EL 5870

Partial Relinquishment Report

To 6th November 1992

Pine Creek Sheet SD 52-8 Batchelor 14/2-IV (5171.IV)

Licensee: Northern Gold NL

Compiled for
Northern Gold NL
Warren Cooper
November 1992
SUMMARY

An exploration program was carried out on the relinquished block of EL 5870 to test the area for Au and base metal mineralisation on the extension of the old Virginia line of workings. Detailed soil sampling in 1991 over anomalous zones identified by stream sediment sampling defined a 700 meter by 400 meter soil Au anomaly with values up to 418 ppb Au. Rock chips from the zone produced results up to 4.28 ppm Au from quartz veins in a synclinal closure of quartz wacke and conglomerates. The mineralisation encountered is considered to be the north-western extension of the Au mineralisation at the Virginia mine. Further sampling was undertaken to better define the mineralised system. A mineral claim has been pegged over this area in the northeast that was identified as containing Au bedrock mineralisation.
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1 INTRODUCTION

1.1 Title
EL 5870 was granted on 7 November 1989 to Northern Gold NL for a period of six years. The licence initially covered four blocks (10 kilometers) and was reduced by relinquishing the two westernmost blocks at the end of the 1991 year. The southernmost block of the remaining two is to be relinquished after the pegging of a mineral claim in the northeast of the block.

1.2 Location and Access
EL 5870 is located approximately 10 kilometers northwest of Adelaide River (Figure 1) within the Rum Jungle Mineral Field. Access to EL 5870 is via the Camp Creek or Batchelor-Stapleton roads. Access within the tenement is restricted to four wheel drive vehicles due to the rugged nature of the terrain.

1.3 Previous Work
Northern Gold NL conducted stream sediment sampling, soil sampling and mapping over the relinquished area of EL 5870 in 1990 (Rhys & Stokes 1990). In 1991, soil sampling, mapping and rock chip sampling was conducted over anomalous areas defined by this work and reported in Cooper & Stokes 1991.
EL 5870
Virginia West
Date granted: 7/11/1989
Expiry date: 6/11/1995
Report date: 6/12/1992
Reduction date: 6/9/1992
Rent: $1993-40
Covenant: -93-
Size: -2 Bl.

FIGURE 1
EL 5870 is situated within the Pine Creek Geosyncline, a tightly to isoclinally folded sequence of mainly pelitic and psammitic Lower Proterozoic sediments with interlayered tuff units. All the lithologies in the area have been metamorphosed to low and in places medium grade metamorphic assemblages. For the purposes of this report the prefix meta is implied but omitted from rock names and descriptions. The sequence has been intruded by pre-orogenic dolerite sills and a number of late syn-orogenic to post-orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata as well as Cainozoic sediments and laterite overlie the Pine Creek Geosyncline lithologies.
3 EXPLORATION COMPLETED

Northern Gold completed an exploration program designed to test the area for gold and base metal mineralisation. Work on the relinquished block was concentrated in the northeastern portion which has subsequently been pegged as a mineral claim. Field checking of the western low order Au anomaly indicated by soil sampling in 1991 failed to indicate potential for economic mineralisation.

3.1 Geological Reconnaissance

EL 5870 comprises mainly north-south trending ridges separated by tributaries of Stapleton Creek. A geological map is presented as Figure 2. The ridges consist of Proterozoic lithologies which are blanketed by Quaternary cover to the south.

Outcrop in the relinquished block of EL 5870 generally consists of low ridges of siltstones and greywackes of the Burrell Creek Formation. The northeast corner of the block covers part of the synclinal closure along which the old Virginia workings occur. The dominant rock type exposed there is a bedded quartz greywacke with minor siltstone interbeds both of which are quartz veined in part.

The low order soil Au anomaly identified by previous work on the western side of the tenement (Cooper & Stokes 1991)
overlies weakly pyritic siltstones that are veined by bucky white quartz, considered to be responsible for the weak Au anomaly. No further work is warranted on this anomaly.

Detailed mapping of the better anomalous zone defined by soil sampling conducted in 1991 identified Au mineralised quartz veins. The mineralised veins have a strong spatial association with the Virginia synclinal closure (Figure 3). Host rocks for the mineralised veins are quartz wackes and conglomerates. The quartz veins occur as bedding subparallel veins, bedding cross-cutting veins sub parallel to the dominant foliation and as shear hosted veins. The old working on the area consists of small pits and trenches that have been dug on dominantly the shear zone hosted quartz veins.

3.2 Rock Chip Sampling

A total of 8 rock chip samples were collected over the anomalous area defined by previous work. Sample locations, results and descriptions are presented in Figures 3 and in Appendix 1. Results ranged from below detection limit to 0.30 ppm Au. These are of a lower tenure than samples collected the previous year as emphasis was placed on sampling material not sampled previously.
LEGEND

SCALE 1:5000 approximately

Pqq Quartz wacke, minor siltstone and conglomerate
Pc Quartz pebble conglomerate, minor siltstone
\[ \text{\textdegree} \] bedding with dip
\[ \text{\textdegree} \] cleavage with dip
\[ \ast \] old diggings
\[ \ast \] creek
\[ \times \] 3000\( \pm \) rock chip sample site with number
\[ \rightarrow \] quartz vein

FIGURE 3
Detailed soil sampling in 1991 over anomalous zones defined by stream sediment sampling in 1990 identified a well defined soil Au anomaly 400 meters by 700 meters in extent that is open to the south-east. Reconnaissance rock chip sampling over the anomaly gave results up to 4.28 ppm Au from quartz veins in the area. The anomalous zone is thought to represent the north-western extension of the mineralisation at the old Virginia mine. Mapping of the anomalous zone with some further rock chip sampling better defined the mineralisation.

The southern block is to be relinquished after the pegging of a mineral claim over the anomalous zone.
6. REFERENCES


7 EXPENDITURE

Expenditure on EL 5870 during the third year totalled $5,537. Details of this expenditure are listed below as Table 1.

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Table 1.
Appendix 1
Rock chip sample results and descriptions
ROCK CHIP DESCRIPTIONS

80036- sheared and veined siltstone
80037- quartz vein
80038- quartz vein
80039- quartz vein in conglomerate bed
80040- as for 80039
80041- thin quartz tension veins in greywacke
80042- as for 80041
80043- quartz vein in sheared siltstone
80044- quartz vein from small pit
ASSAY CODE: AC 04551

Northern Gold NL

Client Reference: N 01362
Project :
Cost Code:

Date Received: 16/10/1992
Number of Samples: 40

### Sample Preparation

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Authorisation: Ray Wooldridge
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