BURNSIDE OPERATIONS P/L

ANNUAL EXPLORATION REPORT
EL23540

“SAUNDERS CREEK”

YEAR ENDING 16th February 2004

BURRUNDIE 1:50,000 SHEET

Distribution:-

1. DBIRD Darwin NT
2. Northern Gold NL Perth
3. Burnside Operations P/L Brocks Creek
4. Harmony Gold (Australia) Perth

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SUMMARY

EL23540 is located 150km SE of Darwin, NT and 20km ESE of Brocks Creek.

The tenement is subject to the Burnside Joint Venture, managed by Burnside Operations P/L comprising Territory Goldfields NL and Buffalo Creek Mines NL. The latter are subsidiaries of Northern Gold NL and Harmony Gold (Australia) P/L respectively.

The licence encompasses a suite of metasedimentary rocks that are part of the Pine Creek Geosyncline sequence and lies just east of the gold and base metal mineralised localities of Iron Blow and Yam Creek.

This is the first year following grant of the licence and the annual expenditure was set at $5,600.00.

The joint venture has been actively exploring the Burnside region since its formation in April 2002. Work to date has been focused on establishing open pit resources through RC drilling at Yam Creek, Mottrams, Chinese South, Cosmo Howley, and Woolwonga. Underground development and diamond drilling has been carried out at the Zapopan Mine.

Work on EL23540 has been subordinate to activity on other JV tenements as the emphasis has been on establishing gold resources at established mineralised prospects. Expenditure during 2003 was related to a remote sensing study, fracture analysis and reporting. This amounted to $650.00.

A large volume of unsorted historic exploration data exists at the Brocks Creek library. Sorting and collation of this data in 2004-05 will advance the state of understanding of the tenement's prospectivity.
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1. INTRODUCTION

EL23540 (Saunders Creek) was applied for to cover vacant ground east of Yam Creek and Iron Blow, and lies on the west flank of the Burrundie Dome. The tenement has just completed its first anniversary since grant.

The Burnside Joint Venturers comprising Buffalo Creek Mines NL and Territory Goldfields NL have other mineral assets in the immediate area: at Mt Bonnie to the east and along the Yam Creek-Golden Dyke trend that passes through the centre of the EL. Since April 2002 the joint venture has carried out extensive drilling programs on joint venture tenements in the Burnside region and developed the Zapopan underground mine in 2003.

This report deals with exploration activity carried out during the year ending 16th February 2004.

2. TENURE DETAILS

EL23540 was granted on 17th February 2003 and expires on 16th February 2009. It comprises five blocks that cover approximately 16.1 sq. km.

It forms part of the eastern boundary of tenement holdings comprising the Burnside Joint Venture and is registered in the names of Territory Goldfields NL and Buffalo Creek Mines NL in equal shares. It is unencumbered by third party tenements.

The expenditure covenant set for this, the first year, was $5,600.

3. LOCATION AND ACCESS

EL23540 is situated 150km SE of Darwin NT and 20km ESE of Brocks Creek siding on the Darwin-Alice Springs railway. Brocks Creek is also the location of a gold treatment plant owned by the Burnside Joint Venture and is close to the Zapopan underground mine development.

Access to the tenement is via the Stuart Highway, thence north via the Grove Hill unsealed road that passes west of the tenement. Access can be gained via bush tracks that peel off north from the Mt Bonnie access road, towards Iron Blow. Alternatively tracks lead into the tenement south from the railway line east of Grove Hill. The location may be seen on Figs. 1, 2, and 3. The headwaters of the Mary River and Saunders Creek pass through the tenement and flow northwards.

The tenement falls on the Pine Creek 1:250,000 sheet and on the Burrundie 1:50,000 sheet. The tenement also is within the Douglas Pastoral Lease.

Outcrops occur through much of the tenement and the area comprises undulating hills and ridges of low to moderate relief, particularly on units of the Zamu Dolerite and Gerowie Tuff in the western half. The eastern half of the
tenement is more topographically subdued and is affected by Saunders Creek and its alluvial deposits.

4.0 GEOLOGICAL SETTING

4.1 Regional Geology

EL23540 is situated within the Pine Creek Geosyncline, a tightly folded sequence of fine to coarse grained clastic basinal sediments of Lower Proterozoic age.

In the report area the sequence has been regionally metamorphosed to greenschist facies and has been intruded by late syn-orogenic to post orogenic granitoid intrusions. These intrusions imparted thermal contact metamorphic and metasomatic effects and contributed to the deposition of a range of economic minerals in structurally permissive sites.

There is a tendency for gold mineralisation to be focused in anticlines within strata of the South Alligator Group and lower parts of the Finnis River Group. This sequence evolved from initial low energy shallow euxinic basinal sedimentation to higher energy deeper water flysch facies. A water-lain tuffaceous component is present and the prospective sequence has been intruded by concordant pre orogenic mafic sills.

Less deformed Middle Proterozoic sedimentary and volcanic sequences unconformably overlie the Lower Proterozoic. Adjacent to the Daly River Basin, Cambo-Ordovician lavas and sediments onlap the older sequences. Cretaceous arenaceous strata are locally preserved as hill cappings.

Cainozoic to Recent erosion of the cratonised basement has resulted in the formation of hills and ridges alternating with talus and clay-sand alluvial deposits occupying river flats and flood plains.

3.2 Local Geology

The tenement encloses a sequence of South Alligator Group sediments that lie on the northern sector of the Burundie Dome. The Margaret Syncline lies to the west and separates the Burundie Dome from the Yam Creek sequence. To the east of the tenement the irregular, and perhaps shallow west-dipping Prices Creek Granite contact, terminates the South Alligator strata. Fig. 4.

Within the tenement the Group is represented by Koolpin Formation and Gerowie Tuff, both of which were extensively intruded and concordantly dilated by sills of Zamu Dolerite. All were tightly folded on NNW striking axes during the Pine Creek Orogeny. The folds plunge shallowly to the
NNW and locally, in the centre of the tenement, have undergone strike faulting perhaps as a result of axial failure. See Fig. 4.

3.3 Mineralisation and Prospectivity

At this point in time the author is not aware of mineralised occurrences within EL23540, though its structural setting appears favourable, particularly in the region of strike faulting in the centre of the tenement.

The abundance of Koolpin Formation comprising mudstone-siltstone-echert-BIF lithologies, interfolded with Zamu Dolerite has many similarities to host sequences at Golden Dyke-Langleys, Davies, Afgans Gully and Good Shepherd to the south west and at Cosmo Howley some 20km to the west.

The Iron Blow Cu-Pb-Zn-Au deposit lies within Mt Bonnie Formation rocks about 2km west of the tenement. The Pickfords Pb deposit lies 600m south of the tenement within the faulted axial zone. (Fig.4, 5 blue fractures).

The axial zone faulting coincides with a change in outcrop abundance, with poorer exposure to the east, in association with the Saunders Creek drainage system.

In terms of localisation of mineralisation, the part played by subordinate late stage fracture sets striking WNW is thought to be relevant. These can be traced on the SPOT image passing through the vicinity of Yam Creek MCN828 and Iron Blow open pit and progressing ESE across the EL. See Fig. 5, red fractures.

As a working hypothesis, the intersection of these fractures, particularly the set marked in red, with favourable lithologies within the strike faulted zone, as well as their continuation under alluvial cover further to the east, could be areas to target for initial reconnaissance exploration for gold and base metals.

In the region of the Saunders Creek valley in the eastern half of the tenement, it is inferred that the Prices Creek Granite may underlie the Koolpin-Zamu sequence at no great depth. In this event it conceptually could have activated hydrothermal fluids along favoured fracture sets where they could have interacted with compatible lithological units.

4. PREVIOUS EXPLORATION

At the time of writing the author has no knowledge of the extent or type of exploration carried out over EL23540. The data held in the library at Brocks Creek office could well hold records relevant to the history of the tenement. It is proposed that this data be accessed during 2004.
5. **EXPLORATION DURING 2003**

During 2003, the first year of grant of the tenement, exploration work was focused in the vicinity of the Zapopan mine and at Cosmo Howley. In those areas gold deposits with the scope for development are being drill evaluated to increase the known resource base to feed a central treatment plant. In 2003, with the poor gold price in Australian dollar terms, it has been deemed prudent to focus on known resources as a priority.

During the year work on **EL23540** comprised a remote sensing study and report writing. The conclusions of this study are incorporated into Sections 3.2 and 3.3 of this report plus Fig. 5 that shows a fracture analysis (interpreted linears) that could focus future exploration activity.

The cost of this study was $650.00.

6. **FORWARD PROGRAM 2004**

It is desirable to identify details of previous exploration work in the tenement before embarking on significant new field work. The Brocks Creek technical library is thought to contain the relevant information, particularly that collected by Dominion Mining and Northern Gold NL.

It is planned to access this data and compile any geochemical, geological or drilling information. The cost of this work is expected to be $1,100.00
7.0 REFERENCES