5th Annual Report

EXPLORATION LICENCE 9596

MOUNT GOYDER

For the Period Beginning 15th November 2000
And the Period Ending 14th November 2001

LICENCEE: Rustler's Roost Mining Pty Ltd.
OPERATOR: Sirocco Resources NL
STANDARD 1:250,000 SHEET: SD5204 Darwin
STANDARD 1:100,000 SHEET: Mary River 5272
AUTHOR: Scott Hall Project Geologist.
DATE: December 2001
DISTRIBUTION: NT Department of Mines & Energy.
Sirocco Resources NL, Brisbane.
Sirocco Resources NL, Tom's Gully.
William Resources Inc., Toronto.
**TENEMENT DETAILS**

Exploration Licence 9596 was granted to Rustler’s Roost Mining Pty Ltd on 15 November 1996 for a period of 6 years. A Joint Venture Agreement was entered into between Rustlers Roost Mining Pty Ltd and Sirocco Resources NL in October 1998 in respect of this licence (and others in the Mount Bundey area) and this Agreement has been registered with the Department as Dealing 6766.

The tenement currently comprises of 23 graticular blocks occupying approximately 75km². A summary of the tenement details and history is outlined in Table 1, below.

Table 1. Tenure Record of EL 9596, Mount Goyder

| Mining tenure identification map name | Mount Bundey |
| Mining tenure identification map number | 8/6 – III |
| Blocks | 17 Total |
| Mining tenure identification map name | Annaburro |
| Mining tenure identification map number | 8/6 - II |
| Blocks | 6 Total |
| 26/62, 26/63, 26/64, 26/65, 27/62, 27/63 |

| Date of Grant | 15 November 1996 |
| Period of Grant | 6 Years |

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Figure 1. Tenement Location Map

1:2,000,000
SUMMARY

Exploration Licence 9596, Mount Goyder comprises part of the group of mining and exploration tenements held by Rustler's Roost Mining Pty Ltd and operated by Sirocco Resources NL as part of a Joint Venture Agreement. The area is proximal to the Tom’s Gully Gold Mine, has a comparable geological setting, and is considered prospective primarily for stratabound and stockwork gold mineralisation within lithologies of the Early Proterozoic South Alligator Group and Mount Partridge Group.

This report summarises the exploration activities completed during the last year of Tenure.

No new data is contained in this report.
1. INTRODUCTION

Exploration Licence 9596 *Mount Goyder*, is centred approximately 105 kilometres east-southeast of Darwin and approximately 25 kilometres east of the Tom’s Gully Gold Mine (Figure 1). The tenement straddles the boundary between the Mount Bundey and Annaburroo 1:50,000 sheets. Access from Darwin is via the Arnhem Highway to well known tourist haven, The Bark Hut Inn, thence via graded track northward to the tenement area. Access within the tenement is reasonable, though largely limited to cross-country four wheel drive traversing. Access to the tenement by vehicle during the wet season is impossible.

The topography of the area is characterised by low, though often steep strike ridges through the central, northern and southeastern portions of the tenement. Mount Goyder forms a prominent conical landmark in the southwestern portion of the tenement. Other areas are low, flat to gently undulating terrain of black soil.

A Joint Venture Agreement was entered into between Rustlers Roost Mining Pty Ltd and Sirocco Resources NL in October 1998 in respect of this licence (and others in the Mount Bundey area) and this Agreement has been registered with the Department as Dealing 6766.

The area was selected primarily for its potential to host stratabound or stockwork gold mineralisation within prospective lithologies of the Early Proterozoic South Alligator Group and Mount Partridge Group. The main exploration target will be the Wildman Siltstone & the Koolpin Formation, which hosts the nearby Tom’s Gully & Quest 29 gold deposits respectively, operated by Sirocco Resources.
2. REGIONAL GEOLOGY

EL 9596 is located within the Pine Creek Geosyncline which has been interpreted as an intracratonic basin lying on an Archaen basement and containing a 14 km thick sequence of Proterozoic sediments, accompanied by lesser volcanics, Granitic Plutons and Dolerite intrusions. The Northern portions of the project area contain the oldest sediments The Mount Partridge Group which is unconformably overlain by the South Alligator Group which comprises most of the tenement areas. The southern portions of the Project area is comprised of Burrell Creek Formation which Conformably overlies The South Alligator Group. All the lower lying portions of the tenement areas are unconformably overlain by Tertiary and Quaternary Soils and Gravel’s generally referred to as “Black Soils Regions”. All of the pre Proterozoic sequences are structurally deformed and generally plunge gently to the south. As can be seen in Figure 2.

2.1 The Mount Partridge Group

2.1.1 Wildman Siltstone

The Mount Partridge Group is represented by the Wildman Siltstone, which is interpreted to be up to 1500m thick. In the Mount Bundey Region the Wildman Siltstone consists of laminated and banded shale, carbonaceous and often pyritic siltstone interbedded with undifferentiated volcanics in up to 100m interbeds, minor dolomitic sediments may also be present. The sediments near the granite intrusion may also be hornfelsed. The Wildman Siltstone is interpreted to be prospective for large tonnage, low-grade gold deposits and small tonnage, high-grade deposits. Wildman Siltstone hosts the Tom’s Gully gold deposit.

2.2 The South Alligator Group

The South Alligator Group is represented by the Koolpin Formation, Gerowie Tuff and the Mount Bonnie Formation. The rocks of the South Alligator Group are considered to be prospective for either large tonnage, low grade gold deposits (such as that at the nearby Rustler’s Roost gold mine) or small tonnage, high grade deposits.

2.2.1 Koolpin Formation

The Koolpin Formation comprises ferruginous siltstone and shale, which is commonly carbonaceous and pyritic. Chert bands and nodular horizons are common and lenses of ironstone occur occasionally, as haematitic breccias through out the sequence into undisturbed quartz-veined siltstone and shale. Minor components of dolomite can also occur. The Koolpin is one of the most prospective units in the Mount Bundey Region for hosting mineralisation (West Koolpin, Taipan, BHS and North Koolpin Open Pits at Quest 29 are all within Koolpin sediments)

2.2.2 Gerowie Tuff

The Gerowie Tuff conformably overlies the Koolpin and has similar characteristics of siltstones and shales but is not as iron rich. Within the Mount Bundey Region it is dominated by graded beds of siliceous tuffaceous mudstones grading to greywacke and arenite, diagenetically altered up to 600m thick and generally poorly mineralised.

The Gerowie Tuff unit has been described as a mudstone-rich sequence with interbeds of diagenetically altered distal tuff
2.2.3 Mount Bonnie Formation

The Mount Bonnie Formation conformable overlies the Gerowie Tuff and is dominated by a shallow marine sequence of interbedded and graded siltstone, chert and greywacke with occasional BIF’s. The unit can be up to 600m thick and is generally iron rich and may be siliceous in places. The Rustler’s Roost deposit is hosted by the Mount Bonnie Formation.

2.3 Finniss River Group

2.3.1 Burrell Creek Formation

Conformably overlying the Mount Bonnie Formation is the Burrell Creek Formation interpreted as a flysch sequence of fine to coarse marine sediments and appears to be part of continuous sedimentation process. Due to the lack of marker horizons and poor exposure the width of the unit is unknown but is thought to be >1000m. This Formation is considered prospective for large low-grade gold deposits as typified by the Batman deposit of Mount Todd. The potential also exists for small high-grade deposits similar to Possum and Happy Valley with John Shields GIGIAC Theory (Gold in Greywacke in Anticlinal Crests). Also high-grade deposits such as Bandicoot, Marrakai and the Ringwood line which all lie on a major deep-seated magnetic trend. This unit is not found in EL 9596.

2.4 Intrusives

2.4.1 Zamu Dolerite

The Zamu Dolerite occurs as small bodies it is poorly exposed due to the nature of weathering some rubble boulders may be present at surface. It consists of altered quartz dolerite and gabbro and is generally narrow and broadly conformable to bedding. The Zamu Dolerite is the only known suite of mafic intrusive emplaced prior to regional metamorphism and deformation. The Zamu Dolerite appears to have a controlling influence on the mineralisation at Quest 29 within the Koolpin sediments but this is not fully understood at this stage. Mineralisation is also hosted within this unit at Quest 29 and also at Chinese Howley.

2.4.2 Mount Bundey Granite & Mount Goyder Syenite

The sedimentary sequences and the Zamu Dolerite are intruded by the Proterozoic Mount Goyder Syenite and Mount Bundey Granite which form a cogenetic complex which crops out over about an 80km area. This intrusion is believed to have been the heat and fluid source for the mineralisation, which occurs throughout the local region. Their mineralogy on geochemistry suggests they are both differentiated from common magma, which intruded into the gently south plunging folded belt of sediments.

A thermal metamorphic overprint associated with the southern margin of the Mount Bundey Granite intrusive has resulted in the development of both cordierite and andalusite, and probably was the generator for the local gold mineralisation. Further to the south of the Mount Bundey and Mount Goyder intrusive is possibly a second deep-seated pluton to the south magnetic feature (Discussions with Williams Resources 1998).
2.5 Deformation & Metamorphism

Regional deformation with north-north-east folding plunging gently south occurred around 1800 Myr, based on a rubidium-strontium analysis, causing metamorphism to greenschist, and sometimes higher to amphibolite facies. This event also resulted in the intrusion of thin sills of Zamu Dolerite, and the post-tectonic emplacement of the Mount Bundey Granite and Mount Goyder Syenite is a comparable cogenetic pluton dated at 1790 + 110 Myr in the region. Structural deformation of the metasediments is complex.

The major folding episode resulted in tight folds whose axes plunge southwest. However within these major folds the more incompetent beds, i.e. carbonaceous shale’s, have been deformed into localised complex structures. The granitic emplacement has also influenced the fold structures as can be seen on the regional geological map. Metamorphism to greenschist facies through dynamic compression associated with intense folding is common. The granitic emplacement and the associated structural deformation and generation of hydrothermal fluids is thought to have been responsible for most of the gold enrichment throughout the Pine Creek Geosyncline. e.g. Cosmo Howley, Rustlers Roost, Toms Gully, Moline, Mt Todd and Quest 29.
Figure 2. Regional Geology & Geological Target Areas 1:50,000
3. PREVIOUS EXPLORATION

The earliest significant exploration within the region was undertaken by Geopeko during the early 1970’s following their acquisition of the then relatively new BMR aeromagnetic and radiometric survey data which was flown during 1970. Geopeko’s exploration programs were directed primarily at uranium and secondarily at base metals with only minor attention being paid to gold. Interpretation of this geophysical data outlined a large number of potential target areas throughout the region, which were subsequently investigated by ground-based geophysics and geochemical sampling. These sampling programs defined anomalies, which were thence-designated “Quest” numbers for identification. These anomalies became the focus of Geopeko’s exploration activities for some four years.

Two of the “Quest” anomalies (Quest 32 and Quest 33) occur within the western portion of the tenement, proximal to the Mount Goyder Syenite. The Donkey Hill gold prospect occurs within the central portion of the tenement and is located upon an anticlinal structure within the Wildman Siltstone. The prospect has been extensively rock chipped, costeanned with encouraging results. Drill testing however proved disappointing.

A review of Open File and published data, literature and geological mapping was completed as a preliminary introduction to exploration during the first year. Additionally, the tenement area was included within a regional aerial photography program flown by Airesearch Mapping Pty Ltd for Rustler’s Roost Mining Pty Ltd resulting in colour photography at 1:20,000 scale. The colour aerial photography has been used extensively for geological interpretation and identification of target areas for investigation.

Published and unpublished regional geological mapping data was compiled by Rustler Roost Mining Pty Ltd and digitised and prepared by consultant geological drafting service, Sun Drafting, of Brisbane. This work resulted in the production of detailed, regional geological plans at 1:50,000 and 1:100,000 scale which include EL 9596. Published and unpublished regional aeromagnetics data was also compiled and prepared by consultant imagery specialists, Geoimage, of Brisbane. This work culminated in the production of colour imagery at 1:100,000 scale and include the area within EL 9596.

However this data has not been sighted or forwarded to Sirocco Resources NL.

With the subsequent intervening prolonged “wet seasons” 1998-2001, exploration work has been extremely limited during the dry seasons. Early burning of the tenement also proved sporadic making on ground investigations difficult.

Most of the work under taken by Sirocco Resources has involved the creation of a GIS database of previous work in the Mount Bundey Region. Field reconnaissance traverses were undertaken for spot checking of previous work and also for familiarisation with the topographic, geological and access conditions within the tenement area for future work. This preliminary work lead to geological target generation, from the compiled GIS data and the knowledge that has been gained from the mining of the Quest 29 tenements particularly the West Koolpin and BHS open pits as well as the Taipan and North Koolpin mineralisation. The combination of lithological and structural controls that have combined to form the mineralisation developed at Quest 29, were utilised and expanded before being applied to EL 9596, generating several prospective geological target areas.
4. CURRENT EXPLORATION

Work on this tenement for the year has comprised completely of, improving understanding of target areas, based on the knowledge that has been gained from the mining of the Quest 29 tenements particularly the West Koolpin and BHS open pits as well as the Taipan and North Koolpin mineralisation. In conjunction with the utilising of magnetics data for comparisons of structural trends. The combination of lithological and structural controls that have combined to form the mineralisation developed at Quest 29, have been utilised and expanded and then applied to EL 9596.

Using the above controls for gold enrichment developed during the exploration and mining of the Quest 29 area, and applying these controls into EL 9596, selected areas have been delineated on Figure 2.

There is a controlling effect of the Mt Bundey pluton, where there is a thermal metamorphic aureole, approximated to have effected a 15km radius, within which gold levels are enhanced, due to classic polymetallic zonation and also as a result in some situations of contact metamorphism.

This work has been undertaken to determine areas with potential for gold resources that can be trucked to the established infrastructure at Tom's Gully Gold Mine or can be used for dump leach extraction. Dump Leach Extraction in arenaceous metasediments has proved to be economically viable at Quest 29, and previous explorers have overlooked this method of extraction. Most of who were looking for stand alone projects and/or base metals and uranium rather than gold.

4.1 Geological Target Areas

Area 1:

This area is a NE – SW trending domal anticlinal structure double plunging to the North and South it is comprised lithologically of Wildman Siltstone and Mundogie Sandstone which creates a number of gold targets based on competency and grain size contrasts for gold deposition. It also contains two anticlines, which is cross cut but several faults and shears along its 9km strike length within the tenement boundaries. Donkey Hill is located in the southern portion of this, which has had some costeaming and drilling completed on it by Newmont but current data is in local grid and no conversion to AMG has as yet been uncovered. The area is well within the metamorphic aureole for gold fluid movements. The main targets within this area will be near where the crosscutting faults and shears intersect the anticlines, these targets have been further defined by the recent NTDME Mary River Magnetics data.

Area 2:

This area south of the Arnhem Highway contains tightly folded Koolpin Sediments and Wildman Siltstone, which also contains what appears to be unconformable fault contacts which form an ideal setting for gold deposition due to the lithological contrasts between the units and the likely presence of doleritic sills. Newmont have shown through their BLEG sampling several spot anomalies on inferred cross structured which will be the priority targets to be followed up. This area has the added benefit of being close to the road so trucking to the Tom’s Gully Mill will require minimum road works.
5. CONCLUSIONS & PROPOSALS

5.1 Conclusions

Target Areas within Exploration Licence 9596 covers stratigraphy that is considered prospective for stratabound and/or stockwork gold mineralisation within lithologies of the Proterozoic sediments of the South Alligator Group and the Mount Partridge Group. Evaluation of the mineral potential of this exploration area is steadily being advanced, with our knowledge of geological controls developed during the mining of Quest 29.

Work on this tenement was however reduced during the year due, to the economic uncertainty of Native Title and spot gold price. As a result exploration was concentrated on granted MCN’s in the Quest 29, Quest 30 and Tom’s Gully Mine Lease areas.

5.2 Proposals

Work proposed for Year 6 of this licence includes:

- Further Development of target areas based on an improved understanding of geological controls derived from our mining operations at Quest 29.
- Target upgrading via geochemical sampling
- Soil and rock chip sampling.
- Detailed localised geological mapping
- Follow up RAB or RC drilling as required

Expenditure for this work is expected to be in the vicinity of $10,000

EL 9596 Surrounds the Arnhem Highway 20 km east of Tom’s Gully and is regionally important in relation to the viability of the Tom’s Gully Mill.

Recent operation of the Dump Leach Facility proved that economic recoveries can be obtained by leaching low grade oxide gold in Proterozoic Koolpin Formation Sediments. As a result the Leach Facility has been expanded and the search for low grade, oxidised sedimentary gold intensified. With another cycle of dump leaching, of the North Koolpin Deposit, currently being investigated for 2002 dry season.

EL 9596 because of its location and geological environment is an excellent exploration target for this style of mineralisation further low grade gold will increase the viability of the entire project.

Exploration is partially driven by ongoing production demands for both leachable oxide ores and the more complex CIL gold ores. The latter with the current low gold price has become less viable over the last three years, and as a result gold exploration by most mining companies have been drastically reduced.

Sirocco Resources NL despite these difficult operating times has maintained a reduced exploration programme and kept up a mining presence in the Mt Bundey region of the Northern Territory.
6. **Expenditure During the Fifth Tenure Year**

A minimum expenditure covenant of $10,000 was nominated for the fifth tenement year, this was unfortunately not met, and a breakdown of the expenses can be shown below.

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**Grand Total** | $7,665.35
7. REFERENCES

The following published and unpublished reports and papers were used to provide background information relevant to EL 9596 during the initial planning stages of the exploration program and during the preparation of this report.


ATTACHMENT 1 CD ROM DIGITAL DATA