are coarse grained, quartz-phyric rhyolitic volcanics, apparently largely of ignimbritic type. There are also lenses of tuffaceous siltstone and horizons containing Precambrian quartzite pebbles. The ignimbrites contain abundant lithic clasts including fragments of the siltstone and the dome lavas.

The lava comprises a steep-sided bulbous mass. It is feldspar-phyric and has the snowflake devitrification texture so typical of other lava domes on the EL. There is patchy development of stockwork alteration and mineralisation (chlorite-quartz-magnetite-specularite-pyrite-chalcopyrite-gold), which is strongest along the margin flanking the mineralised 'basinal' rock.

It is inferred that the 'basinal' rocks were deposited in a depression against the margin of the dome, and were altered and mineralised by fluids emanating from the dome via the stockwork in its flank. The environment of deposition was predominantly high energy mass-transport type. Caught up within the 'crumble breccia' of lava fragments on the outside of the dome there are occasionally pebbles of Precambrian quartzite and tuffaceous siltstone, which suggest that there may have been some basinal rocks present prior to the emplacement of the dome.

The mineralised rocks are in faulted contact to the east with massive quartz-phyric ignimbrites that are essentially unaltered and completely unmineralised. They are separated by the Jukes Proprietary Fault, a major vertical structure which is unmineralised and obviously post-mineralisation.

The best mineralisation is concentrated in the stratigraphic top of the 'basinal' rock adjacent to this fault, and comprises disseminated grains and clots of chalcopyrite-pyrite-magnetite, with traces of galena, sphalerite and barite.

Numerous adits and trenches were excavated when the prospect was discovered in the late 19th Century. Of the three large adits, Nos 1 and 3 were driven on the main mineralised zone in the 'basinal' rocks, and No 2 was driven on mineralisation in the lava. There may have been some minor production.

In 1974 INCO drilled a hole beneath the mineralisation in No3 Adit but the hole intersected only 4.5m of 0.59% Cu and 0.5g/t Au.

In 1981-82 Lyell chip sampled the adits and delineated zones of significant gold and copper values, particularly towards the southern end of the exposed mineralisation where a 10-12m wide zone averaging better than 1% Cu and 1g/t Au was indicated. (As at East Darwin, the Lyell sampling in the adits showed lower copper values than those obtained by INCO which must be regarded as suspect. Apparently INCO did not sample the adits for gold).

After IP, EM, magnetic, geochemical and geological surveys, Lyell drilled two holes 80m either side of the INCO hole. JPI, to the north, intersected 2m @ 0.41% Cu, 0.1 g/t Au, and was stopped while still in altered, weakly mineralised 'basinal' rocks. JP2, the southern hole, passed only 20m ahead of the mineralisation in the face of No3 Adit, and intersected 10m @ 1.55% and 1.56g/t Au.

The work to date has outlined a zone of mineralisation within the 'basinal' rock at least 100m long, 10m wide and 75m deep, with an indicated grade around 1.25% Cu, 1.2 g/t Au. The zone is open to the south and at depth. On the surface, the 'basinal' rocks peter-out 150m south of JP2, but the flanking stockwork zone in the lava continues another 100m to the contact with overlying Owen Conglomerate. Ultimately, the limits to the amount of mineralisation that could be present are defined by the shape of the original basin or depression against the lava dome. However, a large section of the 'basinal' blocks as currently outlined contains no ore-grade mineralisation.

3. Work completed and results

Work completed by Austmin has comprised:-

- (i) detailed review of previous results,
- (ii) surface investigations, and
- (iii) rock chip sampling to confirm or otherwise previous sampling results.

The review of previous results is embodied in the geological overview of the Exploration Licence, discussed above.

Surface investigations involved inspections of the outcrop geology, and the adit sites. Inspection of mineralised zones previously sampled by Gold Fields Exploration Pty Ltd, the previous Licence holder, suggests that these zones are patchy and have variable strike character. (Figure 2) Adit No2 was driven through a section of lavas to the north-west of the main zone and several zones of stronger mineralisation were channel sampled by Gold Fields. A more detailed review of Gold Fields IP, EM and magnetic data suggests that the Jukes zone is the only significant target zone in the Licence area.

Rock chip sampling was conducted in several localities with a view to confirming earlier results and, in particular, to follow up an earlier surface channel assay of 11m @ 3.37 ppm Au in Channel F (Figure 2). Locations of all rock chip assays are shown in Figure 2 and assay results are outlined in Appendix 1. In general the results obtained confirm the previous work, except that the result for channel F does not confirm the earlier 3.37 ppm assay. It is possible that the earlier result was affected by a single spiky value (possibly attributable to a nugget effect in the surface sample). Given that channel F was considered to have the most encouraging previous results, the re-sampling has significantly downgraded the potential for a near-surface gold-copper result with gold grade appreciably greater than 1.5g/t.

Further to the above, an inspection of samples taken from the HEC tunnel recently completed in the Jukes area does not reveal any significant anomalous alteration. The acid volcanics transected by the tunnel are weakly altered, generally devoid of significant sulphides and not anomalous in gold or base metals.

4. CONCLUSION

The results of Austmin's first stage surface investigations at Jukes have proved negative. It is considered that a low tonnage low grade uneconomic gold-copper resource does occur in the near surface at Jukes and that there is little scope in the Licence area for a significant economic mineable reserve at depths less than 100 metres.

5. EXPENDITURE

Year ended 21st April,1989

1.	Geological/geophysical staff/consultants	\$14,389.00
2.	Support field staff	2,800.00
3.	Office staff	3,150.50
4.	Travel and accommodation	2,920.35
5.	Assaying	1,650.50
6.	Field supplies	821.10
7.	Compilation, reporting, drafting	625.50
8.	Unallocated office expenses	<u>3,953.54</u>
	TOTAL	<u>\$30,310.49</u>

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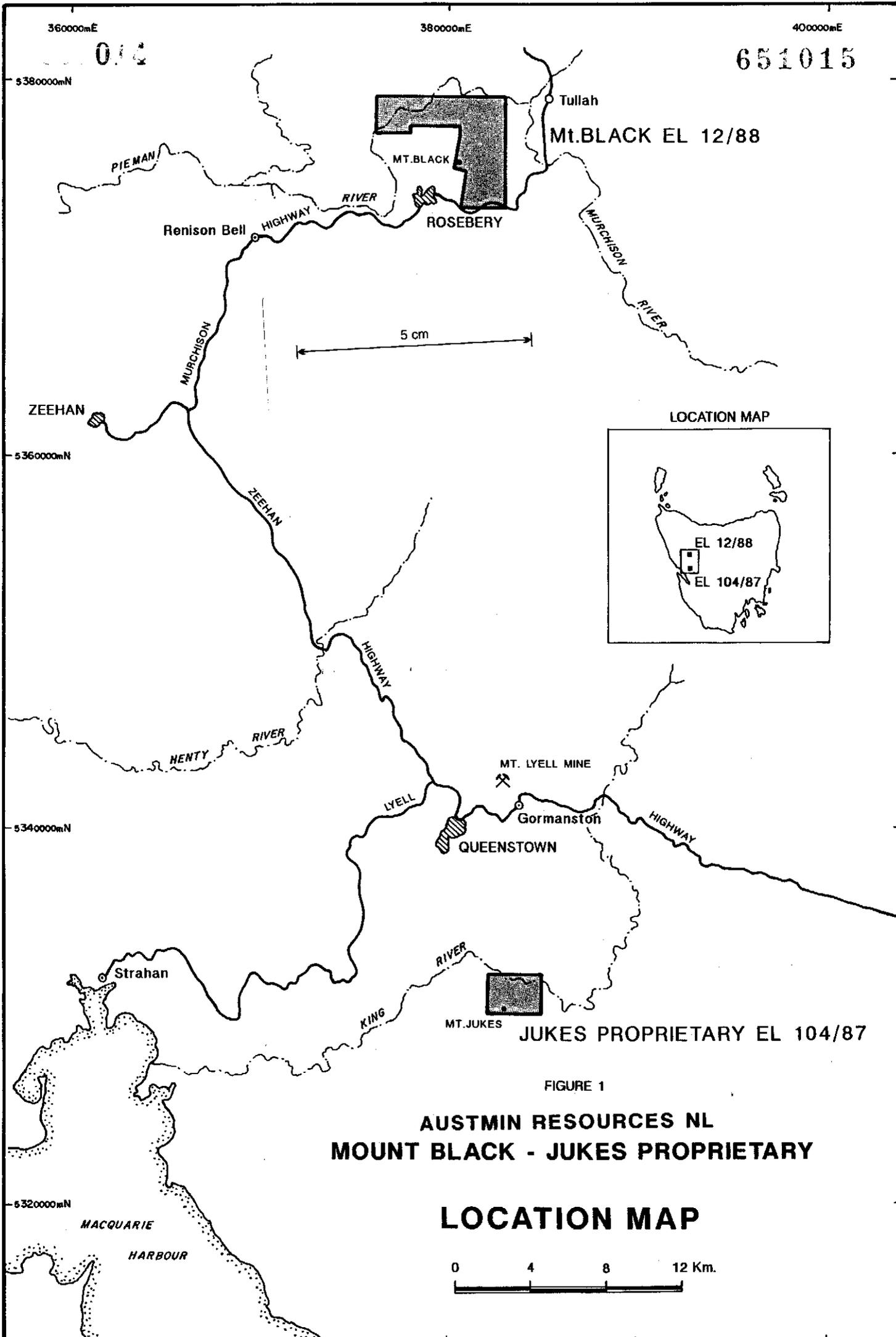
Appendix 1.

Assay results from surface rock chip channel sampling.

ROCK CHIP RESULTS

Channel	Au Assay(ppm)	Average	Earlier Gold Fields result
A	0.52		
	0.61		
	0.91		
	0.30		
	0.11		
	1.62	6m @ 0.68 ppm	8m @ 0.76 ppm
B	0.21		
	0.30		
	0.49		
	0.38		
	0.61		
	0.10	6m @ 0.35 ppm	9m @ 0.30 ppm
C	0.11		
	0.20		
	0.38		
	0.26		
	0.05	5m @ 0.20 ppm	4m @ 0.15 ppm
D	0.28		
	0.39		
	0.11		
	0.20		
	0.06		
	0.91		
	0.88		
	0.31	8m @ 0.39 ppm	16m @ 0.21 ppm
E	0.11		
	0.81		
	0.34		
	0.06		
	0.07		
	0.19		
0.02	7m @ 0.24 ppm	12m @ 0.20 ppm	
F	0.06		
	0.12		
	0.39		
	0.26		
	1.91		
	0.39		
	0.81		
	0.02	8m @ 0.5 ppm	11m @ 3.37 ppm
G	0.14		
	0.12		
	0.02		
	0.20		
	0.03		
	0.01	6m @ 0.09 ppm	7m @ 0.13 ppm

Channel	Au Assay(ppm)	Average	Earlier Gold Fields result
H	0.01		
	0.02		
	0.01		
	0.01		
	0.01	5m @ 0.01 ppm	14m @ 0.01 ppm
I	0.01		
	0.01		
	0.01		
	0.01		
	0.19		
	0.01		
	0.02	7m @ 0.26 ppm	15m @ 0.04 ppm
J	0.01		
	0.01		
	2.19		
	0.36		
	0.12		
	0.91		
	0.23		
	0.02		
	0.01		
	0.32	10m @ 0.42 ppm	20m @ 1.70 ppm



360000mE

380000mE

400000mE

014

651015

5380000mN

5360000mN

5340000mN

5320000mN

Tullah
Mt. BLACK EL 12/88

5 cm

LOCATION MAP

EL 12/88
EL 104/87

MT. LYELL MINE

Gormanston

MT. JUKES

JUKES PROPRIETARY EL 104/87

FIGURE 1

**AUSTMIN RESOURCES NL
MOUNT BLACK - JUKES PROPRIETARY**

LOCATION MAP

0 4 8 12 Km.

015

383400mE

383500mE

383600mE

5331100mN

5331000mN

5330900mN

5330800mN

ADIT No.2
548m R.L.

ADIT No.3
600m R.L.

ADIT No.1
639m R.L.

Z142003
(approx.)

2m @ 2.40% Cu
1.7 g/t Au
4m @ 0.75% Cu
2.3 g/t Au
6m @ 0.58% Cu
1.3 g/t Au

12m @ 1.15% Cu
0.8 g/t Au
2m @ 1.4% Cu
0.8 g/t Au

Old adit sample
14m @ 0.03% Cu
1.2 g/t Au

Old adit sample
7m @ 1.42% Cu
1.0 g/t Au

Old adit sample
9m @ 0.074% Cu
0.8 g/t Au

Old adit sample
16m @ 1.68% Cu
1.4 g/t Au

9m @ 1.27% Cu
0.9 g/t Au

A
B
C
D
E
F
G
H
I
J

690m
700m
650m
600m
550m
510.4m

5 cm

651016

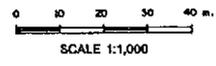
FIGURE 2 89-2946

Structure Contours
H.W. "Mineralized Zone"
(F.W. Jukes Pty Fault)

Longitudinal Projection Reference Line Bearing 014° AMG

LEGEND

- Gold Fields diamond drill hole
- A Location of channel rock chip samples repeated by Austrin.



AUSTMIN RESOURCES NL		
TASMANIA		
EXPLORATION LICENCE 104/87 JUKES PROPRIETARY		
DRILL HOLE LOCATION PLAN AND STRUCTURE CONTOURS		
JUKES MINERALIZED ZONE (after Gold Fields Exploration P/L)		
SCALE 1:1,000		DATE: April, 1989
	DRAWN: WHS	