

# GBS GOLD AUSTRALIA PTY LTD

ANNUAL EXPLORATION REPORT BROCKS CREEK GROUP YEAR ENDING 26 JUNE 2008 MLN1139, MLN176 MCN4689-4697, MCN4701-4703 MCN4863-4871, MCN4895-4899

> Pine Creek 1:250,000 SD5208 Batchelor 1:50,000 5172

## **Distribution:**

- DPIFM Darwin NT
- GBS Gold Australia P/L Perth
- Burnside Operations P/L Brocks Creek NT
- Union Reef Mine Site Pine Creek NT

Report No: PC/BJV/08-23

Zia U. Bajwah September 2008

## **SUMMARY**

The Brocks Creek Project is located in the central part of the Pine Creek Orogen and is one of the main gold producing areas in the Northern Territory. It comprises a group of mining tenements centered about 140 km south east of Darwin, NT. Brocks Creek has historically been the focus of open pit, underground and alluvial gold mining area and has produced significant quantities of gold along the Brocks Creek-Zapopan (BKZ) structure. GBS Gold Australia Pty Ltd acquired the project area on 1<sup>st</sup> April 2006.

The project area comprises a sequence of Palaeoproterozoic meta-sedimentary rocks of the South Alligator Group and Finniss River Group, intruded by the Burnside Granite. This rock sequence has been tightly folded on axes that trend north westerly, and have been subjected to greenschist facies metamorphism. Thermal effects from the late-orogenic Burnside Granite that lies to the north of the group has imparted hornfelsing and porphyroblastic spotting of garnet, biotite and andalusite/cordierite depending on lithology and proximity to the contact.

During the reporting year, 21 diamond holes for a total of 2758 meters were drilled to generate new resource model for mining. All holes were drilled through an underground drill access drive, from where they formed a fan shape pattern. This drilling program was undertaken at the 870 level about 225 metres below surface with the objective of testing for depth extensions of main lode, in particular, deeper levels in the central lode. A total of 656 samples were retrieved and assayed for Au. Drilling from underground within the Brocks Creek underground mine has indicated depth extensions to both the main and central lodes of the ore body. In particular, the central lode of the ore body is increasing at depth in strike length, average grade and true width.

Drilling program undertaken during 2007-08 indicates that significant resource of gold mineralisation is present at depth. With further drilling this resource can be defined and add value to mine economics. In the next reporting year, additional diamond drilling and assaying is planned to extend resource base further at Brocks Creek.

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## 1.0 INTRODUCTION

The Brocks Creek Project comprises a group of mining tenements centered about 140 km south east of Darwin, NT. Brocks Creek has historically been the focus of alluvial and underground gold mining and the 1990's featured gold production from open pits along the Brocks Creek-Zapopan (BKZ) structure. This report describes work carried out on the Brocks Creek report group in the year ended 26 June 2008.

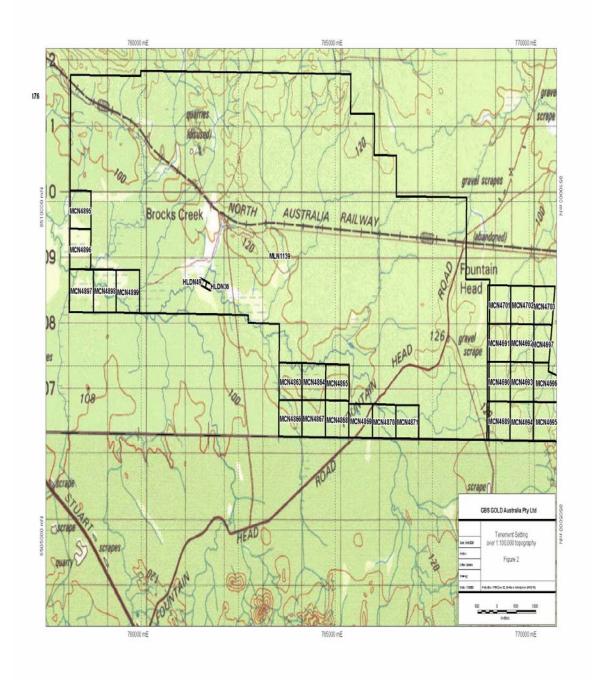
The Brocks Creek treatment plant was commissioned in April 1996 by Solomon Pacific Resources NL to accommodate ore from several open pit gold deposits. The company was subsequently acquired by Acacia Resources (later subsidiary of AngloGold Australia) that continued open pit gold production until April 2000. In November 2001 Buffalo Creek Mines P/L, a subsidiary of Hill 50 Limited purchased the Brocks Creek project from AngloGold Australia.

## 2.0 TENEMENT DETAILS

The granted tenement package was consolidated between 1987 and 1995 by Cyprus Gold Australia and Solomon Pacific-Acacia Resources Pty Ltd. The principal tenement covering the majority of known deposits at Brocks Creek is MLN1139 of 3,949 hectares and constitutes 75% of the Brocks Creek group (Figure 1). A freehold lot, No.10 at Brocks Creek townsite is also owned by the joint venture. In addition, HLDN 36 and 49 are also located within the project area.

The MLNs and MCNs (Figure 1) were granted to the Burnside Joint Venture, which comprised 50% Northern Gold (through the subsidiary Territory Goldfields) and 50% Harmony Gold through subsidiary Buffalo Creek Mines). During 2005, GBS successfully made a takeover for Northern Gold NL and has purchased Harmony's 50% interest of the Burnside project. GBS Gold Australia Pty Ltd has now 100% of the Burnside Project as of 1April 2006. Tenement details are given in Table 1. Brocks Group tenements are located within the Ban Ban Springs pastoral lease.

**Figure 1: Tenement Location Map** 



**Table 1: Tenement Details of the Brocks Creek Reporting Group** 

Ten. ID	Grant date	Date Expiry	Area ha
MLN176	4/03/1966	31/12/2016	16.18
MLN1139	27/06/1995	31/12/2019	3949.0
MCN4689	5/11/1995	3/11/2011	32.4
MCN4690	5/11/1995	31/12/2014	36.0
MCN4691	5/11/1995	31/12/2014	36.0
MCN4692	5/11/1995	31/12/2014	36.0
MCN4693	5/11/1995	31/12/2014	36.0
MCN4694	5/11/1995	31/12/2014	32.4
MCN4695	5/11/1995	31/12/2014	32.4
MCN4696	5/11/1995	31/12/2014	32.77
MCN4697	5/11/1995	31/12/2014	25.0
MCN4701	5/11/1995	31/12/2014	36.0
MCN4702	5/11/1995	31/12/2014	36.0
MCN4703	5/11/1995	31/12/2014	29.8
MCN4896	27/04/1995	31/12/2014	33.43
MCN4897	27/04/1995	31/12/2014	39.29
MCN4898	27/04/1995	31/12/2014	39.0
MCN4871	13/02/1995	31/12/2010	31.0
MCN4863	13/02/1995	31/12/2010	33.71
MCN4864	13/02/1995	31/12/2010	33.71
MCN4865	13/02/1995	31/12/2010	33.71
MCN4866	13/02/1995	31/12/2010	33.71
MCN4867	13/02/1995	31/12/2010	33.71
MCN4868	13/02/1995	31/12/2010	33.71
MCN4869	13/02/1995	31/12/2010	31.0
MCN4870	13/02/1995	31/12/2010	31.0
MCN4895	6/10/1995	31/12/2014	33.43
MCN4899	6/10/1995	31/12/2014	39.0
HLDN36	23/04/1981		1.98
HLDN49	18/02/1982		1.98

Total 4849.32

## 3.0 LOCATION AND ACCESS

The tenement group is centered some 140 km south east of Darwin, NT. Access is presently gained by road 160 km south from Darwin along the Stuart Highway, thence north-easterly along the Fountain Head road for 12 km. A graded dirt road passes westward on the north side the Darwin railway, connecting the bitumen Fountain Head road to the mill and office complex. A network of dry season tracks services the tenements internally. The terrain within the project area is undulating with low ridges and flats vegetated with tall and mixed grassy open savannah acacia and eucalypt woodland. Towards the north the terrain is more elevated. Southwards the gradient flattens to the Howley Creek alluvial plain. The climate is hot with periodic monsoonal rains between November and May. For the remainder of the year it is warm to hot and largely dry.

## 4.0 ABORIGINAL AREA PROTECTION AUTHORITY

Certificates have been issued to allow exploration and extractive activity on the tenements. There are no registered aboriginal sites of significance within the project.

## 5.0 GEOLOGICAL SETTING

Tenements of the Brocks Creek projects are located within the Pine Creek Orogen, a tightly folded sequence of Palaeoproterozoic rocks, 10 to 14 km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga (Ahmad et al. 1993). The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with minor inter-layered tuff units. Pre-orogenic mafic sills of the Zamu Dolerite intruded the sequence prior to regional metamorphism and deformation.

During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded and pervasively altered with metamorphic grade averaging greenschist facies to phyllite. The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.85-1.78Ga (Bajwah 1994). These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created more extensive biotite and andalusite hornfels facies.

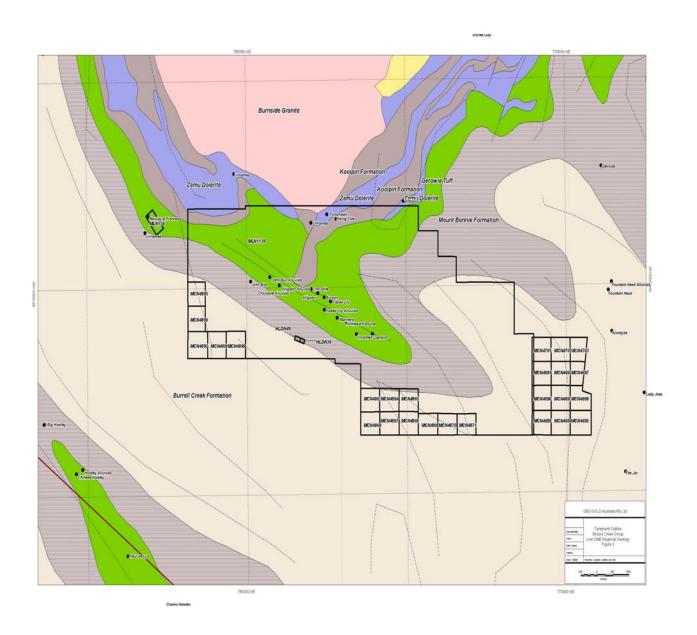
Less deformed Neo- to Meso-proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite overlie parts of the Pine Creek Orogen lithologies. Recent scree deposits occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

## 5.1 Local Geology

The project area encloses a sequence of Palaeoproterozoic meta-sedimentary rocks of the South Alligator Group and Finniss River Group, intruded by the Burnside Granite (Figure 2). This rock sequence has been tightly folded on axes that trend north westerly, and have been subjected to phyllitic - middle greenschist facies metamorphism. Thermal effects from the post orogenic Burnside Granite that lies to the north of the group has imparted hornfelsing and porphyroblastic spotting of garnet, biotite and andalusite/cordierite depending on lithology and proximity to the contact. Calc-silicate hornfels is reported from some thermally higher grade areas. The granite emplacement has also distorted and disrupted pre existing fold and fault patterns.

Rocks of the South Alligator Group comprising Koolpin Formation, Gerowie Tuff and Mt Bonnie Formation host most of the gold occurrences in the Pine Creek Orogen. The boundaries of the Formations within South Alligator Group are gradational while the lower contact of the Group is unconformable with the Mt Partridge Group. The overlying Burrell Creek Formation is generally coarser and high energy greywacke dominant units.

Figure 2: Geological Setting of the Project area



This formation is also a significant host to gold deposits in the Burnside and Pine Creek region.

Regionally, the South Alligator Group has been intruded and dilated by semi concordant pre-orogenic sills of the Zamu Dolerite. Only the Koolpin Formation appears to have been intruded within the Brocks Creek project area. A tight WNW trending, shallow south east plunging asymmetric fold structure termed the Brocks Creek-Zapopan (BKZ) anticline has been subject to axial plane failure and thrust fault movement. It hosts the bulk of gold mineralised occurrences in the project tenements. The association of gold with failed anticlinal axial zones in South Alligator Group is common in the Pine Creek Orogen (Shaw, 2005).

The **Koolpin Formation** (100m-500m) is typically thin to medium, bedded dark carbonaceous pyritic mudstone-siltstone with rare iron formation and dolomitic horizons. It represents low energy deposition in an anoxic basin and hosts the Cosmopolitan Howley and Golden Dyke Dome gold mineralisation. It rests unconformably on Mt Partridge Formation (Wildman Siltstone).

The overlying **Gerowie Tuff** (200m-500m) comprises a cyclic silt-greywacke-arenite unit with frequent alternations of thin cherty tuffite beds, and carbonaceous argillite. It represents distal sub aerial felsic volcanism feeding into a euxinic basin. The unit is present at the Faded Lily, Burgan and Alligator deposits.

The **Mt Bonnie Formation** (150m-500m) is of cyclic siltstone, mudstone and greywacke with thin pyritic chert horizons that are locally important host rocks at Zapopan. It represents slightly higher energy deposition and is a precursor to the high energy greywacke facies of the Finniss River Group into which it grades conformably.

**Burrell Creek Formation** represented by lithic greywackes and siltstone-argillite is the first Formation resting gradationally on Mt Bonnie Formation and outcrops extensively to the south of the BKZ. Regionally it is known to host gold mineralisation, but less commonly than the Koolpin, Gerowie Tuff and Mt Bonnie Formations in the Burnside region.

Late-stage biotite-lamprophyre and felsic porphyry dykes also cut the meta-sedimentary sequence.

## 6.0 SIGNIFICANT GOLD DEPOSITS IN THE PROJECT AREA

Gold was first discovered at Brocks Creek at the end of 1872 and alluvial mining, mainly carried out by Chinese indented labour, was intense until the turn of the century. Underground mining was also carried out, sometimes by the Chinese, at the Zapopan deposit up till 1915. In the period 1980 to 1995 alluvial mining was resumed by small operators.

Companies such as Cyprus carried out modern gold exploration and identified significant widths of gold mineralisation at Faded Lily and Alligator on the BKZ.

The BKZ structure has been traced by mapping and magnetic interpretation for over 8 km and hosts a group of significant gold deposits over a strike length of 2 km. These include the Faded Lily, Burgan, Alligator, Zapopan, and Homeward Bound. Outlying prospects include John Bull, Britannia and Rising Tide that are on splays or separate structures. The deposits comprise either bedding-concordant quartz-pyrite/pyrrhotite arsenopyrite bodies or steeper transgressive vein systems associated with the axial plane. The majority of the deposits have a steep to moderate southerly dip though some components lie on the northern limb of the BKZ. The axial zone where the concordant veins flatten is often higher grade and thicker. A moderate ESE plunge has been reported on the mineralisation at most of the open pits and at Zapopan. (38 degrees) There is a minor base metal association in the higher grade sectors of the deposits including arsenopyrite, chalcopyrite, sphalerite and galena. Tourmaline is also commonly present with the quartz. Haematite alteration has locally been observed in the ore zone and may have an association with lower gold grades.

## 6.1 Brocks Creek (Zapopan) Deposit

#### **Geological Features**

The Zapopan deposit is located on the BKZ 600m east south east of the Faded Lily pit. In contrast with the other deposits that occurred on low rises or ridges, and occurred within a small creek drainage system of low relief and was prone to flooding.

Historically the deposit was mined from a series of shafts put down between discovery in 1888 and 1935. During this period gold production of 26,685oz from 41,000t of ore was reported. The average head grade of this ore was 20.0g Au/t. Mining was hindered by sulphide rich ore, inexperienced management, poor scheduling of funds, flood-prone underground development and the presence of two, parallel, 2m thick "slides", that are post-mineral shear zones comprising incompetent foliated and graphitic rock slightly oblique to the axial plane.

The auriferous quartz veins which generally trend 280 degree and dip 55-60 degree west, are in tuff and siltstone of the Gerowie Tuff. In plan, the steeply (55-60 degree) south dipping 'slides' transgress the axis of the fold at a small angle and appear to have offset an axially focused set of crudely bedding-concordant quartz veins and chert hosted sulphidic mineralisation. The gold bearing lodes have been divided, into three structurally separated units; Fissure Lode on the south limb, Central Lode on the north limb and Main Lode axially positioned and bracketed by the slides. All three tend to follow the shallow ESE plunge of the fold axis.

Historically, gold was mined from these three separate reefs of which the most productive was **Fissure Lode** that was on the southern fold limb and exposed at surface. Fissure lode dips south at 55-60 degrees and is a composite quartz vein structure striking 282 degrees occupying the same stratigraphic package as Main Lode. It is thought that as mineralisation passes down dip away from the axial zone, the grade and thickness fades out. Frequent parallelism with bedding, laminated quartz and chert components and concordant pyritisation has led to previous incorrect theories of syngenetic origins for the gold, though it is stratabound and the component chert units correlate with Main Lode

and Central Lode. Multiple vein crack-seal brecciation events aligned with the axial plane are associated with the best visible gold concentrations.

Central Lode and Main Lode are similar in appearance to Fissure Lode. As a result of 2003 underground drilling and mapping of exposures, Main Lode (as well as Fissure and Central) has been broken down into bedding-concordant vein styles that may be correlated along strike by virtue of both epigenetically mineralised chert bed markers (Z5, Z15 and Z20) and concordant vein quartz (Z10, Z30). Most of the present high grade resource lies within Main Lode, bracketed between the two slides, and largely not depleted by historic mining. The thicker and higher grade ESE plunging axial closure contains the bulk of the gold in Main Lode. The down plunge extensions of Main and Central Lodes remain largely untested.

Work by Acacia Resources Ltd attributed an overall plunge to the anticlinal controlling structure of 38 degrees towards 122 degrees magnetic with the axial plane dipping steeply south at 75-85 degrees.

The more northerly of the two main "slides" is also referred to as the Axial Planar Shear but strikes slightly oblique to the axis. A reverse movement has been measured from drag folding and it is up to 2m wide. The south "slide" shows a north block west relative horizontal movement but is more diffuse over a 5m-10m width. Both are sub parallel and offset the axial plane and mineralisation.

A more detailed structural and grade analysis is now available as a consequence of the decline access to the deposit, put down in the 2002-2003 report period.

The resource report of A.Gillman, P.Harris and F.Dyer (2003), based upon underground diamond and surface drilling plus exposures in the workings, was presented in the Appendix of the 2003 annual report. Underground mapping and core logging by P. Harris and P. Kastellorizos was instrumental in the understanding of the deposit.

## Open Pit Mining at Zapopan

Open pit mining was carried out by Acacia and completed over a 12 month period ending in November 1999. A total of 121,281t @ 1.92g Au/t was milled as high grade feed. Low grade feed totalling 11,880t @ 0.8g Au/t was milled in the same period. A low

grade stockpile remained at the end of the operation totalling approximately 54,000t @ 0.8g Au/t. The open pit is thought to have been centred on the Fissure Lode, a steep south dipping shoot that had been the focus of historic stoping and comprised the fault-dislocated southern limb of the Zapopan vein system. The pit is close to 40m deep (1055m RL final flitch). The mine RL has had 1000m added to natural RL.

The portal of the new decline has been cut into the north batter of the pit at a point where exposures of pyritic Z5 or Z20 occur near the axis of the fold.

Unmineralised and oxidised Z5, Z15 and Z20 chert markers have been located in outcrop near the top of the pit ramp on the north limb of the fold. (Shaw 2004).

## Previous Resource Studies at Zapopan

Several resource estimates were made at Zapopan prior to Burnside Operations P/L management. Of these the most recent was by Mining and Resource Technology for Acacia Resources P/L in June 1999.

MRT estimated that indicated resources below the level of the old workings in Main Lode totalled **169,000t** @ **18.55g Au/t.** This applied a cut off grade of 35.0g Au/t but no mining dilution and no allowance for minimum mining width. The grade, however was cut post-compositing, which artificially elevated the average by about 4.0g Au/t.

Other lodes within the deposit (Fissure Lode and Central Lode) comprised inferred resources totalling 116,000t @ 6.32g Au/t using the same parameters.

The modelling work of Gillman, 2003, and more recently Harris, based on new underground drilling and exposures has updated the resource which stand at measured resource of 84 8000 tonnes @ 20.6 g/t with contained gold 56 100 oz.

# **6.2** Rising Tide Deposit

#### **Geological Features**

The Rising Tide Deposit Is Located 2.5km North Of Faded Lily Pit On A Ridge Near The Northern Boundary Of The Tenement Group. The mineralised structures comprise shallow, south sipping reverse fault planes within the Koolpin Formation that parallel the underlying contact with the Zamu Dolerite Sill.

The Koolpin Formation host rocks comprise argillite, carbonaceous and pyritic/pyrrhotitic shale, chert bands, calc-silicates and possible iron formation. A prominent late stage, cross-cutting quartz vein on 330 degrees cuts the deposit and passes into the burnside granite to the north.

Mineralisation is hosted by at least two thin sub parallel structures dipping at approximately 25 degrees to the south. These zones lie below and have the same orientation as a bedding-parallel quartz-pyrite rich sheared fault zone, interpreted to be the main thrust plane that transposed the Koolpin Formation sequence northward over Zamu Dolerite.

The mineralised zones display quartz-limonite veining in schistose, sericitic and tourmaline-altered argillite (carbonaceous graphitic shale), pyrite-pyrrhotite veining in fine grained amphibolite with accessory garnet and fluorite, and quartz-pyrite pyrrhotite veining in garnetiferous amphibolite. The gold is thought to be supergene enriched and associated with structures leading to the Burnside Granite that carry accessory copper, lead and zinc.

#### **Technical studies at rising tide**

Earlier resource modelling was carried out by Mining and Resource Technology late in 1998. They estimated an inferred resource of 1.94Mt @ 1.72g Au/t using an 0.7g/t cut off grade and an upper cut of 10.0g/t.

The Burnside Joint Venture also conducted interpretation and modelling on the deposit in mid 2002 (Gillman A.J.) Using a 10g/t top cut he created a block model with a global 719,390t @ 1.64g Au/t. Whittle optimisation was carried out on this by C.Skelton.

In 2003 Gillman and Dyer further refined the Rising Tide model using a geostatistical approach and created a new resource report. It was concluded that the deposit comprises an indicated and inferred resource of 826,206t @ 2.2g/t Au using a lower cut off of 0.7g/t Au. An updated global resource and interpretation was undertaken by McMurtrie and Dyer in 2004.

## **6.3** Alligator Deposit

The Alligator deposit was open pit mined by Acacia Resources in 1997-98. It comprises Gerowie Tuff host rocks that are cyclic, upward fining, thinly bedded to laminated siltstone and interbeds of tuff, chert and arenite. The sequence forms the southern limb of a stratigraphically overturned east trending tightly folded anticline. Bedding dips average 68 degrees towards 205 az. and like Zapopan, the deposit formed at the intersection of the BKZ and a NE-SW TM feature.

There are three sets of quartz veins: bedding parallel, bedding discordant and tension veins associated with a 4m thick lamprophyre dyke. The veins are qtz-pyrite +/-tourmaline and arsenopyrite.

The main lode cross cut the bedding (argillite-chert-tuff) and trended NW-SE and averaged 1.7g/t Au. In contrast both the east and west margins of the deposit consist of mineralisation sub parallel to bedding with an east west orientation within two argillite-greywacke units. These are less continuous in strike and average 1.5g/t Au.

## 6.4 Faded Lily Deposit

The Faded Lily, located east of Alligator, is also hosted by the BKZ structure within Gerowie Tuff Formation and is cut by biotite-lamprophyre dykes. Open pit mining by Acacia Resources commenced in 1996. The mineralisation comprises 50-60 degree south dipping qtz-pyrite +/-arsenopyrite, carbonate and tourmaline veining through two major units of greywacke-dominant rocks separated by argillite-dominant units and a 5m thick cherty tuffite marker unit. The productive greywacke packages were informally named as were other units in the stratigraphy. This assisted in predictive structural interpretation. It was globally an 8Mt @ 1.8g/t Au deposit before mining.

The western zone is contained within a 200m long zone dipping 50-60 degrees south and plunging 35 degrees grid east. The lode is within a closure of the sheared anticlinal axis and stratabound in the lower argillite-greywacke. To the east subsidiary lodes in the

anticlinal axis are within the upper argillite-greywacke. To the south of the axis, the hangingwall contains several lodes also within the upper argillite-greywacke, up to 100m in length. 'Breakthrough veins' related to reverse faulting of the axial zone have also been noted.

## 7.0 PREVIOUS EXPLORATION ACTIVITY

## **Historical Activity**

Gold was discovered in the Brocks Creek field in 1872 and by 1874 there was a rush of 400 Chinese miners along the line of reef between John Bull and Brocks Creek conducting alluvial and reef extraction. By 1895 there were several established reef mining operations and a population of 311. The Zapopan mine was being established in 1897 with the importation of heavy machinery from the UK. It was severely over capitalised, poorly managed and changed hands frequently with few successes and many failures. Most of the historic production of 40,674t for 26,685oz recovered was made before 1915.

Since 1975, when alluvial gold mining again became profitable in the Burnside region, there have been in excess of 100 different tenements within the area covered by this report. In view of this, a summary of the main activity carried out will be given.

#### **Recent Activity**

CRA Exploration P/L, Geopeko, Zapopan Consolidated P/L, Pacific Goldmines NL, CSR Ltd, and Cyprus Australia were among the first modern explorers to evaluate the primary gold sources that gave rise to the alluvials in the vicinity of Brocks Creek. Cyprus identified significant vein hosted resources at Faded Lily and Alligator. Their work included detailed drilling, geological mapping, geophysical traverses (IP), and soil sampling.

In **1992** Solomon Pacific acquired a 25% interest in a group of Cyprus tenements and purchased the balance in 1994. SolPac undertook a feasibility study of the Faded Lily and Alligator deposits.

In the year to June 26<sup>th</sup> 1996 Acacia-SolPac undertook gridding, hole surveying, IP surveys, gradient IP at Rising Tide, 1823.25m of HQ3 diamond core drilling, 14,737.5m of RC drilling, 130m of RAB drilling, 2657m of vacuum and auger geochemical drilling, geological mapping at John Bull and Alligator, plus feasibility studies at Faded Lily and Alligator.

The Brocks Creek treatment plant with capacity of 1Mt per annum was constructed and commissioned in April 1996 using Faded Lily ore.

**In the year to June 26<sup>th</sup> 1997** Acacia completed 48line/km of gradient IP, ground magnetic survey at Faded Lily pit, 151 RC holes for 12,779m, diamond core drilling 888m in 11 holes, 1262m of vacuum and 2099m of post hole RAB.

In the year to June 26<sup>th</sup> 1998 Acacia drilled extensively, comprising 27,342m of RC drilling, and 2184m of diamond core drilling at Rising Tide, Zapopan and Burgan, 4075m of vacuum drilling completed geochemical coverage, 38 rock chip and niche samples, 3096m of costeans at Howley Creek and Homeward Bound, Pit and surface geological mapping at Faded Lily, Alligator and Howley Creek, plus aeromagnetic, radiometric and gravity surveys.

In the year to June 26<sup>th</sup> 1999 Acacia drilled 40m of vacuum samples at John Bull, 4 costeans at Howley Creek for 1,004m, two costeans at John Bull for 446m, resource drilling at Britannia, Zapopan, John Bull/Crocodile, Alligator, and Burgan comprised 44 holes for 3,809m, 5 diamond core holes were drilled at Zapopan for 396m and 484m of precollars. A feasibility study was carried out at Rising Tide and 1592m of grade control drilling completed. Resource modelling was done by MRT.

In the year to June 26<sup>th</sup> 2000 work was limited to mining the remaining open pit resources at Zapopan and Burgan. Mining ceased in April 2000 after a total treatment of 4,834,287t @ 1.67g Au/t and 485,209t of low grade ore @ 0.71g Au/t. Fine ounces recovered totalled 254,741.

In the year to June 26<sup>th</sup> 2001 no field work was carried out apart from care and maintenance of the mill and surface infrastructure.

The Brocks Creek assets were acquired by Buffalo Creek Mines P/L (Hill 50 Gold NL) in November 2001 and in April 2002 the Burnside Joint Venture with Territory Goldfields NL (Northern Gold NL) was finalised.

**During most of the period ending 26<sup>th</sup> June 2002** the project was under the management of the Burnside Joint Venture through Burnside Operations P/L

The Joint Venture has the objective of bringing the Zapopan and surrounding gold resources in the district into production using the then owned Brocks Creek mill. Exploration in this period comprised preliminary computer modelling of the Rising Tide deposit and preparatory planning for the Zapopan mine.

Most expenditure was committed to refurbishing the Cosmo camp and Brocks Creek office and workshop infrastructure. Environmental monitoring of the Brocks Creek open pits and wetland areas was continued through the wet season.

Substantial exploration in the form of RC drilling was committed to the Yam Creek and North Point projects as well as the Mottram's and Chinese South targets north of Cosmo Howley. This work falls outside the scope of this report and has been reported separately in its appropriate tenement group.

In the period ended 26<sup>th</sup> June 2003 a diamond drilling program was commissioned at Zapopan Mine. A total of 37 holes were drilled from the new underground development for an advance of 1,540m. An updated resource block model and report was created from the results of this drilling. The Rising Tide deposit was also subjected to further modelling and a geostatistical consultant was commissioned to estimate the resources at both Zapopan and Rising Tide. Mining activity to the Zapopan 1000 and 980m RLs was discussed in the 2003 report. Some 12,000t of development ore was stockpiled at surface for treatment. Exploration costs totalled \$322,241 while mining costs for the year totalled \$7,844,381.

In the period ending 26th June 2004 the development ore was carted to Union Reefs mill and treated. The reported outcome was 10,830t treated for the recovery of 2,600 fine oz gold. This equated to a head grade of 7.60g Au/t.

The mine was then put on a care and maintenance program pending a decision to mine. Engineering and geological modelling studies were applied to Zapopan and to Rising Tide. Expenditure on exploration totalled \$30,770. Mine maintenance cost \$650,06

**2004/2005:** exploration work comprised geological modelling of the Rising Tide gold deposit and drilling of a geotechnical hole into the Zapopan mine environment. The following is a table of indicated and inferred resources of Rising Tide using a lower cut off of 0.4g Au/t and no upper cut so as to capture a global resource.

CATEGORY	TONNES	Au GRADE	OUNCES
Indicated	1,481,232	1.48 g/t	70,575
Inferred	1,505,876	1.24	60,038
TOTAL	2,987,109	1.36	130,611

Indicated and Inferred Resources of Rising Tide

One diamond core hole (ZGT-001) was drilled for geotechnical information at Zapopan mine. It was drilled to provide information on ground conditions and rock quality in the vicinity of the planned production decline.

**During 2005-06** work within the Brocks Creek group of tenements focused on drilling within the Zapopan project and the Rising Tide project, mapping and rock chipping within the 'Lymberover' prospect (north of 'John Bull' prospect).

The Lymberover project involved the taking of 19 rock chip samples over the region. Lymberover is also known as John Bull north. The best result was a rock chip sample from a gossan reef near a contact with the Zamu Dolerite, revealing Au quantities of 1.45 ppm. The rock chip sample was vuggy, had a botryoidal structure, showed oxide discoloration. The sample is adjacent to a previous sample which yielded 100 to 250 ppb Au. All data was provided in a report submitted for 2005-06.

Within the Zapopan project five diamond holes and six wedge holes were completed for 2719.6m. The holes completed in 2005 were drilled to test for Down plunge extension of Zapopan ore body (ZEX009 – ZEX011). ZEX010 was planned to intercept the Main Zone down dip from the hinge area of the lode. Visible gold is present in the ore zone at 300m. The first hole (ZEX010) was 20m off target, so the remainder of the program has been adjusted accordingly. ZEX011 was planned to locate the southern extent of the Main Zone. The resultant intercepts verify the down dip location of the southern extent. The small intercepts, and relatively large distance between the Z15 and Z10 lodes, show that the ore zone is reducing as it nears the Southern Slide.

ZEX 012 was drilled and intersected the Fissure Lode in tact at 94m downhole (1019mRL).

Within the Rising Tide project some 21 RC holes (RTRC0001-0021) were completed for 824m. Two diamond holes (RTDH001-002) were completed for 161.2m. These holes completed the work on the Rising Tide deposit and have enabled the management to bring the deposit into a mineable phase. RTDH001 was re-drilled at the drilling companies (Titeline) expense. The original hole was not logged/sampled as the drillhole can not be located with enough accuracy.

## 8.0 EXPLORATION PPROGRAM PERIOD ENDING 26 JUNE 2008

During the reporting period, underground diamond drilling program along with major mine development programs were undertaken.

During the reporting period, 21 diamond holes for a total of 2758 meters were drilled to generate new resource model for mining. All holes were drilled through an underground drill access drive from where they formed a fan shape pattern (Figure 3). This drilling program was undertaken at the 870 level about 225 metres below surface with the objective of testing for depth extensions of main lode, in particular, deeper levels in the central lode (Figure 3). A total of 656 samples were retrieved and assayed for Au. All data are reported in Appendix 1.

Drilling program met with significant success and returned higher grades in various parts of the main and central lodes (Figure 3). Some of the significant intersections are given in Table 2.

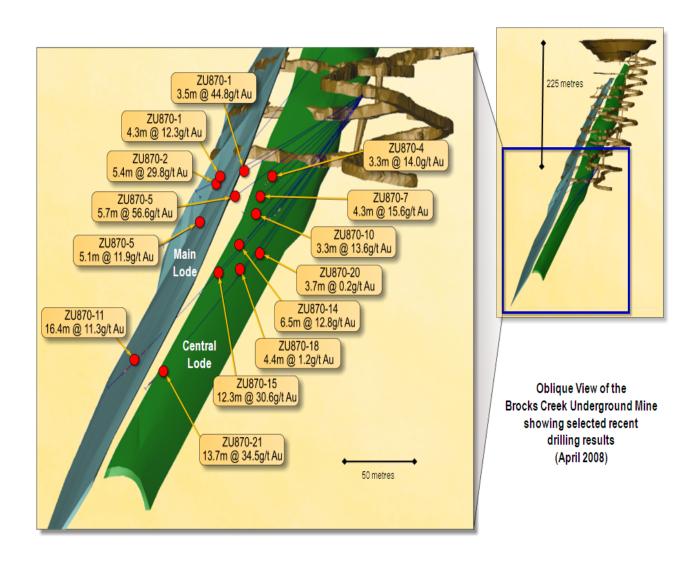
Table 2: Significant intercepts from Brocks Creek mine underground drilling

Drillhole No.	Down hole Depth (m)	Intercepts Width (m)	Intercept Grades g/t
ZU870-1	66.5	3.5	44.8
ZU870-2	72.7	5.4	29.8
ZU870-5	76.3	5.7	56.6
ZU870-11	166.3	16.4	11.3
ZU870-15	105.0	12.3	30.6
ZU870-21	162.7	13.7	34.5

Drill holes given in Table 2 provide information about the nature of gold mineralisation presence at depth which is significantly higher than the mineralisation encountered at the upper levels of the ore body. ZU870-5 is characterised by the highest concentration of gold from the drilling program undertaken during 2007-08 campaign. It comprises an intersection of 5.7 metres with a grade of 56.6 g/t at 76.3 metres depth. Another drill hole (ZU870-1) also contains rich gold intercepts at depth of 66.5 metres which is 44.8 g/t and covers 3.5 metres. Similarly, remaining drill holes in Table 2 have appreciable high grade gold intercepts.

Figure 3 shows diagrammatic representation of central and main lode with significant intercepts. Results indicate that the central lode of the Brocks Creek ore body is increasing in strike length, grade and true width with depth. Additional encouraging intersections in the main lode have also been received. Drillhole ZU870-11 returned an average grade of 11.3g/t gold in the main lode from an area where a grade of 6.0g/t gold

FIGURE 3: Diagrammatic representation of Brock Creek ore with significant intercepts



was predicted by the existing resource model. It would therefore appear that localized upgrading of the resource is occurring. This information will form the basis of a new block model and resource estimate.

A planned drill access drive from the 810 Level will enable future drilling to both intersect the ore body at an optimum angle and to obtain drill coverage for a further 200 metres vertical depth beyond the current known resource limits.

Drilling from underground within the Brocks Creek underground mine has indicated depth extensions to both the main and central lodes of the ore body. In particular, the central lode of the ore body is increasing at depth in strike length, average grade and true width. The results also indicate localized upgrading of the existing resource model in areas where significantly better grades than predicted were achieved. Further drilling is planned and a new resource model is being prepared.

## **Resources and Mining**

Currently, Brocks Creek mine has an indicated resource of 140,000 tonnes at 18.1g/t containing 81,700 ounces of gold, and an inferred resource of 69,000 tonnes at 8.3g/t containing 18,500 ounces of gold (April 2008). Mining commenced in the Brocks Creek underground operation in late 2006 and has since progressed to approximately 270 metres below surface at the 825 Level. Since the start of mining in 2007, the mine has produced approximately 159,000 tonnes at an average gold grade of 11.6g/t for the production of approximately 56,000 ounces. The majority of this gold production has been sourced from the main lode of the Brocks Creek ore body, and the latest indications are that the adjacent central lode is increasing in size and grade with depth.

For the reporting period, this program costed \$336485.00 for the Brocks Creek group of tenements. A break down of this expenditure is given in the Table 2 below.

Table 2: Expenditure details for the Brocks Creek Project area

Tenement. ID	Expenditure (\$)
MLN 176	755.00
MLN 1139	325600.00
MCN 4689	330.00
MCN 4690	360.00
MCN 4691	360.00
MCN 4692	945.00
MCN 4693	945.00
MCN 4694	330.00
MCN 4695	340.00
MCN 4696	330.00
MCN 4697	250.00
MCN 4701	360.00
MCN 4702	360.00
MCN 4703	300.00
MCN 4896	340.00
MCN 4897	400.00
MCN 4898	390.00
MCN 4871	250.00
MCN 4863	340.00
MCN 4864	340.00
MCN 4865	340.00
MCN 4866	680.00
MCN 4867	340.00
MCN 4868	200.00
MCN 4869	310.00
MCN 4870	310.00
MCN 4895	340.00
MCN 4899	340.00

Total 336485.00

## 9.0 FORWARD PROGRAMME YEAR ENDING 26 JUNE 2009

Drilling program undertaken during 2007-08 indicates that significant resource of gold mineralisation is present at depth. With further drilling this resource can be defined and add value to mine economics. In the next reporting year, additional diamond drilling and assaying is planned to extend resource base further at Brocks Creek.

The Brocks Creek Project also contains several gold prospects which needed to be investigated for additional mineralisation to improve the inventory base. In the coming years, these areas will be tested with soil/rock sampling and RAB/RC drilling. A minimum budget of \$20000.00 is proposed for this program.

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