

BEACONSFIELD RL 99/01
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1. SUMMARY

RL 99/01 lies north along stratigraphic strike from the Beaconsfield Mine Joint Venture's mining lease CML 1669P/M which encompasses the Beaconsfield Gold Mine centred on the Tasmania Reef. The current resource at the Beaconsfield Gold Mine is 1.574 million tonnes @ 16.4 g/t Au for 0.83 million ounces of contained gold (Hills, 2001). Historically, 854,000 ounces of gold were produced at recovered grade 24.5 g/t Au from 1877 to 1914 making a pre-mining resource of approximately 2 million ounces. Official historical plus contemporary production from the Beaconsfield Gold Mine surpassed 1 million ounces in December 2001.

RL 99/01 arose from the relinquishment of the preceding exploration licence EL 7/88, specifically to retain title over a small and currently uneconomic resource at Pease Creek 3km north of Beaconsfield. The current JORC (1999) compliant Identified Mineral Resource at Pease Creek is 264,000t @ 1.6g/t Au (14,000 ounces) (Hills and MacDonald, 1999).

No new exploration was conducted over RL 99/01 during the current reporting year.

2. INTRODUCTION

2.1 LOCATION AND ACCESS

Beaconsfield lies approximately 40 kilometres by road northwest of Launceston in northern Tasmania on the western side of the Tamar River.

The RL 99/01 "Beaconsfield" lies immediately north-west of the town of Beaconsfield (see figure 1). The licence shares its southern boundary with CML 1669P/M, the mining lease held by the Beaconsfield Mine Joint Venture over the Tasmania Reef.

Access to the Licence is via the West Tamar Highway. Access within the Licence is good with a number of gravel tracks (generally 2WD standard).

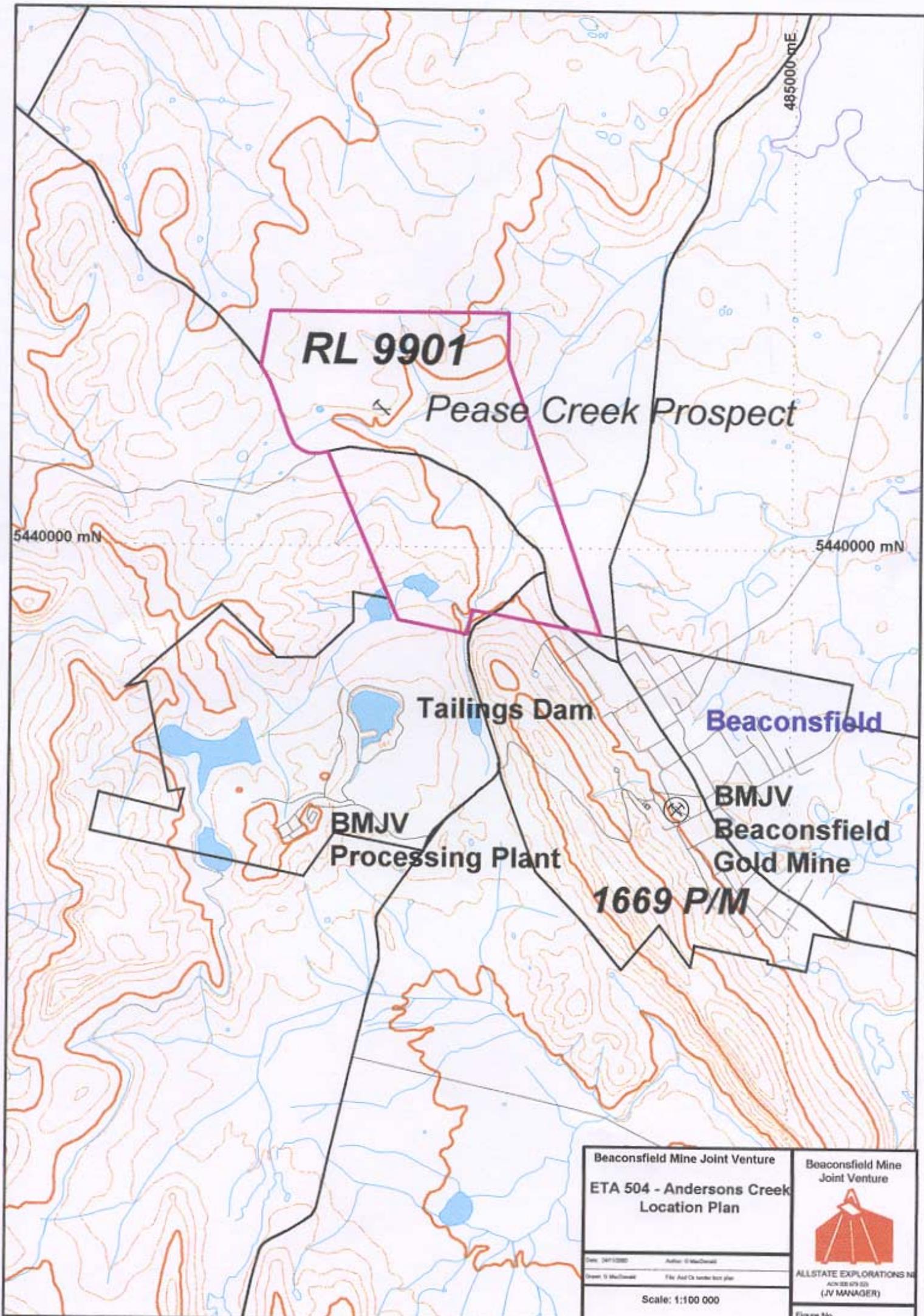
2.2 TENURE AND LAND USAGE

RL 99/01 was granted to Beaconsfield Operations Pty Ltd on 7th January 2000 to allow the Pease Creek prospect to be further considered as a potential additional source of ore to compliment production from the nearby Beaconsfield Gold Mine. The licence replaced EL 7/88 which was in place when the Pease Creek prospect was discovered by RC and diamond drilling between 1997 and 1999. The licence covers an area of 2 skm and is due to expire on 7th January 2003.

RL 99/01 largely occupies Crown Land and multiple use State Forest. A small portion of the area is used for residential, rural residential and agriculture purposes.

2.3 TOPOGRAPHY AND VEGETATION

The 2 square kilometres of RL 99/01 largely consists of an elevated surface at 50 - 70 metres A.S.L. underlain by Tertiary gravel. The area is covered by dry sclerophyll regrowth, in part swampy, vegetation though most of the area has been disturbed in the search for high quality gravel for construction purposes in the past 30 – 40 years.



<p>Beaconsfield Mine Joint Venture</p> <p>ETA 504 - Andersons Creek</p> <p>Location Plan</p>	<p>Beaconsfield Mine Joint Venture</p> 
<p>Date: 24/1/2002 Author: G MacDonell</p>	<p>ALLSTATE EXPLORATIONS INC</p>
<p>Drawn: G MacDonell File: Aeta 504 tender loc plan</p>	<p>ACT 504 019 020</p> <p>(JV MANAGER)</p>
<p>Scale: 1:100 000</p>	<p>Figure No.</p>

3. PREVIOUS EXPLORATION

This section of the report in part reiterates Hills and MacDonald (1999) verbatim.

3.1 EXPLORATION WITHIN RL 99/01

The first phase of exploration within the bounds of what is now RL 99/01 was undertaken by Bates (1979) and consisted of limited mapping and drilling of two fences of RAB holes drilled across the line of the North Tasmania workings on the southern boundary of the licence. A result of 1m @ 1.5 g/t Au from RB35 on Line 3 at Brandy Creek/North Tasmania was particularly significant. Work by Hamlyn (1982) included grid based mapping at 1:2000 and mapping of North Tasmania Adits 1, 2 and 3 and the London Adit also at North Tasmania. Hicks (1989) completed mapping at 1:5000 scale (using airphotos as the base), regional BLEG sampling, an aeromagnetics/radiometrics survey and RC and RAB drilling programme. Most of the drilling occurred in the vicinity of the Tasmania reef but some holes were drilled at Brandy Creek following up the earlier RB35 intersection. Later work in the North Tasmania area including reopening the North Tasmania Inclined Shaft to 24 metres and mapping and sampling the London Adit (Blanchard and McGain, 1991).

In 1995 a series of 25 RC holes (BRC1 to BRC25) for 1409 metres (including a total of 140 m of diamond tails on BRC24 and BRC25) were drilled in the Pease Creek area (McKeown, 1995). This was essentially a 'wildcat' programme and represented the first attempt at exploration north of the Yorktown Road.

Diamond drilling of the North Tasmania reef was proposed by Newnham (1996). This programme was completed with 4 diamond holes (B37 to B41) but failed to locate economic mineralisation (Hills, 1997). A high resolution helimagnetic survey and subsequent enhancement and interpretation of the data also covered the current licence (MacDonald, 1998).

3.2 PEASE CREEK

Anomalous gold mineralisation reported by McKeown (1995) from BRC15 of the order of 2m @ 0.163 g/t Au was followed up with a 10 hole programme in 1997 (BRC26 to BRC35) for 697 metres (Hills, 1997). The results of the 1997 RC drilling were quite encouraging, with BRC29 in particular showing promise. That hole returned 2m @ 2.89 g/t Au from 73m and was terminated at 75m. A diamond tail was added and extended the zone of mineralisation 13.0m @ 1.21 g/t Au from 68m. A diamond tail was also added to the BRC34 extending it beneath BRC29 and intersected lower tenor mineralisation of 3.0m @ 0.53 g/t Au from 145.6m. BRC29 was twinned with a diamond drill hole (B41) which returned a spectacular result of 10.0m @ 5.3g/t Au from 66.5m including 3.5m @ 11.06g/t Au from 71.0m in August 1997.

Drilling at Pease Creek continued until late 1997 with hole B42 to B44, B44A and B46 plus a diamond tail on BRC28. Total diamond drilling to that point totalled 1145m. Up to that point a number of intercepts had been obtained with the general tenor of mineralisation around 5m @ 1.5 – 2.0g/t Au and tentative thoughts on likely mineralisation scenarios had been expressed with little defensible evidence. Results of all previous work at Pease Creek were reported by Hills (1996, 1997) and MacDonald (1998).

Activity during 1998 was confined to the helimagnetic survey discussed above (MacDonald, 1998). The purpose of the survey was to explore the entire area of EL 7/88 prior to compulsory relinquishment in October 1998. A number of anomalous features were delineated but little additional light was cast over the Pease Creek Prospect. A number of unanswered questions remained in regard to the nature of mineralisation at Pease Creek and an application for extension sought and was ultimately granted to allow further investigations to take place.

A single diamond drill hole, B51, was drilled during 1999 (Hills and MacDonald, 1999). The purpose of the hole was to follow up on the possible strike extension of low grade mineralisation encountered in earlier drilling. Mineralisation of similar tenor to that encountered in previous drilling was intersected by B51 some 100m NE along strike and 150m down dip of the previous eastern-most hole, B44. The effect of B51 was to provide some areal extent to the previous limits of known mineralisation which in turn allowed a low grade Inferred Resource of 264,000t @1.6g/t Au (14,000 ounces) to be estimated. This Inferred Resource provided the basis for the application for the Retention Licence currently extant.

4. GEOLOGY

This section of the report in part reiterates Hills and MacDonald (1999) verbatim.

4.1 INTRODUCTION

The Beaconsfield Gold Mine in Northern Tasmania is focussed on a mineralised shear structure of Middle Devonian age, the Tasmania Reef, which crosscuts an easterly dipping Ordovician stratigraphy. This deposit provides the model upon which the geology of the Pease Creek prospect is interpreted.

4.2 REGIONAL GEOLOGY

The Denison Group and overlying Gordon Group correlates which host the Tasmania Reef at Beaconsfield and other like mineralisation including the Pease Creek mineralisation, is an upward fining supra-littoral grading to marine sequence of Ordovician sediments (Hills, 1998).

The formalised stratigraphy of the Denison Group has been modified after recent mapping by MacDonald (1999, 2000) has demonstrated the lack of areal extent of the Cabbage Tree Conglomerate. The Cabbage Tree Conglomerate is now considered to be the localised base of the Salisbury Hill Formation (formally Lower Transition beds) consisting of quartz sandstone, grit and micro-conglomerate with occasional pebble horizons. The Salisbury Hill Formation is conformably overlain by the Eaglehawk Gully Formation (formally Upper Transition beds) of quartz siltstone and interbedded stylolitic limestone and the two formations constitute the Denison Group in the Beaconsfield area. The Denison Group correlates are in turn overlain by Flowery Gully Limestone which correlates with the Gordon Group.

4.3 LOCAL GEOLOGY

At Pease Creek, a lack of outcrop in scrubby sclerophyll vegetation is exacerbated by Tertiary and Quaternary cover. However, the broad regional stratigraphy outlined above has been confirmed by mapping and drill core.

4.4 STRUCTURE

At Beaconsfield, widespread structural deformation associated with the Devonian Tabberabberan Orogeny which is evident over much of southeastern Australia led to the occurrence of northeast – southwest directed shears. Within the brittle Denison Group correlates and the Salisbury Hill and Eaglehawk Gully Formation rocks in particular, these shears were dilational perpendicular to the thrust direction and formed a locus for subsequent quartz + ankerite + sulphide mineralisation. The Pease Creek structure as illustrated is modelled on the Tasmania Reef 3 km to the south. The structure is shown offset by two north – south striking faults. By analogy with historical descriptions of the Tasmania Reef and recent mapping by Dr Richard Keele in the TEMCO Quarry on Cabbage Tree Hill (Hills, 1997) these faults are presumed to be near vertical or steeply west-dipping with a predominantly dextral transcurrent sense of movement. Evidence for the faults is somewhat circumstantial but fits well with

- Crush zones logged in B42 and B46 in particular,
- The lack of a mineralised intercept in B46, and
- The logic of depicting mineralisation approximately parallel to the Tasmania Reef.

Indeed it is also not unreasonable to suggest that the abandoned sand soap quarry located in the centre of the prospect was focussed on weathered fault gouge along these structures.

At a meso- or micro- scale, the structural geology of the Pease Creek prospect is poorly known but as at the macro scale, is considered to be analogous to that observed at Beaconsfield.

4.5 MINERALISATION

Again the Tasmania Reef at Beaconsfield is considered the type example for the Pease Creek prospect. Quartz + ankerite + sulphide veining is the host to gold mineralisation. In most drill hole intercepts the mineralisation is of substantially lower tenor than that observed in the Tasmania Reef at Beaconsfield. However, the similarities despite deep oxidation at Pease Creek see the latter as a further example of the Tasmania Reef style. Certainly the Pease Creek mineralisation is mirrored by several low grade reefs which parallel the Tasmania Reef at separations of a few hundred metres.

5. **EXPLORATION PHILOSOPHY**

This section of the report essentially reiterates Hills and MacDonald (1999) verbatim.

The Tasmania Reef is a quartz + ankerite + gold + arsenopyrite + chalcopyrite + sphalerite + galena reef of mesothermal type. The reef strikes in a northeasterly direction and dips moderately to the southeast. It is hosted within the carbonaceous sandstones, grits and pebbly conglomerates of the Salisbury Hill Formation and the calcareous sandstones and siltstones and interbedded limestones of the Eaglehawk Gully Formation.

The reef occupies a dilational shear zone, the principal control on which appears to be the relative rheology of the host rock. Dilation and consequently reef development is most pronounced in the most brittle strata. The reef does not 'make' in the Cabbage Tree Conglomerate at the base of the Salisbury Hill Formation, nor within the Flowery Gully Limestone which stratigraphically overlies the Eaglehawk Gully Formation. Within the host stratigraphy, local variations in the rheological index (expressed as the ratio $E:UCS^1$) appears to be the critical factor in reef thickness. It is not simply a matter of whether the rock is strong, nor is it simply related to elasticity.

Chemically the host rocks are bimodal. The lower part of the mine sequence, corresponding approximately with the Salisbury Hill Formation, is carbonaceous and indicates a reduced assemblage, whilst the upper part of the mine sequence contains carbonate, indicating an oxidised assemblage.

Gold distribution within the reef is most probably related both to the rheology and chemistry of the host rocks.

The Tasmania Reef structure has undergone an apparent dextral offset of around 40 metres although there is also evidence for a normal strike slip component to this displacement. The deformation responsible for the formation of the Tasmania Reef is considered to be the Middle Devonian Tabberabberan Orogeny with the Tasmania Reef structure opening under a roughly northeast/southwest principal stress regime.

There is evidence of mineralisation in a number of other orientations than that of the Tasmania Reef which strikes northeast – southwest and dips southeast at an average of 60°.

- The North Tasmania reef strikes more towards 080°, dipping moderately southwards. This vein is quite sulphidic, particularly rich in chalcopyrite.
- Mineralisation in the Moonlight-cum-Wonder workings has a wide range of orientations (including sub-horizontal and both north-south and east-west striking) along a trend which strikes north-north-westerly, parallel to the regional strike.
- The old workings at Salisbury Hill 6 km south-southeast from the Tasmania Reef, dip shallowly to the west and are hosted within quartz sandstones and grits in the hangingwall to a thrust? contact with ultramafics.
- East of the Tamar River auriferous reefs of the Lefroy Goldfield strike approximately 080 and are arranged in an en-echelon pattern along a 5km long north-north-west trending zone. Although the Lefroy reefs are hosted within the Siluro-Devonian Mathinna Beds the structural setting is very similar in orientation to the Tasmania Reef.

Any rocks older than Middle Devonian may be mineralised and the nature and orientation of the mineralisation may vary. Empirically however, the perceived trap for gold mineralisation at Pease Creek is structurally dilational zones formed under a

¹ E = Tangential Young's Modulus (GPa), UCS = Uniaxial Compressive Strength (MPa)

northeast/southwest principal stress regime in the Middle Devonian and the ideal trap rocks are the Salisbury Hill and Eaglehawk Gully Formation rocks which host the Tasmania Reef at Beaconsfield.

The source of the gold is considered to be the devolatilisation of metamorphic rocks at depth, probably greenstones. There has been some suggestion that the Anderson's Creek Ultramafic Complex may be the source, or associated with the source of the gold. Leaman (Appendix 5 in MacDonald, 1998) shows the presence of a mafic/ultramafic body at depth to the east of the Tamar River.

6.0 WORK COMPLETED

No new work was undertaken at Pease Creek or within RL 99/01 generally during the second year of the Licence.

While the current Resource at Pease Creek remains uneconomic, the potential to add to the overall Reserves of the Beaconsfield Mine Joint Venture remains. Using the analogy of the Tasmania Reef it is possible that the known low grade reef structure at Pease Creek is in fact a splay or outlier to a mineralised structure of much greater significance.

7.0 **INFERRED RESOURCE**

Full details of the method of estimation of the JORC (1999) compliant Inferred Resource were presented by Hills and MacDonald (1999) and are not reiterated here.

The Resource was estimated using polygonal techniques and details of that Resource and reproduced in Table 1.

Polygon	Area (m)	E.H.T. (m)	ρ (t/m ⁻³)	Tonnes (t)	Grade (g/t Au)	Grams Au (g)	Ounces (oz)
BRD29	1910	6.6	2.8	35,083	1.21	42,450	1,365
BRD34	3280	1.5	2.8	13,868	0.53	7,350	236
B41	1680	5.0	2.8	23,332	5.30	123,659	3,976
B43	2420	3.8	2.8	25,546	1.49	38,063	1,224
B44	4010	2.7	2.8	30,203	1.53	46,211	1,486
B44A	2110	2.9	2.8	17,074	1.42	24,245	780
B46	5820	2.1	2.8	34,548	0.97	68,059	2,188
B51	13140	2.3	2.8	84,622	0.98	82,929	2,666
Total				264,275	1.64		13,920

Table 1. Polygonal resource estimation.

In summary, the Pease Creek Inferred Mineral Resource remains as it was at 15th September 1999, being

264,000 t @ 1.6 g/t Au (14,000 ounces Au).

8.0 EXPENDITURE

8.1 2000 EXPENDITURE

Tenement Fees	\$606
Consumables	\$25
Total	\$631

8.2 FUTURE EXPENDITURE

Allstate Explorations NL, managing partner in the Beaconsfield Mine Joint Venture went into Voluntary Administration in June 2001 and shortly thereafter minor partner Beaconsfield Gold NL went into Voluntary Receivership. Allstate Explorations NL is now operating subject to Deed of Company Arrangement and it is intended that the business will trade on. However, the focus will be on the current operation. Options for the development of regional exploration tenements are currently being considered.

9.0 REFERENCES

- Bates, T.E., 1979. EL 17/73. Summary report on auger and rotary drilling on lines 1 to 4, EL 17/73. [TCR 79-1403].
- Blanchard, B. and McGain, A., 1991. EL 7/88 Annual report 1990/91. Beaconsfield Gold Mines Limited. [TCR 91-3293].
- Berkman, D.A., 1995. Field Geologist's Manual. (The Australasian Institute of Mining and Metallurgy: Melbourne).
- Hamlyn, D.A., 1982. EL 17/73. Beaconsfield geology and exploration. AMAX. [TCR 82-1681].
- Hicks, J.D., 1989. EL 7/88. Exploration report for the period October 1987 to January 1989. Beaconsfield Gold Mines Limited. [TCR 89-3011].
- Hills, P.B., 1996. EL 7/88. Annual report 1995/96. Beaconsfield Mine JV.
- Hills, P.B., 1997. EL 7/88. Annual report 1996/97. Beaconsfield Mine JV.
- Hills, P.B., 1998. Tasmania gold deposit, Beaconsfield, in Geology of Australian and Papua New Guinean Mineral Deposits (Eds. D.A. Berkman and D.H. MacKenzie), pp 467-472 (The Australasian Institute of Mining and Metallurgy: Melbourne).
- Hills, P.B., 2001. Tasmania Reef – Identified Mineral Resource and Ore Reserve as at June 2001. Beaconsfield Mine JV.
- Hills, P.B. and MacDonald, G., 1999. EL 7/88. Annual report 1998/99. Beaconsfield Mine JV.
- JORC 1999. Australasian Code for Reporting of Mineral Resources and Ore Reserves, Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia. September 1999.
- Lewis, D., 1998. Lithostratigraphy, sedimentology and palaeontology of the Denison Group, Beaconsfield, Tasmania, BSc Honours thesis (Unpublished), University of Tasmania, Hobart.
- MacDonald, G.I., 1998. EL 7/88. Annual report 1997/98. Beaconsfield Mine JV.
- MacDonald, G.I., 1999. EL 20/94. Annual report 1998/99. Beaconsfield Mine JV.
- MacDonald, G.I., 2000. EL 20/94. Annual report 1999/2000. Beaconsfield Mine JV.
- McKeown, M.V., 1995. Beaconsfield Mine Joint Venture - EL 7/88 Drilling Programme.
- Newnham, L.A., 1996. Beaconsfield area mineral resource potential and recommended evaluation programmes.