ANNUAL REPORT FOR
EXPLORATION LICENCE 9293
JOKER PROSPECT

TENNANT CREEK 1:250,000 MAP SHEET NO SE53-14
VOLUME 1 OF 1

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EL 9293 lies approximately 15 km SE of Tennant Creek Township. Access is via the sealed Peko and Nobles Nob Roads and the gazetted Gosse River Road.

This report details exploration undertaken for the period from 8 March 1999 to 7 March 2000.

Exploration conducted over the tenement has included a high-resolution airborne magnetics survey in 1998, airborne TDEM survey in 1999, the signing of the agreement to access Warrumungu Land Trust areas and ongoing environmental review.
1 CONCLUSIONS & RECOMMENDATIONS

Exploration conducted over the tenement has included a high-resolution airborne magnetics survey in 1998, airborne TDEM survey in 1999, the signing of the agreement to access Warrumungu Land Trust areas and ongoing environmental review.

The 1998 Nobline airborne geophysical survey and the airborne 1999 TDEM survey will play an integral role in the delineation of new exploration targets. A total of 8,200 line kilometres were flown for the aeromagnetic survey.

Exploration planned for next year will include completion of the TDEM analysis and target generation using the recently acquired geophysical and geochemical data sets. Detailed structural and alteration mapping will be used to assist in target generation modeling. Drill testing will follow for any suitably prospective targets.

2 INTRODUCTION

This report details exploration undertaken by Normandy Tennant Creek Pty Ltd (Normandy) on EL 9293 for the period from 8 March 1999 to 7 March 2000.

3 LOCATION, ACCESS AND CLIMATE

EL 9293 lies approximately 15 km SE of the Tennant Creek township. Access is via the sealed Peko and Nobles Nob Roads and the gazetted Gosse River Road. A well-developed network of gravel tracks extends from these roads to provide good vehicular access (Figure 1).

The climate of the Tennant Creek district is mild and dry through most of the autumn to spring months. The summer period is hot with seasonal heavy rainfall between January and March making access very difficult during these periods.

4 TENURE

EL 9293 was applied for on the 14 August 1995 and approval to negotiate given on the 10 October 1995.

EL 9293 was granted on the 8 March 1999 after the signing of an agreement with the Central Land Council on the 8 December 1998. The exploration licence covers an area of 2 graticular blocks (6.64 km²).
5 REGIONAL GEOLOGY

The geological understanding of the Tennant Creek Inlier has been advanced by detailed geological mapping over the Tennant Creek and Flynn 1:100,000 map sheets (Donnellan et al. 1995), precision dating of stratigraphic components of the region (Compston, 1995) and regional geophysical interpretations.

The oldest exposed lithologies in the Tennant Creek Inlier are the metasedimentary rocks of the Warramunga Formation, which host the Au-Cu-Bi mineralisation of the Tennant Creek Goldfield. These Proterozoic sediments were deposited approximately 1860 Ma. Deformation and intrusion of the Warramunga Formation by porphyries and granitoids occurred during the Barramundi Orogeny (1858 Ma to 1845 Ma).

Deposition of the volcanics and volcaniclastics of the Flynn Sub-Group followed the Barramundi Orogeny between 1845 Ma and 1827 Ma. An additional deformation event preceded the deposition of the Hatches Creek Group/Tomkinson Creek Sub-Group (1820 Ma to 1785 Ma) and the intrusion of late-stage granitoids and porphyries into both the Warramunga Formation and Flynn Sub-Group at 1650-1712 Ma.

6 LOCAL GEOLOGY


Unless otherwise stated, all localities and orientations are referenced to local Nobles Nob metric mine grid.

The rocks of the Nobles Nob area comprise Lower Proterozoic Warramunga Group turbiditic siltstone, shale and sandstones with subordinate volcaniclastic sediments. Ironstones and felsic porphyries occur within the sediments. Cabbage Gum Granite occurs 2 km south of Nobles Nob (Evans, 1996). MacCahon (1959) broadly correlated the stratigraphic succession mapped at Nobles Nob to Archangel.

Elliott & Jones (1993) subdivided the Warramunga Group at Nobles Nob into two units using grain size and facies association as controlling parameters. Both units host ironstone and gold mineralisation.

Unit 1 is exposed throughout the southern and central parts of the area and is predominantly composed of fine-grained felsic volcaniclastic sandstones with minor coarser sediments. Partial and complete Bouma sequences are commonly preserved. Unit 1 grades towards the north into Unit 2.

Unit 2 is distinguished from Unit 1 by an increase in grain size and a change in the scale, type and association of facies preserved. Massive, laminated, large-scale trough cross-bedded sandstone and extensively rippled bedding surfaces were observed. The unit is exposed in the range that lies to the north of the Mount Rugged range and hosts the Kia Ora Mine.

The coarser grained volcaniclastic sandstone of Unit 2 has been previously mapped as Flynn Sub-Group, however this sandstone is more likely to represent a shallower facies of the Warramunga Group. Unit 2 possibly reflects sedimentation in a shallow marine or fluvial environment and the relationship between Units 1 and 2 suggests that the Warramunga Group were deposited in a shallowing basin.
The Late Proterozoic to Early Cambrian Rising Sun Conglomerate unconformably overlies the Warramunga Group and outcrops as a linear WNW striking unit extending from just south of Juno through Nob West to Red Terror. The conglomerate comprises angular and rounded quartz and Warramunga Group sediment clasts in a coarse grained grit matrix (Elliot & Jones, 1993).

The main regional structure of the Nobles Nob Mine area is the Nobles Nob anticline, an upright shallow west plunging fold (Elliot & Jones, 1993). The Nobles Nob area occupies the southern limb of the Nobles Nob anticline (Evans, 1996).

Several anticlinal to monoclinal flexures in the southern limb create localised plunge reversals. Several lines of shearing occur in the Nobles Nob area. The dominant orientation is WNW to east-west striking shears, which is probably associated with regional fold axial plane cleavage. In general, ironstone in the Nobles Nob area is striking in a WNW to easterly direction. This orientation parallels the Nobles Nob Line of Lode (Nob Line) which extends west from Skipper Extended, east through Mt Samuel, Eldorado, Juno, Nobles Nob to Red Terror (Campbell, 1953).

7 PREVIOUS WORK

Previous exploration and mining history of the Nobles Nob leases has been presented in Lidbury (1999).

Australian Development held part of this area from 1973 to 1976 with EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow up (Nobelex, 1975 & 1976). A part of the area cover by the present EL 8786 was also covered by EL 143 held by Nobelex. Several anomalies were investigated but were not believed to be due to discrete ironstone bodies (Nobelex, 1975a). A 1975 regional airborne geophysical survey failed to identify further targets (Nobelex, 1976b).

In 1982, Peko-Wallsend Operations held the ground with EL 2535. A low level aeromagnetic survey revealed two parallel WNW-ESE trending features (Duke, 1982). Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas (Duke et al, 1986).

PosGold explored part of the area from 1986 to 1992 with EL 4929. An airborne survey was flown in 1990 which detailed 2 magnetic features west of Nobles Nob. Four RC holes were drilled with Anomaly 2 showing significant gold grades and Anomaly 3 generating no significant anomalies (Schusterbauer, 1992). A further 11 RC holes were drilled (1071m) at other prospects but assay results were disappointing (Lindsay-Park, 1991). Exploration of this area was incomplete and inclusive.

TC8 Pty Ltd held part of the ground from 21/4/92 to 5/3/97 with EL 7687. A total of 20 rock chip and 12 soil samples were collected with 2 samples from the NE of the licence returning anomalous gold and bismuth values (Simpson, 1993). An extensive gravity survey was completed over the licence in 1994 and a vacuum drilling program initiated (Simpson, 1994). Review of the gravity data concluded that ground magnetics and vacuum drilling were required to determine drill targets (Simpson, 1995).
WORK CARRIED OUT DURING THE REPORTING PERIOD

The Nobline airborne geophysical survey was completed in October 1998 by Kevron Geophysics Pty Limited for a total of 8,200 line km (diagram attached).

Information gained from the survey included aeromagnetic, radiometric and digital elevation data. Lines were flown north – south, 50m apart at an average flight height of 40m. Aeromagnetic readings were taken every 7m and radiometric and altitude readings were taken every 49m. Tie lines were flown east – west every 500m. EL 9293 aeromagnetic contours are presented in Figure 2 and digital data presented in Appendix 1.

An agreement, The Area of Interest Agreement, with the Central Land Council was signed on 9 December 1998. This agreement, between Central Land Council, Traditional Landowners and Normandy, establishes land access for mineral exploration upon Warrumungu Land Trust areas.

In October and November 1999, a Normandy proprietary an airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 9293 (Figure 3). The helicopter borne sensor was flown at 30m mean terrain clearance and 100m line spacing. Analysis of the data is underway and will be reported in the annual report in March 2001. Digital data presented in Appendix 1.

While field activities have been restricted during the wet season, work has concentrated on the systematic consolidation of all exploration data to facilitate target generation. This has included validation of the Datamine database and compilation of a GIS database. Exploration in the area has been focussed on target generation.

An environmental audit was completed at the end of 1999 and covered all historical mining and exploration sites in the Tennant Creek mineral field. The audit located and detailed all occurrences of disturbance including mine workings, tracks, dumps, drillholes, excavations, buildings and rubbish.
Figure 2: Contoured TMI AMAG
# EXPENDITURE STATEMENT FOR THE PERIOD 8/3/1999 TO 7/3/2000

During the reporting period of tenure, the EL 9293 incurred an expenditure of $10,183. A breakdown of this expenditure follows (Table 1):

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<td>Overheads</td>
<td>$ 90</td>
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<td>Operating Costs</td>
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<td>Specialist Services</td>
<td>$ 6,830</td>
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<td>$ 10,183</td>
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Tenement rental for the year to March 2000 was $20 and the Total Expenditure is $10,203.

An expenditure commitment of $19,250 was not met and an application for variation of covenant was lodged on the 21 January 2000.

# RECOMMENDED WORK PROGRAM & PROPOSED EXPENDITURE FOR THE PERIOD 8/3/2000 TO 7/3/2001

Proposed exploration activities for the period 8 March 2000 to 7 March 2001 will involve assessing the 1998 high resolution magnetics data and TDEM survey for target generation.

The proposed exploration expenditure for EL 9293 for the next year of tenure is as follows (Table 2):

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<td>$ 7,650</td>
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Tenement rental for the year to March 2000 was $20 and the Total Proposed Expenditure is $7,670.
Because no on-ground work that could cause substantial disturbances has been conducted on EL 9293, no environmental rehabilitation has occurred during the reporting period. With regards to rehabilitation of ground disturbance caused by historical mining and exploration activities, Normandy's ongoing rehabilitation program is described below.

Normandy has commenced an active rehabilitation program 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.

Several active rehabilitation programs are currently being undertaken in the Tennant Creek field. These include programs at Nobles Nob, Eldorado, White Devil, Orlando, Ivanhoe and Warrego.

Environmental Management Plans for the Company’s Tennant Creek Operations (Fowler, 1993; Fowler et al., 1998) have been submitted to the Department of Mines and Energy under separate cover. These plans detail the strategies to be implemented over various areas following completion of exploration programs and mining operations.
REFERENCES


APPENDIX ONE

1998 AEROMAGNETIC SURVEY & AERIAL TDEM SURVEY DIGITAL DATA
APPENDIX TWO

BIBLIOGRAPHIC DATA SHEET
**BIBLIOGRAPHIC DATA SHEET**

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