ANNUAL EXPLORATION REPORT

MLN 1109, MLN 833 and AN398-402

UNION REEFS GOLD MINE

Year Ending 31 December 2009

Pine Creek 1:100,000
Pine Creek 1:250,000

DISTRIBUTION:

DOR Darwin, NT
Crocodile Gold Australia Humpty Doo
Brocks Creek, NT

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SUMMARY

The Union Reefs Group comprises 7 tenements (MLN 1109, MLN 833, ANs 398-402) and is located about 170 km SE of Darwin, NT and 12 km north of Pine Creek. Union Reefs Gold processing plant and related infrastructure is located within MLN 1109. There are other tenements such as MLN 833 and AN398-402 of small size, which are also included in this project for the purpose of group reporting.

On 15 September 2008, GBS Gold Australia went into voluntary administration and all assets including Union Reefs gold processing site was placed under care and maintenance. In 2009, Crocodile Gold Australia purchased all assets held by GBS Gold Australia (liquidated) and secured the ownership of project area on 9 November 2009 after meeting all statuary and regulatory requirements. With the re-commissioning of Union Reef mill in November 2009, Crocodile Gold focused on the treatment of gold ore from Brocks and Chinese South deposits. In addition plans are also underway to re-commence mining at Fountain Head/Tally Ho and North Point/Princess Louise and ore mined from these deposits will be treated at Union Reefs.

Geologically, the mining centre is situated within a 300m wide NW-trending structural corridor (Pine Creek Shear Zone). The corridor comprises tightly folded and sheared pelitic to arenitic sediments of the Palaeoproterozoic Burrell Creek Formation and inliers of underlying Mt Bonnie Formation. Two sub parallel lines of historic gold workings comprise the focus for the array of open pits mined in recent years.

During most of the reporting period, the project area remained under care and maintenance. Exploration, mining and processing activities commenced again in November 2009, when Crocodile Gold Australia secured the ownership of the mining and exploration assets held by GBS Gold Australia (liquidated). Union Reefs project area is considered to be of strategic significance which will play a major role in the development of company objectives in the near future.

An exploration program for year 2010 will include infill soil sampling and re-evaluation of the project area. If any encouraging result received, it will lead to RC/RAB drilling. A minimum budget of $10000.00 is proposed.

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1. INTRODUCTION

The Union Reefs project area comprises MLN1109, MLN 833 and AN 398-402. In this report activities carried out in the year ended 31 December 2009 are presented.

The Union Reefs mining centre comprises open pits, waste dumps, tailings dams and process water dams in a 4.5km x 2km area. Access within this zone is limited to approved personals. There are over a dozen open pits, many now backfilled with waste, and the Crosscourse pit has been used to store tailings. AngloGold Ashanti rehabilitated the site prior to its sale to the Burnside JV.

In the past, mining at the Union Reefs Gold Mine was carried out under the management of Acacia Resources Ltd and AngloGold (Ashanti) Limited (Anglo) till 2003. During this phase, the total of ore milled was 20,225,360t @ 1.47g/t Au or the recovery of 957,523 fine oz gold.

The Burnside Joint Venture , a subsidiary of GBS Gold Australia (liquidated) subsequently purchased the mill (design capacity 2.5Mt per annum CIL) and underlying tenements from Anglo in August 2004, thereby extending its commitment to bringing gold resources in the region into production. Mill was re-commissioned in September 2006 and feed stock was secured from Brocks Creek and other mines located about 60 km northwest of the project area. GBS Gold Australia went into voluntary administration and all assets including Union Reefs project were placed under care and maintenance. On 9 November 2009, Crocodile Gold Australia secured Union Reefs project area and other assets in the region and commenced mining and processing operations again. Under new management, first gold was poured on 29 December 2009.

2. TENEMENT DETAILS

MLN1109 was granted on 16th December 1993 and expires on 31st December 2015.
It is the principal tenements covering about 3,998 hectares and encloses wholly or partly other smaller tenements (MLN 833, AN 398-402) included in this project.

MLN 833 is located in an inaccessible position on the western wall of the open pit, and is within MLN 1109. Special dispensation for group reporting has been obtained in previous years from DPIFM, and so MLN 1109 and MLN 833 are reported together.

Smaller tenements enclosed by MLN 1109 include; AN 402 (haul road), AN 398 - AN 401 (tailings dams and other mining-related infrastructure). Details of these tenements are given in Table 1 and depicted in Figure 1.

Table 1: A list of tenements, Union Reefs

Tenement No	Grant Date	Expiry Date	Area (Ha)
MLN 1109	16/12/1993	31/12/2015	3998
MLN 833	01/01/999	31/12/2018	1.12
AN 398	11/03/1994	10/03/2014	1.16
AN 399	11/03/1994	10/03/2014	1.21
AN 400	11/03/1994	10/03/2014	1.41
AN 401	11/03/1994	10/03/2014	0.35
AN 402	11/03/1994	10/03/2014	73.7

3. LOCATION AND ACCESS

MLN1109 is situated 170km SE of Darwin and 12km north of Pine Creek in the Northern Territory.

Access may be attained eastwards from the Stuart Highway 13km north of Pine Creek, using the Ping Que access road for 5km. This crosses the railway and the headwaters of the McKinlay River that flows northwards just to the west of the mine. Alternative direct access may be achieved by using access tracks north from the Kakadu Highway, just NE of Pine Creek.

The newly refurbished Darwin-Adelaide Railway passes through the western extremities of the tenement, well to the west of the mine and mill infrastructure. The Palm Valley to Darwin-gas pipeline passes just east of the mine complex.

The Union Reefs mining centre comprises a concentration of open pits, waste dumps, tails dams and process water dams occupying an area of 4.5km by 2km (Figure 1). Access within this zone is limited to approved roads and tracks. There are over a dozen open pits, many now backfilled with waste and some, such as the main Crosscourse Pit have been used as a tailings repository. The area was rehabilitated by Anglo prior to sale.

4. GEOLOGICAL SETTING

4.1 Regional Geology

Regional geology of the project area is outlined in many publications, notably Ahmad *el al*. (1993) and Stuart-Smith et al. (1986, 1986). The tenements are within the Pine Creek Orogen, a folded sequence of Palaeoproterozoic pelitic and psammitic sediments, with

Figure 1: Location of tenements, Union Reefs

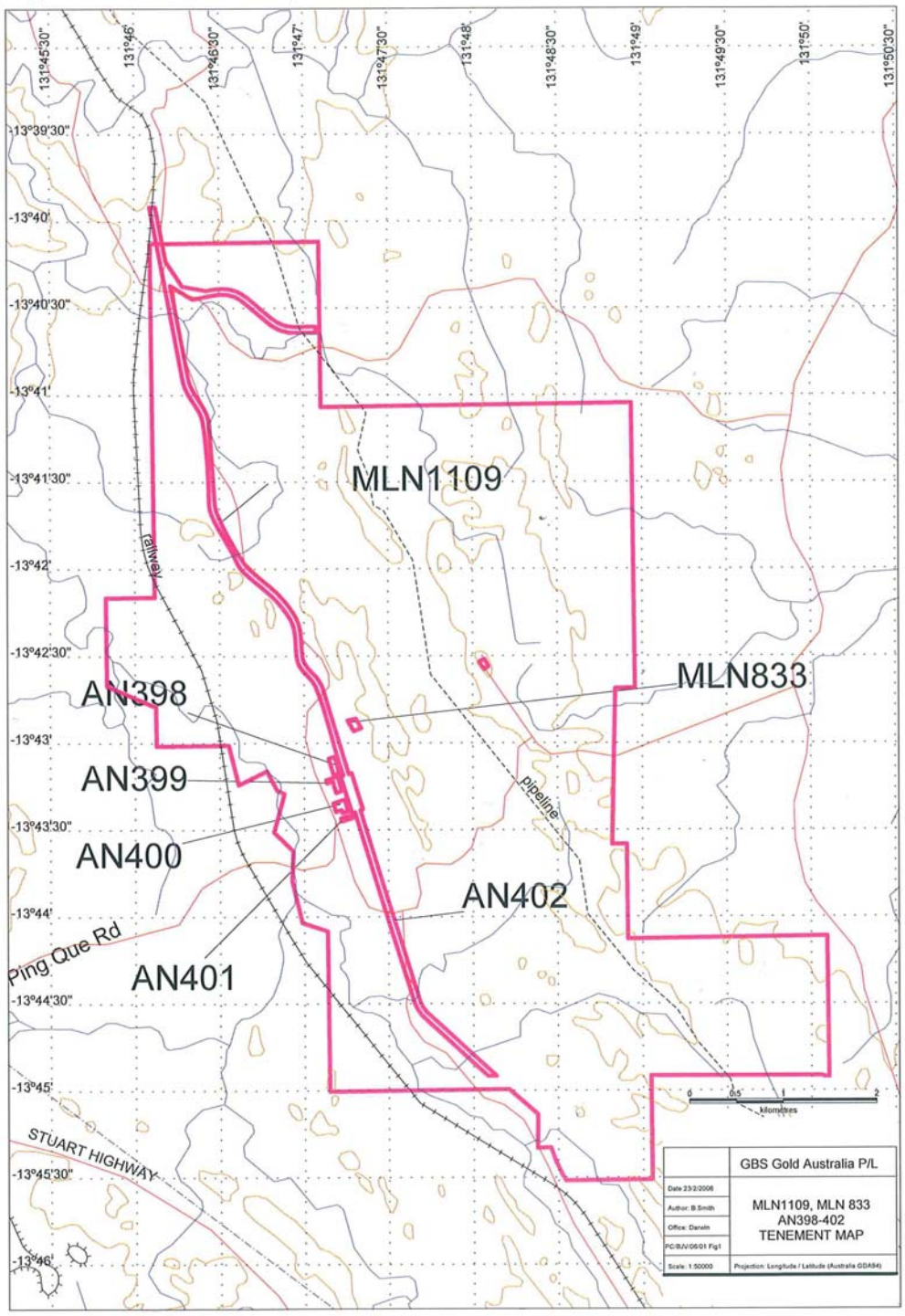

Figure 2: Aerial view of the Union Reefs Gold Mine and related infrastructure

interlayered cherty tuff units. Mafic sills of the Zamu Dolerite (~1.87Ga) intruded lower formations of the South Alligator Group.
During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies with phyllite in sheared zones

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.84-1.78Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Less deformed Meso- and Neoproterozoic 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 cementation overlie parts of the Pine Creek Geosyncline lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

There is a tendency for gold mineralisation to be focused in anticlinal settings (F3) within strata of the South Alligator Group and lower parts of the Finniss River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies. Some of the gold mineralisation appears to be related to the I-type members of Cullen Batholith, formed during the evolution of hydrothermal fluids as a result of fractionation and differentiation processes (Bajwah, 1994).

4.2 Local Geology

The geology of the Union Reefs mining centre is dominated by the NW striking Pine Creek Shear zone, a 300m wide corridor of folded and sheared metasediment package that largely comprises Burrell Creek Formation (Finniss River Group) and structurally generated inliers of Mt Bonnie Formation (South Alligator Group). Geology of the area is shown in Figure 3.

The host sequence including the Pine Creek Shear Zone is confined to the east (Allamber Springs Granite) and to the west by the Tabletop and McCarthys Granites (Figure 3). Rocks within this zone have been tightly folded and in high strain areas, subjected to fold limb failure. Axial planes and bedding tend to dip steep westerly. Spotted hornfels to garnet hornfels facies metamorphism is attributed to the influence of the Cullen intrusive event.

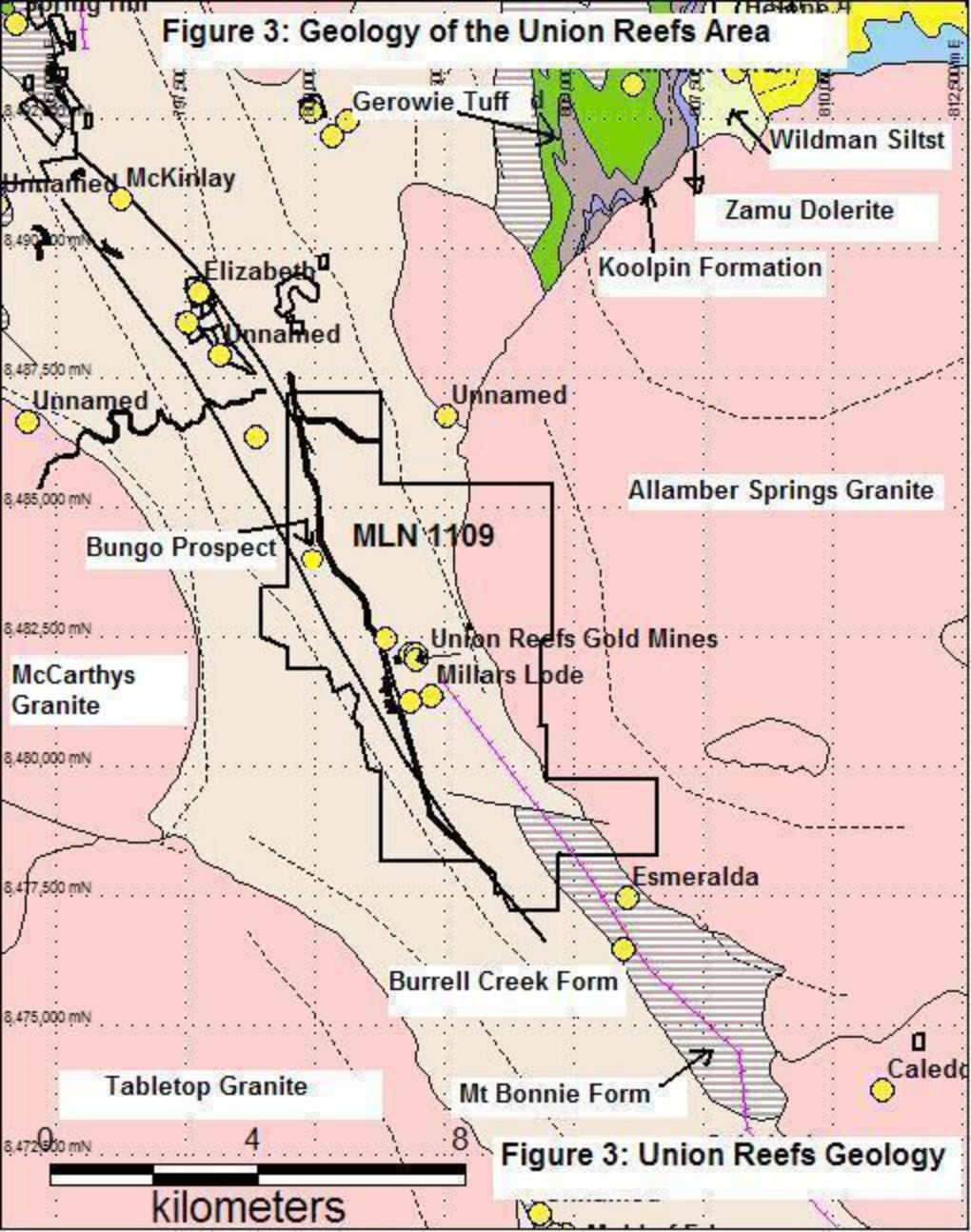
Figure 3: Geology of the Union Reefs Area
Gerowie Tuff
Wildman Siltst
Unnamed McKinlay
Zamu Dolerite
Koolpin Formation
Elizabeth
Unnamed
8,487,500 mN
Unnamed
Unnamed
8,485,000 mN
Allamber Springs Granite
Bungo Prospect
MLN 1109
8,482,500 mN
Union Reefs Gold Mines
Millars Lode
McCarthys Granite
8,480,000 mN
Esmeralda
8,477,500 mN
Burrell Creek Form
8,475,000 mN
Tabletop Granite
Mt Bonnie Form
8,472,500 mN
0
4
8
kilometers
Figure 3: Union Reefs Geology

4.3 Gold Mineralisation

Gold bearing lodes of the Union Reefs District are confined to the Pine Creek Shear. Economic mineralisation is related to a interbedded sequence of weakly carbonaceous shales and greywackes of the Burrell Creek Formation. Two lines of lode exist on which numerous historic workings are centred. The most productive structure is known as the 'Union Line' with a subordinate structure to the east, known as the 'Lady Alice Line'. The lodes are typical of those characterised as 'shear related' but they locally host small saddle reefs.

The gold is associated with quartz-sulphide veining. The location and style of veining throughout the deposit is a complex interplay of structural and lithological controls. Three end member vein styles are recognised.

Lode Style Veins, are up to 4m thick, commonly discontinuous, pod-like and hosted by highly sheared, dominantly shale wall rocks. Lode style mineralisation displays the largest amount of grade variability at URGM and includes localised zones of high grade gold. The majority of the old workings at URGM are located on these systems.

Stockwork vein systems, are complex and largely restricted to greywacke-dominated horizons. Stockwork veining is typically of moderate gold grade.

Sheeted vein systems, are characterised by sub-parallel vein sets that typically occur in thinly interbedded sequences of shale and greywacke. Sheeted veining is typically of lower grade.

The Crosscourse Zone which hosted the majority of gold in the URGM field is dominated by the stockwork vein style with lode style veins concentrated in the Ping Ques and Western Lens system.

Coarse gold is a characteristic feature of the Union Reefs field and occurs as single grains and clusters up to 5mm across. Alluvial/eluvial deposits have remained an attractive feature of the area as a consequence. Some alluvials were put through the mill.

Geologists have carefully modeled 26 lodes in the area. These weakly sulphidic lenses range in width from 1m to 75m and in strike length from 30m to 200m. The down dip extension of the best lode (E lens) is undefined but in excess of 300m. Most other lenses have a plunge component, usually to the north, of 100m to 150m.

The lenses comprise quartz, carbonate, chlorite sericite and broken or brecciated wall rock. Most major veins are bedding-parallel but several linkage vein sets occur and some areas are characterised by sheeted vein sets and deformed stockwork veinlets. Boudins are common. Post mineral faulting has not had an adverse effect on ore block mineability, despite the deformation history being complex.

The local pathfinder mineral for gold is arsenopyrite, but pyrite, pyrrhotite, sphalerite, galena and sparse copper minerals are also present.

The **principal styles** of sulphide mineralisation include quartz-visible gold banded veining (rare), low sulphide auriferous pyritic veining (common), weakly banded auriferous arsenopyrite-pyrite veining (common), low grade disseminated arsenopyrite-bearing breccias or mylonitic shears (localised), and small semi massive base metal pods that are erratic.

The wider lodes have sharp, feather-edge contacts with wall rock, however many of the narrow structures show diffuse contacts. Visual control during mining is subtle in the stringy zones and in areas of ramifying veinlets. Conditional simulation techniques were used to smooth the composited data and create a mineable ore block mark-out during the grade control process.

The metasediment host rocks to the veins are variably stratified and generally dip steeply (85 degrees) towards the west. Stratification is well defined with strong continuity down dip. The greywacke units are generally 3m to 20m thick and the shale packages generally 1m to 30m thick. The units are interbedded and intercalated. The shales generally are poor quality rock due to chloritic and phyllitic developments, vertical foliations and laminations. The greywacke packages in contrast are fair quality competent rock.

5. PREVIOUS EXPLORATION

Gold was discovered at URGM in December **1873** by prospectors Adam Johns and Phil Saunders (Jones, 1987). Most of the claims were held by European and Chinese miners until 1892, but most had been purchased by Chinese miners by 1894.

Diamond drilling programs were completed at URGM between 1905 and 1964 (Brown, 1906; Jensen, 1915; Shields, White and Ivanac, 1967) and included two government-funded holes drilled in **1905–1906**, believed to be the first exploration holes in the Northern Territory (Hellsten et al., 1994).

Drilling during the **1960**s by the Bureau of Mineral Resources identified a resource at Crosscourse.

Between **1984** and **1988**, 25 exploration holes were drilled by Enterprise Gold Mines NL at Ping Que and Crosscourse (Hellsten et al., 1994).

In **1988**, Mineral Horizons drilled 68 percussion holes along the northern half of the Union and Lady Alice lines of mineralisation.

In **1991** The Shell Company of Australia Limited (Shell) carried out detailed soil sampling, geophysical surveys, rotary percussion and diamond drilling. Shell transferred

its mineral interests to Acacia Resources Limited (Acacia), which was then floated as a public company, in November 1994.

In February **2000**, AngloGold acquired Acacia and operated the mine until closure in July **2003**. Rehabilitation of the mine site was undertaken by Anglo.

In August **2004**, the Burnside Joint Venture purchased the project tenements and infrastructure from AngloGold. At the same time the JV sold the Brocks Creek mill to Tanami Gold NL.

In November 2005, GBS Gold Australia P/L acquired Northern Gold NL (part of the Burnside JV) and have agreed to buy Harmony's 50% share in the Burnside JV, giving GBS Gold sole ownership of Union Reefs mill and tenements. Since acquiring the Union Reefs Project, the Burnside Joint Venture has escalated its exploration drilling and technical review activities in the Burnside region and at Pine Creek. The main objective is to identify sufficient gold ores to justify re opening the mill at Union Reefs.

Technical review of Prospect Claim (Makar, 2005) recognised underground potential of gold mineralisation in the project area. With further drilling zones of economic mineralisation can be established, which could supply additional feed stock to the mill.

During **2006-07** reporting period, a total of 6 RC holes for 591 metres were drilled at Bungo Prospect, located in the NW part of MLN1109 (Figure 3). During drilling, a total of 615 samples were retrieved and analysed for a suite of elements by Northern Australian Laboratories located at Pine Creek, Northern Territory. Of particular interest was gold concentrations, ranging from 0.01 ppm to 0.03 ppm. Arsenic varies form 50 to 910 ppm with an average of 58 which is also low as compared to arsenic values from gold-bearing horizons in the area. Copper is generally low (range: 0.5 to 292, average: 31 ppm) as compared to other elements assayed. In some samples lead concentration as high as 7260 has been observed but it averages at 93 ppm. Zinc varies from 0.5 to 8040 ppm with an average of 157 ppm. Overall this drilling campaign gave disappointing results except some high concentration of lead and zinc which appears to be related to the presence of galena and sphalerite.

6. EXPLORATION PROGRAM FOR YEAR ENDING 31 DECEMBER 2009

During most of the reporting period, tenements covering the Union Reefs project area, remained under care and maintenance. The main activity was review, valuation and ranking in order to prepare assets for sale. In April 2009, Crocodile Gold Australia Pty Ltd, a subsidiary of Forbes Manhattan bank announced to acquire all assets held by GBS Gold Australia (liquidated) in Northern Territory. After meeting all statuary and regulatory requirement, Crocodile Gold Australia took over the control of Union Reefs

project area and commenced mining and processing of gold ore, which was sourced from Brocks Creek and Chinese South (Extension) gold mines. Under new management, first gold was poured on 29 December 2009. Site care and maintenance and start-up costed over $ 0.5 Million.

After securing the Union Reefs project area, Crocodile Gold Australia commenced review of the tenements covering the project area. Initial result shows that MLN 1109 has significant potential for gold mineralisation, and prospect Claim area located within MLN 1109 is of special interest, which will be tested with a dedicated exploration program.

This activity incurred a sum of $5905.00 and details are given in Table 2 below.

Table 2: Tenement exploration expenditures for 2009

Tenement No	**Exploration Expenditure ($)**
MLN 1109	3000.00
MLN 833	520.00
AN 398	350.00
AN 399	450.00
AN 400	425.00
AN 401	480.00
AN 402	680.00
TOTAL	**5905.00**

FORWARD PROGRAM 2010

MLN 1109 and other tenements in this group are designated site for processing gold ore from several mining operations located in Burnside project area. These operations came on-line after over a year of care and maintenance. It is expected that Union Reefs project site will play a major role in expanding gold production in the near future.

An exploration program for year 2010 will include infill soil sampling and re-evaluation of the project area. If any encouraging result received, it will lead to RC/RAB drilling. A minimum budget of $10000.00 is proposed.

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