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## **EL28/2001 Annual Report and Application for Extension of Term**

**'Lake Newton'**

**EL28/2001**

Vol. 1 of 1

<b>HELD BY:</b>	<b>BARRICK (HENTY) LTD</b>
<b>MANAGER &amp; OPERATOR:</b>	<b>BARRICK (HENTY) LTD</b>
<b>AUTHOR:</b>	
<b>DATE:</b>	<b>2009</b>
<b>MAP SHEETS:</b>	<b>1:25k Tyndall (3835) Oceana (3635) 1:100k Sophia</b>
<b>GEOGRAPHIC COORDS (GDA94):</b>	<b>Min East: 379,100mE Max East: 382,100mE Min North: 5,356,200mN Max North: 5,360,200mN</b>
<b>COMMODITY(s):</b>	<b>Au, Basemetals</b>

## Summary

Barrick (Henty) Limited requires a further one year extension of term of the Lake Newton exploration lease (EL28/2001) to fully assess newly potentially economic mineralisation associated with the Lake Newton hydrothermal system.

During the later stages of the reporting period, May 10, 2008 to May 10, 2009, Barrick (Henty) Limited (formerly Placer Dome Australia Ltd - Henty Mine) performed an extensive data review of the area following a large staff turnover in 2008. This data review was followed up with extensive ground reconnaissance. As a result of this work, Barrick has re-evaluated the targets delineated in the 2007-2008 desktop study and created an exploration program aimed at moving specific targets up the exploration pipeline in order to better identify those targets which may require follow up work, including potential drill testing to assess for significant gold mineralisation.

Although the Lake Newton alteration identified to date is diffuse and low grade, it indicates the activity of a large, active gold-basemetal rich hydrothermal system with the potential to form economically significant mineralisation.

The main areas of interest are located at the southern extents of the Lake Newton alteration system and are summarised below:

1. UTEM anomaly located west of Lake Newton, identified by Pasminco in the 1990's (Wendy's Folly) (Target 1)
2. Polymetallic targets associated with the Spillway horizon (Target 2)
3. Au rich Henty Style A-Zone underlying the barite + basemetal mineralisation at the Tyndall Creek (Target 3)

An ongoing work program involves reprocessing/interpretation of geophysical datasets, solid geology interpretation, an MMI soil sampling program, detailed mapping and drill core investigation, including ASD analysis for potential ore vectoring.

Total expenditure for EL28/2001 by Barrick (Henty) Ltd for the 08/09 reporting date was \$123,625. An anticipated \$90,000 is expected to be spent during the next year in advancing targets generated in the previous reporting period.

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## **1. INTRODUCTION**

This report details work completed by Barrick (Henty) Limited over the past year as part of a submission for a one year extension to the 'Lake Newton' EL28/2001 (also known as 'Tyndall Creek').

EL28/2001 is due for relinquishment on 10 May 2009.

The 'Application for Extension of Term', together with an environmental impact statement is provided in Appendix 1.

The license area consists of crown land and land vested in the HEC, both land uses coming under the mines act. The far western edge of the tenement is part of the Mt Dundas Regional Reserve (World Heritage Recommended Area for Protection). The far eastern extent, east of the HEC high-tension power lines is the Tyndall Regional Reserve. Any disturbances in these areas require notification and approval from the Mineral Exploration Working Group (MEWG). Further conditions of exploration are outlined in the Exploration Code of Practice (produced by Mineral Resources of Tasmania (MRT)).

The land vested in the HEC includes Lake Newton and associated pump station, the Henty canal, the high-tension power lines and service tracks.

### **1.1. Tenure**

EL28/2001 was acquired in 2002 by Placer Dome Asia Pacific (formerly AurionGold Exploration and previously Goldfields Exploration) after a successful tender for ETA 552.

Barrick (Henty) Limited acquired the EL in January 2006, following the global takeover of Placer Dome by Barrick Gold Ltd.

### **1.2. Location and Access**

Lake Newton (EL28/2001) lies midway between Queenstown and Tullah on Tasmania's west coast. The EL's northern boundary abuts the Henty Gold Mine leases (Figure 1).

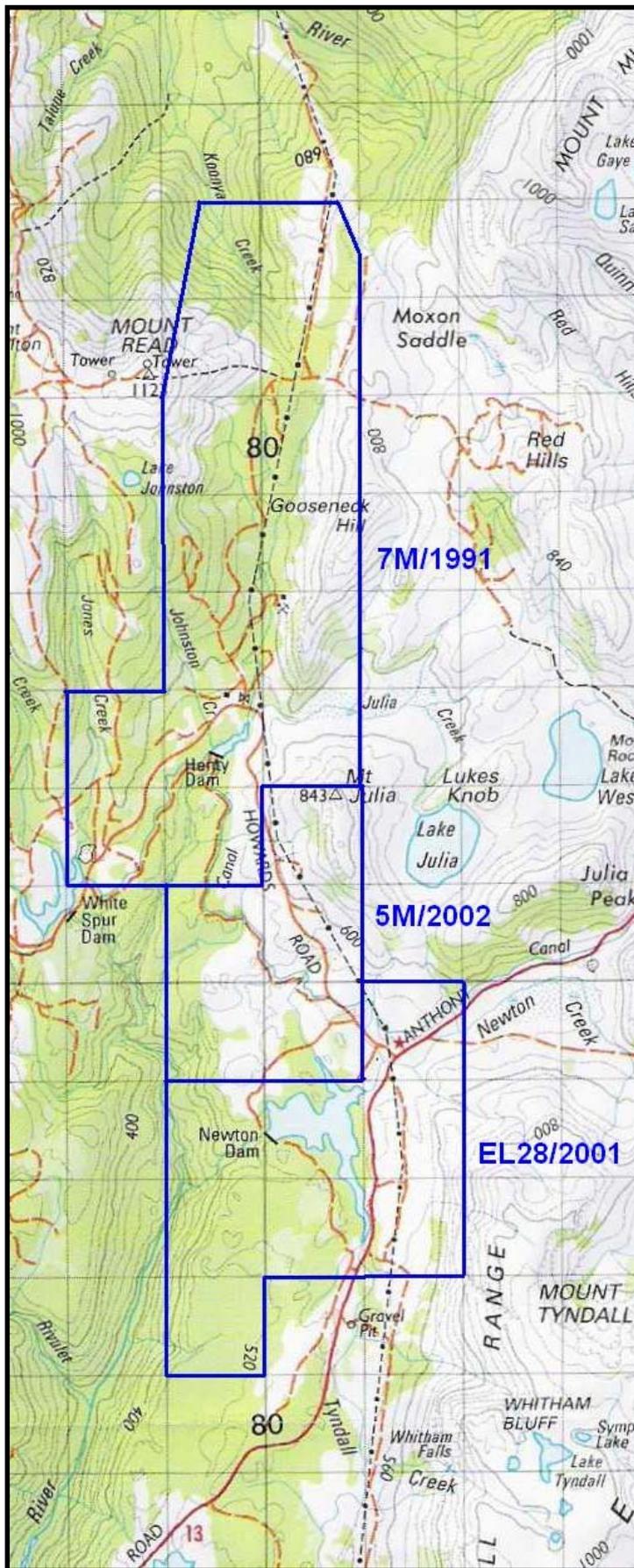


Figure 1. Location Map, showing EL28/2001 south of the Henty Mine leases

### 1.3. Regional Geology

Basement rocks of western Tasmania comprise sediments multiply deformed during the Late Proterozoic Penguin Orogeny (700±50 Ma) (Berry, 1994). A rift phase followed, characterised by continental shelf sedimentation and tholeiitic volcanism (Crawford and Berry, 1992).

The first phase of the Cambrian Delamerian Orogeny (510-490 Ma) is characterised by extensional tectonism which resulted in the rapid deposition of sediments and calc-alkaline volcanics (Mount Read Volcanics), particularly along the eastern margin of the newly formed Dundas Trough (Berry, 1994).

The Mount Read Volcanics (MRV) interfinger with the Dundas Group to the west and are bound by Precambrian rocks of the Tyennan Region to the east.

On the south-eastern side of the Henty Fault, the MRV package can be divided into four main lithostratigraphic groups (Corbett, 1992). These are: the Western Volcano-Sedimentary Sequence (WVSS), the Central Volcanic Complex (CVC), the Eastern Quartz Phyrlic Sequence (EQPS) and the Tyndall Group (TG).

The WVSS comprises rocks of the Dundas Group and the Yolande River Sequence (Corbett, 1992) which interfinger with the lava rich zones of the CVC and the EQPS sequence. The WVSS was deposited in a marine setting and consists of tuffaceous mass flow deposits, volcano-sedimentary siltstones/mudstones, volcanoclastic turbidites and black graphitic shales (Corbett & Lees, 1987).

The CVC is the central belt of the MRV and interfingers with both the WVSS and EQPS. CVC lithologies are predominantly feldspar-porphyrific rhyolitic to andesitic volcanics and pumiceous volcanoclastics, with lesser intercalated minor sediments and mafic units (Corbett 1992). A useful geochemical subdivision is proposed by Crawford et al (1992) where the CVC is split into two distinct geochemical suites (Suite 1 and Suite 2, see Section 2.5: Local Geology).

The EQPS occurs along the eastern margin of the MRV belt and interfingers with the CVC to the west. The package comprises rhyo-dacitic lava-dominated volcanics with common quartz-feldspar phyrlic intrusives (Corbett, 1992).

The TG comprises a lower association consisting mainly of crystal-rich sandstones and polymictic breccias with minor rhyolitic and andesitic lavas, overlain by the volcanogenic conglomerate and sandstone units of the upper TG.

The last phase of the Cambrian Delamerian Orogeny (~490 Ma) caused the earlier faults to be reactivated as reverse faults and formed open north trending folds along with the uplift and erosion of the Tyennan Block which formed the Owen Group conglomerates (Berry, 1994). The Owen Group appears to conformably overly the TG in the Henty area (Corbett, 1992).

Deposition of the Owen Group ceased in the mid Devonian with the onset of the Tabberabberan Orogeny resulting in tightening of the north trending Cambrian Folds in the Dundas Trough with formation of a NNW striking cleavage (Berry, 1994).

See Figure 2 (Appendix 4) for map showing the distribution of the Mt Read Volcanics.

## 1.4. Local Geology

### *Stratigraphy*

The stratigraphy of the South Henty lease has been well documented by previous workers through detailed lithogeochemistry and mapping. The stratigraphic interpretation remains largely unchanged following work completed by Barrick with the exception of separating the Howards Basalt unit into an upper and lower unit. A slightly amended stratigraphic column is suggested for the South Henty area and has been summarised in Figure 3.

In the Lake Newton area the volcanic package comprises a section of Central Volcanic Complex (CVC) conformably overlain by lower Tyndall Group stratigraphy. The CVC is broadly divided into a lower association (Suite 1) and an upper package (Suite 2), based on geochemical divisions (Crawford et al, 1992). The lower CVC (Suite 1) comprises a package of interlayered feldspar-phyric rhyolitic to dacitic lavas, volcanoclastic breccias, conglomerates and crystal rich sandstones (Williams, 2000).

The overlying upper CVC (Suite 2) is commonly referred to as the Anthony Road Andesites after the andesite members that dominate the package, but is also known as the Anthony Road Volcanics (ARV). Upper CVC units within the tenement area are dominated by a quartz-feldspar porphyry facies interpreted to be a sill in the South Henty area (Street, 1999) and a comagmatic package of interlayered plagioclase+hornblende-phyric andesite units with lesser interlayered sandstone, mudstone and carbonate units (Williams, 2000).

Conformably overlying the CVC package are crystal-rich sandstones, polymictic breccia units and lesser quartz-feldspar felsic lavas of the Lower Tyndall Group. The felsic lavas of the Tyndall Group are characteristically Suite 1 (Williams, 2000).

### *Structure*

Two major structures constrain the Cambrian lithologies in the Lake Newton area, the South Henty Fault to the west and the Great Lyell Fault to the east. The South Henty Fault is a steeply west dipping (60-90°) major regional structure which forms the western boundary of the Yolande River Sequence, CVC and Tyndall Group rocks. The Great Lyell Fault forms the eastern margin of Cambrian lithologies and is a large west dipping fault with several hundred metres of displacement (Corbett & Lees, 1987).

Bedding is generally steeply dipping to the east and occasionally appears overturned, dipping steeply to the west. A tight, shallow, north plunging syncline is located near the Great Lyell Fault in the southeast of the lease and may be a southern extension of the Mt Julia syncline (Callaghan, 1999). A major regional S<sub>2</sub> foliation is noted by Callaghan (2003) which steeply dips towards the southwest and overprints most rocks in the Lake Newton area.

Callaghan (2003) also notes evidence for extensive ductile deformation in the Howards Anomaly area. In this area the Howards basalt horizon has a strongly developed foliation and down dip stretching lineation in chloritised basaltic breccias grading into brittle faulting and kinking of the earlier foliation. The fault represents the extended limb and hinge of a series of NNW trending asymmetric folds located in the SE corner of the EL which extend southwards. These structures mark the change from dominantly east-facing, steeply dipping bedding, strongly influenced by the Henty Fault in the west to flatter lying strata to the east. The bedding to the east is disrupted by N to NNW trending open to tight folds and associated faulted limbs with wavelengths of approximately 200m in the east (Callaghan, 2003).

Henty Area Stratigraphy					
	Group	Formation	Unit	Lithologies	
Late Cambrian-Ordovician	Owen Group		Owen Conglomerate (OC)	Siliciclastic conglomerate and sandstone	
			Newton Creek Sandstone (NCF)	Turbiditic micaceous siltstone, quartzwacke and conglomerate	
Cambrian	Tyndall Group (Suite 1)	Zig Zag Hill Formation (ZZH)		Rhyolitic volcanoclastic sediments	
				Bedded sandstone-siltstone units	
		Comstock Formation		Syn-eruptive quartz-feldspar crystal rich sandstone. Massive quartz-phyric rhyolitic lavas, breccias and intrusions (Mt Julia Rhyolite)	
			Mt Julia Member (MJM)	Quartz + feldspar-phyric lava and intrusives	
			Upper Howards Basalt Breccia (UHBB)	Fine grained basaltic andesite dykes, lavas and lithic breccias (Howards Basalt). Commonly haematitic and carbonate alteration	
			Lynchford Member (LYM)	Syn-eruptive feldspar crystal rich volcanoclastic sandstone.	
		Massive carbonate and marly sediments			
		Dacitic volcanoclastic sediments			
	Central Volcanic Complex (Suite II)	Anthony Road Volcanics		Suite II Porphyry	Quartz-feldspar-hornblende porphyry. Intrusive sill. Peperitic top and bottom contacts
				Anthony Road Andesite (CVC)	Feldspar-hornblende phyric andesite and breccia, extrusive and intrusive
				Lower Howards Basalt Breccia (LHBB)	
	Central Volcanic Complex (Suite I)	Newton Creek Dacites			Dacitic volcanoclastic pumice breccias
					Dacitic, feldspar-phyric to aphyric lavas, breccias and intrusions. Peperitic contacts
					Dacitic to andesitic volcanoclastic sediments/vitric tuff, minor shale, sandstone
				Spillway Breccia	Coarse polymict and dacitic massflows with some sulphide clasts
			Spillway Basalt Breccia	Massive to stratified clast-supported monomictic basalt breccia 'fire fountain'	
Yolande River Sequence			Footwall Pumice Breccia	Rhyolitic-dacitic massflows, commonly graded	
				Bedded vitric siltstones and sandstones	

Figure 3: Summary stratigraphic section of the Henty Region

## 1.5. Alteration and Mineralisation

The ongoing exploration review has identified three broad target areas with the potential to host significant Henty-style gold and VHMS mineralisation within the Lake Newton area:

- The Lake Newton Prospect (Cu-Au). Encompasses the areas Howards Anomaly (Ba-Ag) - Tyndall Creek (Zn-Pb-Ba)
- The spillway horizon (VHMS-polymetallic massive sulphide)
- UTEM anomaly associated with a zone of dilation thought to have formed with a transfer fault in the area. Within the CVC and lying close to the Yolande River Sequence contact

### 1.5.1. Lake Newton Prospect

Previous workers have defined the prospect as a well zoned, epigenetic, low grade (0.2-0.4 g/t Au), disseminated copper-gold system with an extensive low grade (<1% Pb + Zn) base metal halo. The entire alteration zone extends over a strike length of at least two kilometres, varies between 30 to over 400 metres in width and is open to the south and at depth. The alteration system is well zoned moving inwards from a distal carbonate-chlorite halo → carbonate-sericite-(chlorite-sphalerite-galena) → sericite-pyrite-carbonate-(gold-galena-sphalerite) and a proximal zone of sericite-silica-pyrite-(chalcopyrite±gold) (Callaghan, 2003). Typical results from the inner zone include:

SHD16	615.0-736.0m	121m @ 0.2 g/t Au
	770.8-791.8m	21m @ 0.4 g/t Au
SHD22	346.0-392.0m	46m @ 0.2 g/t Au
SHD22	482.0-508.0m	26m @ 0.3 g/t Au

The alteration is dominantly hosted in the polymict dacitic massflows of the Spillway Horizon and overlying the massive dacitic pumice breccias of the Newton Creek Dacites, but also overprints the Spillway Basalt and extends down into the underlying Yolande River Sequence (Callaghan, 2003).

The top of the alteration system also crosscuts units of the lower Tyndall Group, particularly the Howards Basalt and Lynchford Member volcanoclastics, and varies in composition along strike from south to north. The Tyndall Creek occurrence, to the south of the lease, is hosted within Lynchford Member units. It is interpreted to represent an exhalative expression of the Lake Newton alteration system and consists of small discontinuous lenses of barite-basemetal-sulphide alteration with weakly anomalous gold, confirmed in limited shallow drilling (to 3.8g/t in TC3). In the north of the lease, the lower Tyndall Group alteration varies between weak, disseminated pyrite-sericite (e.g. SHD21) and occasional elevated silver assays from haematite altered volcanoclastics (e.g. Howards Anomaly, drillholes HA4 and HA6). The presence of barite and jasper veining at both prospects suggests a near seafloor position within the Lower Tyndall Group during the mineralising event (Callaghan, 2003).

The relative timing of the alteration system can be partly constrained by overprinting relationships of the alteration across the boundary of Suite 2 porphyry units. This overprinting relationship implies a syn- to post-porphyry timing of the hydrothermal event (Callaghan, 2003). As Suite 2 porphyries show consistent peperitic intrusive contacts with the overlying Lynchford Member units, the porphyry, and therefore the alteration, post dates at least some units of the Lynchford Member (possibly even the exhalative sulphide lenses within the Lynchford Member).

### 1.5.2. The Spillway Horizon (Polymetallic Massive Sulphide)

The spillway horizon is a volcanoclastic massflow breccia unit (Ccvag) containing a number of high-grade, polymetallic sulphide clasts, outcropping in the Lake Newton Dam spillway. The source of the massive sulphide clasts is yet to be identified. The sulphide clasts are well-rounded cobbles and boulders consisting of massive sphalerite-galena-pyrite and chalcopyrite with an average grade of 27% Pb, 31.7% Zn, 700 g/t Ag and 0.92 g/t Au (Herrmann and MacDonald, 1996).

A detailed interpretation of the spillway breccia and sulphide clasts by Allen (1993) suggested that the clasts had not been transported far from their source environment. The sulphides are most likely to have formed in the same source area as the dominantly dacitic hyaloclastite rich mass flow. The proximal sulphide source is likely to have existed within 5km of the outcropping clasts (Allen, 1993). The Spillway Basalt forms a distinct and laterally continuous marker horizon at the base of the massflow breccias (Allen, 1993).

### 1.5.3. Wendy's Folly

The Wendy's Folly prospect is interpreted as lying within the Central Volcanic Complex (CVC) close to its contact with the underlying sediments of the Yolande Group. The CVC is dominated by massive rhyodacite mass debris flows with minor siltstone, vitric siltstone and andesite intrusives. To the east, and stratigraphically above Wendy's Folly is the Spillway breccia, and a hornblende and andesitic intrusive. This intrusive appears to be a sill similar to the Anthony Road andesite in the overlying stratigraphy and related to the Spillway basalt breccia in the same way as the Anthony Road andesite relates to the Howards Road basalt. These latter two are associated with the mineralisation at Henty. The Spillway intrusive and the Wendy's Folly Prospect occur at the juncture of north-east and north-west trending structures (Aliano, 2007).

## 1.6. Previous Exploration

The Lake Newton area has been semi-continuously explored mainly for VHMS-style mineralisation over the last forty years. Good summaries of previous exploration are available in Lewis (1995b), Quayle (1995), Fitzgerald (1987), and Donaldson (1993) and in Appendix 2.

In the 1950's and '60's, Pickands Mather discovered Howards Anomaly gossan using EM, mapping, and soil and rockchip geochemistry.

Between 1966 and 1987 Goldfields Exploration (formerly Mt Lyell Mining and Railway Company Ltd) explored the region covering the current lease area ('Tyndall' EL9/66). Their work culminated in identifying coincident soil and IP anomalies, which defined barite-haematite veins and silver mineralisation associated with Howards Anomaly. Work also highlighted a distinct 'sulphide zone' associated with the occurrence; follow-up drill testing intersected strong sericite+silica+pyrite+carbonate alteration (inc. HA8 232m @ 0.2% Zn and 15m @ 0.1g/t Au). Little follow-up work was conducted in this area and Goldfields were required to relinquish the ground in 1985.

The existing EL (EL9/66) split in half in 1985 and subsequently Arimco/EZ was granted the western area ('Yolande River' EL11/85) while CRAE was granted the eastern area ('Lake Margaret' EL5/85). The southern halves of these leases correspond with the western and eastern halves of the current Lake Newton lease.

Exploration commenced on the two separate leases in the late 1980s. CRAE conducted a-horizon soil sampling (400m spacing) and a UTEM survey before signing a joint venture agreement with Aberfoyle in 1989. During the following year Pasminco took control over the JV with Arimco and carried out systematic c-horizon soil sampling, mapping, helimagnetic and UTEM surveys with limited follow-up drill testing.

During the early 1990's exploration was re-invigorated by Pasmenco's discovery of several large clasts of high grade polymetallic massive sulphide in a coarse volcanoclastic breccia at the Newton Dam spillway. This led to systematic coverage by c-horizon ('wacker') geochemical sampling, fixed loop TEM and high resolution helimagnetic surveys (Pasmenco/Arimco). In the last years up to 1995, Pasmenco completed 16 diamond drillholes totalling 4,413m, mainly testing strike extensions of the "Spillway" unit. The source for the massive sulphide clasts was not discovered.

Aberfoyle also escalated their exploration in the early 1990's, following their discovery of the Tyndall Creek sulphide-barite occurrence. Work included drilling five short holes around the Tyndall Creek occurrence (inc. 2.1m @ 5%Pb and 7% Zn from TC5, 3.8g/t Au from TC3) and four deep holes targeting conceptual targets near the inferred intersection of the Lower Tyndall Group and the Great Lyell Fault.

In 1996 Resolute Samantha Limited acquired both licences discussed above and formed the South Henty EL (EL8/96) the southern half of which covered the current lease area.

Resolute conducted infill c-horizon sampling (wacker), rockchip sampling, an IP survey with follow-up diamond drilling and downhole EM. Their main target was the Lake Newton Prospect magnetic anomaly. A total of 14 drillholes (4984m) were drilled centred on and below the Henty Comstock horizon. No significant mineralisation was encountered at this stratigraphic level; however a significant zone of alteration was intersected in underlying CVC Group lithologies, believed to be an extension of the zone identified underlying Howards Anomaly (Goldfields, 1980s inc. HA7, HA8). Resolute also completed four drillholes intersecting the spillway horizon (SHD2, SHD12, SHD8 and SHD9). A significant alteration zone was intersected in SHD2 (inc. 0.5m @ 0.13% Cu, 11.7% Pb, 18.2% Zn, 3.42 g/t Au, 220 g/t Ag) and SHD8 (3m @ 0.8 g/t Au) hosted within pumice breccias of the Upper Newton Creek Dacites. No source for the 'Spillway' unit mineralised clasts was identified.

In 1998, a JV between Resolute and Goldfields Exploration was formed. Goldfields managed the project and completed rockchip sampling, diamond drilling and downhole EM surveys. Exploration work defined a large zoned hydrothermal alteration system at Lake Newton, including a proximal inner core of silica+sericite+pyrite±chalcopyrite, into sericite+carbonate+pyrite, out to a distal facies of sericite+carbonate±sphalerite±galena alteration (Callaghan, 1999).

In 2000, Resolute elected to withdraw from the JV, transferring all of its interest to Goldfields. The following year Goldfields applied for an extension of term for the northern half of EL8/96 whilst the southern area (current EL28/2001) was relinquished (ETA552). Placer Dome (ex-Goldfields) regained the ground in 2002 through a successful tender for ETA552 and the area became the current E28/2001 'Lake Newton' lease.

In the period 2002 to 2003, two deep diamond holes were completed targeting a DHEM anomaly and the southern extension of the Lake Newton alteration system. Exploration defined several zones of massive pyrite with associated silica-sericite-pyrite alteration returning low levels of gold and base metals (Callaghan, 2003).

During 2005-2006 Placer Dome completed one diamond drillhole on EL28/2001 (DDH Z16520) targeting a conceptual target at the intersection of the "Henty-Comstock Horizon" with the Great Lyell Fault. Drilling failed to confirm any significant mineralisation, intersecting the target horizon further away from the Great Lyell Fault than planned (Pollard, 2006). Further work on this lease was put on hold until further examination of existing geochemical and geophysical data had taken place.

In 2007, Barrick (Henty) Limited embarked on an intensive exploration program, employing several new staff to re-evaluate exploration targets on the main mining leases and EL28/2001. During the course of this program diamond drilling was conducted at Tyndall Creek. This drilling program was designed to test for 'Henty style' silica-sericite alteration in the footwall to the exhalite horizon. The hole is targeting a barite-base metal + Au exhalite

occurrence outcropping in Tyndall Creek with previous rock chips (from float in Tyndall Creek) returning up to 12g/t Au.

The first diamond drillhole in this program was Z16732. This hole was abandoned after encountering extensively faulted ground. The collar was moved to avoid the faulted ground, repositioned to the western side of the target. Diamond drillhole Z16739 was completed in September 2007 to a depth of 330.3m. The hole was targeting is a barite-base metal-jasper + Au exhalite occurrence outcropping in Tyndall Creek with previous rock chips returning up to 12g/t Au.

Hole Id	Northing	Easting	mRL	Azimuth	Dip	Depth	mFrom	mTo	Grade
Z16739	48812.6	22850	2525	050	-50		NO	SIGNIFICANT	ASSAY

*Coordinates in Henty Mine Grid*

Au assays were insignificant, with the majority below detection limit. Ag was sporadically anomalous, with results including 1.9m @ 28.7g/t, returned from a faulted section. It appears likely that the hole has traced the contact of the Anthony Road Andesite and Lower Tyndall Group sediments. The hole intersected thick units of Lower Tyndall Group magnetic crystal rich tuff interbedded with minor cherty units to 160m. A polymict carbonate lithic breccia with trace jasper and sulfides was encountered at 160m which is likely to represent the target horizon

## 1.7. SWIR Analysis of Drill Core

Short wave infrared (SWIR) spectroscopy is an effective method of mapping variations in alteration mineralogy. When a rock sample is illuminated with Infra red light from a spectrometer, certain wavelengths of light are absorbed by the minerals in the sample. The resultant spectral signature or 'spectra' of the reflected light contains absorption features which result from the sub-molecular vibration of certain bonds within the minerals. The dominant absorption features are related to the molecules OH, Water, AlOH, FeOH, MgOH, CO<sub>3</sub> and NH<sub>4</sub>. Groups of minerals containing these bonds which can be measured and identified using SWIR include the phyllosilicates group, clays, chlorite, carbonates, sulphates and hydrous silicates (Pontual, 2007).

There are three main types of information that can be collected from spectra which provide information on identification and composition of minerals in a sample (Howard, 2006):

The **Wavelength** of the minima within a particular absorption feature often provides information on the solid solution composition

The **Depth** of an absorption feature provides the calculation of a relative abundance of a mineral species

**Ratios** of the depth of one particular absorption feature to another can provide relative proportion of mineral species in a mixed sample.

The most useful information collected from spectral studies at Henty is the wavelength of the white mica AlOH absorption feature (AlOH $\lambda$ ). This ranges from 2180nm to 2228nm and varies with solid solution composition of the mica. The pH of the fluid from which the white mica crystallises is a major influencing factor in mica composition. Phengite will be favoured in near neutral to alkaline fluids, while muscovite or paragonite will be favoured in more acid conditions. The AlOH $\lambda$  can be used to map the strength and pH of the hydrothermal fluid and potentially facilitate ore vectoring. Numerous deposits around the world are associated with relatively acidic or high temperature mineralising fluids and show a trend to more muscovitic (or paragonitic) compositions close to ore (Howard, 2006). Further information regarding SWIR and its application can be found in Merry & Pontual (1997) and Hauff *et al.* (1999).

### 1.7.1. Henty Spectral Studies

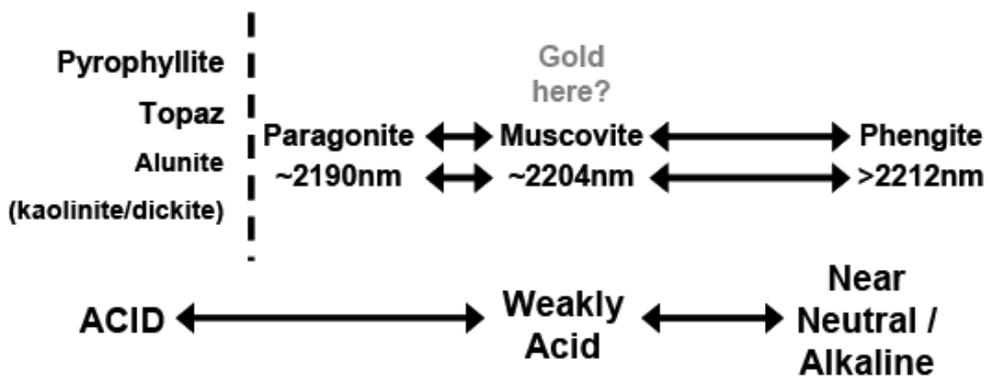
Several phases of Short Wave Infra Red (SWIR) spectroscopy have been carried out on the Henty Leases. The first significant study was carried out by Ned Howard in 2004 using a PIMA (Portable Infrared Mineral Analyser) which concentrated on the alteration facies of Darwin South.

Howard (2004) noted a dramatic decrease in the wavelength of the white mica AIOH absorption feature ( $AIOH\lambda$ ) associated with the main alteration zone. A transition of phengitic to muscovitic micas ( $>2210\text{nm}$  to  $2196\text{nm}$ ) occurs vectoring towards gold mineralisation. The lowest white mica wavelengths were also found to be associated with the thickest zones of alteration. However, no relationship was established between gold grade and  $AIOH\lambda$  within the main zone (A Zone) alteration facies (MV & MQ).

Exploration drilling following Howard's work had intersected suspected strongly acid mineralogy down dip and along strike from the Darwin South mineralisation. Selected samples were sent to the University of Tasmania for SWIR analysis which confirmed the presence of acidic minerals, particularly topaz and pyrophyllite.

Following the PIMA orientation study findings proved the clear decrease in white mica wavelength towards the centre of the A Zone. The suspected trend of increasing acidity down dip and to the south of the Darwin South ore body was confirmed, this zone containing acidic minerals including pyrophyllite, topaz and dickite.

A strong correlation between gold and intermediate acid mica composition was identified. Whilst there was no relationship between  $AIOH\lambda$  and gold grade within particular alteration facies, gold was associated with alteration which contained white mica  $wAIOH$  values of  $\sim 2200$  to  $2205\text{nm}$ . In particular, MQ with mica  $wAIOH$  of  $2203\text{nm}$  to  $2206\text{nm}$  is particularly prospective for grades  $>10$  ppm (Figure 4). The strong association between gold grade and white mica wavelength/composition indicates that the gold may have dropped out on a pH gradient (Howard 2007).



**Figure 4.** Schematic showing mica composition and variation of the wavelength of the AIOH absorption feature with acidity of the hydrothermal fluid (Howard, 2007).

Data from a more extensive SWIR study encompassing samples from all of the Henty leases exhibited good white mica zonation from weakly acid/neutral to a high acidity core. It was also observed that most holes ended within significant acid alteration. This suggests that the Lake Newton alteration has not been closed off at depth by drilling. The data shows that gold associated with the known Lake Newton alteration may be related to a slightly more acid composition, however a degree of remobilization is suspected in the Lake Newton system which could explain the variable Au-/ $AIOH\lambda$  relationship.

The main outcomes of the study include:

- The white mica wavelength composition of drill holes analysed from the Lake Newton alteration system showed a clear zoned increase in acidity towards the centre of the alteration with most holes found to have stopped within the most intense alteration.
- It could be seen that highest alteration intensity as indicated by white mica wavelength was concentrated along the underside of the Sill (Anthony Road Andesite body) and along interpreted cross cutting structures. When gold grades are displayed, the highest gold accumulations were also concentrated in areas directly below the sill and associated with EW cross cutting structures.
- The relationship between  $AlOH\lambda$  and gold identified in the Henty PIMA studies is not directly applicable to the Lake Newton Alteration System. Gold appears to occur with slightly more acid white micas than the Henty system. However remobilisation may have an effect in this variation. More data is required on the Lake Newton Alteration System.
- SWIR analysis has been useful in providing an unbiased quantitative method of mapping alteration zonation. In most cases, a well developed zonation existed from Int. chlorite – Fe chlorite – phengite – muscovite – illite – paragonite with paragonite being the most acid white mica.

## 1.8. Geological Modelling

### Intrusives

There are at least two different intrusive phases evident in the area, an andesitic hornblende bearing phase and a more acid quartz-feldspar porphyry phase. These units have been amalgamated for the purpose of modelling due to the difficulty in distinguishing one phase from the other using computerized data. The hornblende porphyry is likely to be the earlier phase, with the more acid phase on its flanks (Aliano, 2007). These units occur together and have probably intruded through the same pathways as sills, consistent with interpretation by Street (1999). They form a continuous stratiform coherent igneous body ~20-350m thick, which appears to have intruded along the Lower Howards Basalt horizon. Previous studies have recorded a range of compositions from basalt to dacite and given the collective term 'Anthony Road Andesites'.

### Basaltic Units

There are three distinct basaltic units identified in the stratigraphy. These are laterally continuous through the area and proved to be significant stratigraphic marker units. They consist of the Spillway Basalt Breccia (SBB) and Howards Basalt Breccia (HBB). The descriptions and stratigraphic relationships remain unchanged from Herrmann and MacDonald (1996) with the exception of the HBB. This has been divided into an upper (UHBB) and lower (LHBB) unit as a result of the recent interpretation by Aliano (2007) (Figure 3).

The Spillway Basalt Breccia (SBB) is a chloritic mafic unit consisting of closely packed dark green lensoidal poorly sorted basaltic clasts. The unit has been texturally interpreted to be formed from a subaqueous fire fountain basalt deposit (Allen, 1993). The SBB lies within the Central Volcanic Complex and forms a basal marker unit to the Spillway Horizon, a volcanoclastic massflow breccia unit containing a number of high-grade, polymetallic sulphide clasts. It can be traced from south of the Lake Newton area and the Newton Dam Spillway, northwards to just south of the Henty Mine. The SBB has been the focus of much exploration activity due to the association with the Spillway Horizon massive sulphide clasts and empirical proximity of VHMS deposits and other such fire fountain basalt breccias around the world.

The Howards Basalt Breccia (HBB) unit is described in detail in Herrmann and MacDonald (1996). It is a thin, variably green, purplish and haematitic unit which has been previously

described as 'Howards Anomaly alteration', Howards Tuff and haematitic chloritic sediments. The HBB occurs within the Tyndall Group and has been separated into an upper and lower unit. The Basal unit is interpreted to mark the top of the 'Henty-Comstock Horizon' (Herrmann and MacDonald, 1996).

The Lower Howards Basalt Breccia lies between the Central Volcanic Complex and the Tyndall Group. This horizon has to a large extent been displaced in the south by the largest of the sills which appears to have intruded along this favourable horizon (Aliano, 2007). The intrusion of the sill at depth has resulted in the replacement of some of the uppermost Western edge of the LHBB. The LHBB also appears to continue down-dip, eastwards from bottom the sill. Carbonates and breccia within the sill have been interpreted to be entrained remnants of the LHBB (Aliano, 2007). The sill, replacing this unit, overlies the Lake Newton mineralized zone.

The uppermost basalt breccia zone lies within the Lynchford Member of the Tyndall Group. It has been labelled the Upper Howards Basalt Breccia. Although it is laterally traceable to the north, it is most prominent within the southern half of the area where it is associated with the known mineralisation at Tyndall Creek. Further north it does not appear to be associated with mineralisation. No basaltic units have been recognized within the Henty mine stratigraphy and appear to taper out just south of the mine (Aliano, 2007).

## **Structure**

Structures were identified using aeromagnetic interpretation, new and existing field mapping and drillhole information. The Henty Fault is a major fault structure which cuts obliquely across the Mount Read Volcanic belt (Corbett and Solomon, 1989). The Henty Fault splays into three main branches in the vicinity of the Henty mine at GDA 5363500mN. The main three branches are the Great Lyell Fault, North Henty and South Henty Faults which dominate the South Henty/ Lake Newton Area.

### **Great Lyell Fault**

The Great Lyell Fault trends NNW and is steeply dipping at surface and occurs within the lowermost member of the Owen Conglomerate found in outcrop at the foot of the Tyndall Ranges. Aeromagnetic interpretation suggests that the Great Lyell Fault splays into two faults towards the north before intersecting the Henty Fault in the vicinity of the Henty Mine (5363500mN, 380200mE GDA). The Great Lyell Fault is cross cut by later NNE structures which are believed to have had very little offset and represent disruptions in magnetically continuous units in the aeromagnetic image.

The dip of the Great Lyell fault is believed to shallow significantly with depth and has been intersected in holes NC3 & NC2, where Tyndall Group sediments are juxtaposed on top of Owen Conglomerate at a significant fault. Projection from the surface trace of the Great Lyell Fault through to this structure shows a distinct flattening of the fault at depth in a listric fashion. Although the listric nature of the faults fits the model of an extensional basin, it is not essential to the remainder of the sectional model that has been constructed (Aliano, 2007).

### **Influence of the Great Lyell Fault at the Henty Mine**

The Great Lyell Fault splays before and intersects the alteration zone at the Henty Mine. Reinterpretation of the area suggests that the western splay of the Great Lyell Fault may be intersected within the Henty mine workings and previously identified as the Moa Fault. The Moa fault is a significant shallow lying fault(s) and has a WNW to NW strike and a gentle SW dip which separates the Mount Julia and Darwin ore bodies. The Moa Fault intersects and offsets the Henty Fault as suggested from drilling information. At this point the stratigraphic package can be seen in the mine to rotate around the Moa Fault from a strike of 013° north of this point to 158°, south of this point. The same kink in stratigraphy can be observed at

surface and in the aeromagnetic images. The Moa is thought to have had a controlling influence in mineralisation where the alteration package thickens against the fault.

A projection of the Moa Fault to surface also appears to coincide with the interpreted Great Lyell Splay visible on the aeromagnetic image. In addition to the South Henty modelling, the Moa Fault was projected to surface and to the South. It was found that the Moa Fault exhibited a similar flattening at depth to the Great Lyell Fault. As a result of this modelling, it is believed the Moa Fault is likely to be the down dip continuation of the Eastern Great Lyell Fault Splay.

### **Northeast Trending Faults**

Aeromagnetic interpretation suggested a series of northeast striking faults which are interpreted to be near vertical and largely bounded by the Great Lyell and South Henty Faults. There did not appear to be a great deal of movement on these structures, although there is some evidence for rotation. The presence of the structures proved to be an elegant solution to the apparent differences in width of the different geological units from section to section. Examination of the Lake Newton Alteration Zone area has prompted the suspicion that these northeast striking faults might post date mineralisation.

### **South Henty Alteration and Mineralisation**

Through geological modelling, it was observed that the intrusive sill in most parts forms a bounding cap to the Lake Newton alteration. The higher gold grades appear to be confined to underneath the sill and associated with later E-W cross cutting structures along which gold may have been remobilised. Supporting evidence can also be seen in the spectral data.

The existing Lake Newton drill holes were re-examined to ascertain the relationships of the gold in the system to geology and alteration. This examination determined that there was not a high degree of spatial correlation between alteration intensity and mineralisation, possibly due to remobilisation. The copper and lead distributions within the drill holes of the area were also examined, in order to get a better feel for the nature of the mineralisation and their relationships with each other, gold and the alteration. Zinc was not contoured as it was thought that lead and zinc varied together, so that one would be sufficient to establish relationships.

### **Conclusions**

There is now a better overall understanding of the geology of the South Henty area. Similarities and differences to the Henty system can be evaluated and applied to exploration in South Henty. Difficulties remain in understanding the details of the geology of South Henty, in some areas because of a lack of data, and due to the need for simplification of, and lack of continuity between, drillhole logs.

The following conclusions were drawn from re modelling and SWIR work:

- Within the general region of the Lake Newton Alteration Zone the widespread gold anomalism may be remobilised along vertical structures defined by magnetic lineaments. Associated base metals also appear to be remobilised along these structures.
- The alteration itself is the best vector for exploration and drilling, as elemental abundances may have been remobilised.

- The alteration zone is open at depth and to the south east and south west. SWIR results of existing drill core indicate that the heart of the alteration zone may not have been intersected to date.
- The alteration zone widens from north to south from about 150m to 350m width.
- Aliano (2007) suggests that the mineralisation in the Lake Newton area does not bear as strong a similarity to porphyry copper gold style as previously thought. Although there is a copper gold association, previous conclusions of a zoned Pb-Zn could reflect the mobility of the different elements post remobilisation rather than a primary effect.
- Aliano (2007) concludes that the Lake Newton Alteration System shows potential to host Henty Style or structurally controlled gold deposits.
- The alteration zone is of significant size in the context of a Henty style ore body.

## 1.9. Exploration Model

Mineralisation at Henty appears to share a number of features in common with both magmatic hydrothermal systems and exhalative volcanogenic massive sulphide systems. Massive pyrite and sulphide lenses located at the top of 'A-zone' mineralisation at the Henty deposit have historically been used as evidence for an exhalative origin for mineralisation (Halley and Roberts, 1997). As a result, VHMS exploration has largely focussed on this stratigraphy. Recent work suggests the importance of a magmatic source of metals involved in the formation of the Henty gold mineralisation, as evidenced by alteration mineralogy, immobile element geochemistry, stable isotopes of carbon and oxygen, sulphur isotopes, metal zonation and ore mineralogy (Callaghan, 1998, Huston and Kamprad, 2001) and more recently through PIMA investigation (Howard, 2004).

This conflicting evidence can perhaps be explained by considering a separation in timing between phases of basinal vs. magmatic dominated fluid types during evolution of a single hydrothermal system. However, some evidence currently exists for an initial period of dominantly basinal fluid circulation responsible for the convincingly syngenetic exhalative systems documented throughout the Henty area (Henty lenses, Howards Anomaly, Tyndall Creek). Following this initial event a relatively late period of dominantly magmatic fluids is invoked and is supported by overprinting relationships observed within the Lake Newton alteration system. This model assumes that the Lake Newton system and Henty systems are genetically linked, which appears likely. The magmatic fluid phase then utilised the existing synvolcanic structural architecture that led to the prior localisation of the exhalative base metal occurrences in the area.

An important depositional control on mineralisation is suspected from the trend in increasing gold grades towards the north of the Henty deposit. This trend is interpreted as the result of the increased influence of circulating bicarbonate/H<sub>2</sub>S-rich seawater controlling deposition of metals (Callaghan, 2001) and constrains the later event to a submarine environment. The Henty mineralisation is therefore interpreted as an approximately syngenetic, polyphase hydrothermal system with evidence for a slightly later, magmatic fluid dominated phase responsible for much of the gold mineralisation. Subsequent deformation during the Late Cambrian Delamerian Orogeny and the Devonian Tabberabberan Orogeny has resulted in folding and faulting of the Henty sequence, developing strong fabrics in the alteration minerals, and remobilising some metals within late veins.

Evidence for magmatic hydrothermal systems in the district include an interpreted syngenetic, high-sulphidation system at the Basin Lake Prospect, located 7km south of Henty. At Basin Lake, pyrite, tennantite, chalcopyrite and galena mineralisation is observed hosted within an

intensely silicified core inside advanced argillic and sericitic alteration zones (Williams, 2000). The system is closely associated with the Suite 2 quartz-feldspar porphyry (upper CVC Group), which Williams (2000) interprets to be comagmatic with the upper CVC andesites (Anthony Road Andesites). Evidence for an overlying and associated exhalative system is provided by a zone of barite.

A possible genetic connection between the Basin Lake and Henty systems is supported through carbonate isotope systematics and similar rock associations in the Lake Newton alteration system. The Basin Lake high-sulphidation system may represent a deeper, more acidic version of the Henty gold rich system.

## **2. WORK COMPLETED DURING THE REPORTING PERIOD, MAY 10, 2008 to MAY 10, 2009**

During the reporting period, May 10, 2008 to May 10, 2009, Barrick (Henty) Limited (formerly Placer Dome Australia Ltd-Henty Mine), suffered the loss of several key staff members, including the chief geologist and three exploration geologists who worked on the exploration campaign of 2007. This led to the temporary cessation of exploration on EL28/2001. Following the employment of a senior exploration geologist in September and reshuffling of remaining staff, another historical work review was conducted to enable a target re-ranking exercise on the exploration lease. This led to a re-prioritisation for exploration, with the decision to focus efforts on a new area in the exploration lease rather than revisiting old targets. Consequently an MMI soil sampling program over the Wendy's Folly target in the west of the exploration lease was conducted in addition to mapping and rock chip sampling.

### **2.1. Target Review**

Following the data review of 2008, it was decided to re-evaluate the targets generated with the assistance of the Barrick Regional Exploration Superintendent. A new exploration pipeline was constructed and targets re-ranked according to exploration potential. This re-ranking exercise saw several targets moved up the pipeline while others were downgraded due to disappointing results from the previous exploration campaign. The three targets of priority for the 2008/09 exploration program were Henty North, Henty Updip and Wendy's Folly. Wendy's Folly was the only target on EL28/2001 with an active work program designed.

### **2.2. Wendy's Folly MMI Soil Sampling Program**

The Wendy's Folly prospect area lies close to the western edge of EL28/2001 and centred on GDA 379 360mE, 5358 440mN. Exploration in the Wendy's Folly area began in 1985 with low key gridding, stream sediment and rock chip sampling. In 1985, further rock chip sampling and soil geochemistry programs were conducted, in addition to a VLF ground magnetic survey over the Henty Fault Zone. During the 1991-1992 season, a UTEM survey was carried out and revealed an anomalous zone over Wendy's Folly. The prospect was first identified as a theoretical target, based on an aeromagnetic lineament, Landsat and mapped fault analysis by F.C. Murphy for Pasminco in 1993. Murphy (1993) identified the White Spur Fault as a significant transfer fault in the area, and concluded that where it crossed the South Henty Fault would be a zone of dilation.

Wacker sampling by Pasminco indicated that the UTEM anomaly was coincident with carbonate sericite altered felsic volcanics with minor disseminated and stockwork pyrite. Anomalous Pb, Zn and Mn have been noted in fluvioglacial sediments in the area overlying the anomaly on line 58600N (AGD84). Values were 490ppm Pb, 203ppm Zn and 1.34% Mn in manganiferous wad. 200m to the south of the UTEM anomaly on lines 58100N and 58200N 79300E (AGD84) rock chips were assayed of sandstone with disseminated pyrite-galena-sphalerite containing up to 0.29% Pb, 0.25% Zn and 3g/t Ag. Cu and Au were not anomalous.

In 1994, a short, 2 line MMI program was undertaken by Pasminco on lines 5360000 and 5359400, 600m north of the Wendy's Folly starting grid line. This second line on 59400 (and closest to the Wendy's Folly grid) shows increased response ratios (particularly for Cu and Pb), which is indicative of buried sulphides (Quayle, 1995). That same year, for unknown reasons, application for EL renewal was rejected and further exploratory recommendations for the area never followed up.

The Wendy's Folly prospect is interpreted as lying within the Central Volcanic Complex (CVC), close to its contact with the underlying sediments of the Yolande Group. The CVC is dominated by massive rhyodacite mass debris flows with minor siltstone, vitric siltstone and andesite intrusives. Aliano (2007b) suggested that the intrusive may have a particular affiliation with the SBB horizon similar to the Anthony Road Andesites and LHBB association, which occur higher in the stratigraphy.

To the east, and stratigraphically above Wendy's Folly is the Spillway breccia, and a hornblende and andesitic intrusive. This intrusive appears to be a sill similar to the Anthony Road andesite in the overlying stratigraphy and related to the Spillway basalt breccia in the same way as the Anthony Road andesite relates to the Howards Road basalt. These latter two are associated with the mineralisation at Henty. The Spillway intrusive and the Wendy's Folly Prospect occur at the juncture of north-east and north-west trending structures.

Geophysical interpretation from aeromagnetic maps has Wendy's Folly lying within a magnetic low, with the Pasminco UTEM survey highlighting the strongest anomaly on line 58400 at 79270E (AGD 84) at a suggested depth of 60m (Fig 2). According to the UTEM survey from report 92\_3376, anomalism appears evident on the line to the south and to the next two lines to the north, giving the anomaly a strike length of around 600m.

Work completed by Barrick geologists began with reconnaissance in the Wendy's Folly area to assess the viability of gridlines from the UTEM survey carried out in 1992. The previously established grid lines were relatively open and clear. Each line was to be re-surveyed and flagged to facilitate the sampling program. An additional three infill lines were established between the existing lines to decrease the grid spacing in the program to 100m. Two base line access tracks were also flagged to facilitate an easy access traverse mid grid during sampling. The MMI sampling program carried out at Wendy's Folly consisted of samples taken every 20m over a total line length of 3km with 162 samples collected (including repeats). Weather was a mitigating factor in the collection of samples since 24 hours of clear weather is required after rain before sampling may resume. In addition to the MMI sampling program, mapping of the area was conducted and some rock chip samples taken. The samples collected on this occasion returned results with no mineralisation.

Encouraging results were obtained from the Wendy's Folly MMI survey showing an elevated MMI response for gold and associated base metal elements in direct correlation with the earlier UTEM anomaly interpreted by Pasminco in the 1990's.

### **2.3 Spillway**

The northern end of the spillway occurrence appears to have been well tested by Pasminco. However, the southern end is poorly tested and from an initial solid geology-magnetic interpretation there appears to be stratigraphic magnetic trends which constrain the southernmost position of the spillway horizon into an area which remains largely untested (Figure 5). This area is also partly coincident with a trend of IP chargeability (Anomaly P4) and an interpreted CSAMT conductor (Zone 4) (Asten, 2000).

The southern area will be followed-up through a solid geology interpretation, wacker sampling and a possible follow-up drill testing.

### **2.4 Tyndall Creek**

Applying a Henty model, the Tyndall Creek occurrence suggests proximity to a hydrothermal vent and therefore the potential for a gold rich Henty-style system immediately beneath an exhalative system.

The Tyndall Creek barite + basemetal mineralisation consists of small discontinuous lenses of barite-basemetal-sulphide alteration with anomalous gold. Subsequent shallow drilling by Aberfoyle returned an intersection of 3.8g/t Au but was never followed-up (TC3).

Further encouragement is gained through interpretation of available geophysical datasets, which suggest the Lake Newton alteration system extends southward into the vicinity of the Tyndall Creek area. In particular the CSAMT survey identified a pyritic alteration zone, the southern kilometre of which underlies the barite-basemetal mineralisation of Tyndall Creek (Callaghan, 2003). Dipole-dipole chargeable IP features also define the southern continuation of the alteration system (Figure 6). Re-opening the previous Tyndall Creek grid and conducting a sampling exercise is recommended, as is detailed ground truth mapping of the area.

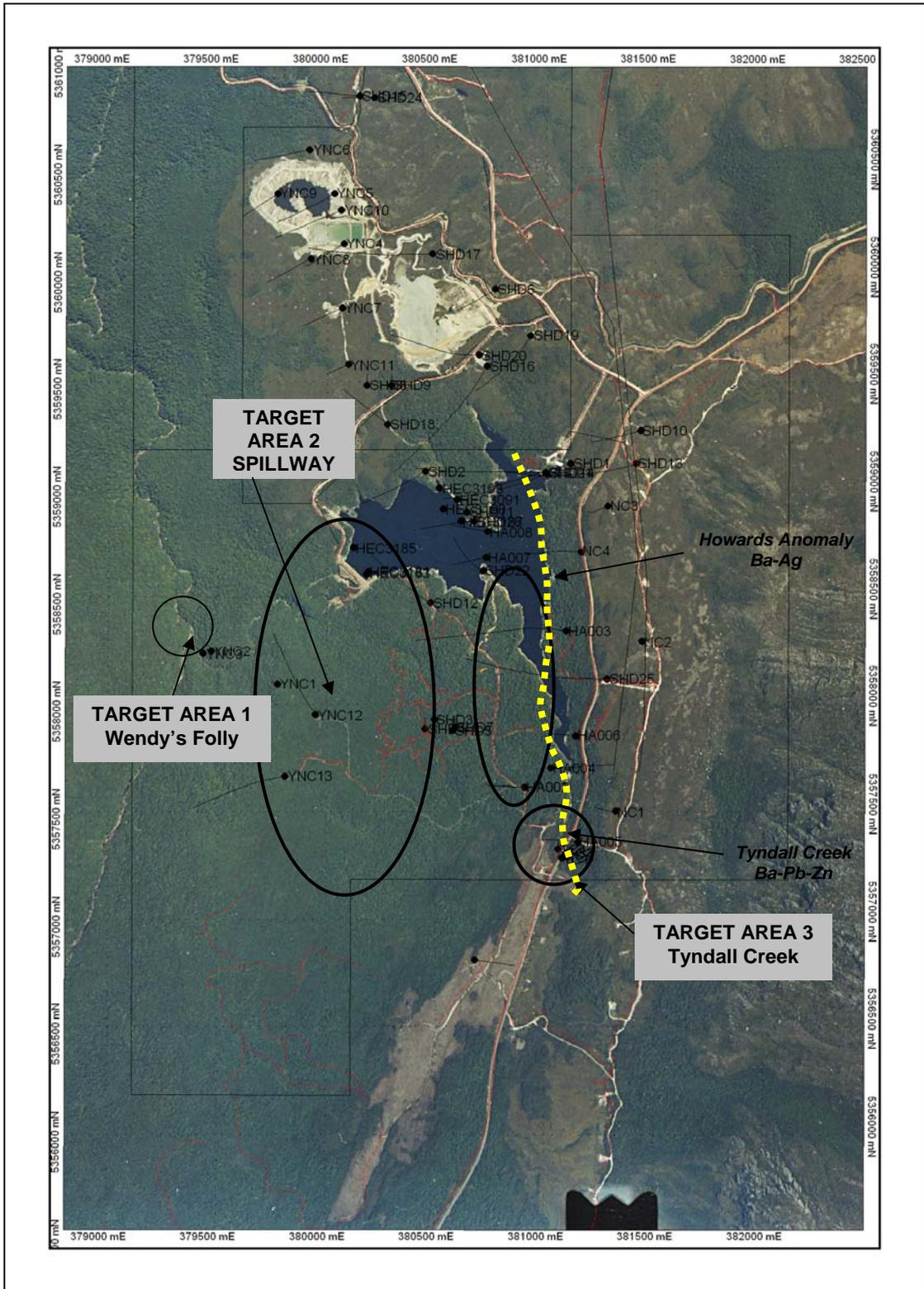


Figure 5: Lake Newton Prospect. Access Map showing aerial photography, existing drilling coverage, mineral occurrences, approximate position of the Lynchford Member exhalative horizon.

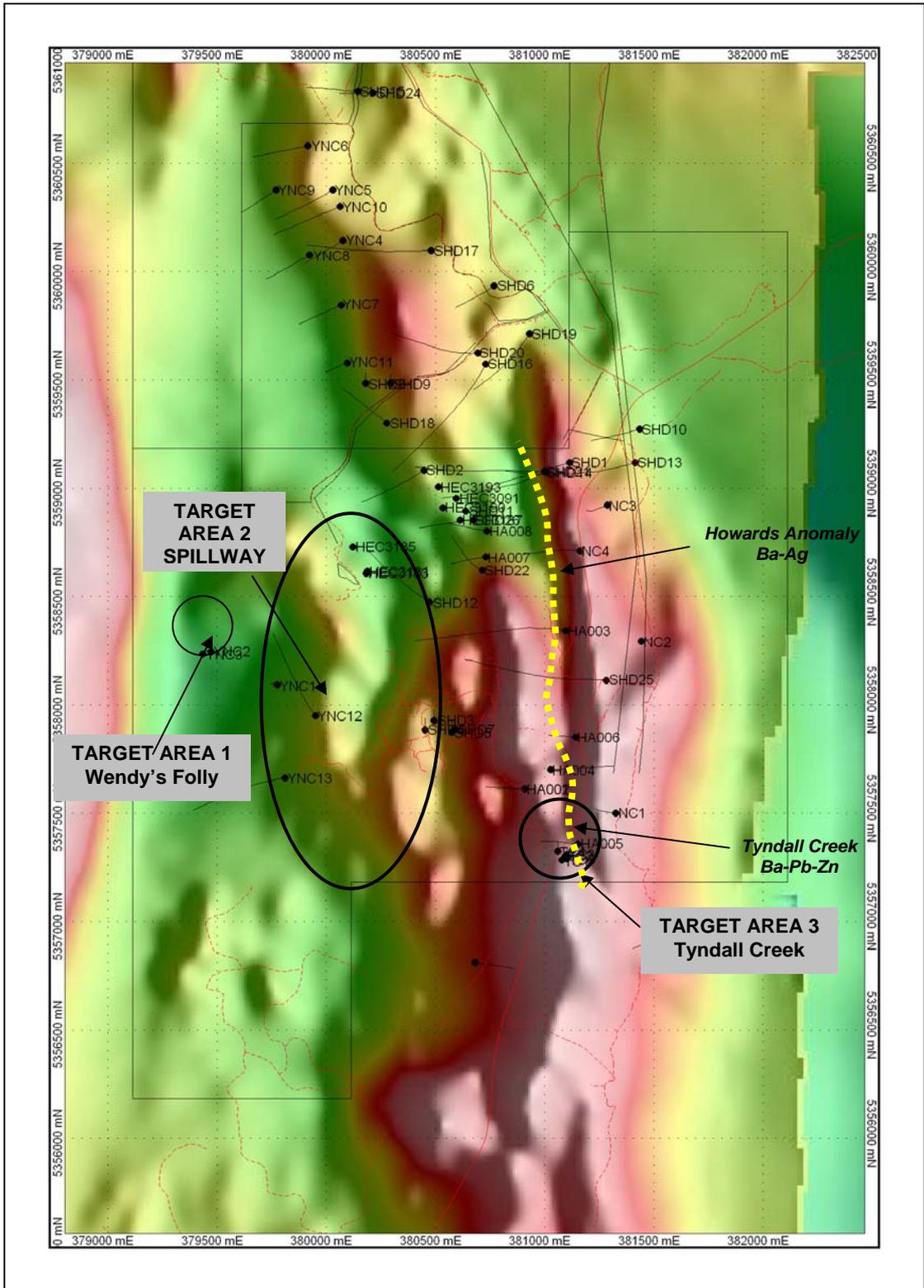


Figure 6: Lake Newton Prospect. Dipole-Dipole IP chargeability image showing existing drilling coverage, mineral occurrences, approximate position of the Lynchford Member exhalative horizon.

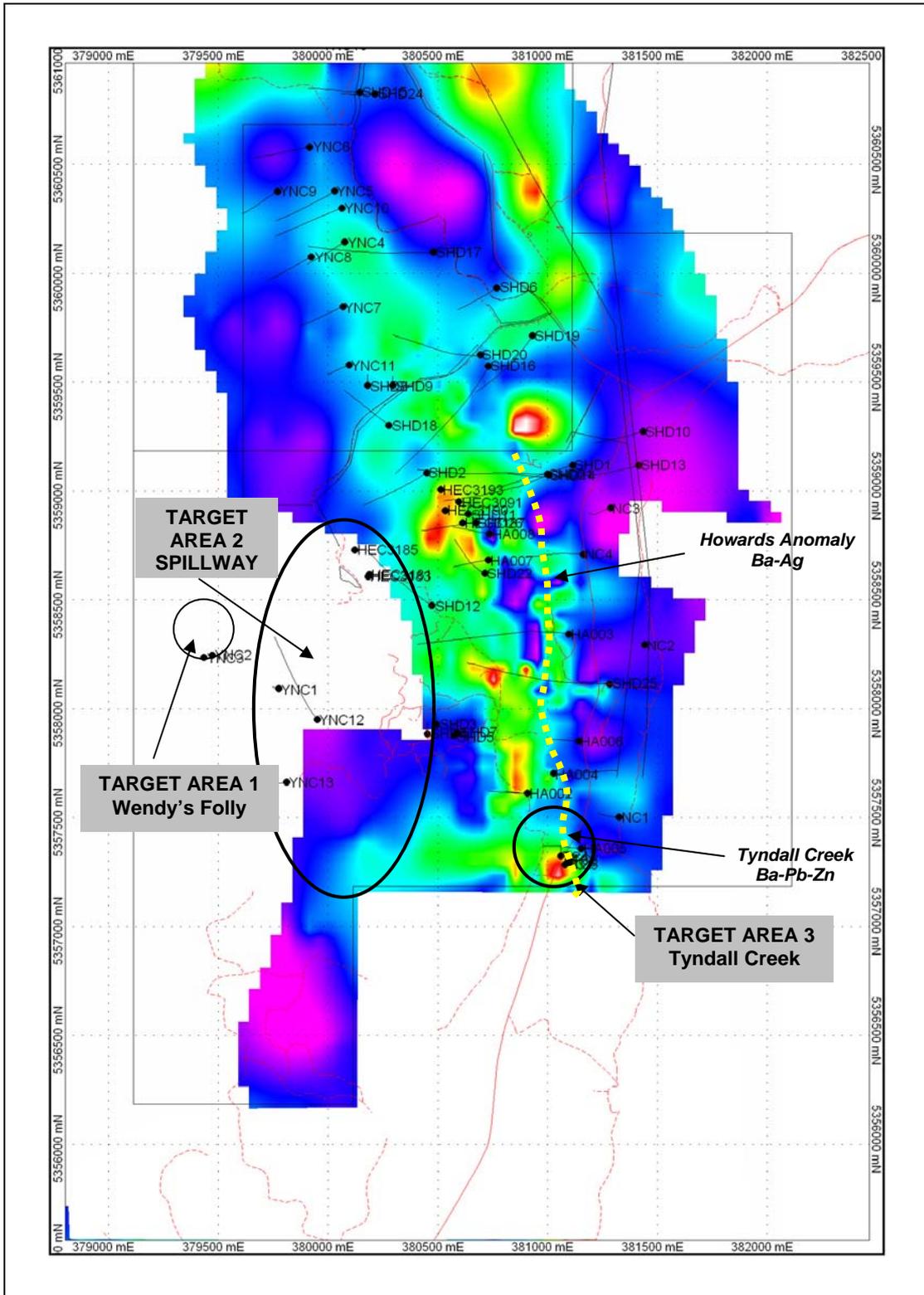
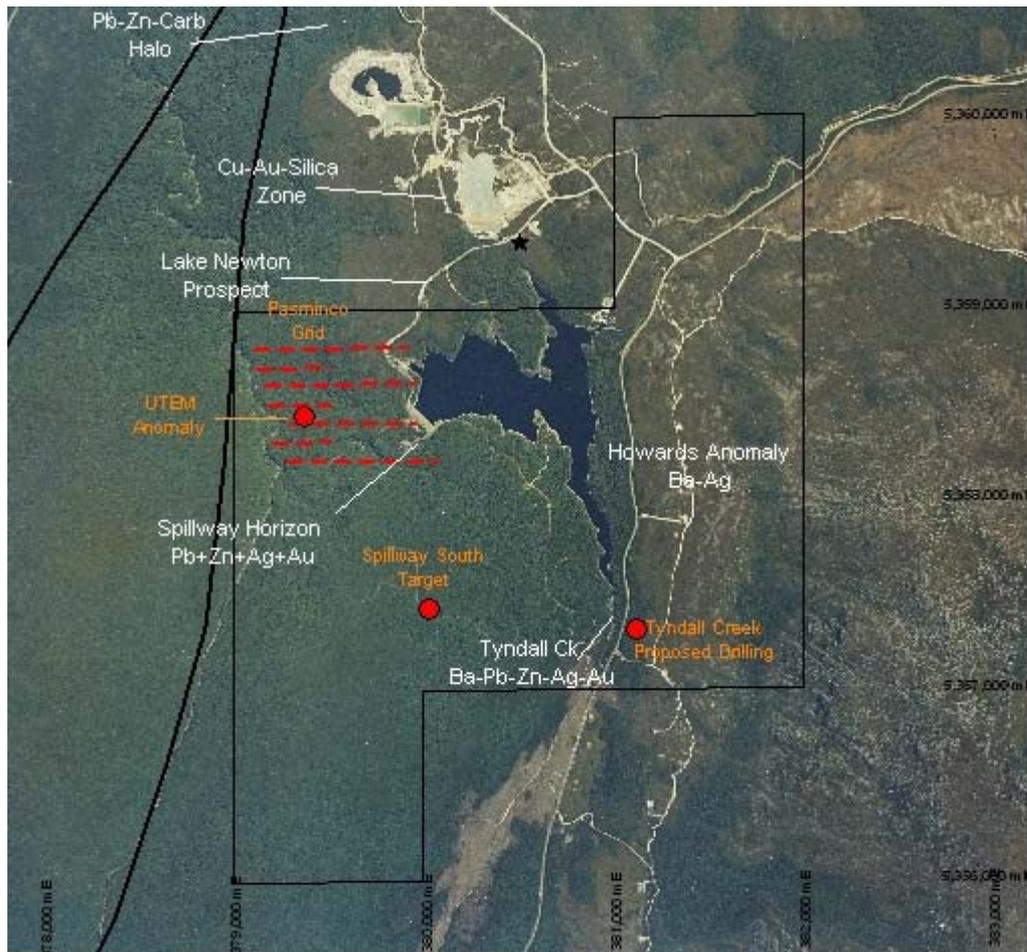


Figure 7: Lake Newton Prospect. Dipole-Dipole IP chargeability image showing existing drilling coverage, mineral occurrences, approximate position of the Lynchford Member exhalative horizon.



**Figure 8 – EL28/2001 Lake Newton aerial photo showing exploration targets 2008/09 and 2009/10 (orange) and regional mineralisation (white).**

## 4.0. Conclusion

During the reporting period, May 10, 2008 to May 10, 2009, Barrick (Henty) Limited (formerly Placer Dome Australia Ltd-Henty Mine) reviewed large volumes of previously unseen data held at MRT. An extensive target re-evaluation campaign was conducted and targets re-ranked. A soil sampling program was carried out at Wendy's Folly and following receipt of results, a decision will be made for additional work program(s) in the area. Attempts to re-drill the previously abandoned Tyndall Creek drill site and the re-opening and clearing of the old Tyndall grid for a sampling program to be conducted is also being considered.

Therefore, Barrick request a twelve month Extension of Term of the Tyndall Creek/Lake Newton lease (EL28/2001. The focus of the term extension is to progress the targets specifically mentioned in this report).

## 5.0. Expenditure 08/09 Reporting Period

Total Expenditure for the 08/09 Reporting Period was \$113,725.

	Quarter 2 1 Apr to 30 Jun	Quarter 3 1 Jul to 30 Sep	Quarter 4 1 Oct to 31 Dec	Quarter 1 1 Jan to 31 Mar
Salaries (including recon, line marking, surveying, flagging, sampling, mapping, rock chipping)	\$ -	\$ -	\$ 109,004.00	
Oncosts	\$ -	\$ -	\$ -	
Consultants	\$ -	\$ -	\$ -	
Capital	\$ -	\$ -	\$ 602.00	
Drill Access Roads	\$ -	\$ -	\$ -	
Administration	\$ -	\$ -	\$ 587.00	
Core Assays	\$ -	\$ -	\$ -	
Core Preparation	\$ -	\$ -	\$ -	
Contract Labour	\$ -	\$ -	\$ 3,060.00	
Training	\$ -	\$ -	\$ 134.00	
Rental			\$ 338.00	
Assay Costs				\$ 9,910.00
Sub Totals	\$ -	\$ -	\$ 113,725.00	\$ 9,910.00

Annual Total	\$123,625.00
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Table 1: EL28/2001 'Lake Newton' Exploration Expenditure 2008-2009

## 6.0. Forecast Expenditure 09/10 Reporting Period

Following the success of the MMI soil geochemical work program on EL28/2001 over the Wendy's Folly target at the start of the 2009 summer season, a broader MMI soil geochemical program is proposed to cover the Tyndall Creek target area for the 2009/2010 work season. Other work programs planned for the year include data compilation and analysis, field reconnaissance, geological mapping and rock chip sampling. With the successful conclusion of the Wendy's Folly program, the data will be extensively reviewed and a follow up work program designed for the area later in the year. The proposed expenditure for the 2009/2010 field season on EL28/2001 is \$94,400, the breakdown of which is outlined in Table 2.

<b>EL28/2001 Exploration Budget 2009/2010</b>		
<b>Activity</b>	<b>Unit</b>	<b>Total</b>
<b>Target definition</b>		
Mapping	est	9,000
Rock chip sampling (50)	\$54	2,700
MMI sampling program (to include: grid Line re-opening)	est	58,000
Soil Sampling + freight (400)	\$58	24,700
	<b>Total</b>	<b>94,400</b>

Table 2: EL28/2001 'Lake Newton' Exploration Budget Forecast 2009/2010

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# Appendix 1

- Application for Extension of Term of Exploration Licence
- Environmental Impact Statement

## Appendix 2

- Summary of Historical Activity

# Appendix 3

- EL28/2001 Solid Geology Interpretation

# Appendix 4

- Figure 2

# Appendix 5

- Henty Area Stratigraphy

# Appendix 6

- Geo-story Interpretation of the Henty Area