TANAMI GOLD NL

EL6132 MUNYU HILLS

REPORT ON EXPLORATION WITHIN THE RELINQUISHED PORTION FOR THE PERIOD OF TENURE TO 28 AUGUST 1996

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1. Summary

A regional evaluation of the Highland Rocks area was completed by Dr Peter Williams of geological consultants Etheridge Henley Williams (EHW) in 1994. This study reviewed publicly available aeromagnetic, gravity, geological and structural data, and resulted in the identification of several target areas for field investigation. The principal commodity sought was gold.

Due to the remoteness of the area and the lack of track access, sacred site clearance surveys and field programmes were helicopter supported. A first sacred site clearance survey was undertaken in 1994 and this was followed by a geological reconnaissance and surface sampling programme. In addition to rock chip samples taken from Lower Proterozoic (Arunta Complex) outcrops, a soil/pisolith sampling traverse was completed over a sand covered magnetic anomaly. Low gold values were returned (maximum: 4ppb Au).

A second sacred site clearance survey in undertaken in May, 1996, was followed by a further programme of lag sampling within the cleared area. All gold assays were below the lower limit of detection (i.e. <1ppb Au).

Assessment of the tenement from the air during the 1996 exploration programme revealed the rarity of Lower Proterozoic outcrop. The low gold assays returned from sampling over outcrops and magnetic anomalies led to the decision to relinquish this portion of EL 6132.

2. Introduction

This report discusses exploration undertaken on the portion of EL 6132 Munyu Hills nominated for relinquishment in July 1996.

EL 6132, Munyu Hills, was applied for on 25 May 1988 by Kia Pacific Gold Limited (Kia Pac). Tanami Gold NL (TGNL) commenced discussions with Kia Pac in February 1994, resulting in the signing of the Kia Pac Joint Venture (KPV) on 17 March 1994. The KPV includes EL 6132, Munyu Hills, and the adjacent EL 6131, Mt Russell. Under the terms of the KPV agreement TGNL managed the project and could earn up to 80% equity in the tenements.

The tenement application areas lie entirely within Aboriginal Land. TGNL recommenced negotiations with the Traditional Owners and the Central Land Council (CLC) resulting in the signing of a Deed for Exploration on 26 July 1994. The applications had remained current until negotiations were completed successfully with the Traditional Owners and the CLC. ELs 6131 and 6132 were granted on 29 August 1994.

Sacred site clearance surveys were undertaken prior to commencing field work in 1994, and again in 1996.
3. Location and Access

The Highland Rocks project area (Fig. 1) is located in the Northern Territory, adjacent to the Western Australian border, approximately 640km NW of Alice Springs. EL 6132, Munyu Hills, lies within the SW quadrant of the Highland Rocks 1:250 000 Map (SF52-7), and is located entirely within the Lake Mackay Aboriginal Reserve No 1028 which is largely uninhabited. The nearest habitations are Vaughan Springs homestead 160km east, Tanami Downs Station 130km NNE, and Ngulupi Outstation 130km NNW. The nearest stores are Rabbit Flat 170km NNE and Marwuntu Store at Wirrimanu Community 200km NW. The NW portion of EL 6132 was chosen for relinquishment.

Access to the area is difficult. There are no existing roads to or through either EL 6131 or EL 6132. All access to the tenements, to date, for the purpose of site clearance or sampling has been via helicopter. For the 1996 work programme a base camp was established at Carrol’s Bore, W.A., 80km north of the NW corner of EL 6132 and 35km south of Ngulupi. Fuel was ferried to three fuel dumps within the project area via helicopter and sling, in order to maximise the efficient use of the helicopter during the sampling programme.

4. Site Clearance

The initial sacred site clearance survey was completed in 1994 prior to the commencement of the field exploration programme. Most Lower Proterozoic outcrops within the EL were cleared for the exploration programme by the Traditional Owners.

A second sacred site clearance survey over proposed exploration areas on EL 6131 and EL 6132 was undertaken during May, 1996. An anthropologist, Derek Elias, and CLC Assistant Mining Officer, Scott Laidlaw, accompanied by a group of Traditional Owners from Lajamanu, Mt Liebig, Kintore and Nyirripi, camped at Carrol’s Bore from 22 May to 24 May.

A Lloyd Aviation Jetranger was used over a two day period to check TGNL’s selected exploration areas for sites of significance. General approval was given for the proposed work programme, although TGNL was advised of certain areas of significance. TGNL agreed to avoid all such areas.

5. Geology

The geology of the Highland Rocks project area was described in detail in the 1995 Annual Report (Kavanagh, 1995). A brief description of the main geological features follows.

Outcrop within EL 6132 is poor. Most of the area is covered with Aeolian sand, with long E-W trending stable dunes developed in some areas. Occasional small clay pans are scattered through the area.
Occasional ridges of gently dipping Adelaidean (Redcliff Pound Group) sandstone form prominent landmarks throughout the region. These ridges include sites of significance (navigational and ceremonial) to the Traditional Owners. These late Proterozoic sandstones unconformably overlie a granitic and metamorphic basement complex, mapped by the Bureau of Mineral Resources (now AGSO) as Arunta Complex.

6. **Exploration History**

The Highland Rocks project area has not been subjected to modern exploration programmes, due to its remotesness, extensive Quaternary aeolian sand cover, and location within an Aboriginal Reserve. There have been prior exploration licence applications made but all of these have been either cancelled or withdrawn.

Several prospectors and explorers passed through the region in the early part of the century. The prospector, Wickham, is rumoured to have found specimen gold at Wickham’s Find, the location of which is not known. Wickham’s Well lies 33km NE of the NE corner of EL6132, confirming that Wickham passed through the area.

Michael Terry, Stan O’Grady and Ben Nicker passed south and west of the area on a camel supported exploration safari. An indication of their route can be gained from places they named along the way, including Mount Nicker, McEwin Hills, O’Gradys Well and, in Western Australia, Nicker Creek and Hidden Basin.

7. **Exploration Programmes.**

Due largely to the remotesness of the area and the absence of track access to the tenement, field work was undertaken in two helicopter supported campaigns, the first in 1994 and the second in 1996. Sample locations are shown on Plate 1

7.1 **1994 Geological Reconnaissance and Surface Sampling**

A helicopter supported geological reconnaissance and surface sampling programme was completed in August 1994. The field work was undertaken by geologists, Dr Peter Williams of EHW and Nick Swindler of Kia Pac, and EHW field assistants. Three areas were sampled for a total of 42 samples.

All samples were analysed for gold, arsenic, bismuth, copper, lead and zinc. Sample locations and assays are listed in Appendix 1. Sample locations are shown on Plate 1. In areas of no outcrop, soil/pisolith samples were taken. Soil from shallow pits was sieved, and the -6mm and +20mesh fraction was collected. Rock chip samples were taken from small outcrops of Arunta Complex.
Gold assays ranged from <1ppb to 4ppb. Arsenic values were low (maximum 34ppm As). All other base metal values were very low, with the exception of slightly elevated copper and zinc values in rock chip sample PW1886 (Cu: 122ppm and Zn: 110ppm).

7.2. 1996 Surface Sampling

A surface sampling programme over EL 6132 commenced in the last week of May and was completed in the first week of June. The sampling crew included two senior geologists (the authors), a junior geologist, Randall Jones, and two field assistants. Access to the area was via a Bell Jetranger helicopter, chartered from Lloyd Aviation, Adelaide, and operating from the base camp at Carrol’s Bore (Fig. 1).

General areas for sampling had been selected in advance of the field programme, based on a combination of magnetic interpretation, geological assessment and the results of the first sampling programme (1994). During the field programme aerial reconnaissance was undertaken over each area in order to select the best sampling sites. The optimum sample medium was selected at each site, having regard to local outcrop, cover and regolith regimes. Most samples were collected from the retained portion of EL 6132. Only 7 samples were collected from the area subsequently selected for relinquishment. Lower Proterozoic outcrop is restricted to a few small zones in this area.

Gently dipping Adelaidean and flat lying younger cover sequences and their erosional products mask substantial areas within the tenement. A presumed recent iron enrichment process has coated surface material and produced fine to medium sized pisolite and nodules in the soil. Aeolian sand forms a major component of the soil.

Relief is low throughout this very mature landscape, with all regolith regimes and cover sequences condensed and superimposed producing a complex and highly variable geochemical domain.

Sampling was restricted to surface material and was designed to reduce the effect of aeolian sand dilution and maximise the scavenging properties of the surficial iron concentration. Sample sites were biased to areas where surface geochemistry was considered as reflective of underlying Lower Proterozoic units.

Sample media included:
- rock fragments (from outcrop, sub-outcrop and proximal scree gravel);
- lag gravel;
- pisolite (in situ and transported); and
- fine grained recent pisolite.
Lag samples were screened to +2mm and -8mm, except where sample quality was judged to be poor, and duplicate coarse sieved samples (+8mm) were taken. Sample locations are shown on Plate 1.

All samples were assayed for gold and nine other potential indicator elements (arsenic, bismuth, copper, lead, zinc, barium, tungsten, iron and manganese). The samples were assayed by Australian Laboratory Services P/L (ALS). Gold was determined by low detection fire assay (ALS Method Code PM219) with a lower detection limit of 1ppb. The remaining elements were determined by inductively coupled plasma atomic emission spectrometry (ALS Method Code IC587) with the following lower detection limits: As: 10ppm, Bi: 5ppm, Cu: 5ppm, Pb: 5ppm, Zn: 5ppm, W: 10ppm, Ba: 10ppm, Fe: 10ppm and Mn: 5ppm.

The results were disappointing. Gold assays were all <1ppb, arsenic ranged from <10ppm to 32ppm and the highest bismuth assay was 6ppm. Sample locations and assays are listed in Appendix 1.

8. **References**

**Kavanagh, M.E., 1995.** Annual Report to Northern Territory DME Exploration Licences EL 6131 and EL 6132, TGNL unpublished report.
APPENDIX 1

SAMPLE LOCATIONS AND ASSAYS
Key to Sample Types

S-P  Soil - Pisolith
L    Lag
R    Rock Chip (outcrop and/sub-outcrop)
L-c  Coarse Sieved Lag (+8mm)