FINAL REPORT
FOR SUBSTITUTE EXPLORATION LICENCE 8664
FOR THE PERIOD 15/4/94 TO 21/05/96
TENNANT CREEK DISTRICT, NORTHERN TERRITORY
LOCKSLEY PROSPECT
TENNANT CREEK 1:250,000 SHEET SE 53-14

VOLUME 1 OF 1

AUTHOR: DR PHILIPPE O J MOUCHET
EXPLORATION GEOLOGIST

DATE: JULY 1996.

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COMMODITIES: Gold, Copper
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1 SUMMARY

This report presents the work undertaken by PosGold on SEL 8664 for the period 15/6/94 to 21/5/96. SEL 8664 is located approximately 25 km W of Tennant Creek. SEL 8664 was granted to PosGold on 15/6/94 and comprised nine graticular blocks. It was formed in lieu of former EL's 8390 (Castle Prospect), 8034 (Ivanhoe Prospect) and 8403 (Moosehead Prospect). In accordance with Section 26 of the Mining Act, five graticular blocks of SEL 8664 were relinquished on 14/5/95.

Exploration completed by PosGold during this period includes:

- a previous exploration and mining date review, and
- vacuum drilling.

Results indicate that the possibility of economic mineralisation within SEL 8664 is limited and SEL 8664 was surrendered after the second year of tenure.
2 INTRODUCTION

2.1 Location and Access

SEL 8664 (Locksley Prospect) is located approximately 25 km west of Tennant Creek, refer Figure 1. Access is gained using the Tennant Creek to Warrego Road to the Ivanhoe Mine turn-off, then west via the Ivanhoe - Red Bluff track. The Darwin to Amadeus gas pipeline is used to access the western portions of the licence.

2.2 Climate and Physiography

The physiography of SEL 8664 is characterised by aeolian, alluvial and colluvial peneplains which gently slope to the south from the Red Bluff line of hills outside and to the north of the licence.

The region experiences seasonal rainfall in the period November to April and this may reduce access for limited periods. Temperatures at this time of the year are high (maximum > 35°C). During the rest of the year, temperatures are warm to mild and conditions are dry.

2.3 Tenure

SEL 8664 was granted to PosGold on 15/6/94 for a period of four years. The licence comprises nine graticular blocks.

SEL 8664 was formed in lieu of EL’s 8034 (Ivanhoe) 8039 (Castle) and 8403 (Moosehead), refer Figure 1.

Within SEL 8664 are several current groups of Mineral Leases and Claims including ML’s C124 and C129 covering the SE Red Bluff area, and MC’s C799 and C800 covering the Explorer 13 magnetic anomaly, held by PosGold MC’s C1123 to C1129 cover the Pelican geochemical anomaly and MC C801 covers the eastern extension to the Exploration 13 anomaly, held under Roebuck Resources NL - Camelot Resources NL Joint Venture.

On 14/5/95, five graticular blocks were relinquished from SEL 8664 as per statutory reduction requirements.

2.4 Previous Exploration

During the late 1960’s and early 1970’s Authority to Prospect 2092 held by the Westmoreland Minerals Limited - MAT Exploration Pty Ltd - Paringa Mining and Exploration Company Ltd Joint venture covered portions of SEL 8664. The joint venture parties conducted an aeromagnetic survey over the Authority but did not define any magnetic anomalies within the area of SEL 8664 (McMahon et al, 1971).

During the mid 1970’s Noblex NL (Noblex) held portions of SEL 8664 under EL 471 (Argo South). Noblex conducted both aero- and ground magnetic surveys without significant follow-up work.

During the late 1970’s Uranerz Australia Pty Ltd (Uranerz) held EL 1668 which covered western portions of SEL 8664 (Taylor, 1979). Uranerz utilised aeromagnetic and radiometric surveys in search for unconformity related uranium deposits. No work was conducted within the area of SEL 8664.
During the late 1980's, EL 5074 held under Newmont Australia Limited (Newmont) - Australia Development Limited (ADL), now PosGold, Joint Venture and EL 5071 held by ADL covered portions of SEL 8664. Initial work comprised aeromagnetic surveying and regional soil geochemical sampling with follow-up RAB and later RC testing of geochemical anomalies without significant results (Hatcher and Halfpenny, 1993).

During 1993 PosGold were granted EL's 8034, 8390 and 8403 which formed SEL 8664. No work was conducted over EL's 8390 and 8403 during their period of tenure. (Evans, 1994, 1994a; Kuoni 1994, 1994a).

No mines or historical workings exist within SEL 8664. The Ivanhoe Mine is located 500m east of SEL 8664, and structurally along-strike and east of Explorer 13. Total production during the period 1965 to 1972 was 315,000 tones @ 2.3 g/t Au, 12.3 g/t Ag and 2.9% Cu.

3 LOCAL GEOLOGY

The bedrock of SEL 8664 comprise Warramunga Formation siltstone, shale and greywacke with varying degrees of haematite- and kaolin-alteration. Several quartz-haematite ironstone pods outcrop in the eastern section of the licence. Vacuum geochemical drilling identified vast areas of granite (Red Bluff Granite) and quartz porphyry beneath 2-6 metres of transported cover, in the central and western portions of the licence.

Regionally the licence covers several NW and NNW trending Navigator Fault and Mary Lane Shear splay structures.

The Ivanhoe Mine is the closest large mine to SEL 8664. Ivanhoe was discovered in 1959 by Geopoko through deep drilling of a magnetic anomaly Explorer 9) in an area that is completely covered with Quaternary alluvium and colluvium. Ore was mined from a vertically dipping, brecciated, tabular, chlorite-magnetite body with a strike length of 100m and a 10m width. The mineralisation which included old, bishmuthinite, galena and sphalerite occurred as a fracture infillings in magnetite. The mineralised host shear zone has a strong base metal component with galena and sphalerite reported as gangue minerals and a substantial silver content in the mine production.

4 EXPLORATION UNDERTAKEN OVER SEL 8664 DURING LIFE OF TENURE

4.1 Exploration undertaken for the period 15/6/94 to 14/6/95

Work completed over SEL 8664 during the first year of tenure included a historical data review and vacuum geochemical drilling at three prospects (Ivanhoe, Castle and Moosehead).

A total of 355 vertical holes for 1,618 metres have been drilled; downhole geochemical sampling involved collection of transported overburden above bedrock (at Moosehead and Castle) and bedrock samples (at Moosehead and Ivanhoe). The overburden samples were subject to heavy mineral concentrating (HDC) and submitted to Analabs Pty Ltd in Perth for Au, Cu, Bi, Fe, Mn, Pb, Zn, Mo, Ag and Cd analysis by AAS using an aqua regia digest. Bedrock samples were submitted to Amdel for ICP-MS analysis for Au, Cu, Bi, Pb, Zn and Ag (for Moosehead) and to Australian Laboratory Pty Ltd in Alice Springs for analysis on Au, Cu, Bi, Pb, Zn and Ag by AAS using an aqua regia digest.
Geochemical assay results defined very subtle zones of anomalous HDC-bedrock Au-Cu, Bi-Ag values. Refer to Evans (1995, 1995a) for all vacuum data, figures and plans.

4.2 Exploration undertaken for the period 15/6/95 to 21/5/96

Work completed over SEL 8664 in year two of tenure included reconnaissance field work and a review of previous exploration data.

5 EXPENDITURE INCURRED DURING THE PERIOD

5.1 Exploration Expenditure incurred during the period 15/6/94 to 14/6/95

During year one of tenure, PosGold incurred are exploration expenditure of $45,043 (Evans, 1995).

5.2 Exploration Expenditure incurred during the period 15/6/95 to 21/5/96.

During the period 15/6/95 to 21/5/96, PosGold incurred on exploration expenditure of $7,911 over SEL 8664. A breakdown of this is as follows:

<table>
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<th>EXPENSE</th>
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<td>Employee Costs</td>
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<td>Overheads</td>
<td>$883</td>
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<td>Drilling</td>
<td>$1,202</td>
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<td>Assays</td>
<td>$   -</td>
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<tr>
<td>Operating Costs</td>
<td>$575</td>
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<tr>
<td>Specialist Services</td>
<td>$   -</td>
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<td>Tenement Costs</td>
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**TOTAL**  $7,911

Covenant  $14,490

Total expenditure for the two years of tenure is $52,954

6 CONCLUSIONS AND RECOMMENDATIONS

Exploration conducted over SEL 8664 during the life of tenure focus part of a broad regional exploration strategy including a multi-disciplinary approach using geochemical and geophysical techniques. This work has led to the conclusion that the ground lacks potential for economically attractive mineral resources and should be surrendered after the second year of exploration.
7 ENVIRONMENTAL AND REHABILITATION FACTORS

PosGold has commenced an active rehabilitation programme over much of the Tennant Creek field. This commitment has been reinforced within the Normandy Group with the appointment of a Group Environmental Engineer to oversee and implement the Group’s guidelines and objectives. In addition to this an Environmental Superintendent has been engaged at Tennant Creek to design and implement the Group’s objectives throughout the Tennant Creek area.

As an example of the Group’s commitment to environmental issues several active rehabilitation programmes are currently being undertaken in the Tennant Creek field. These include programmes at Nobles Nob, Eldorado, White Devil and Warrego.

An Environmental Management Plan for the Company’s Tennant Creek Operations (Fowler, 1993) has been submitted to the Department of Mines and Energy under separate cover (March 1993). This plan details the strategies to be implemented over various areas following completion of exploration programmes and mining operations.
8 REFERENCES


Nobelex NL. Completion exploration Report EL 471 - Argo South. Report to the NTDME No. 74021. Nobelex NL.

APPENDIX ONE

BIBLIOGRAPHIC DATA SHEET
**BIBLIOGRAPHIC DATA SHEET**

**REPORT NUMBER**  
96044

**REPORT NAME**  
FINAL REPORT FOR SUBSTITUTE EXPLORATION LICENCE 8664 FOR THE PERIOD 15/6/94 TO 21/5/96 TENNANT CREEK DISTRICT, NORTHERN TERRITORY, LOCKSLEY PROSPECT

**PROSPECT NAME(S)**  
RED BLUFF PROSPECT  
MOOSEHEAD PROSPECT  
CASTLE PROSPECT  
IVANHOE PROSPECT  
LOCKSLEY PROSPECT

**OWNER/JV PARTNERS**  
POSGOLD LIMITED

**KEYWORDS**  
VACUUM DRILLING  
GEOCHEMISTRY  
DATA REVIEW  
EXPLORER 13  
MARY LANE SHEAR ZONE  
NAVIGATOR FAULT

**COMMODITIES**  
GOLD, COPPER

**TECTONIC UNIT**  
TENNANT CREEK INLIER  
WARRAMUNGA GROUP  
RED BLUFF GRANITE

**1:250,000 MAP SHEET**  
KELLY 52/4  
TENNANT CREEK 52/5

**1:100,000 MAP SHEET**