

BEACONSFIELD MINE JOINT VENTURE

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ALLSTATE EXPLORATIONS NL
(Manager of the Beaconsfield Mine Joint Venture)



BEACONSFIELD GOLD NL

EL 20/94 SALISBURY HILL ANNUAL REPORT

2007



Helimagnetics/radiometrics surveying - Salisbury Hill in background

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1.0	Summary.....	3
2.0	Introduction.....	4
2.1	Location and Access	4
2.2	Tenure.....	4
2.3	Topography, Vegetation and Land Use.....	4
3.0	Exploration Philosophy.....	6
4.0	Previous Exploration.....	7
5.0	Geology	8
6.0	Work Completed, 2006 - 2007	11
6.1	Introduction.....	11
6.2	Drill site and access	11
6.3	Drilling	11
6.4	Helimagnetic/radiometric survey.....	
7.0	Results of Work Completed, 2006 - 2007.....	13
7.1	B53	15
7.2	Magnetics/radiometrics	15
9.0	EXPENDITURE 2006-2007.....	18
10.0	References.....	19
	Appendices.....	20

Appendix A Drill logs

Figures

Figure#	Title
1	EL 20/94 "Salisbury Hill" Location Plan
2	EL 20/94 - "Salisbury Hill" Geology
3	Comparative stratigraphic columns for the Beaconsfield Type Section and Middle Arm Gorge
4	Middle Arm Gorge prospect drill plan
5	B53 Drill Section
6	Helimagnetic/radiometric survey area

1.0 Summary

Work in the 2006-2007 reporting year consisted of drilling a single diamond drill hole B53 to a depth of 522.3m and flying a high resolution helimagnetic/radiometrics survey over much of the licence area.

B53 did not intersect any of the weakly mineralised structures/zones intersected in the holes drilled during the previous year. However, the hole did intersect a significant fault between 187.6m and 190.9m which appeared to be that responsible for the Middle Arm Gorge topographical feature, the original target of the previous years drilling.

A helimagnetics/radiometrics survey was flown late in the year but data was unprocessed at year end. Images from the survey are shown in appendix B.

2.0 Introduction

2.1 Location and Access

EL 20/94 covers an area of 13 square kilometres in northern Tasmania, just south of Beaconsfield and the +2Moz Tasmania Reef (see figure 1). EL 20/94 extends along Salisbury Hill and the southern part of Cabbage Tree Hill and takes in over 8km's of strike of the Cabbage Tree Thrust slice.

Access to the licence is excellent being transected by the bitumen Flowery Gully Road (through Middle Arm Gorge) ~1km from its junction with the West Tamar Highway. Access within the licence is of moderate ease with the prospective country lying on the generally more gentle eastern slopes but also on the ridgeline and the steeper western slope. There are old tracks which can and have been exploited.

2.2 Tenure

The licence was granted to Allstate Prospecting Pty. Ltd. on behalf of the BMJV on 28th October 1994. The BMJV managed exploration over the licence from that date until 30th September, 2002, when an agreement was signed with Diamond Ventures N.L. who managed exploration until 8th November 2004. Thereafter, responsibility for exploration on EL 20/94 was returned to BMJV.

The licence was extended on 28th October 2005 and an active work programme focusing on drilling of the Middle Arm Gorge prospect at the northern end of the licence commenced as soon as a drill rig became available.

Diamond drill hole B52 was almost completed at the time of the accident/rescue at the Beaconsfield Mine on the 25th April, 2006. After a hiatus due to the accident and its aftermath, drilling recommenced with the hole continued as B52A and a smaller wedged B52B.

An application for extension of tenure on EL20/94 was made on the basis of the success of B52A in October 2006, and B53 commenced prior to the anniversary date of the licence in the hope that an extension would be granted, which duly occurred. The results of that hole were less successful and the licence expired on 28th October, 2007.

2.3 Topography, Vegetation and Land Use

The licence is focused on the strike ridge of Salisbury Hill, Middle Arm Gorge and the southern part of Cabbage Tree Hill.

The licence area consists largely of state forest consisting of dry sclerophyll bush along Salisbury Hill, the southern part of Cabbage Tree Hill and in the intervening Middle Arm Gorge.

Part of the licence area includes small rural holdings used for hobby farms or grazing. In the north of the licence an active silica quarry is operated by Boral for Temco.

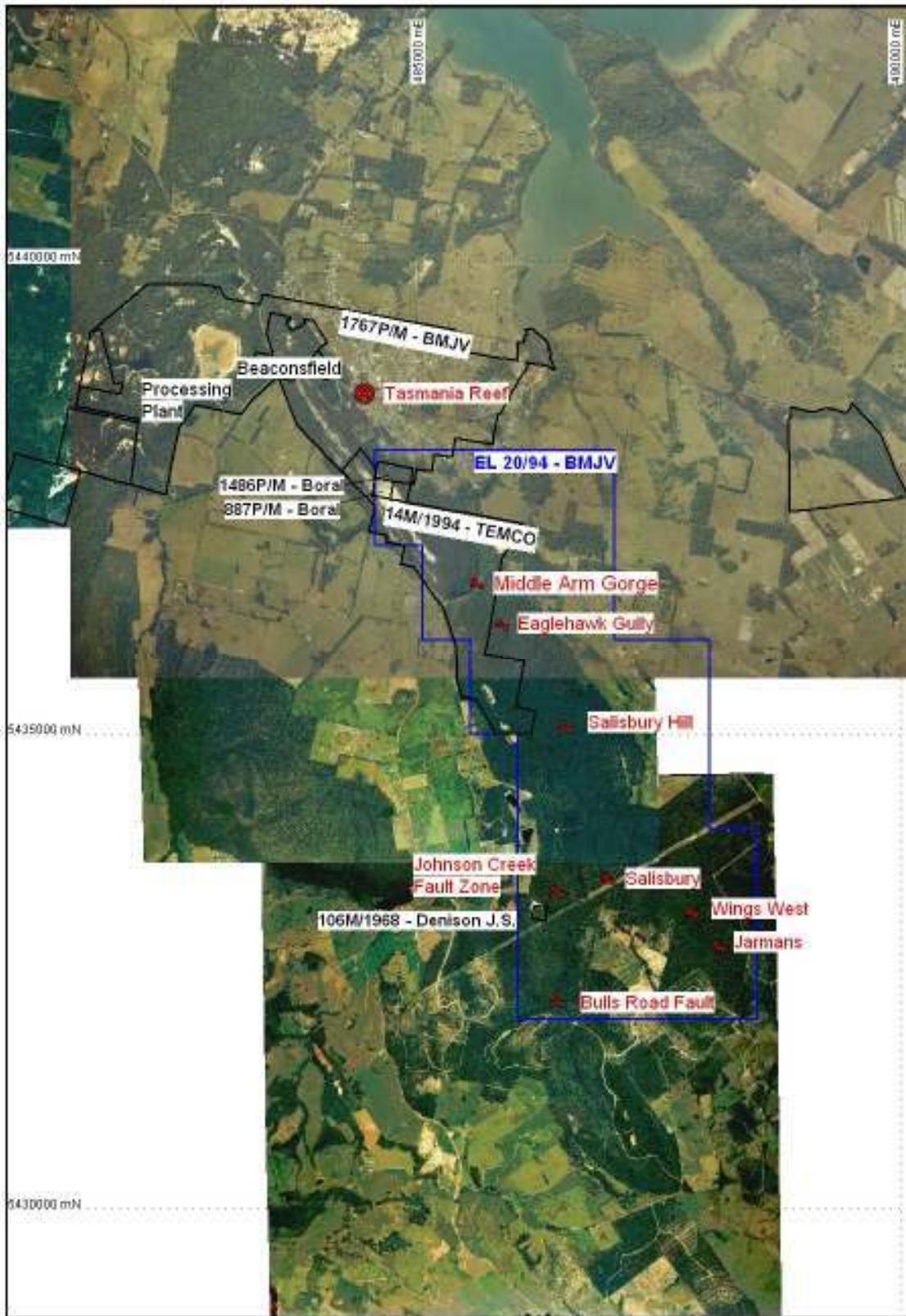


Figure 1; EL 20/94 "Salisbury Hill" Location Plan

3.0 Exploration Philosophy

The BMJV's exploration philosophy was elaborated on in the preceding annual report (MacDonald, 2006). In essence the BMJV is exploring for further gold resources to add feed to its mill a short distance to the north of the licence. Exploration is focussed on locating analogues of the Tasmania Reef.

4.0 Previous Exploration

Previous exploration on EL 20/94 was summarised in MacDonald (2000). More recent work by Diamond Ventures NL was summarised by Bucknell (2003).

The Middle Arm Gorge area was the subject to considerable prospecting activity for periods in the latter part of the 19th century with the Rising Sun perhaps the most significant old working in the gorge. That working, which was probably only active in the years 1882 and 1883 consists of an adit (now closed off) into the northern side of the gorge with an internal winze on a Cu-rich "mundic" lode.

Other smaller workings in the form of shallow prospecting shafts and pits can be found to the north and south of the gorge though not to the intensity which characterises the area of the Tasmania Reef/Moonlight-cum-Wonder workings on the northern end of Cabbage Tree Hill. More substantial shafts and adits can be found ~700m up Eaglehawk Gully to the south and 1700m to the north along Cabbage Tree Hill.

Alluvial wash was worked from the ephemeral Eaglehawk Gully during the 1930's depression. A small sample bottle of alluvial gold on display in the Grubb Shaft Museum was recovered from Eaglehawk Gully during that period.

Modern exploration commenced in the Beaconsfield region in the late 1960's but Middle Arm Gorge only saw reconnaissance work until 1988 when the area was covered by the regional fixed-wing aeromagnetics survey flown by Austirex (Hicks, 1989) with structures interpreted by Dr J Bishop (Bishop, 1988). A stream sediment survey also included the Middle Arm Gorge area (Hicks, 1989).

In the summer of 2002/2003 Diamond Ventures grid based soil sampling programme covered the area on a 100m x 50m pattern (Bucknell, 2003) as part of a larger programme.

While the drill collar pipe of the RAB hole B8 (FG1), 102m deep, is exposed a few metres off the southern verge of the road through the gorge just west of the main bend the hole was drilled as a piezometer hole (no logs or other details are available). Other than this hole no drilling for gold took place in the area prior to B52.

The previous reporting years work consisted of drilling a parent hole (B52) and two daughter wedges (B52A and B52B) to test the Middle Arm Gorge topographic feature, associated old workings and anomalous gold in streams.

5.0 Geology

The geology of EL 20/94 is summarised in the figure 2 (plan) and figure 3 (stratigraphic column determined for Middle Arm Gorge contrasted with that from the mine environment).

Most up to date and thorough descriptions of the regional geology and that of the Tasmania Reef can be found in Jones (2001), Hills et. al. (2001), MacDonald et. al. (2001) and MacDonald (2004). The latter work preceded the discovery of the "South Trevor" syncline and "Middle East Trevor" anticline fold pair, a significant change from the lack of folding which had characterised the Denison Group in the upper part of the mine.

Significant departures from the geology outlined in these references are summarised below.

Structural evidence as well as a pronounced partitioning of gold content in the Tasmania Reef across these fold hinges indicates that most folding occurred prior to the formation of the Tasmania Reef and that changes in the orientation of the reef corresponding with the fold hinge lines are due to refraction of the structure. Somewhat tighter interfold angles for the anticline and syncline in the hangingwall with respect to those in the footwall suggest that some tightening of the folds has occurred post reef formation with this tightening partitioned across the reef fault.

A number of recent time-space diagrams have shown the contact between the Blyths Creek Formation and Denison Group to be an unconformity and the Eaglehawk Gully Basalt to lie on the contact between the Salisbury Hill and Eaglehawk Gully Formations of the Denison Group e.g. Reed (2001) and Taheri & Keele (2004). The following argument has been presented in part elsewhere (MacDonald, 2004), however, the drilling of B52 and B52a has provided more compelling evidence. In particular, the very similar stratigraphic sequence intersected in the drilling at Middle Arm Gorge with that known in detail around the Beaconsfield Gold Mine make it very clear that the Eaglehawk Gully Basalt was intruded into the lower part of 1SL unit of the Eaglehawk Gully Formation and about 1/3rd of the way up sequence from the contact with the Salisbury Hill Formation. It clearly does not lie on the formation boundary.

The contact between the Blyths Creek Formation and overlying Denison Group is essentially conformable (though in places it is possible that it may be partly erosional). The Blyths Creek Formation intersected in B52a shows a lower sequence of sandstone and shales with a marked change (moving up sequence) at 623.6m with the first occurrence of quartz pebble conglomerate. Similar conglomerates are found throughout the Blyths Creek Formation from here, up sequence to the contact with the overlying Cabbage Tree Conglomerate (basal) unit of the Denison Group. These conglomerates occur as coarser grained bases to recognisably graded fining upwards cycles indicative of higher energy deposition

Parallel bedding, the lack of any equivocal evidence of an extra deformation event in the Blyths Creek Formation rocks, and a recognisable trend in the evolution of the sedimentary facies being deposited all support a conformable relationship between the Blyths Creek Formation and Denison Group.

Drilling has exposed a number of other aspects of the geology of the Middle Arm Gorge area. These are detailed below in the following sections.

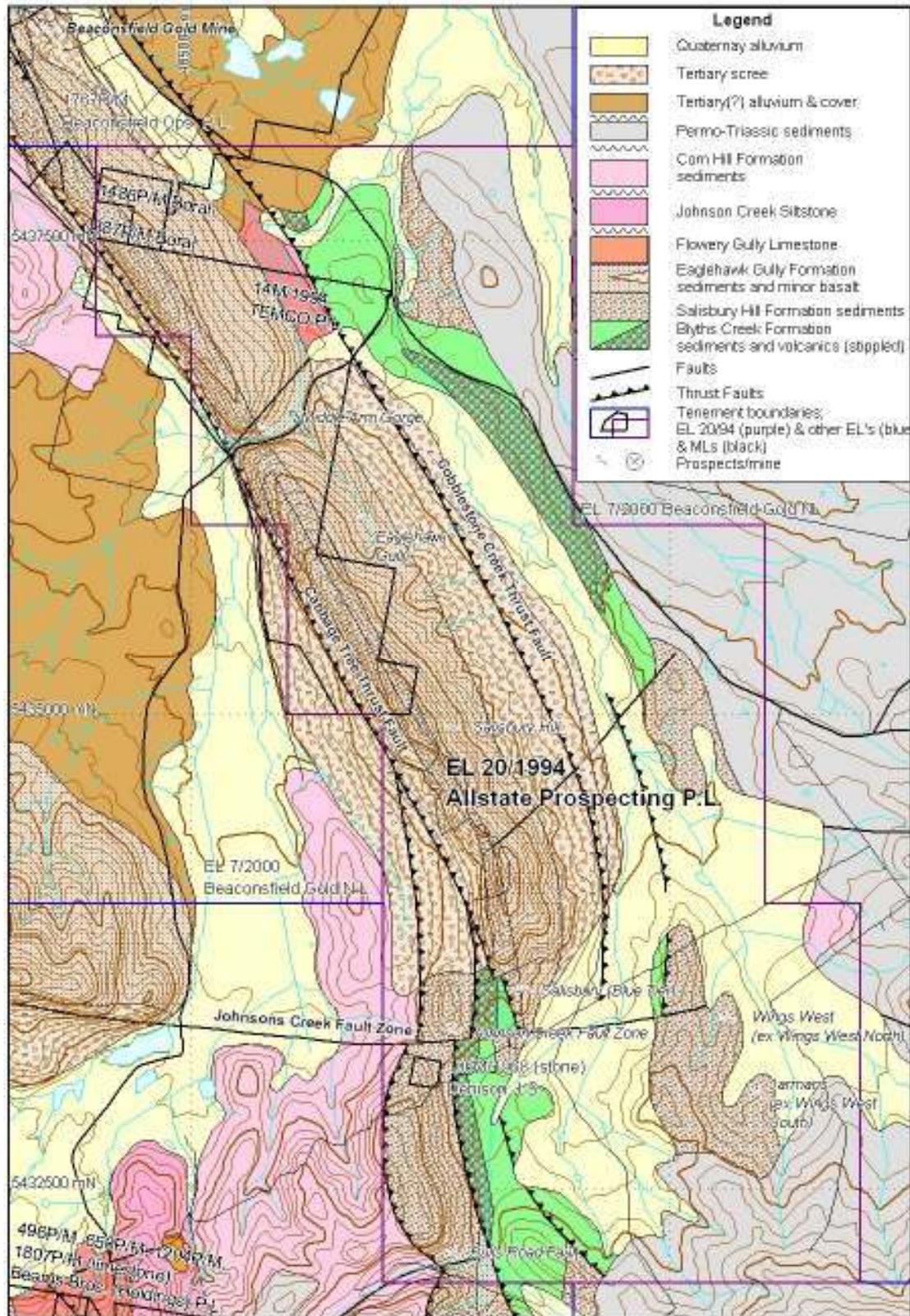


Figure 2; EL 20/94 "Salisbury Hill" Geology

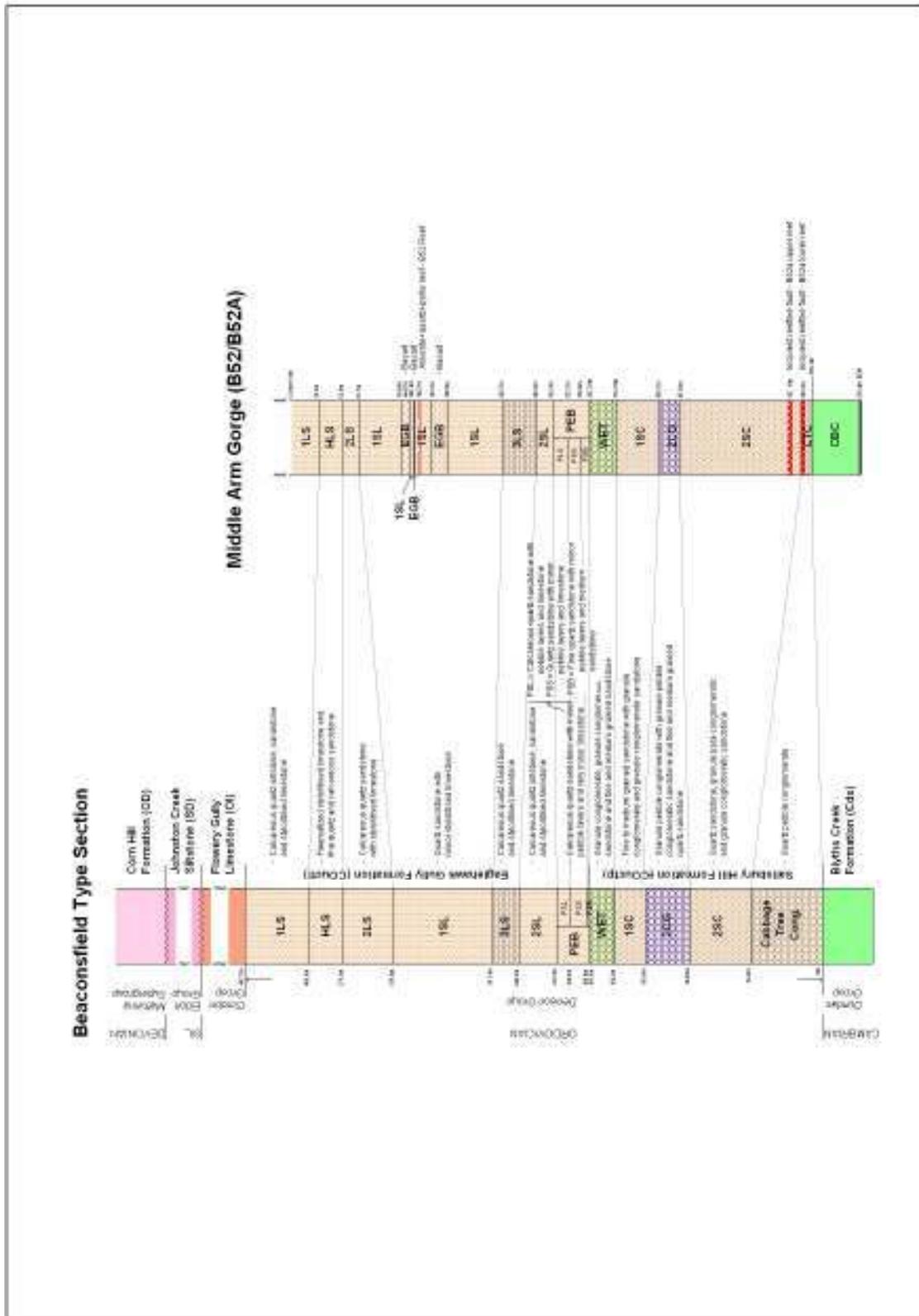


Figure 3; Comparative stratigraphic columns for the Beaconsfield Type Section and Middle Arm Gorge.

6.0 Work Completed, 2006 - 2007

6.1 Introduction

The focus of BMJV's work programme which recommenced in 2005-2006 was the drill testing of Middle Arm Gorge. That work continued in 2006-2007 with the continuation of B53 to a depth of 522.3m.

In addition a high resolution helimagnetic/radiometric survey was flown over much of the licence.

6.2 Drill site and access

B53 was collared at 485481.2mE 5436365.9mN (AMG) on the northern end of the western ridge of Salisbury Hill (see figure 4).

Access to the site for the rig and rod sloop as well as daily access for 4WD vehicles made use of existing tracks. The initial part of the access was up an old track accessing the disused open cut on the western side of the ridge. The last part of the access required the reforming of an old firebreak dozer scrape used by Boral's dozer.

Water was obtained from the small weir at the western end of Middle Arm Gorge with poly pipe up to the site.

6.3 Drilling

B53 commenced drilling on 13th September, 2006, and was completed to a depth of 522.3m on 23rd January, 2007. The hole was drilled HQ to 292.7m, NQ from 292.7m to 464.5m, with the final section drilled BQ.

Drill logs are attached in appendix A. No samples were sent for assay.

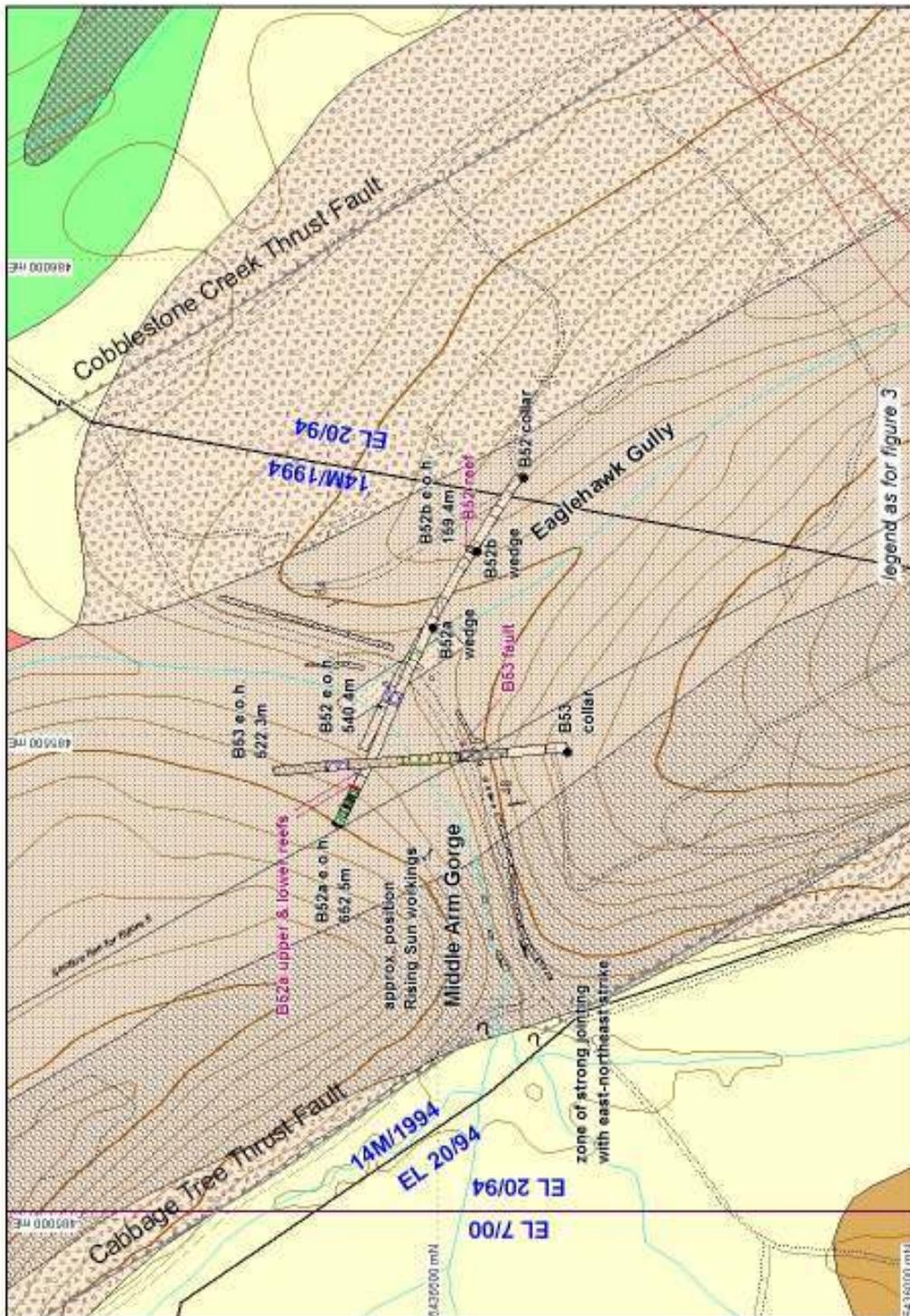


Figure 4: Middle Arm Gorge prospect geology

6.4 Helimagnetics/radiometrics survey

GPXair (of W.A.) had been in the state flying a helimagnetics/radiometrics survey over northeast Tasmania for Mineral Resources Tasmania. Due in part to the cost saving associated with the lack of mobilisation/demobilisation costs it was decided to fly a high resolution helimagnetic/radiometrics survey over EL's 7/2000 (both parts) and EL 20/94. However, because of the potential risk to stock from low flying aircraft, it was decided to modify the survey area meaning that none of EL 7/2000 was surveyed and some of EL 20/94 also excluded. Of particular concern was the impact on horses at the time of the 2007 Equine Influenza lock-down.

The full survey report is included as appendix B and the data has been supplied in digital format to Mineral Resources Tasmania.

The survey was conducted by GPXair of W.A. on Sunday 9th September using a stinger mounted on a Heli Australia AS-350D "Squirrel". The surveying equipment used was a Scintrex CS3 Cesium Vapour magnetometer sensor, Billingsley TFM100-G2 fluxgate magnetometer and Exploranium GR820 (16 litre crystal) spectrometer.

Survey lines were flown AMG east-west i.e. 090° and 270° at a spacing of 50m and nominal ground clearance of 60m. Tie lines were flown AMG north-south i.e. 000° and 180°, at a spacing of 500m. The total survey length was 305km. The survey flight-lines are shown on figure 6 below.

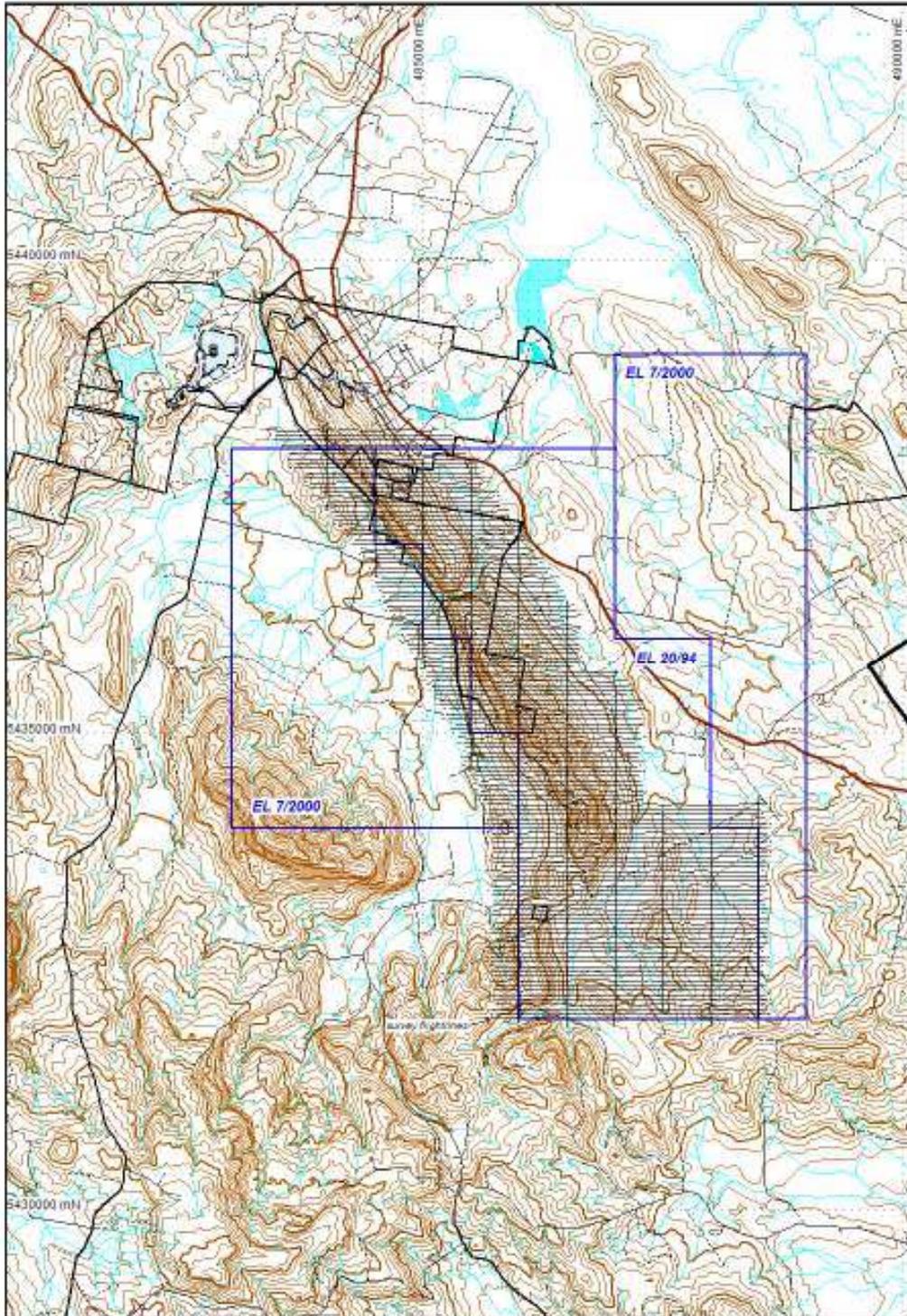


Figure 6; Helimagnetics/radiometrics survey flight-lines and exploration licences

7.0 Results of Work Completed, 2006 - 2007

7.1 B53

B53 failed to intersect any significant mineralisation. In particular the hole did not intersect any of the incipient reef-like structures intersected in B52/B52A/B52B nor the zone of tension veining which assayed 0.8m (down hole) @ 4.4g/t Au.

The hole did intersect a significant fault between 187.6m and 190.9m which satisfactorily explains the location of Middle Arm Gorge. The structure is carbonaceous with polished slickensides. There are some quartz tension veins up hole, and to a lesser degree down hole, as well as some associated pyrite veinlets up hole, however, the structure itself is unmineralised.

The original aim of the drilling in Middle Arm Gorge was to locate and define the structure expected to be responsible for the Middle Arm Gorge, a significant topographical feature cross-cutting the Cabbage Tree Hill-Salisbury Hill strike ridge in a favourable (Tasmania Reef analogous) east-northeast orientation. This intersection in B53 essentially satisfies the initial aims of drilling at Middle Arm Gorge.

B53 - summary log

0.0m - 36.0m	Sandstones and clay (after limestone)	OEG 3LS
36.0m - 103.6m	Sandstones and lesser fine grained sandstones and minor clay (after limestone)	OEG 2SL
103.6m - 187.6m	Sandstones with occasional quartz pebble bands	OEG PEB
187.6m - 190.0m	Fault - dirty carbonaceous slickensided surfaces at very low angles to core axis - no hosted reef mineralisation = Middle Arm Gorge Fault	DFZ FLT
190.0m - 195.2m	Sandstones with occasional quartz pebble bands	OEG PEB
195.2m - 291.2m	Conglomerate with lesser grit and sandstone	OSH WET
291.2m - 389.7m	Sandstones with minor grit and conglomerate	OSH 1SC
389.7m - 431.5m	Conglomerate with minor grit and sandstone	OSH 2CG
431.5m - 522.3m	Sandstones with minor grit and conglomerate	OSH 2SC
522.3m	end of hole	

The fault intersected between 187.6m and 190.9m consists of one or more polished carbonaceous surfaces within a section of strongly jointed, broken core. These surfaces range from 0° to 20° to core axis though most are generally ~10°. This orientation is inconsistent with a moderately southeasterly dipping structure having the east-northeasterly strike of the gorge (i.e. directly analogous with Tasmania Reef orientation), however, the orientation is consistent with a sub-vertical to very steeply northwesterly dipping structure having the same strike. Jointing in the road-cut at the western end of the gorge has this orientation confirming that this is likely to be true. In such a case the fault may be that structure logged (cursorily) in B(FG1)8. The structure is herein called the Middle Arm Gorge Fault.

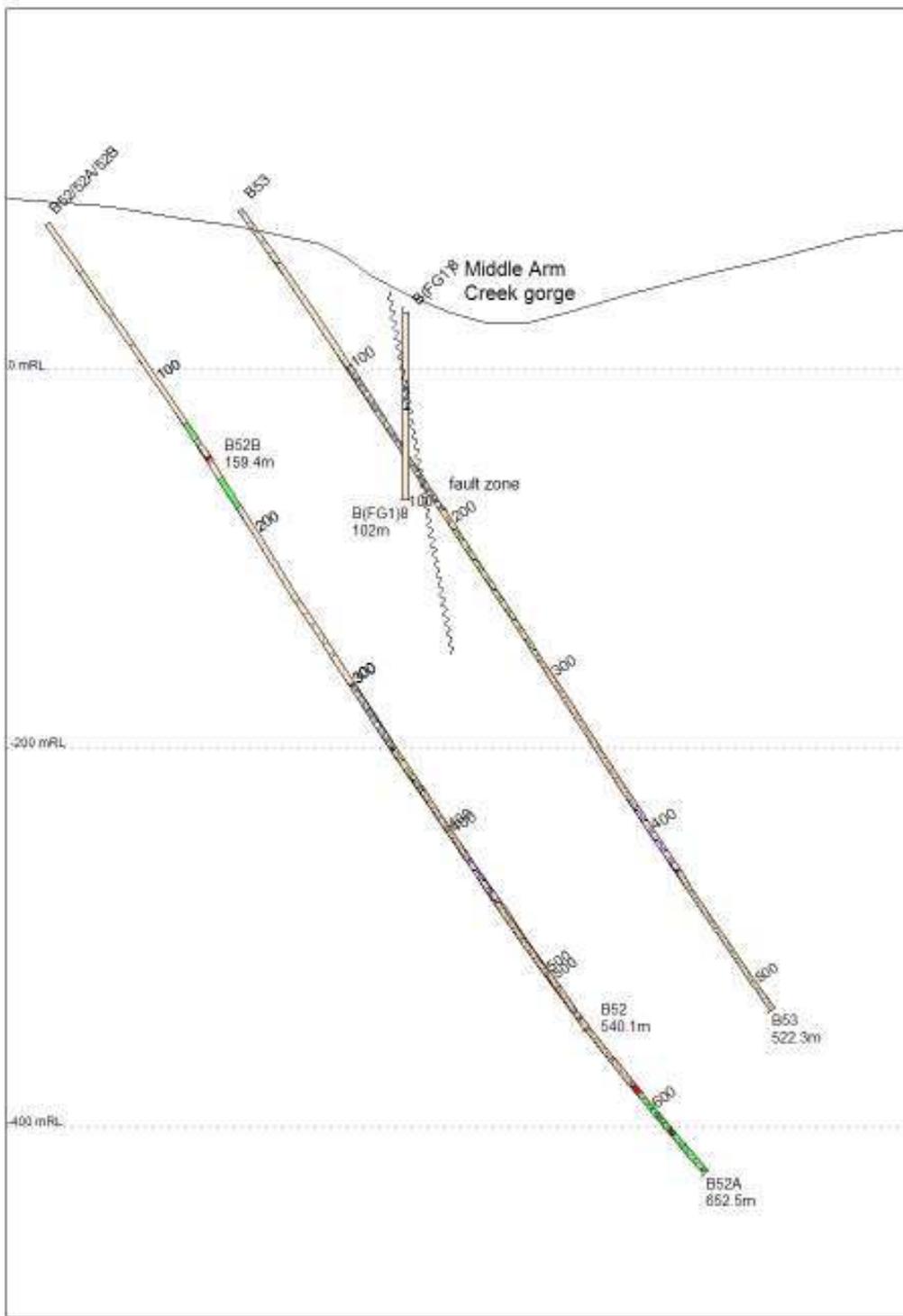


Figure 5: Cross-section (perpendicular to ridge)

7.2 Magnetics/radiometrics

As at 28th October 2007, the relinquishment date for the licence, the survey data was at the point where GPXair had done their processing and prepared preliminary images of total magnetic intensity, reduced to pole total magnetic intensity 1st vertical derivative (greyscale) and total count radiometrics. These images are included in GPXair's report included herein as appendix B.

8.0 EXPENDITURE

8.1 2006-07 EXPENDITURE

Expenditure during 2006-07 was predominantly related to drilling B53 (hole was at 83m at the end of the 2005-06 reporting year) and the flying of the helimagnetic/radiometric survey.

Costs are summarised as follows:

Drilling Contractor	\$192,766.42
Assaying	\$Nil
Helimagnetic/radiometric survey	\$48,265.00
Geology	\$5,000.00
Management	\$10,000.00
Labour	\$9,882.40
Total	\$265,913.82

9.0 References

- Bishop, J.R., 1988. Interpretation of the Beaconsfield aeromagnetic survey (EL 7/88) for Beaconsfield Gold Mines Ltd. Mitre Geophysics. Unpublished.
- Bucknell, W., 2003. Report on Exploration at Beaconsfield for the Period 8 November 2002 - 31 March 2003. Diamond Ventures NL.
- 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., MacDonald, G., Nero, L. and Mueller, A.M., 2001. Beaconsfield Gold Mine - Tasmania Reef, in *Structure and setting of Proterozoic and Palaeozoic rocks in the Tamar region, Northern Tasmania*, (Ed. A. R. Reed), Geological Society of Australia Specialist Group in Tectonics and Structural Geology - Field Guide No. 9. Pp. 57-75.
- Jones, B.J., 2001. *Genesis of the Tasmania Reef, Beaconsfield*. BSc (Hons) thesis (unpublished). University of Tasmania.
- MacDonald, G., 2000. EL 20/94 Salisbury Hill. Annual Report 1999/2000. Allstate Explorations NL.
- MacDonald, G., 2004. Beaconsfield Area. In, Taheri, J., & Keele, R.A., Eds, (2004). *Mineralisation, structure and granites, northeast Tasmania*. Field Guide A1, 17th Australian Geological Convention, Hobart. Geological Society of Australia Inc. Pp53-67.
- MacDonald, G., 2006. EL 20/94 Salisbury Hill. Annual Report 2005/2006. Allstate Explorations NL.
- MacDonald, G., Hills, P.B. Reed, A.R., Zengerer, M., Morrison, K.C. and Roach, M., 2001. Beaconsfield Region, in *Structure and setting of Proterozoic and Palaeozoic rocks in the Tamar region, Northern Tasmania*, (Ed. A. R. Reed), Geological Society of Australia Specialist Group in Tectonics and Structural Geology - Field Guide No. 9. Pp. 25-42.
- Reed, A.R., 2001. Pre-Tabberabberan deformation in eastern Tasmania: a southern extension of the Benambran Orogeny. *Australian Journal of Earth Science*, 48: 785-796.
- Taheri, J., & Keele, R.A., Eds, (2004). *Mineralisation, structure and granites, northeast Tasmania*. Field Guide A1, 17th Australian Geological Convention, Hobart. Geological Society of Australia Inc. 71pp.

Appendices

B53

0.0 36.0 Sandstones and clay (after limestone) OEG 3LS

Very weathered sequence of sandstones with sections of clay (interpreted confidently to be weathered limestone). Sandstones are quite porous with the porosity interpreted to be due to the weathering and leaching of carbonate flecks and so the sandstones are considered to have been calcareous. The nature of the sandstone and the numerous clay zones after limestone argues for this unit being the correlate of the 3LS unit of the OEG.

The whole unit is orangish grey to light greenish grey in colour and appears to have been sericite + ankerite altered throughout. There is no suggestion of any precursor chlorite.

There is no veining of any kind in this section and there are no faults or shear zones or any other no significant structures in this section.

Sandstones are commonly massive and porous with some more minor sections of thinly bedded and bioturbated facies with sections of clay (i.e. after limestone or very calcareous sandstones) from 10.8m to 11.3m, 13.4m to 13.7m, 24.3m to 24.5m, 27.9m to 28.2m and 34.2m to 34.4m.

Bedding is consistent throughout being 20° to core axis at 13m, 20° at 20m, 23° at 24.0m, 21° at 28.5m and 20° to core axis at 35.0m.

36.0 103.6 Sandstones and lesser finer grained sandstones with minor clay (after limestone) OEG 1SL

Weathered sequence of sandstones, finer grained sandstones and occasional sections of strongly weathered clay interpreted confidently to be weathered limestone. Some sandstone sections have porous texture interpreted confidently to be due to leaching of carbonate flecks i.e. these sandstones were calcareous. Marked change in weathering occurs at 66.5m.

The whole unit is orangish grey to light greenish grey in colour and appears to have been sericite + ankerite altered throughout. There is no suggestion of any precursor chlorite. Yellow staining 89.3m to 92.9m and 96.4m to 103.6m (cont) is associated with pyrite on fracture surfaces though there are no significant discrete veins with pyrite.

Bedding is consistent throughout except for a very gently very open fold at 78.8m. There are no faults or shear zones and no significant structures in this section.

Clay (i.e. after limestone) sections are from 45.7m to 46.0m, 47.0m to 47.2m, 47.4m to 47.8m, 53.9m to 55.0m, 58.2m to 58.4m, 59.8m to 60.3m, 60.7m to 61.1m and 62.7m to 63.0m.

The dominant facies is massive sandstone facies with just minor thinly bedded faces. From 36.0m to m 43.0m is massive sandstone facies, 43.0m to 44.0m thinly bedded facies, 44.0m to 45.7m massive sandstone facies, 45.7m to 46.0m clay after limestone, 46.0m to 47.0m thinly bedded facies, 47.0m to 47.2m clay after limestone, 47.2m to 47.4m massive sandstone, 47.4m to 47.8m clay after limestone, 47.8m to 53.2m massive sandstone facies, 53.2m to 53.9m thinly bedded, 53.9m to 55.0m clay after limestone, 55.0m to 58.2m thinly bedded, 58.2 to 58.4m clay after limestone, 58.4m to 59.8m massive sandstone, 59.8m to 60.3m clay after limestone, 60.3m to 60.7m calcareous sandstone, 60.7m to 61.1m clay after

limestone, 61.1m to 62.7m calcareous sandstone, 62.7m to 63.0m clay after limestone, 63.0m to 66.5 calcareous sandstone, 66.5m to 77.4m massive sandstone, 77.4m to 78.8m bioturbated, 78.8m to 87.4m massive sandstone, 87.4m to 88.6m bioturbated, 88.6m to 96.2m massive sandstone, 96.2m to 103.6m (and continued into underlying unit) bioturbated.

There are only two veins in this unit, (1) a 12mm true thickness S0 conformable quartz vein at 46.6m at 21° to core axis; and (2) is a large bucky quartz vein at 66.2m to 66.3m which has an irregular (broken core) upper contact and sharp, planar lower contact at 28° to core axis which is possibly S0 conformable. Neither suggest any associated potential.

Bedding is 22° to core axis at 40.5m, 24° at 43.0m, 23° at 53.0m, 24° at 58.0m, 24° at 70.5m, 21° at 78.5m, 7° at 78.8m, 20° at 79.0m, 27° at 84.0m, 24° at 86.2m and 22° to core axis at 103.0m.

103.6 187.6 Sandstones with occasional quartz pebble bands OEG PEB

Unit of sandstones with very occasional rounded quartzose pebbles generally in the range 5-15mm in diameter occurring in thin trails of quartzose pebbles ranging up to discrete thin beds of conglomeratic sandstone (to a maximum of ~100mm thick). The unit is cut by a significant fault between 187.6m and 190.9m with this same sedimentary unit continuing below the fault (it is unclear as to the offset on this fault). Below ~172m the core (1) becomes quite broken; (2) contains fine pyrite veinlets (though pyrite can be seen on fracture surfaces below ~160m); and (3) contains discrete quartz tension veins, all apparently associated with the fault. These features are elaborated on below.

Sandstones are medium grained quartz sandstones. There are three recognisable sedimentary facies. Sandstones can be categorised as either massive or bioturbated facies. The third facies type is that characterised by the presence of pebbles. These pebbly facies occur in three general forms; (1) very discrete trails to lone pebbles within massive sandstone; (2) loosely scattered pebbles in cross-bedded sandstone; or (3) thicker beds or bands of pebbles within a sandstone matrix with pebbles constituting up to 50% by volume of the bed.

Facies are pebbly sandstones 103.6m to 103.75m (scattered pebbles), bioturbated from 103.75m to 110.6m, pebbly conglomeratic sandstone 110.6m to 111.0m, bioturbated 111.0m to 116.2m, massive sandstone from 116.2m to 119.95m, few scattered pebbles in sandstone 119.95m to 120.0m, massive sandstone 120.0m to 121.0m, bioturbated 121.0m to 122.2m, massive sandstone 122.2m to 124.4m, bioturbated 124.4m to 127.8m, massive sandstone 127.8m to 128.0m, few bands of sparsely scattered pebbles in massive sandstone 128.0m to 128.95m with 50mm thick pebbly band 128.95m to 129.0m, bioturbated 129.0m to 134.0m, 50mm thick band pebbles 134.0m to 134.15m, bioturbated sandstone 134.15m to 139.8m, massive sandstone 139.8m to 141.3m, bioturbated 141.3m to 142.9m, massive sandstone 142.9m to 146.0m, bioturbated 146.0m to 148.0m, massive sandstone 148.0m to 148.4m, bioturbated 148.4m to 150.7m, massive sandstone 150.7m to 152.5m, few scattered pebbles in massive sandstone 152.5m to 154.0m, massive sandstone 154.0m to 158.2m, 2 or 3 thin pebble bands in bioturbated sandstone 158.2m to 158.5m, bioturbated sandstone 158.5m to 163.7m, thick pebbly band 163.7m to 164.3m in sandstone, bioturbated sandstone 164.3m to 165.9m, thin pebble trail 165.9m to 166.0m, bioturbated sandstone 166.0m to 171.1m,

massive sandstone 171.1m to 174.3m, pebble band 174.3m to 174.5m and massive sandstones 174.5m to 187.6m.

Sections of the unit between 99.0m and 127.6m have weathered in the sun (core has been exposed to the elements for a couple of months prior to detailed logging) to a rusty reddish brown colour which is interpreted to be after chlorite (based on a similar morphology to chloritic zones in near mine drilling). The reddish brown colour is quite strong between 124.5m and 127.6m, being of lower tenor from 99.0m to 124.5m. The core is patchy brownish grey with intermittent medium dark grey from 127.6m to 159.0m, mostly brownish grey 159.0m to 171.1m, almost completely medium dark grey from 171.1m to 183.5m, light brownish grey 183.5m to 185.5m (associated with zone of broken core) and medium dark grey from 185.5m to 187.6m. These lighter greyish zones, i.e. 127.6m to 171.1m and 183.5m to 185.5m probably reflect a weak pervasive carbonate (ankeritic) alteration commonly seen in these rocks. Medium dark grey sections probably reflect the lack of any such alteration.

Bedding is 21° to core axis at 108, 19° at 116.5m, 16° at 120m, 24° at 123.5m, 26° at 134.0m, 23° at 144.0m, 18° at 152.0m, 23° at 163.5m, 25° at 172.0m, 26° at 179.5m, 25° at 183.0m and 30° to core axis at 186.5m.

Core becomes very broken core from ~179.5m down to the fault at 187.6m. Most breaks appear to be on bedding surfaces though there is also a recognisable jointing throughout much of this zone on which a number of breaks occur. This jointing may be the same as that seen in outcrop at the western end of the Middle Arm Creek Gorge road-cut.

There are a number of quartz tension veins from 172.7m down to the fault zone. There are a few smaller veinlets (<1mm thick) but in general the veins are larger 10-30mm thick) and discrete i.e.: 20mm thick at 70° to core axis at 172.7m, 30mm thick at 60° to core axis at 174.55m, 15mm thick at 35° to core axis at 176.4m, 25mm thick at 60° to core axis at 178.6m, 10-20mm thick vein at ~65° to core axis at 179.05m containing patches of massive pyrite, and a fault dislocated 10mm thick vein at 60° to core axis at 187.4m immediately adjacent to fault zone proper.

Below ~160m the core contains occasional pyrite on fracture surfaces. Below 173.5m to the fault are fine (<1mm thick) massive pyrite veinlets with a section 178.9m to 179.1m containing massive pyrite veining up to 30mm thick.

Below 172.1m the core contains zones of fine leached fractures at low angles to core axis. It is not clear as to whether any mineral has been leached out of these fractures as there are no remnants, nor staining. In places these fractures occur in immediate proximity to fresh pyrite veinlets indicating that they are not after these pyrite veinlets. These fractures have a different orientation to the two veins types (quartz tensional and pyrite) and may be related to the jointing.

The fine massive pyrite veinlets between 178.7m and 179.1m are spatially associated with one of the quartz tension veins at 179.05m and infill this vein in part indicating they are later stage but related to the same fault.

187.6 190.9 Fault (Middle Arm Gorge Fault) DFZ FLT

Dirty carbonaceous (+/- minor pyritic) fault zone defined by a series of anastomosing sinuous slickensided fault surfaces cutting sandstones at very low angle to core axis. The

rocks on either side of the fault are from the PEB unit though there are no pebbles in this section of faulted sandstone.

There are a number of polished slickensided surfaces in the fragments of broken core which range from 3° to 20° to core axis though generally ~10° to core axis appears more common. The section between 188.3m and 188.6m has surfaces at 10° to core axis and -10° i.e. opposite w.r.t. core axis to core axis. Because of this low angle and the sinuosity it is uncertain as to how many individual surfaces there are.

Surfaces are commonly carbonaceous and polished. One surface at 188.25m contains pyrite slickenlines which are at 82° to core axis. Other surfaces have minor amounts of pyrite in irregular veinlets or angular patches spatially associated with the surfaces.

The rock adjacent to these surfaces has occasional fine quartz tension veinlets and the same fine open spaced fractures as the rocks up hole.

190.9 195.2 Sandstones with occasional quartz pebble bands OEG PEB

Continuation of same unit as above fault though it is unclear as to whether the fault has removed or repeated this unit. These rocks, whilst having some of the features seen in the rocks up hole from the fault, i.e. fracture/joint surfaces at low to sub-parallel angles to core axis, some fine open fractures, quartz tension veins and pyrite on fracture surfaces, are much less deformed and show these features at a lower tenor.

Core is broken from 190.0m to 192.3m. There is a 20mm thick quartz tension vein at 192.3m at 65° with some minor pyrite and two 5-10mm thick veins, one at 193.1m at 75° to core axis and another at 193.5m at 65°. The larger vein at 192.3m is offset on a microfault at 8° to core axis.

In this section below the fault there are no bioturbated facies with massive sandstones 190.9m to 193.0m, thin trail pebbles 193.0m to 193.1m, massive sandstone 193.1m to 195.0m, massive sandstone with a few loose pebbles 195.0m to 195.2m. There is no significant pebble band/bed in the sandstones immediately above the WET conglomerate contact hence the upper contact of the WET contact is quite unequivocal.

The rock is medium dark grey (unaltered) throughout. Bedding is indistinct but is ~20° to core axis.

195.2 291.2 Conglomerate with lesser grit (granule conglomerate) and sandstone OSH WET

The WET conglomerate-grit (granule conglomerate)-sandstone unit contains 3 conglomerate rich zones separated by sections of sandstone, coarse grained sandstone and/or grit (granule conglomerate) and followed by a section of interbedded grit (granule conglomerate) and sandstone with somewhat ill-defined base to the unit. Bedding is at low angles to core axis so the down hole depths exaggerate the significance of individual sub-units. The upper contact is well defined and unequivocal, the lower contact is less well defined and hence is equivocal.

The unit has a sharp upper contact and starts with a (1st) section of conglomerate with only very minor sandstone from 195.2m to 220.0m. This is followed by a section of sandstone with very minor conglomerate 220.0m to 227.0m. This is followed by a (2nd) section of

conglomerate and conglomeratic sandstone 227.0m to 233.6m. This is followed by a section of interbedded coarse grained sandstone and grit (granule conglomerate) from 233.6m, to 241.3m and a section of coarse grained sandstone with minor grit (granule conglomerate) from 241.3m to 252.1m. This is followed by a (3rd) section of quite massive conglomerate from 252.1m to 263.55m. Underlying this is a relatively thick section of interbedded grit (granule conglomerate), coarse grained sandstone and sandstone with sandstone becoming more common down hole. The base of the unit is somewhat arbitrary. The base of the 3rd (massive) conglomerate section at 263.55m is one option for the base of this unit, the other option is that used herein (at present) with the base of the lowermost thick section of grit (granule conglomerate) at 291.2m taken as the base of the unit. In general contacts between sandstone, grit or conglomerate beds are sharp and do not show the grading seen in the underlying 15C unit. Unless noted conglomerates are clast supported, consist of clasts in the range 2-8mm in diameter which are generally subrounded with lesser subangular and consist of 95% quartzose clasts and ~5% dark shale clasts; grit (granule conglomerate) is clast supported, consists of subangular to subrounded clasts, 2-4mm in diameter predominantly quartzose with occasional dark shale clasts; and sandstones are medium dark grey quartz sandstones.

The unit contains only relatively minor quartz (\pm small vugs which are probably after leached ankerite - there is no suggestion that these are after pyrite). Tension veining appears to be lithologically controlled with quartz(\pm minor now leached out ankerite?) tension veins predominantly within more massive conglomerate beds. Significant zones (generally ~1m) of quartz tension veining are from 214.5m to 220.5m, 226.0m to 231.0m and 252.0m to 262.0m and a small zone 286.0m to 292.0m. These veins are at moderate to high angles to core axis and are generally in the range 5-30mm thick.

There is a weak but pervasive carbonate alteration throughout all lithotypes in this unit which has undergone varying degrees of leaching such that in some sections carbonate spots are still present whilst in others the carbonate is leached leaving spotty vugs. In sandstones and coarse grained sandstone these spots are fine $\frac{1}{4}$ -1mm and evenly distributed whilst in grit (granule conglomerate) and conglomerate they are generally a little larger $\frac{1}{2}$ -2mm, more randomly distributed and sparser and essentially replace the matrix between clasts. Towards the base of the unit the degree of carbonate alteration becomes somewhat stronger, a trend which continues in the underlying unit where carbonate alteration has the gross appearance of "bleaching" - albeit now a rusty strain due to weathering in the open air. The colour of the rock reflects this increase in alteration in intensity with sandstones medium dark grey down to 279.7m (unless otherwise noted) becoming brownish grey below this.

Very minor amounts of pyrite can be seen as rare sporadic spots in conglomerate and very occasionally on fracture surfaces - this pyrite is typical background diagenetic? pyrite seen in Salisbury Hill Formation rocks throughout the region.

Most of the core is broken and there are a few zones of quite strongly broken core i.e. 214.0m to 219.0m and 263.5m to 264.5m but these are lithologically controlled and not structurally. There are no structures of any significance in this unit.

195.2 197.0 Conglomerate.

197.0 198.0 Sandstone.

198.0 202.3 Conglomerate.

202.3 203.0 Sandstone.

203.0 205.0 Grit.

205.0 206.4 Sandstone with occasional conglomerate beds.

206.4 220.0 Conglomerate with very minor sandstone.

220.0 223.7 Sandstone with minor grit.

223.7 224.1 Conglomerate.

224.1 224.8 Sandstone

224.8 225.7 Conglomerate.

225.7 226.3 Sandstone

226.3 226.45 Conglomerate.

226.45 227.0 Sandstone

227.0 230.7 Conglomerate with 90% subrounded quartzose clasts 2-10mm, occasionally to 15mm, and 10% dark shale clasts.

230.7 230.8 Sandstone

230.8 231.4 Conglomeratic sandstone. Poorly sorted medium grey sandstone with 5-10% rounded clasts quartzose and minor shale grading into underlying conglomerate.

231.4 233.6 Conglomerate with 5-10%, 10-25% siltstone and rest quartzose clasts.

233.6 236.0 Coarse grained sandstone. S_0 is 20° to core axis at 235.0m and 18° at 236.0m.

236.0 237.4 Grit.

237.4 239.8 Medium grey (some rusty brown staining after carbonate) coarse grained sandstone. S_0 is 20° to core axis at 239.5m.

239.8 241.3 Grit.

241.3 242.45 Medium dark grey to dark greenish grey sandstone, somewhat transitional between WET type sandstone and 1SC/2SC type though resembles latter facies more. S_0 is 10° to 15° to core axis at 241.5m, 18° at 249.5m, 20° at 251.0m.

242.45 242.55 Conglomerate

242.55 242.95 Sandstone.

242.95 243.05 Conglomerate

243.05 244.0 Sandstone.

244.0 244.3 Grit.

244.3 244.6 Sandstone.

244.6 244.8 Grit.

244.8 246.6 Sandstone.

246.6 246.8 Grit.

246.8 250.4 Sandstone.

250.4 252.1 Conglomeratic sandstone with occasional; subrounded quartz pebbles 2-8mm.

252.1 263.55 Conglomerate.

263.55 269.0 Sandstone.

269.0 273.65 Grit. Discrete massive bed of clast supported grit (granule conglomerate), with sub-angular to sub-rounded clasts, 2-6mm, of predominantly quartz/quartzite and ~5% dark shaley clasts. Upper contact is sharp and at ~15° to core axis, lower contact is sharp and ~10° to core axis.

273.65 275.7 Medium dark grey sandstone with carbonate spotting throughout with some minor zones of grit. Lower contact in broken core.

275.7 279.7 Brownish grey grit (granule conglomerate) with minor zones coarse grained sandstone. Grit is 2.4mm, clast supported and consists predominantly of quartz/quartzite with minor dark shaley clasts.

279.7 281.0 Brownish grey sandstone with minor coarse grained sandstone showing fining up grading uphole indicating drilling down sequence. SO is 17° to core axis at 280.5m.

281.0 284.4 Brownish grey grit (granule conglomerate) in upper part becoming more coarse grained sandstone downhole. Gradational lower contact with underlying sandstone.

284.4 286.5 Coarse grained sandstone. Brownish grey coarse grained sandstone as gradational base to overlying grit (granule conglomerate).

286.5 286.8 Grit.

286.8 287.4 Brownish grey sandstone with carbonate spots. Sharp upper contact, gradational lower contact grading into underlying grit (granule conglomerate)/conglomerate.

287.4 291.2 Grit (granule conglomerate)/conglomerate/conglomeratic sandstone. Initially grit becoming a more conglomeratic sandstone with the lower part coarser grained 4-8mm. Clast supported, sub-angular to sub-rounded with 2-5% dark shaley clasts.

291.2 389.7 Sandstones with minor grit and conglomerate OSH 1SC

Predominantly quartz sandstone but with a significant component of siltstone and pebble conglomerate. Essentially a sequence of upwardly fining graded beds with relatively thin conglomerate bases overlain by a relatively thicker section of massive quartz sandstone in turn overlain by finer sandstone or siltstone.

Conglomerate bases are clast supported and oligomictic to monomictic consisting of 95% to 100% quartz pebbles and 0% to 5% dark shale and occasional siltstone clasts. Clasts are generally in the range 2mm-8mm in diameter, are usually rounded to sub-rounded and generally well sorted. Grit consists of sub-angular to sub-rounded grains 1-4mm in diameter, variably sorted with variable medium dark grey sandstone matrix.

Finer sandstone/siltstone tops are commonly weakly ankerite altered and olive greenish grey to brownish grey in colour. Sandstones, coarse grained sandstones and conglomerate are predominantly medium grey to medium dark grey in colour but with subtle reddish brown colour due to pervasive carbonate spotting.

The unit contains very occasional quartz tension veins at high angles to core axis though with no associated shear structures.

Between 339.0m and 369.3m the core contains a number of thin (few mm thick) zones with fine pyrite veinlets or trails of disseminations associated with similarly oriented thin (few mm thick) open fractures (same type as seen in rocks uphole from fault between 187.6m and 190.9m). These thin zones are at $\sim 20^\circ$ to core axis and appear (though this is not certain) to be S_0 conformable.

Blotchy "bleaching" style carbonate alteration 295.6m to 300.6m, 303.8m to 309.0m, 320.3m to 320.8m, 323.8m to 325.7m, patchy between 329.0m and 332.0m. 337.5m to 341.5m, 344.0m to 346.5m, 349.0m to 350.0m, 351.9m to 355.0m, 356.1m to 359.6m, 361.8m to 362.2m, 363.5m to 365.2m, 371.0m to 372.9m. This carbonate alteration is in part associated with the fine grained pyrite veinlets/disseminations.

291.2 296.9 Sandstone and coarse grained sandstone to 296.7 with grit (granule conglomerate) base from 296.7m to 296.9m. Sharp base at $\sim 9^\circ$ to core axis.

296.9 299.5 Coarse grained sandstone to 299.2m with conglomerate base 299.2m to 299.5m. Moderately sharp base at $\sim 20^\circ$ to core axis.

299.5 301.4 Coarse grained sandstone and sandstone to 300.6m with grit (granule conglomerate) base to 301.4m. Sharp base. S_0 25° to core axis at 301.0m.

301.4 307.2 Sandstone 301.4m to 306.9m with coarse grained sandstone base 306.9m to 307.2m.

307.2 314.7 Sandstone and coarse grained sandstone 307.2m to 311.8, coarse grained sandstone and grit (granule conglomerate) 311.8m to 314.7m. S_0 (defined by banding of carbonate alteration) at $\sim 24^\circ$ to core axis at 308.3m.

314.7 317.6 Sandstone to 316.9m, coarse grained sandstone and grit (granule conglomerate) 316.9m to 317.6m.

317.6 327.4 Sandstone and coarse grained sandstone 317.6m to 327.1m, coarse grained sandstone and grit (granule conglomerate) 327.1m to 327.4m.

327.4 332.7 Sandstone 327.4m to 332.4m, grit (granule conglomerate) 332.4m to 332.7m.

332.7 343.6 Sandstone 332.7m to 341.2, coarse grained sandstone 341.2m to 343.6m.

343.6 347.5 Sandstone 343.6m to 346.7m, coarse grained sandstone 346.7m to 347.5m.

347.5 351.2 Sandstone 347.5m to 349.8m, coarse grained sandstone 349.8m to 351.15m, grit (granule conglomerate) base 351.15m to 351.2m, sharp lower contact at $\sim 35^\circ$ to core axis.

351.2 352.0 Sandstone 351.2m to 351.3m, grit (granule conglomerate) 351.3m to 352.0m.

352.0 361.7 Sandstone to 360.1m, grit (granule conglomerate) and conglomerate to 361.7m.

361.7 365.6 Sandstone to 365.1m, grit (granule conglomerate) 365.1m to 365.6m. S_0 30° to core axis at 363.8m.

365.6 369.5 Sandstone to 368.2m coarse grained sandstone 368.2m to 368.7m, grit (granule conglomerate) 368.7m to 369.5m.

369.5 372.8 Sandstone to 372.6m, grit (granule conglomerate) to 372.8m

372.8 375.3 Sandstone and coarse grained sandstone to 374.8m, grit (granule conglomerate) and conglomerate 374.8m to 375.3m.

375.3 377.3 Sandstone and coarse grained sandstone 375.3m to 377.1m, grit (granule conglomerate) 377.1m to 377.3m. S_0 22° to core axis at 376.0m.

377.3 382.85 Coarse grained sandstone and grit (granule conglomerate) 377.3m to 382.7m, conglomerate 382.7m to 382.85m.

382.85 384.3 Coarse grained sandstone and grit (granule conglomerate) throughout with sharp base at 384.3m at 28° to core axis.

384.3 386.0 Sandstone.

386.0 388.5 Conglomerate, conglomeratic sandstone and grit (granule conglomerate).

388.5 389.7 Coarse grained sandstone.

389.7 431.5 Conglomerate with lesser sandstone, grit (granule conglomerate) OSH 2CG

Distinctive unit of (predominantly) conglomerate but with some significant interbedded coarse grained sandstone and grit, particularly, below 401.4m. The unit corresponds with a conglomerate unit intersected in B52/B52A and correlated confidently with the 2CG unit seen in the mine environment. From 389.7m to 401.4m the unit consists of conglomerate with minor interbedded sandstone. From 401.4m to 431.5m the unit consists of similar volumes of interbedded conglomerate and sandstone.

Both the upper and lower contacts are well defined. The upper contact is placed midway through a graded bed where the rock changes from sandstone to conglomerate. The lower contact is placed at the base of the lowermost thick conglomerate bed.

Unless noted the conglomerate is clast supported, oligomictic to monomictic with 95% to 100% quartzose clasts, 0% to 5% dark shale clasts. Quartzose clasts are rounded to sub-rounded and 2-8mm in diameter. Shale clasts can be rounded but also can be raft-like.

The unit has a light grey colour but with a yellow stain due to variable ankerite and fine grained pyrite in the matrix. There are occasional quartz \pm ankerite tension veins to 50mm thick at high angles to the core axis as well as some massive ankerite veinlets. There are no structures associated with these veins.

389.7 390.2 Conglomerate, clast supported clasts 2-5mm, sub-angular to sub-rounded.

390.2 390.5 Sandstone, S_0 30° to core axis.

390.5 392.0 Conglomerate 2-5mm clast supported sub-angular to sub-rounded.

392.0 392.3 Coarse grained sandstone.

392.3 396.2 Conglomerate, clasts 2-6mm, generally sub-rounded to 396.1m. From 396.1m to 396.2m pebbles to 25mm.

396.2 401.4 Coarse grained sandstone to 396.2m coarsening down hole to grit (granule conglomerate) below 399.8m. Contains some leached zones after carbonate. Broken core below 399.9m with pyrite in very fine veinlets and in disseminations. Grades into underlying conglomerate.

401.4 404.3 Conglomerate 2-6mm sub-rounded clast supported. Some pyrite on fracture surfaces and in disseminations.

404.3 404.7 Sandstone with some ankerite veining.

404.7 405.5 Conglomerate, clasts rounded 2-5mm clast supported.

405.5 406.7 Ankerite altered coarse grained sandstone. S_0 32° to core axis.

406.7 407.8 Conglomerate, clasts 2-4mm sub-rounded, some clasts to 15mm.

407.8 408.2 Coarse grained sandstone/grit.

408.2 408.9 Ankerite altered sandstone. S_0 29° to core axis.

408.9 412.0 Coarse grained sandstone and grit (granule conglomerate) with minor conglomerate. S_0 28° to 30° to core axis

412.0 415.4 Conglomerate with sub-rounded clasts 2-12mm.

415.4 417.3 Sandstone and coarse grained sandstone. S_0 $\sim 26^\circ$ to core axis.

417.3 420.4 Conglomerate and grit (granule conglomerate). Clasts 2-5mm sub-angular to sub-rounded.

420.4 422.2 Sandstone and coarse grained sandstone. S_0 30° to core axis

422.2 422.4 Conglomerate. Clasts 2-5mm. sub-angular to sub-rounded

422.4 424.3 Sandstone.

424.3 424.6 Conglomerate. Clasts 2-15mm sub-rounded.

424.6 424.9 Coarse grained sandstone.

424.9 425.0 Conglomerate base. Clasts 2-8mm.

425.0 426.4 Coarse grained sandstone.

426.4 426.7 Conglomeratic sandstone, poorly sorted with clasts sub-angular to more commonly sub-rounded 1-8mm.

426.7 429.0 Coarse grained sandstone.

429.0 431.5 Conglomerate. variable zones with some very sub-angular others more poorly sorted.

431.5 522.3 Sandstones with minor grit and conglomerate OSH 2SC

Predominantly quartz sandstone but with a significant component of siltstone and pebble conglomerate. Essentially a sequence of upwardly fining graded beds with relatively thin

conglomerate bases overlain by a relatively thicker section of massive quartz sandstone in turn overlain by finer sandstone or siltstone.

Down to 474.3m conglomerate bases are clast supported and oligomictic to monomictic consisting of 95% to 100% quartz pebbles and 0% to 5% dark shale and occasional siltstone clasts - i.e. quartz pebble conglomerates. Clasts are generally in the range 2mm-8mm in diameter, are usually rounded to sub-rounded and generally well sorted. Below 474.3m a number of the conglomerate beds are quite distinctively polymictic with sub-angular to raft-like clasts of chert, siltstone and angular vein quartz, poorly sorted to bimodal - i.e. polymictic breccio-conglomerate. Some conglomerate beds are a hybrid of the two types.

Grit consists of sub-angular to sub-rounded grains 1-4mm in diameter, variably sorted with variable medium dark grey sandstone matrix.

Finer sandstone/siltstone tops are commonly weakly ankerite altered and olive greenish grey to brownish grey in colour. Sandstones, coarse grained sandstones and conglomerate are predominantly medium grey to medium dark grey in colour but with subtle reddish brown colour due to pervasive carbonate spotting.

The unit contains very occasional quartz+/-ankerite tension veins at moderate to high angles to core axis above a zone of broken core between 456.0m and 461.0m, becoming more common below this with up to 8/m in places. Some veinlets have pyrite associated and there is also minor pyrite on fracture surfaces in places.

431.5 434.1 Sandstone to 433.0m, coarse grained sandstone 433.0m to 434.0m, grit base 434.0m to 434.1m.

434.1 437.1 Sandstone and coarse grained sandstone 434.1m to 436.8m, quartz pebble conglomerate base 436.8m to 437.1m.

437.1 439.9 Coarse grained sandstone 437.1m to 439.8m, quartz pebble conglomerate base 439.8m to 439.9m.

439.9 443.1 Ankerite altered sandstone 439.9 to 442.0m, coarse grained sandstone 442.0m to 443.1m, quartz pebble conglomerate base 443.1m to S_0 25° to core axis at 440.0m.

443.1 448.5 Sandstone 443.1m to 445.2m, grit and minor conglomerate 445.2m to 448.5m, quartz pebble conglomerate base 448.5m to 448.7m.

448.5 452.5 Grit 448.5m to 452.4m, quartz pebble conglomerate base 452.4m to 452.5m.

452.5 455.3 Sandstone 452.5m to 455.1m, quartz pebble conglomerate base 455.1m to 455.3m.

455.3 462.75 Sandstone 455.3m to 462.6m, quartz pebble conglomerate base 462.6m to 462.75m.

462.75 463.85 Sandstone 462.75m to 463.8m, thin quartz pebble conglomerate base 463.8m to 463.85m.

463.85 464.5 Grit.

464.5 469.2 Sandstone 464.5m to 469.0m, quartz pebble conglomerate base 469.0m to 469.2m.

469.2 472.6 Sandstone 469.2m to 472.2m, quartz pebble conglomerate 472.2m to 472.6m.

472.6 474.3 Sandstone.

474.3 475.0 Distinctive polymictic breccio-conglomerate with sub-angular to raftlike clasts ranging from sand up to 25mm and consisting of chert, siltstone and sub-angular vein quartz. Poorly sorted to bimodal.

475.0 476.3 Sandstone 475.0m to 475.8m, hybrid conglomerate (contains sub-rounded to rounded quartz pebble clasts and angular to raft-like chert, siltstone) base from 475.8m to 476.3m.

476.3 478.8 Sandstone 476.3m to 478.7m, minor quartz pebble conglomerate base 478.7m to 478.8m.

478.8 482.9 Sandstone 478.8m to 482.7m, grit/minor conglomerate 482.7m to 482.9m.

482.9 484.3 Grit and minor sandstone.

484.3 489.2 Sandstone 484.3m to 488.7m, polymictic breccio-conglomerate base 488.7m to 489.2m.

489.2 491.0 Sandstone 489.2m to 490.8m, polymictic breccio-conglomerate base 490.8m to 491.0m.

491.0 492.05 Sandstone 491.0m to 492.0m, minor quartz pebble conglomerate base 492.0m to 492.05m.

492.05 494.6 Sandstone 492.05m to 494.1m, quartz pebble conglomerate base 494.1m to 494.6m.

494.6 498.1 Sandstone 494.6m to 497.9m, grit 497.9m to 498.1m.

498.1 503.65 Sandstone 498.1m to 503.6m, quartz pebble conglomerate base 503.6m to 503.65m.

503.65 509.5 Sandstone 503.65m to 509.4m, quartz pebble conglomerate base 509.4m to 509.5m.

509.5 511.2 Grit and coarse grained sandstone 509.5m to 511.2m.

511.2 522.3 Sandstone.

522.3 End of hole