COMBINED ANNUAL REPORT FOR THE
EASTERN PROJECT AREA

16 NOVEMBER 2005 – 15 NOVEMBER 2006

LICENCEES:

EMMERSON RESOURCES PTY LTD
A.C.N. 117 086 745

GIANTS REEF EXPLORATION PTY LTD
A.C.N. 009 200 346

SANTEXCO PTY LTD
A.B.N. 002 910 296

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15 DECEMBER 2005

DISTRIBUTION:
Department of Primary Industry, Fisheries & Mining
Central Land Council
Emmerson Resources Pty Ltd

MAP SHEETS:
TENNANT CREEK SE53-14
1:250 000
FLYNN
5759
1:100 000
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1. SUMMARY

Exploration Licences (“ELs”) in the EPA, were acquired by Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco Pty Ltd to search for Tennant Creek style iron oxide copper-gold deposits. Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco Pty Ltd are wholly owned subsidiaries of Emmerson Resources Pty Ltd.

This combined report records the exploration work completed on these ELs during the EPA Combined Reporting period from 16 November 2005 to the 15 November 2006.

Total expenditure on the ELs during their anniversary dates was $249,644.15 versus covenant of $164,700.
INTRODUCTION

Exploration Licences (“EL’s”) in the Eastern Project Area (EPA), were acquired by Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco to search for Tennant Creek style iron oxide copper-gold deposits (IOCG deposits). Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco Pty Ltd are wholly owned subsidiaries of Emmerson Resources Pty Ltd.

This combined report records the exploration work completed on these ELs during the EPA Combined Reporting period from 16 November 2005 to the 15 November 2006.

On the 6 August 2005 the Manager of Customer Services – Minerals & Energy Titles (DPIFM) approved the Company’s request to combine the it’s Exploration Licences into four (4) project areas for purposes of combined annual reporting. The 4 areas are divided into the Northern, Southern, Eastern and Western regions, each initially averaging around 750km² (refer Figure 1).

The aim of creating the 4 tenement groups is to simplify tenement statutory reporting and project management, and also more clearly convey exploration expenditure aligned to the Company’s project work areas, which are not restricted to individual tenements. The Company also includes expenditures on mineral leases and claims within each EL, but separately to the qualifying EL expenditures.

2. LOCATION

Exploration Licences covered by the EPA covers an area of some 274.56 km² east of the Tennant Creek Township.

The principal access to ELs in the EPA from Tennant Creek is east via the Peko Rd and Gosse River Road and then by various sealed haul roads (i.e. Juno and Nobles Nob) and unsealed tracks. However, much of the Project area is rocky, without tracks and difficult to reach, even in a 4x4 vehicle. The unsealed tracks become impassable during the wet season.

Figure 1 shows the location of the Licences within the EPA and with respect to the town of Tennant Creek and other combined project areas.

2.1 EL8199 CARLSBERG

Exploration Licence 8199, CARLSBERG is located approximately 18km east southeast of the Tennant Creek Township.

Access to the Licence area is via a 4x4 drive dry weather track originating near the Tennant Creek microwave repeater tower and then to the "Lone Star" trend of workings.
From here EL 8199 is reached by via a series of unsealed tracks for approximately 12 kms. The middle of the EL is 2km south from this gate along the fence-line. During and immediately after rain the area is generally inaccessible. EL 8786 is located on the Tennant Creek 1:100 000 scale map sheet (5758).

Figure 2 shows the location of EL 8199 and surrounding tenure.

### 2.2 EL8279 BINTANG

Exploration Licence 8279 BINTANG is located approximately 8km east of Tennant Creek town. The Licence falls on the Tennant Creek 1:100,000 scale map sheet (5758).

Access is via the sealed Peko road leading off Paterson Street, Tennant Creek. Access to the Licence area from Peko Road is via secondary unsealed tracks. During and immediately after rain the Licence areas are generally inaccessible.

Figure 3 shows the location of EL 8279 and surrounding tenure.

### 2.3 EL8280 SAN MIGUEL

Exploration Licence 8280 SAN MIGUEL is located approximately 5km east of Tennant Creek town. The Licence falls on the Tennant Creek 1:100,000 scale map sheet (5758).

Access is via the sealed Peko road leading off Paterson Street, Tennant Creek. Access to the Licence area from Peko Road is via secondary unsealed tracks. During and immediately after rain the Licence areas are generally inaccessible.

Figure 4 shows the location of EL 8280 and surrounding tenure.

### 2.4 EL8705 BOSEIVER

Exploration Licence 8705 BOSEIVER is located approximately 8 km southeast of the township of Tennant Creek on the 1:100 000 scale Tennant Creek map sheet (5758).

Access to EL 8705 from Tennant Creek town is via the sealed Peko and Juno mine roads. A series of un-sealed minor tracks provides access to the remainder of the tenement. During and immediately after rain the Licence areas are generally inaccessible.

Figure 5 shows the location of EL 8705 and surrounding tenure.

### 2.5 EL8786 FIRST LIGHT

Exploration Licence 8786 FIRST LIGHT, is located approximately 15 km south east of Tennant Creek and lies on the Tennant Creek 1:100 000 scale map sheet (5758).
Access to the Licence area from Tennant Creek is via the sealed road to the Peko and Nobles Nob Mines, and then along the Gosse River road.

Figure 6 shows the location of EL 8786 and surrounding tenure.

2.6 EL8991 SUNRISE

EL 8991 SUNRISE is located approximately 12km southeast of Tennant Creek Township and lies on the Tennant Creek 1:100,000 scale map sheet (5758).

Access from Tennant Creek town is via the sealed Peko and Nobles Nob Roads. A series of un-sealed minor tracks provides access to the remainder of the tenement. During and immediately after rain the area is generally inaccessible.

Figure 7 shows the location of EL 8991 and surrounding tenure.

2.7 EL9293 JOKER

Exploration Licence 9293 JOKER is located approximately 15 km east southeast of Tennant Creek Township on the Tennant Creek 1:100,000 scale map sheet (5758).

Access is via the sealed Peko and Nobles Nob roads and the gazetted Gosse River Road. Various dirt and gravel tracks extend from these roads to provide reasonable vehicle access. During and immediately after rain the area is generally inaccessible.

Figure 8 shows the location of EL 9293 and surrounding tenure.

2.8 EL8879 MT CLELAND

Exploration Licence 8879 MT CLELAND, is located approximately 15km north east of the Tennant Creek Township on the Tennant Creek 1:100,000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east via Peko Road then along the road to the Lone Star Mine. Access to the licence from the Lone Star Mine Road is north east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 9 shows the location of EL 8879 and surrounding tenure.

2.9 EL10118 ROCKY RANGE

Exploration Licence 10118 ROCKY RANGE, is located approximately 18km east of the Tennant Creek Township on the Tennant Creek 1:100,000 scale map sheet (5758).
Access to the Licence area is via the Stuart Highway, east via Peku Road then along the road to the Kiaora Mine. Access to the licence from the Kiaora Mine Road is east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 10 shows the location of EL 10118 and surrounding tenure.

2.10 EL22285 SNAPPY GUM

Exploration Licence 22285 SNAPPY GUM, is located approximately 23km east north east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east via Peku Road then along the road to the Kiaora Mine. Access to the licence from the Kiaora Mine Road is north east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 11 shows the location of EL 22285 and surrounding tenure.

2.11 EL10113 IVORY

Exploration Licence 10113 IVORY, is located approximately 6km north east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east via Peku Road then along the road to the Lone Star Mine, which lies on the licences’ southern boundary. Access to the licence from the Lone Star Mine Road is via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 12 shows the location of EL 10113 and surrounding tenure.

2.12 EL9930 NEW MOON

Exploration Licence 9930 NEW MOON, is located approximately 18km north east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east via Peku Road, then along the road to the Lone Star Mine. Access to the licence from the Lone Star Mine Road is east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 13 shows the location of EL 9930 and surrounding tenure.
2.13 EL10203 WHITE HILL BORE

EL 10203 WHITE HILL BORE is located approximately 18km northwest of Tennant Creek Township, on the Tennant Creek 1:100 000 scale map sheet (5759).

Access from Tennant Creek is north via Stuart Highway to a point about 700m north of the old Overland Telegraph Station, then easterly via series of un-sealed minor tracks to WHITE HILL BORE.

Figure 14 shows the location of EL 10203 and surrounding tenure.

2.14 EL8430 RED BACK

Exploration Licence 8430 RED BACK, is located approximately 8 km southeast of the township of Tennant Creek on the 1:100 000 scale Tennant Creek map sheet (5758).

Access to EL 8430 from Tennant Creek town is via the sealed Peko and Juno mine roads. A series of un-sealed minor tracks provides access to the remainder of the tenement. During and immediately after rain the Licence areas are generally inaccessible.

Figure 15 shows the location of EL 8430 and surrounding tenure.

2.15 SEL8665 SHARK

Substitute Exploration Licence 8665 SHARK is located between 6 km and 20 km east and southeast of Tennant Creek on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area from Tennant Creek is via the sealed road to the Peko and Nobles Nob mines, and then via the un-sealed Gosse River Road. A network of unsealed tracks provides reasonable vehicular access to the remainder of the tenement. During and immediately after rain the area is generally inaccessible.

Figure 16 shows the Location of SEL 8665 and surrounding tenure.

2.16 EL10124 SPEEDWAY

Exploration Licence 10124 SPEEDWAY is dissected by the Stuart Highway, which divides the licence into eastern and western regions. The licence is more precisely located approximately 2km north and also north east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway and then west or east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 17 shows the location of EL 10124 and surrounding tenure.
2.17 EL10114 MCDougall Ranges

Exploration Licence 10114 McDougall Ranges, is located approximately 5km east northeast of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east along Peko Road and via the road to the Lone Star Mine workings, which runs through EL 10114.

Figure 18 shows the location of EL 10114 and surrounding tenure.

2.18 EL9985 Running Bear

Exploration Licence 9985 Running Bear, is located approximately 10km east northeast of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east along Peko Road and via the road to the Lone Star Mine workings. From here EL 9985 is accessed by a series of unsealed tracks, which during and immediately after rain generally become inaccessible.

Figure 19 shows the location of EL 9985 and surrounding tenure.

2.19 EL9403 Jess

Exploration Licence 9403 Jess, is located approximately 4km south east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is south via the Stuart Highway, south east via the road to the Cats Whiskers Mine, which is located immediately to the south of EL 9403’s southern boundary. Access to the licence from the Cats Whiskers Mine is north via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 20 shows the location of EL 9403 and surrounding tenure.

2.20 EL10313 Kodiak

Exploration Licence 10313 Kodiak, is located approximately 15km east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east along Peko Road and via the road to the Kiaora Mine workings. From here EL 10313 is accessed by a series of north bound unsealed tracks and fence lines, which during and immediately after rain generally become inaccessible.

Figure 21 shows the location of EL 10313 and surrounding tenure.
2.21 EL10406 MONTANA

Exploration Licence 10406 MONTANA, is located approximately 5km south east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is south via the Stuart Highway, south east via the road to the Cats Whiskers Mine, which is located in the northern region of EL 10406. Access to other areas of the licence from the Cats Whiskers Mine is via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 22 shows the location of EL 10406 and surrounding tenure.

2.22 EL10312 HOPEFUL

Exploration Licence 10312 HOPEFUL, is located approximately 14km north east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via the Stuart Highway, east via Peko Road then along the road to the Lone Star Mine. Access to the licence from the Lone Star Mine Road is east via a series of unsealed tracks and fence line tracks, which during and immediately after rain generally become inaccessible.

Figure 23 shows the location of EL 10312 and surrounding tenure.

2.23 EL9358 DELTA

Exploration Licence 9358 DELTA is located approximately 22km east southeast of Tennant Creek on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area from Tennant Creek is via the sealed road to the Peko and Nobles Nob mines, and then via the un-sealed Gosse River Road. A network of unsealed tracks provides reasonable vehicular access to the remainder of the tenement. During and immediately after rain the area is generally inaccessible.

Figure 24 shows the Location of EL 9358 and surrounding tenure.

2.24 EL10324 PANDA

Exploration Licence 10324 PANDA is located approximately 18km east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area is via a sealed road from Tennant Creek to the Tennant Creek microwave repeater tower and then east via a series un-sealed tracks. These roads are only negotiable for four wheel drive and are generally inaccessible immediately after rain.

Figure 25 shows the location of EL 10324 and surrounding tenure.
3. TENURE

Tenure details for the 24 Exploration Licences within the EPA are as follows:

Table 1: EPA Tenure details.

<table>
<thead>
<tr>
<th>Exploration Licence</th>
<th>Licence Holder</th>
<th>Blocks &amp; part-blocks</th>
<th>Area (km²)</th>
<th>Date of Grant/Renewal</th>
<th>Period of Grant/Renewal</th>
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<td>GIANTS REEF EXPLORATION PTY LTD *</td>
<td>1</td>
<td>3.23</td>
<td>19 October 2001</td>
<td>6</td>
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<td>EL10203 WHITE HILL BORE</td>
<td>GIANTS REEF EXPLORATION PTY LTD *</td>
<td>2</td>
<td>6.47</td>
<td>17 June 2001</td>
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<td>EL8430 RED BACK</td>
<td>SANTEXCO PTY LTD *</td>
<td>1</td>
<td>3.28</td>
<td>8 March 2005</td>
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<td>SEL8665 SHARK</td>
<td>SANTEXCO PTY LTD *</td>
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<td>8 March 2005</td>
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<td>GIANTS REEF EXPLORATION PTY LTD *</td>
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<td>12.6</td>
<td>1 May 2003</td>
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<td>EL10114 McDougall</td>
<td>GIANTS REEF EXPLORATION PTY LTD *</td>
<td>9</td>
<td>14.67</td>
<td>1 May 2003</td>
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Exploration Licences in the EPA lie within both NT Portion 408, Phillip Creek, Perpetual Pastoral Lease 946 and on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust.

An Agreement referred to as the Areas of Interest Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners in December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas. Nine of the 24 ELs in the EPA are on Perpetual Pastoral Lease and are subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

### 3.1 EL8199 CARLSBERG

EL 8199 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Normandy Tennant Creek Pty Ltd (NTC) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of one graticular block.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited. As a result of this, NTC is now a wholly owned subsidiary of Giants Reef and has had its name changed to Santexco Pty Ltd (Santexco).
The western half of the Licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8199. The eastern half of the Licence falls on NT portion 494 Perpetual Pastoral Lease 1142, Tennant Creek Station.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8199 for a term expiring on 7 March 2007.

3.2 EL8279 BINTANG

EL 8279 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of two graticular blocks.

The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8279.

Approximately 70% of the two-block area of EL 8279 is taken up with Mineral Claims and Mineral Leases that cover the western part of the Peko mine area, and the Comet mine leases.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8279 for a term expiring on 7 March 2007.

3.3 EL8280 SAN MIGUEL

EL 8280 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of three graticular blocks.

The Licence falls within Crown Land (Tennant Creek Township) and Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the
Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8280.

A proportion of EL 8280 is taken up with Mineral Claims surrounding the historic Susan and International (Rosebud) mine workings, and with Mineral Leases surrounding the Argo mine. Altogether, these claims and leases make up an estimated 80% of the 3 blocks, leaving less than 2 square kilometres of the 3 blocks free for exploration under EL 8280.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8280 for a term expiring on 7 March 2007.

### 3.4 EL8705 BOSEIVER

EL 8705 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of one graticular block.

The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8705.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8705 for a term expiring on 7 March 2007.

### 3.5 EL8786 FIRST LIGHT

EL 8786 was applied for in June 1994 and approval to negotiate was given in February 1995. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of four graticular blocks.
The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8786.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8786 for a term expiring on 7 March 2007.

### 3.6 EL8991 SUNRISE

EL 8991 was applied for in April 1994 and approval to negotiate was given in February 1995. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998. (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of one graticular block.

The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8991.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8991 for a term expiring on 7 March 2007.

### 3.7 EL9293 JOKER

EL 9293 was applied for in August 1994 and approval to negotiate was given in October 1995. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998. (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of two graticular blocks.

The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by
the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 9293.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 9293 for a term expiring on 7 March 2007.

### 3.8 EL8879 MT CLELAND

Exploration Licence 8879 Mt Cleland, consists of eight graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 19 October 2001 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

In compliance with the statutory requirements of the mining act, an application for waiver of the compulsory reduction within EL 8879 was completed and was submitted to DPIFM during September 2006.

### 3.9 EL10118 ROCKY RANGE

Exploration Licence 10118 Rocky Range, consists of twenty seven graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 19 October 2001 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

In compliance with the statutory requirements of the mining act, an application for waiver of the compulsory reduction within EL 10118 was completed and was submitted to DPIFM during September 2006.
3.10 EL22285 SNAPPY GUM

Exploration Licence 22285 Snappy Gum, consists of two graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 19 October 2001 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

3.11 EL10113 IVORY

Exploration Licence 10113 Ivory, consists of ten graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 19 October 2001 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

3.12 EL9930 NEW MOON

Exploration Licence 9930 New Moon, consists of one graticular block and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 19 October 2001 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

3.13 EL10203 WHITE HILL BORE
EL 10203 WHITE HILL BORE was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on 17 June 2001 for a period of 6 years.

The Licence covers two graticular blocks. The Licence falls within with in NT Portion 494, Perpetual Pastoral Lease 1142 (Tennant Creek Station).

The Licence area is subject to an Indigenous Land Use Agreement signed in September 2000 with the Native Title holders of the Tennant Creek region and the Central Land Council.

3.14 EL8430 RED BACK

EL 8430 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of one graticular block.

The Licence falls within Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8430.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL 8430 for a term expiring on 7 March 2007.

3.15 SEL8665 SHARK

The application for SEL 8665 was submitted in March 1994 and approval to negotiate was given in December 1995. SEL 8665 was granted on the 8 March 1999 after the signing of an agreement with the Central Land Council on the 9 December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The exploration licence covers an area of seventeen graticular blocks and replaces EL 6343, 6929 and 7274.

The Licence falls within both Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek Station. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council (CLC), Traditional Landowners and NTC on 9 December 1998. This
agreement established land access for mineral exploration upon Warrumungu Land Trust areas.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Pty Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of SEL 8665 for a term expiring on 7 March 2007.

3.16 EL10124 SPEEDWAY

Exploration Licence 10124 Speedway, consists of six graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An Agreement referred to as the Wildhorse II Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners, Giants Reef and Santexco Pty Ltd on the 25th February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 10124.

3.17 EL10114 McDougall Ranges

Exploration Licence 10114 McDougall Ranges, consists of nine graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An Agreement referred to as the Wildhorse II Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners, Giants Reef and Santexco Pty Ltd on the 25 February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 10114.

3.18 EL9958 Running Bear

Exploration Licence 9958 Running Bear, consists of three graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An Agreement referred to as the Wildhorse II Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners, Giants Reef and Santexco Pty Ltd on the 25 February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 9958.
3.19 EL9403 JESS

Exploration Licence 9403 Jess, consists of two graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Wildhorse II Agreement for Exploration was signed by the Central Land Council (CLC), Traditional Landowners and NTC on the 25 February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 9403.

3.20 EL10313 KODIAK

Exploration Licence 10313 Kodiak, consists of two graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Wildhorse II Agreement for Exploration was signed by the Central Land Council (CLC), Traditional Landowners and NTC on the 25 February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 10313.

3.21 EL10406 MONTANA

Exploration Licence 10406 Montana, consists of one graticular block and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 1 May 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Wildhorse II Agreement for Exploration was signed by the Central Land Council (CLC), Traditional Landowners and NTC on the 25 February 2003. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 10406.

3.22 EL10312 HOPEFUL

Exploration Licence 10312 Hopeful, consists of two graticular blocks and was granted to Giants Reef Exploration Pty Ltd (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 9 October 2003 for a period of six years.

The entire licence falls on Inalienable Aboriginal Freehold land held by the Warrumungu Land Trust and is subject to an Indigenous Land Use Agreement (ILUA), signed in
September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

The Exploration License lies within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek station.

3.23 EL9358 DELTA

The application for EL 9358 was granted DELTA Gold Exploration Pty Ltd (DELTA) on 13 May 1996 for a period of 6 years. Giants Reef Mining N.L. (Giants Reef) entered into a purchase agreement with DELTA Gold Exploration Pty Ltd (DELTA) over EL 9358 in November 1996 and title was registered to Giants Reef in March 1997.

The Licence covered an area of 4 graticular blocks and fell within NT Portion 494, Perpetual Pastoral Lease 1142, Tennant Creek Station.

EL 9358 was subject to an Indigenous Land Use Agreement (ILUA) signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council (CLC), and Giants Reef.

The Delegate of the Minister for Mines and Energy (DPIFM) granted a renewal of EL9358 for a term expiring on 12 May 2006. EL 9358 Delta, was allowed to expire on the 12 May 2006, as Giants Reef concluded that the likelihood of a discovery was very limited, and wished to focus exploration elsewhere in the Tennant Creek Mineral Field.

3.24 EL10324 PANDA

Exploration Licence10324 Panda was granted to Giants Reef Exploration (a wholly owned subsidiary of Emmerson Resources Pty Ltd) on the 25 June 2004 for a period of six years. The Exploration Licence consists of five graticular blocks.

An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 10324.
4. GEOLOGY

4.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Flynn 1:100,000 sheet, which covers the area of the Licences.

The rocks of the Warramunga Formation host most of the orebodies in the region and underlie most of the Exploration Licences.

4.2 Geology of the Eastern Project Area

The EPA covers a region of the Tennant Creek Province and includes deformed lower-greenschist facies flyshe sequence (Warramunga Formation) intruded by syn-orogenic granite and granodiorite as well as stratabound felsic porphyry. This sequence is overlain by silicic volcanics and volcanioclastics (Flynn Subgroup) and intruded by late orogenic granite, porphyry and lamprophyre. The Warramunga Formation comprises greywacke, siltstone, shale with interbedded felsic volcanics. Crustal melting resulted in the formation of dry, I-type granodiorite melts and granitic differentiates (Tennant Creek Supersuite), which intruded the Warramunga Formation and lower parts of the Flynn Subgroup during and subsequent to the Barramundi Orogeny. Deformation of the Warramunga Formation produced tight upright folds with a pervasive sub-vertical east west slaty cleavage accompanied by lower greenschist facies metamorphism. Deposition of the volcanosedimentary Flynn Subgroup more or less coincided with the plutonic events.

Progressive dextral shearing resulted in large-scale east trending open folds, as defined by the stratabound porphyries. Disharmonic folds, angular folds and plunging doubly peaking anticlines with a weak sub-vertical crenulation cleavage developed within the Warramunga Formation. North west trending open folds of disharmonic style were generated within the Flynn Subgroup.

The youngest igneous events in the Tennant Creek Province were intrusion of the Warrego and Gosse River East granites, as well as lamprophyre dykes and sills.

The EPA is largely covered by Quaternary sands and gravels in relict fluvial systems, active channels, floodplains and quartz-rich dissected colluvial fan deposits.

Outcrop within the EPA is limited to ridges and these comprise scattered outcrops of Palaeoproterozoic Warramunga Formation and Flynn Sub-group/ Tomkinson Creek Sub-group (Ooradidgee Group).
The EPA includes a number of significant gold-copper-bismuth deposits, including Nobles Nob, Juno, Peko, Eldorado and Argo.

### 4.3 EL8199 CARLSBERG

The Licence is located in the eastern region of the Tennant Creek Province. Outcrop within the tenements is limited to scattered outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation, which is partially silicified in places. The Licence is mostly covered by Quaternary sediments and includes dissected colluvial fan deposits and red soil plains. The Quaternary deposits are assumed to cover Warramunga Formation, including the low magnetic sandstone units in the northern and high magnetic siltstone dominant units in the southern half of the Licence. Rock types include sandstone, carbonaceous siltstone, pyritic shale and haematite shale units, quartz dolerite dykes that trends NNW to north south with sub vertical dips. A number of small E-W fold hinges are displayed within the Warramunga sediments. Aeolian sands or alluvial material obscures large areas of bedrock.

The Licence lies within the south east extension of the Lonestar mineralised trend. There are no known deposits within the Licence, however the Lonestar deposit, which produced some 5,665 oz of gold and smaller surrounding prospects are located approximately 8 km to the north west of the EL.

### 4.4 EL8279 BINTANG

The Licence is located in the eastern region of the Tennant Creek Province. Outcrop within the tenements is limited to scattered outcrops of weathered siltstone, sandstone, conglomerate and greywacke of the Palaeoproterozoic Warramunga Formation.

The Licence is mostly covered by Quaternary sediments and includes dissected colluvial fan deposits and red soil plains. The Quaternary deposits are assumed to cover Warramunga Formation, which comprise the high magnetic siltstone dominant units. Felsic porphyry intrusives are interpreted from aeromagnetic data as intruding the Warramunga units in the south east corner of the Licence.

The southern graticular block of EL 8279 covers the Peko Mine mineral leases. The Peko mine produced 218,000 oz Au, 1.33 M oz Ag, 117Kt Cu and 100 t Bi. The deposit comprises a series of plunging pipes and lenses within a sheared anticlinal structure and mineralisation occurs within quartz-hematite lodes in the oxide zone and magnetite-sulphides zone at depth.

### 4.5 EL8280 SAN MIGUEL

The Licence is located in the eastern region of the Tennant Creek Province. Outcrop is restricted to east-west trending sediment and quartz-haematite ironstone ridges. The dominant lithologies are Warramunga Formation siltstone, shale and greywacke with minor
quartz porphyry in the south. Numerous quartz and quartz-haematite ironstones are present in the ridges. Lamprophyre has been mapped and was intersected in diamond drill holes at the Pinnacles Mine. Several east striking shears traverse the area.

Mineralisation styles are varied and include auriferous quartz veins within a quartz porphyry host (Dolomite and Pup Mines), shear hosted hematite-talc-chlorite ironstone (Pinnacles, Ajax, Fassifern and Southern Star Mines) and massive magnetite-chlorite ironstone (Argo Mine and Explorer 38).

The south west graticular block of EL 8280 covers the Argo Mine mineral leases. The Argo mine produced 65,900 oz Au and the deposit comprises an elongate lens within a reverse faulted anticline and hematite shale unit. Mineralisation occurs within a magnetite-pyrite core and footwall of massive ironstone

4.6 EL8705 BOSEIVER

The Licence is located in the south eastern region of the Tennant Creek Province. The geology of EL 8705 includes minor outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation and these are restricted to the eastern boundary of the Licence. The steeply dipping bedding in the outcrops generally strikes west-northwest and displays sub-vertical cleavage. The western region of EL 8705 is covered by Cainozoic colluvium in the form of sheet wash and fanning topographic ridges. Airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic Warramunga Formation underlie the Licence area.

The Licence lies between two significant deposits and include Nobles Nob and Juno. The Nobles Nob mine produced 1.1 M oz Au and Juno produced 836,000 oz Au, 90,000 oz Ag, 1,500 t Cu and 2,300 t Bi. The Nobles Nob deposit comprises an elongate lens coinciding with S1 cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite. The Juno deposit comprises an elongate lens in an anticline and hematitic shale units, exhibits Au-Bi-Cu zonation and mineralisation occurs as pods in a magnetite-chlorite zone and stringer zone.

4.7 EL8786 FIRST LIGHT

The Licence is located in the south eastern region of the Tennant Creek Province. The geology of Exploration Licence 8786 includes outcropping Warramunga Formation, comprising fine to medium grained lithic arenite, volcanic arenite (metagreywacke), siltstone, shale, slate and terrigenous mudstone. Ooradidgee Group units comprising conglomerate, sandstone, felsic crystal-lithic tuff and lapilli tuff also outcrop within the Licence. Much of the northern and eastern region of the tenement is covered by Quaternary alluvial deposits and includes sandy soil and sheet and dune sand.

The Licence is located immediately east and south east of the Nobles Nob deposit. The Nobles Nob mine produced 1.1 M oz Au and Juno produced 836,000 oz Au, 90,000 oz Ag, 1,500 t Cu and 2,300 t Bi. The Nobles Nob deposit comprises an elongate lens coinciding
with $S_1$ cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite.

4.8 EL8991 SUNRISE

The Licence is located in the south eastern region of the Tennant Creek Province. The exposed geology in EL 8991 consists of several extensive outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation. Much of the Licence is covered by Cainozoic sediments and includes soils and alluvial outwash deposits. Airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic Warramunga Formation underlie the Licence area.

The Licence located immediately west of the Nobles Nob deposit. The Nobles Nob mine produced 1.1 M oz Au and Juno produced 836,000 oz Au, 90,000 oz Ag, 1,500 t Cu and 2,300 t Bi. The Nobles Nob deposit comprises an elongate lens coinciding with $S_1$ cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite.

4.9 EL9293 JOKER

The Licence is located in the eastern region of the Tennant Creek Province. The geology in EL 9293 consists of scattered outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation. Much of the Licence is covered by Cainozoic sediments including soils, sands and alluvial material. Airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic Warramunga Formation underlie the Licence area.

The Licence includes the JOKER deposit, which produced 990 Au oz. The Licence located immediately east of the Nobles Nob deposit and south west of the Golden Forty deposit. The Nobles Nob mine produced 1.1 M oz Au and Juno produced 836,000 oz Au, 90,000 oz Ag, 1,500 t Cu and 2,300 t Bi. The Nobles Nob deposit comprises an elongate lens coinciding with $S_1$ cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite. The Golden Forty mine produced 56,000 oz Au and comprises a plunging horseshoe-shaped pipe with hydrothermal alteration and metal zonation. Mineralisation occurs within a massive-chlorite pod and stringer zone.

4.10 EL8879 MT CLELAND

The northern region of EL 8879 includes a east-west metamorphic contact between the Tennant Creek Granite and sedimentary unites There are a number of intermittent outcrops of granite, metamorphosed sediments and ironstone proximal to the contact area. Outcrops, which coincide with ridges and isolated hills, dominate the southern region of 8879, these ridges and isolated hills consist of scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, which most likely
underlies Cainozoic colluvium scree, alluvial red soil plains and less extensive alluvial deposits in active channels and on flood plains.

The Quartz Hill Fault system and the Hopeful Star Extended shear zone dominate the structure of the licence. The Licence includes numerous historical mine workings such as; Extended East (10.7oz @ 4.7g/t), Black Cat (1,125.4oz @ 15.6g/t), Mauretania (216oz @ 32g/t), Hopeful Star (758.8oz @ 8.7g/t) and Hopeful Star East (170oz @ 5.1g/t).

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.11 EL10118 ROCKY RANGE

The geology of EL 10118 is dominated by Cainozoic colluvium scree, alluvial red soil plains and less extensive quartz rich dissected colluvial fan deposits, alluvial deposits in active channels and on flood plains and also a region of clay soil in a poorly drained depression. Minor outcrops, which coincide with isolated hills are present in the eastern areas of 10118, these isolated hills consist of scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, which most likely underlies the dominate Cainozoic sediments.

The licence includes a number historical mines such as; Renate (15.6oz @ 24g/t) and Golden Mile (96.2oz @ 20.7g/t).

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.12 EL22285 SNAPPY GUM

The geology of EL 22285 is dominated by Cainozoic colluvium scree, alluvial red soil plains and less extensive alluvial deposits in active channels and on flood plains. Less extensive outcrops coinciding with ridges and isolated hills, are present in the north of EL 9930. These ridges and isolated hills consist of scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation and most likely underlies the dominate Cainozoic sediments.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.13 EL10113 IVORY

Outcrops, which coincide with ridges and isolated hills, are dominate through out EL 10113, these ridges and isolated hills consist of weathered siltstone and greywacke of the
Paleoproterozoic Warramunga Formation and most likely underlie Cainozoic colluvium scree, alluvial red soil plains, quartz rich dissected colluvial fan deposits and less extensive alluvial deposits in active channels and on flood plains. The Quartz Hill Fault system dominates the structure of the licence, and is the major control on mineralisation and ironstone emplacement.

The licence contains numerous historical mine workings such as; True Blue (15oz @ 16.1g/t), Mint (25.2oz @ 8.9g/t), Aga Khan (96.5oz @ 11g/t), Memsahib (173.2oz @ 26.3g/t), Yellow Flame (22.5oz @ 55g/t), Mammoth (126.2oz @ 8.8g/t), Three Keys (306.9oz @ 20.5g/t) and Little wonder (27.4oz @ 7.3g/t). The Lone Star Mine workings (5665oz @ 17.6g/t) are located just south of EL 10113, and are covered by a series of MLC’s 362 – 365, 371 – 373, 530, 606, 610 & 616, these MLC’s also cover an area in the central south of the licence, and therefore will not be covered in this report. The Golden Key Mine workings (15.4oz @ 44.4g/t) are located in EL 10113 and are covered by a series of MLC’s 38, 253 – 261, 376 -387 & 432, and will therefore not be covered in this report.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.14 EL9930 NEW MOON

The geology of EL 9930 is dominated by outcrops, which coincide with ridges and isolated hills that dominate the central and northern regions of EL 9930. These ridges and isolated hills consist of scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, and most likely underlie the Cainozoic colluvium scree, alluvial red soil plains and less extensive alluvial deposits in active channels and on flood plains. The Quartz Hill Fault system dominates the structure of the licence, and is the major control on mineralisation and ironstone emplacement.

The licence contains the historical New Moon mine workings (12.9oz @ 5g/t).

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.15 EL10203 WHITE HILL BORE

The Licence is located in the eastern region of the Tennant Creek Province. EL 10203 is largely covered by Tennant Creek drainage system and comprises Cainozoic alluvium and colluvium. The cover sediments include alluvial deposits in active channels and on floodplains, and sheet /dune sand and sandy soil on high floodplain terraces. Outcrop is restricted to a small area in the north of the Licence and includes felsic volcanics and arenites of the Churchill’s Head Group.
Outcrop of the Tennant Creek Granite, with quartz reefs and veins, are found immediately north of the Licence and tourmaline-rich pegmatites outcrop around the White Hill Bore. Field evidence and interpretation of aeromagnetic data suggests that White Hill Bore is located on or very close to a contact-metamorphosed zone along the southern margin of the Tennant Creek Granite. The granite may be in contact with the Warramunga Formation turbidite sequence or with Flynn Sub-group sediments, or both.

There are no recorded mines or prospects within EL 10203. The nearest historic workings with moderate production (>100 oz Au) are about 6km to 8km to the south, and include Lone Star (5,665 oz Au), Memsaib (173 oz Au), Plain Jane (668 oz Au), Black Cat (1,125 oz Au), Mammoth (126 oz Au), Three Keys (307 oz Au), Mauritania (216 oz Au), Hopeful Star (759 oz Au) and Hopeful Star East (170 oz Au).

### 4.16 EL8430 RED BACK

The Licence is located in the south eastern region of the Tennant Creek Province. The geology of EL 8430 includes significant outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation. In places these outcrops are silicified and are referred to in the 1995 NTGS Tennant Creek 1:100,000 scale geology map as being restricted to the eastern region of the EL 8705 where an anticline has been mapped. The steeply dipping bedding in the outcrops generally strikes west-northwest and displays sub-vertical cleavage. The western region of EL 8430 is covered by Cainozoic colluvium in the form of sheet wash and fanning topographic ridges. Airborne and ground magnetic data suggest that metasediments of the Palaeoproterozoic Warramunga Formation underlie the Licence area.

The Licence lies between the two significant deposits, including Nobles Nob and Juno. The Nobles Nob mine produced 1.1 M oz Au and Juno produced 836,000 oz Au, 90,000 oz Ag, 1,500 t Cu and 2,300 t Bi. The Nobles Nob deposit comprises an elongate lens coinciding with S1 cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite. The Juno deposit comprises an elongate lens in an anticline and hematitic shale units, exhibits Au-Bi-Cu zonation and mineralisation occurs as pods in a magnetite-chlorite zone and stringer zone.

### 4.17 SEL8665 SHARK

The Licence is located in the south eastern region of the Tennant Creek Province. The geology in SEL 8665 includes sporadic outcrops of siltstones and greywacke of the Palaeoproterozoic Warramunga Formation. In the southern part of the SEL, sediments of the Cambrian Rising Sun Conglomerate occur as low ridges. In the northern region of the SEL, outcrops of lithic and volcanic arenite of the Yungkulungu Formation (Flynn Sub-group) occur, and numerous outcropping ironstone bodies have been mapped. Most of the low lying plains in the Licence are covered by Cainozoic alluvium and colluvium.
The Licence contains a number of small prospects including the Golden Forty (148,530 Au oz), Great Eastern (842 Au oz), Red Terror (603 Au oz), Black Boy (45 Au oz), Three Thirty (1730 Au oz) and Tunnel (64 Au oz).

4.18 EL10124 SPEEDWAY

EL 10124 straddles the Stuart Highway with the greater area being east of the Stuart highway. The geology to the east of the Stuart Highway (eastern region) in EL 10124 consists of major outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation forming a series of ridges that dominate the geology of the northern half of the eastern region of the licence. The southern half of the eastern region is dominated by Cainozoic colluvium, scree and alluvial deposits in active channels and on flood plains with less extensive minor outcropping weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation. On the western side of the Stuart Highway (western region), the geology is dominated by Cainozoic colluvium, scree and alluvial deposits in active channels and on flood plains with less extensive minor outcropping weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation with minor felsic porphyry confined to the north east area of the western region of EL 10124.

The licence contains many historical mine workings such as; Shamrock (9.6oz @ 4.8g/t), Burnt Shirt (2025.5oz @ 18.8g/t), Wedge (345.7oz @ 9.3g/t), Ace High (113.4oz @ 64.4g/t), Leichhardt One (891.8oz @ 24.1g/t), Kathleen (1154.2oz @ 20.5g/t) and Ortelle Star (9.1oz @ 8.4g/t). The Riesling Prospect is located within the eastern region of EL 10124 and is covered by MLC 182 -184 and therefore will not be covered in this report. MCC 211 encroaches on the northern EL boundary of the western region and will also not be covered in this report.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the licence.

4.19 EL10114 McDougall Ranges

The geology in EL 10114 consists of major outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation forming a series of ridges trending north west, which dominates the western region and north east licence boundary. The western region contains quartz rich dissected colluvial fan deposits with less extensive covering by Cainozoic colluvium, scree and alluvial deposits in active channels and on flood plains. The eastern region of the licence is dominated by Cainozoic colluvium, scree and alluvial deposits in active channels and on flood plains with less extensive quartz rich dissected colluvial fan deposits.

The licence contains the Lone Star Mine workings which are located in the north east region of EL 10114, and are covered by a series of MLC’s, MLC606 – 615, 368 -370, 374 & 375, and therefore will not be covered in this report.
In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.20 EL9958 RUNNING BEAR

The geology in EL 9958 consists of minor outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, limited to central north and north west areas of the licence, these outcrops form a series of north westerly striking low ridges. In the western end of these low ridges the beds all dip steeply southwards with the occasional parasitic fold indicating a variable easterly plunge. Colluvium, scree and alluvial deposits in active channels and on flood plains dominates the geological landscape of the licence, with less extensive alluvial red soil plains confined to the north east area of the licence.

The licence contains historical mine workings such as; Trump (4oz @ 22g/t) and Great Bear (192.1oz @ 18g/t).

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.21 EL9403 JESS

The geology of EL 9403 is dominated by Cainozoic dissected colluvium fan deposits and colluvium scree with less extensive alluvial deposits in active channels and on flood plains in the northern region of the licence. Ridges and isolated hills dominate the southern region of the licence and comprise scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, which most likely underlies the dominate Cainozoic sediments. Less extensive sheet and dune sand and sandy soil can also be found in the southern region.

The licence also contains the Eldorado Anomaly 3 and Ellen M prospects which are located in the south west corner of the licence and are covered by a series of MLC’s, namely MLC’s 15, 16, 51, 502, 503, 518, 523, 528, 529 & 535 and therefore will not be covered in this report.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.22 EL10313 KODIAK

The geology of EL 10313 has no outcropping rocks and is dominated by Cainozoic alluvial deposits in active channels and on flood plains, red earth soils that may contain
ferruginous pisoliths with less extensive colluvium and scree. Dissected colluvial fan deposits are present as very minor cover in the eastern area of the licence.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.23 EL10406 MONTANA

The geology of EL 10406 is dominated by ridges and isolated hills in the northern region of the licence. These ridges and isolated hills comprise scattered outcrops of weathered siltstone and greywacke of the Paleoproterozoic Warramunga Formation, and most likely underlies Cainozoic sediments in the southern region of the licence. The Cainozoic sediments are predominately made up of sheet and dune sand and sandy soil, with less extensive dissected colluvium fan deposits, colluvium scree and a relict fluvial system covered by sands.

The licence contains the Cats Whiskers, Eldorado Anomalies 4 & 5 and Explorer 32 prospects which are located in the north of the licence and are covered by a series of MLC’s, namely MLC 16, 50, 51, 518, 528, 529 & 535 and therefore will not be covered in this report.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.24 EL10312 HOPEFUL

Outcrop within the tenement is restricted to the north and coincides with ridges and isolated hills. These comprise scattered outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation.

The magnetic response over the Licence is relatively subdued and most likely reflects the low-magnetic sandstone dominant units of the Warramunga Formation, as interpreted by the N.T. Geological Survey (2002).

More than 90% of the region is covered by Quaternary colluvium scree, alluvial red soil plains and less extensive alluvial deposits in active channels and on flood plains. The recent cover is interpreted to be underlain by sandstone dominant Warramunga Formation Units.

The only known mineralisation within the Licence area is the Hopeful Star East. This small mine produced approximately 170 oz Au from 1,048 t @ 5.1 g/t Au and lies at the eastern extremity of a trend of prospects which include Hopeful Star (759 oz), Mauritania (127 oz), Little Wonder (27.4oz @ 7.3g/t), Mammoth (126.2oz @ 8.8g/t). Immediately to the west of the Licence are a group of Mineral Leases (Mulga Group) which include such prospects as
Three Keys (306.9oz @ 20.5g/t), Memsahib (173.2oz @ 26.3g/t), Mint (25.2oz @ 8.9g/t), Aga Khan (96.5oz @ 11g/t) and Yellow Flame (22.5oz @ 55g/t). The trend of these prospects is interpreted as extending through the south western region of EL 10312.

EL 10312 lies between the significant northwest-southeast trending Quartz Hill Fault system in the south and the Hopeful Star Extended shear zone in the north. The Quartz Hill Fault system hosts such deposits as the Tennant Creek East Golden Mile workings, Cleo's Gift, Mt Argo, Gecko, Orlando and many others.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek 1:100 000 sheet 5758, which covers the area of the license.

4.25 EL9358 DELTA

The Licence is located in the south eastern region of the Tennant Creek Province. Outcrop in EL9358 is limited, however airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic Warramunga Formation and porphyritic felsic volcaniclastic rocks of the Yungkulungu Formation (Flynn Sub-group or Ooradidgee) underlie the Licence area.

The Licence does not contain any significant deposits, however two small prospects, including Big Heart and Desert Gold (31 oz Au) occur within the EL. The prospects are located along the southern side of a major east-west porphyry dyke or sill at the contact with Warramunga Formation sediments. The "Desert Gold" prospect has previously been referred to as the "Knave" and "Craig Dhu", however the name "Desert Gold", which comes from a Government record dated 28 August 1936, is the original name and is used here. The name of the "Big Heart" prospect comes from a Government record dated 9 February 1937 for lease or claim no. 862.

A series of magnetic anomalies, which lie along the northern contact of the porphyry body, are referred to as the Barracuda (Baloo) target.

The Licence lies within the easterly strike extension of the Eldorado-Juno-Nobles Nob trend of mines and mineral occurrences. Along strike and further to the east of the Licence are the New Hope, Plum, Comstock and Desert Hope gold prospects.

4.26 EL10324 PANDA

The EL10324 is located in the eastern region of the Tennant Creek Province. More than 90% of the tenement is covered by Cainozoic colluvium. A small area of outcropping Warramunga formation occurs in the north eastern region of the Licence.

Airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic and Warramunga Formation and minor volcaniclastics of the
Ooradidgee Group underlie the Licence area. Both the Mary Lane and Quartz Hill faults traverse the Licence.

There are no recorded mines or prospects within EL 10324. The nearest historic workings with moderate production (>100 oz Au) include Metallic Hill (150 oz Au), Billy Boy (inferred resource: 5,100 oz Au), which are 1km to the north east and Kiaora (1,019 oz Au), which is located 3kms to the south west. The Renate (17 oz Au) prospect is located approximately 1 km east of the Licence.
5. PREVIOUS EXPLORATION

5.1 Targets and Concepts

Exploration within the EPA has been aimed at discovering Tennant Creek style iron oxide copper-gold (IOCG) deposits within the Warramunga Formation.

This type of deposit is well documented. Better known examples of the primary copper-gold type in the region include Peko and Argo. These deposits are all hosted in ironstone (magnetite +/- haematite) masses with associated chloritic, dolomitic and silicic alteration. An example of the primary gold type is the Juno deposit. A local examples of the oxide gold type are the Nobles Nob and Eldorado deposits.

There are numerous old mines and prospects within the EPA, held under Mineral Leases and Claims by Santexco Pty Ltd and Giants Reef Exploration Pty Ltd. Some of the more significant deposits included in these are Eldorado (121,961 oz Au), Golden Forty (56,640 oz Au), Lone Star (5,665 oz Au), Cat’s Whiskers (1824 oz Au), Kiaora (1,019 oz Au), New Hope (1,479 oz Au) and Comstock (1,151 oz Au). Some of the more significant deposits that fall within ELs in the EPA include Red Terror (1,690 oz Au), Burnt Shirt (2,026 oz Au) and Kathleen (1,154 oz Au).

There are numerous ironstone outcrops and magnetic anomalies that represent non-outcropping ironstone masses, scattered throughout most of the EPA.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this. Giants Reef considers the potential for the discovery of mineralisation in hematite dominant ironstones in this group of tenements is excellent.

Segments of the EPA are explored under 2 statutory exploration Mining Management Plans (MMP’s) termed Eldorado and Gosse Road. Future exploration should be developed under a project area specific MMP, separated from the existing MMP’s, which are focused on exploring the Juno-Nobles Nob Line.

The Eldorado Project Area MMP was accepted and an Authorisation to explore was issued by DBIRD for the period of one year on 09/07/02. Subsequent amendments and updates throughout the life of the document have occurred. The Current MMP – Authorisation 0031-03 governs exploration within 66 ML’s, 4 MC’s and 2 EL’s. A security of $4,700 resides with DBIRD in the form of $3,000 cash and $1,700 unconditional bank guarantee. On completion of GRM’s post drilling environmental audits a full refund and dissolution of the bank guarantee is envisaged.

The Gosse Road Project Area MMP was accepted and an Authorisation to explore was issued by the DBIRD for the period of one year on 29/07/02. One amendment has occurred throughout the life of the document The Current MMP – Authorisation 0040-02
governs exploration within 8 MC’s, 6 EL’s and 1 SEL. A security of $5,000 resides with DBIRD in the form of $1,600 cash and $3,400 unconditional bank guarantee. On completion of GRM’s post drilling environmental audits a full refund and dissolution of the bank guarantee is envisaged.

5.2 EL 8199 CARLSBERG

Peko-Wallsend held the area of this lease between 1984 and 1987 under EL 4536 (432 graticular blocks). A number of prospects were discovered in EL 4536 including Metallic Hill (Lowe, 1986) but no prospects were discovered in the area of EL 8199. Metana Minerals explored the area between 1988 and 1990, however no reports are available for any of the work undertaken.

The Exploration Licence was originally applied for in May 1993 by Poseidon Gold Limited to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies.

In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8199.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Lonestar trend and re-modelling of magnetic data. This work identified a discrete low amplitude magnetic high (432700mE, 7828600mN MGA94) which, broadly coincides with the outcropping quartz reefs.

Centralian Minerals also conducted a number of field trips into the tenement to examine outcropping quartz reefs and to inspect areas coinciding with the magnetic anomalies, however these locations were found to be covered by Quaternary sediments, including red soil plains.

Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys and rock chip sampling have also been undertaken.

5.3 EL 8279 BINTANG

The southern block of the Licence is largely covered by Mineral Leases over the Peko deposit and Comet workings.

Australian Development held this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow-up.
In 1982, Peko-Wallsend Operations held the ground with EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

Between 1987 and 1993, Wiluna Gold Pty Ltd explored the area under EL 5304. Exploration was carried out under a joint venture with Asarco Gold and Top End Resources. Exploration was directed towards locating near surface gold deposits having weak to no magnetic signature. A prime near surface target such as the anomalous large chloritic zone that lies beneath the Juno deposit was investigated. Prior to the surrender of the Licence, Asarco completed lag geochemistry, auger soil sampling, 6.6 line km of ground magnetics and vacuum drilling. Only weakly anomalous values were obtained from this work. Wiluna Gold was granted EL7182, which covered a portion of EL 8279, in May 1991, however this was surrendered in May 1995 with no field work being carried out.

In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8279. In 1999, a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas, including EL 8279. The helicopter borne sensor was flown at 30m mean terrain clearance and 100m line spacing.

Since the acquisition of the Licence by Centralian Minerals a preliminary review of detailed aeromagnetics identified a significant magnetic in the central region of the north west block was undertaken. This magnetic high forms one of a number of anomalies of similar magnitude along a major east-west “magnetic ridge”. A review of previous work undertaken in this area has shown that no geophysical assessment or modelling has been undertaken and previous explorers have considered the magnetic ridge to reflect a sequence of magnetite-bearing sediments within the Warramunga Formation. Whether the individual magnetic highs along this trend relate to ironstone bodies, and are therefore significantly prospective, or are merely the results of sporadic, relatively high concentrations of disseminated magnetite in the sediments, remains to be investigated.

5.4 EL 8280 SAN MIGUEL

Previous exploration and mining history of the Argo leases which form part of the total area of EL 8280 has been presented previous reports.

Australian Development held this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow-up.

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features.

Between 1987 and 1993, Wiluna Gold Pty Ltd explored the area under EL 5304. Exploration was carried out under a joint venture with Asarco Gold and Top End Resources. Exploration was directed towards locating near surface gold deposits having weak to no magnetic signature. A prime near surface target such as the anomalous large chloritic zone that lies beneath the Juno deposit was investigated. Prior to the surrender of
the Licence, Asarco completed lag geochemistry, auger soil sampling, 6.6 line km of ground magnetics and vacuum drilling. Only weakly anomalous values were obtained from this work. Wiluna Gold was granted EL7182, which covered a portion of EL 8280, in May 1991, however was surrendered in May 1995 with no field work being carried out.

Exploration Licence 8280 was originally applied for in May 1993 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8280. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8280.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Argo - Peko trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Santexco includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

Santexco identified a discrete magnetic anomaly, termed the “South Argo”, at the southern boundary of EL 8280 during a regional geophysical assessment of the Licence. The South Argo anomaly is positioned along a prominent north northwest trending fault that has a clear spatial relationship to the Argo and Juno deposits. Geophysical modelling of this anomaly has determined the depth to top of the main causative magnetic body is at 175m below ground level. This is in contrast to previous modelling by other explorers that estimated a depth of 400m using less detailed aeromagnetic coverage.

Work during the last year of tenure included a Vacuum, RAB and RC drilling program was carried out at The Susan and Argo prospects, and whilst this work was restricted to MLC’s within EL 8280, it has demonstrated the potential for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover. This area is earmarked for further work including geochemical sampling, ground magnetic surveys and follow up Vacuum, RAB, or RC drilling.

Work during the year also included a number of field trips into the tenement to examine outcropping ironstones and to inspect outcropping Warramunga Formation units coinciding with the magnetic anomalies.

5.5 EL 8705 BOSEIVER

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.
PosGold explored the area between 1986 and 1992 under EL 4929. An airborne survey flown in 1990 and this defined two magnetic features west of Nobles Nob. RC drilling of these returned significant gold grades at Anomaly 2 while Anomaly 3 failed to return any significant results. A further 11 RC holes were drilled at other prospects, however results were disappointing.

Between 1992 and 1994, Roebuck Resources and Normandy NFM held this area under EL 7650. Regional gravity data from a 1992 Aerodata multiclient survey outlined a gravity ridge trending across EL 7650. A weak aeromagnetic anomaly was delineated and tested by RAB drilling. Results from this produced a 400m by 100m copper anomaly (max 28ppm), however gold values were low.

Exploration Licence 8705 was originally applied for in May 1993 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8705. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8750.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Eldorado – Juno - Juno trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

Other exploration work completed by Centralian Minerals/Giants Reef Exploration included contracted work by Vector Research Pty Ltd to process Giants Reef’s magnetic survey data using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping the high-frequency “textural noise” associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final MAGSURF response).

The Magsurf filter was applied to an area comprising some 20 km2 and covers EL 8705. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the Licence. Interpretation of geophysical
signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef’s Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef’s Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The Nobline RTP 1VD magnetic data shows strong magnetic anomalies over the Juno and Nobles Nob deposits and a more subtle magnetic ridge extending west northwest through EL 8705, however only very minor magnetic peaks occur along this trend. Interesting the Nobline RTP 1VD magnetic data and Magsurf filters do not highlight many of the mapped ironstones in the survey area.

Neither the Nobline RTP 1VD magnetic data nor Magsurf filters provide a good correlation between any of the anomalies directly over the Nobles Nob deposit, however this is most likely due to the effects of the open cut and irregular, artificial anomalies resulting from magnetite in waste dumps. Probably the best correlation with the deposit is the Nobline RTP 1vd data, which at least covers the eastern end of the pit. The waste dumps surrounding the Nobles Nob deposit is probably best mirrored by the Nobline RTP 1vd anomalies, however there is also some correlation with 400 series Magsurf filters. Interestingly all anomalies extend well beyond the waste dumps, suggesting that deeper source bodies exist or there are perhaps broader haloes of disseminated magnetite surrounding the main ironstone bodies. Another possibility is that the responses result from aerial dispersion of magnetite from the waste dumps and mine haulage activities. Not all of the waste dumps have a magnetic signature, suggesting that they comprise mullock material derived from the barren magnetite ironstone and non-magnetic Warramunga.

The Juno deposit is located centrally within the main Nobline RTP 1vd anomaly and correlates reasonably well with the 200 series Magsurf filters. The 400 series Magsurf filters appear to provide the best correlation to the Juno ironstone and defines a western anomaly which may represent a separate ironstone body. Unfortunately Exploration Licence 8705 does not include any significant 400 series Magsurf filter anomalies of interest. Further filtering (600 and 800 series) appears to only break the responses up into a myriad of anomalies that do not appear to correlate with any particular geological, regolith or topographical features.

The 200 series Magsurf filters defined the prominent north east trending fault structure at Nobles Nob which is also readily observed in the Nobline RTP 1vd magnetic data. This fault structure extends south west through the southern region of EL 8430, however no additional structures were observed elsewhere in the Exploration Licences. Interestingly none of the Magsurf filters reflected the prominent north west structure at Juno which is so clearly defined in the Nobline RTP 1vd magnetic data.

None of the filters appeared to correlate with drainage systems either emanating from known deposits or in the Exploration Licences which comprise sheet wash colluvium and minor drainages systems. Likewise areas of topographic relief, including low ridges of outcropping Warramunga Formation were not reflected in any of the Magsurf filtering.
5.6 EL 8786 FIRST LIGHT

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.

A part of the area covered by the present Licence was also covered by EL 143, held by Nobelex. Several anomalies were investigated but were not believed to be due to discrete ironstone bodies. A 1975 regional airborne geophysical survey failed to identify further targets.

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

From 1984 to 1990 Geopeko conducted exploration under EL 4536. Drilling at Explorer 26 prospect intersected several significant zones with the highest value at 5m @ 9.3 g/t Au. Exploration conducted by GeoPeko also included structural mapping.

PosGold explored the area between 1986 and 1992 under EL 4929. An airborne survey flown in 1990 and this defined two magnetic features west of Nobles Nob. RC drilling of these returned significant gold grades at Anomaly 2 while Anomaly 3 failed to return any significant results. A further 11 RC holes were drilled at other prospects, however results were disappointing.

Metana Minerals also held part of the area under EL 5729 from 1988 to 1991. Interpretation of the 1984 Austirex aeromagnetic survey indicated east-west trending beds with north west structural breaks. Soil samples collected in the north eastern part of the Licence did not return any anomalous values. Vacuum geochemical drilling failed to identify any presence of anomalous geochemical signatures within the bedrock.

TC8 Pty Ltd held part of the Licence from 1992 to 1997 under EL 7687. Rock chip and soil sampling was undertaken in the north east region of the Licences and assays returned anomalous gold and bismuth values. An extensive gravity survey and vacuum drilling program was completed over the licence in 1994. A review of the gravity data concluded that ground magnetics and vacuum drilling were required to determine drill targets.

The Exploration Licence was originally applied for in June 1994 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8705. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8750.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Eldorado – Juno - Juno trend and re-modelling of magnetic data. This work has identified a
number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

5.7 EL 8991 SUN RISE

Australian Development held part of this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow up.

A part of the Licence area was also covered by EL 143 held by Nobelex. Several anomalies were investigated but were not believed to be due to discrete ironstone bodies. A 1975 regional airborne geophysical survey failed to identify further targets.

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

From 1984 to 1990, GeoPeko conducted exploration under EL 4536. Drilling at Explorer 26 prospect intersected several significant zones with the highest value at 5m grading 9.3g/t gold. Exploration conducted by GeoPeko also included structural mapping.

PosGold explored this area from 1986 to 1992 under EL 4929. An airborne survey flown in 1990 defined 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. 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 inconclusive.

Metana Minerals also held part of the area under EL 5729 between 1988 to 1991. Interpretation of the 1984 Austirex aeromagnetic survey indicated east-west trending beds with north-west structural breaks. Soil sampling from the north-east were not anomalous. Bedrock drilling (111 vacuum drill holes – 580m, 187 RAB holes – 3,082m) failed to identify any presence of anomalous geochemical signatures within the bedrock.

Between 1992 and 1994, Roebuck Resources and Normandy NFM held this area under EL 7650. Regional gravity data from the 1992 Aerodata multiclient survey outlined a gravity ridge trending across EL 7650. A weak aeromagnetic anomaly was defined that was followed up by a 67 hole (1143m) RAB drill program. A 400m by 100m copper anomaly (max 28ppm) was outlined but gold values were low.

TC8 Pty Ltd held part of the ground between 1992 to 1997 under EL 7687. Rock chip and Soil samples were collected in the north east region of the Licence and results from this returning anomalous gold and bismuth values. An extensive gravity survey and vacuum geochemical drilling was completed over the licence in 1994. A review of the gravity data
concluded that ground magnetics and vacuum drilling were required to determine drill targets.

The Exploration Licence was originally applied for in May 1993 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8705. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8750.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Eldorado – Juno - Juno trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

5.8  EL9293 JOKER

Australian Development held part of this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow up.

A part of the area covered by the present Licence was also covered by EL 143, held by Nobelex. Several anomalies were investigated but were not believed to be due to discrete ironstone bodies. A 1975 regional airborne geophysical survey failed to identify further targets.

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

PosGold explored the area between 1986 and 1992 under EL 4929. An airborne survey flown in 1990 and this defined two magnetic features west of Nobles Nob. RC drilling of these returned significant gold grades at Anomaly 2 while Anomaly 3 failed to return any significant results. A further 11 RC holes were drilled at other prospects, however results were disappointing.

TC8 Pty Ltd held part of the Licence from 1992 to 1997 under EL 7687. Rock chip and soil sampling was undertaken in the north east region of the Licences and assays returned anomalous gold and bismuth values. An extensive gravity survey and vacuum drilling program was completed over the licence in 1994. A review of the gravity data concluded that ground magnetics and vacuum drilling were required to determine drill targets.
The Exploration Licence was originally applied for in August 1995 by Poseidon Gold Limited (later NTC) because of favourable structural and geophysical anomalies, and its location between the high-grade Nobles Nob and Golden Forty mines.

Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 9293. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 9293.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Eldorado – Juno - Juno trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

Reviews and modelling of the detailed aeromagnetic data by Centralian Minerals have shown a discrete magnetic anomaly in the northern block of EL 9293. It is located approximately 1km north of the JOKER mine. Reconnaissance surveys in this area have confirmed the presence of Warramunga Formation sub-outcrop, however as no ironstone outcrops, the source of the magnetic anomaly appears to be at depth.

5.9 EL8879 MT CLELAND

EL 8879 was acquired to search for IOCG deposits hosted in Warramunga Formation units on the northern fringes of the Quartz Hill Fault trend and to evaluate the potential around the southern margin of the Tennant Creek Granite. The licence incorporates many historical workings and prospects and therefore they will be treated separately.

Hopeful Star Prospect/Mine

The original Hopeful Star workings are located on the south side of a prominent conical-shaped mesa, known locally as ‘The Tooth’ which rises 25 metres above the surrounding plain. They comprise two 5m shafts, a small open pit and an adit. A glory hole has been gouged on the east side of the Tooth, about 70 metres of drives extended beneath the Tooth. Up until 1952 these workings produced 170 ounces at an average grade of 6.07 g/t, Au.

In 1969 BRM drilled two core holes, one inclined from the north (DDH01) and one inclined from the south (DDH02) of the main shaft area i.e. scissoring beneath the Tooth. A number of shallow percussion holes were drilled over the area, one of which intersected 3m @ 29.4 g/t from 3m. A 12 metre shaft was sunk on this hole some 80 metres east of the Tooth, producing 211.3 ounces Au at an average of 44 g/t. The shaft subsequently...
collapsed and a rectangular pit about 4m deep was excavated forming, what is locally referred to as the ‘slot’.

During 1971, Geotecnics Australia Pty Limited carried out a geological mapping program and ground magnetic survey over the southern boundary of EL 8879, around the area of the Hopeful Star mine workings.

Tennant Creek Gold (TCGL) acquired leases in the southern part of EL 8879, in 1987 and drilled three RC holes, totalling 220m, with one hole HPD2 drilled north beneath the slot intersecting 2m @ 2g/t Au. Further exploration was conducted in 1988 under a joint venture with Metana Minerals. This work included: Gridding the area on a 40m x 20m spacing and then geologically mapped, all outcropping ironstone was rock chipped and sampled. A total of 183 rock chips were collected with the best result returned of 2m @ 6g/t from the west corner of the gridded area. Samples were also collected from the Glory hole on the east side of the Tooth, with best results returned as 4m @ 2.8g/t and 4m @ 6.2g/t. 430 soil samples were collected and assayed for Au only, the results outlined the present day drainage pattern with the most elevated values, up to 3300ppb Au, originating from the Tooth. Follow-up analysis of these anomalous values was needed, therefore a 94 hole RAB drilling program, totalling 282m and a 93 hole vacuum, totalling 198m program was completed. Significant results returned from this work included 0.53g/t east of the Tooth, 2.5g/t north west of the Tooth. A 5 hole, 139m open-hole percussion program was undertaken to test the hematitic breccia zone in sheared contact with ironstone on the southern side of the Tooth. Unfortunately the contact was not intersected but a summary of the anomalous zones intersected is as follows: HAT1 12m @ 0.19g/t Au, HAT2 9m @ 0.15g/t Au, HAT3 14m @ 0.28g/t Au, HAT4 5m @ 0.58g/t Au, 5m @ 0.22g/t Au, 7m @ 0.22g/t Au, HAT5 6m @ 0.20g/t Au. A 6 hole RC drilling program (HRC004-HRC009), totalling 241m was also undertaken. HRC008 drilled beneath the shaft south of the Tooth, to intersect the southern shear zone recorded 26m @ 1.04g/t Au from 13m. Within this zone was a high grade intersection of 6m@ 3.92g/t Au. HRC005, 006 and 007 were drilled to intersect the down-plunge extension of the Tooth ironstone. Ironstone was intersected in all three holes with results as follows: HRC005 4m @ 0.28g/t Au, 10m @ 0.35g/t Au (including 5m @ 0.55g/t Au), HRC006 5m @ 0.12g/t Au, 8m @ 0.43g/t Au, HRC007 2m @ 0.55g/t Au, 3m @ 0.47g/t Au (including 1m @ 1.12g/t Au). The results can be interpreted as the identification of a bedrock gold anomaly. A ground magnetometer survey was undertaken on a 20m x 5m spacing, and identified a weak magnetic anomaly beneath the Tooth.

Metana withdrew from the JV in 1989. In 1990, TCGL conducted a 50 hole vacuum drilling program, totalling 100m, with the aim of defining the limits of the north-north east trending gold anomaly. Two 20m vacuum holes 5m apart were drilled on the east side of the collapsed shaft (trending north west) at the bottom of the slot. VDH002 recorded 12m @ 3.8g/t Au from 1m, with the best assay of 1m @ 10.26g/t Au.

In 1991 Roebuck drilled a further 21 RAB holes, totalling 63m, to check previous results. This was followed up in 1992 by a 14 hole, 570m, inclined percussion drilling program. HSG-P01 – P11 were drilled with the aim of testing the previously delineated bedrock gold anomaly east of the Tooth. No anomalous results were recorded thus indicating the
transported nature of the anomaly having originated from the regolith of the Tooth, where free gold is known to occur i.e. superficial gold has penetrated fractures within the upper few metres of the bedrock thus generating spurious anomalies not related to subsurface mineralisation. HSG-P21, 22 and 23 were drilled across the main shaft-slot-Hopeful Star Extended shear zone trend. Anomalous values in Au, Bi, Cu and Pb were recorded from the last four metres of P22 and from 24m to the end of P21. A follow-up RAB program was undertaken delineating the Au, Bi, Cu and Pb anomaly. It is characterised by anomalous Au to 29ppb, Bi 44ppm, Cu 114ppm and Pb to 82ppm These results showed that the anomalous zone was some 25m wide and extended for over 150m within both EL 8879 and EL 10312. The mineralisation appears to be parallel the Hopeful Star Extended shear zone.

Mt Margaret Prospect

Orientation sampling was carried out in the Tennant Creek mineral field in the period 16 – 18 December 1987. The objective was to determine the parameters for geochemical search technology which might be used in exploration for gold in the area.

Samples collected from a single traverse across the Mt Margaret area is characterised by two strong coincident anomalies for all three elements in both soils and lags.

CRA Exploration Pty. Ltd. (CRAE) explored for gold at Mt Margaret under leases MCC171 & 172. There is no record of exploration in the area previous to CRAE but there is one shaft present, which is over 30m deep, assays from samples collected from short drives on the 20m level reported up to 3200ppm Cu and 0.50ppm Au (samples 881425, 881426). Work completed by CRAE included: Surface rock chip sampling of old workings and prospective rock types – samples were collected from outcropping hematitic ironstone breccia, with returned anomalous results of 0.22ppm Au, 235ppm Bi and 200ppm Cu (sample 964469). Magnetic susceptibilities of surface exposures of the ironstone mullock were in the range .001 - .03 SI; A detailed grid survey and photometric mapping at 1:2000, were carried out by surveyors. Grid lines were marked at 50m intervals and ran north – south, from an east west baseline; A ground magnetic survey was carried out at 50m and 100m line intervals on a true north – south orientation, sensor height clearance was 2m. Three magnetic features suggestive of ironstone are apparent on contoured and profiled data. Two features correspond to mapped ironstones and talc-dolomite alteration. No deep seated magnetic sources were indicated. A strong magnetic source of moderate susceptibility is indicated by the data, modelling suggested that the source had a lower magnetic susceptibility than typical ironstone, gravity data also indicated a body of greater than average density, but not as high as typical ironstone; A detailed gravity survey was carried out on north – south lines 100m and 50m apart. Three features of note were present in the data. A gravity low corresponds with low density talc-dolomite and fracture zones mapped at surface. A subtle gravity high corresponds to the termination of a thin mapped ironstone against the NNE – SSW trending fault. An excess mass feature is coincident with a moderate amplitude magnetic anomaly. One other small gravity high does not coincide with a magnetic feature nor surface mapped ironstones; Drilling of defined geophysical and geological targets was carried out in October, 1985. PD85MM1 was drilled vertically to test the moderate excess mass and magnetic anomaly, intersected
lithologies were interpreted to include an ironstone sediment breccia, assays returned anomalous values of 2m @ 0.06ppm Au from 30m and elevated Cu ranging from 350ppm to 1350ppm. PD85MM2 was drilled to test the subsurface extent of mapped talc-dolomite ironstone coincident with gravity low and a magnetic high. The hole was inclined at 60˚ at 020˚, hematite shale with minor specular hematite and quartz was present from 32m to termination at 60m. Assays returned results of elevated Cu 550ppm – 3900ppm, 0.08ppm – 1.2ppm Au and 2m @ 59ppm Bi from 24m. PD85MM3 was drilled to test the subsurface extension of mapped ironstone. The hole was inclined to 60˚ at 215˚, no ironstone was intersected and only minor black hematite on fracture surfaces within unaltered siltstone indicated proximity to true ironstone. As no economic resource was indicated and additional targets could be generated by models at the time additional work was not required. Structural analysis of the ironstone interpreted the major faulting in the area to be along north west – south east trends and appears to either have broken up the ironstone in smaller en echelon bodies or controlled its emplacement. Further interpretation identifies a later set of faults on north north-east – south south-west trends often occupied by thin ‘buck quartz +/- specular hematite reefs, clearly cutting earlier structure and truncates the iron stone to the west.

In 1988 Asarco Australia Limited conducted lag sampling over the Mt Margaret area, 426 samples were collected on a 200m x 25m spacing, follow-up soil sampling was also conducted, 500 samples were collected on a 100m x 25m spacing. Results from both confirmed two anomalous zones. A total of 40 rock chip samples were collected mostly from around the alteration zone and shaft at the Mt Margaret mine, highest values returned were at 1.35g/t Au. Asarco also drilled four RC holes, totalling 276m, in March 1988. The holes aimed to test the alteration zone. Over a strike length of 70m three holes intersected ironstone and/or alteration assemblages over drill widths of up to 15m. A detailed aeromagnetic and radiometric survey was flown by Aerodata Holdings Limited. The survey totalled 7.4km, and comprised 25m stations on 200m line spacings. The survey aimed to locate the interpreted anomalies from the 1988 aeromagnetic survey. An anomalous magnetic high was defined in an area were soil and lag geochemistry registered only background levels. An identified radiometric anomaly exhibited a weak magnetic signature and had no geochemical anomalies. A magnetic high was identified 75m north of the mine, in an area of anomalous Au geochemistry. Further ground magnetic surveys failed to locate this anomaly. Two RC holes were drilled to test a lag anomaly coinciding with workings developed on massive hematite. Assays returned no anomalous results.

Black Cat Prospect

Gold was mined on a small scale from Black Cat prior to 1936 and then more consistently in the period 1937-42 for a total recorded production of 1023 ounces, with grades varying from 8 – 18 g/t. Previous exploration prior to 1988 is sited in an Adelaide Petroleum NL
report dated February 1988, as being reported in Forrest R.J., 1987, Report on Lease Mapping and Sampling, Tennant Creek NT for National Gold, this report was unavailable for review. The previous exploration work cited, includes: ground magnetic surveys and geological mapping. Further mapping and electromagnetic survey and drilling of 11 wagon drill holes (SABC1 – 11) was completed by Australian Development NL in 1959. Results of this drilling were not considered encouraging, however, intercepts in six of the holes ranged from 3.65m @ 2.5g/t Au to 1.23m @ 5.4g/t Au. Drill holes 7 and 9 drilled intervals of green chloritic sediments with some ferruginous zones which may be indicative of the occurrence of deeper sourced chlorite-ironstone bodies. In 1987 National Gold NL completed a limited sampling program of the main workings and dumps of the Black Cat. Results of this work indicated potential for gold lodes to continue below existing workings in a shear zone.

CSIRO Work

In 1988, the CSIRO conducted a series of hydrogeochemistry (water sampling and trace element analysis) exercises in the Tennant Creek mineral field. The work was largely aimed at accumulating base data for the groundwaters of the district. It involved collecting samples of groundwater from stock bores, exploration drill holes, and underground water seeping into the mines that were active at the time, with the objective of using the analytical information to help pin-point target areas for further mineral exploration. The collected samples were analysed to a very high degree of precision at the CSIRO’s North Ryde (NSW) laboratories and, after allowances were made for a number of variable factors, it was possible to compare the final results with each other. In this work, levels of gold are measured in nano-grams of gold per litre (ng Au/L). A nano-gram is one billionth of a gram. Out of 33 samples collected and analysed in 1988, only a few were found to contain gold detectable by the analytical methods of that time. The White Hill Bore water sample was one of these and, at 30ng Au/L, compared well with water samples from Warrego (40ng Au/L) and Peko (100ng Au/L). Nothing was done to follow up this result in the field, despite recommendations to do so. A repeat sample was taken from the bore in July 2000. Analysis of this sample, using techniques much improved since 1988, gave a result of 129ng Au/L. This strongly corroborated the result of the sample taken 12 years before. A water sample was also taken from Middle Bore, 3km southeast of White Hill Bore, and within EL 8879. This sample assayed 16ng Au/L, much less than the White Hill Bore sample, but still rated anomalous.

In Giants Reef first tenure year, consultant geophysicist Frank Lindeman, of Lindeman Geophysics Pty Ltd, was engaged to examine the 1998 AGSO aeromagnetic data over the White Hill Bore area, which covers the northern region of EL 8879. Due to the lack of detailed resolution in this data, no encouraging bodies were delineated and therefore no specific drill targets were produced. The various magnetic features that were noted appeared to relate to lithological units along the granite-sediment contact zone. and a more detailed ground magnetic survey was recommended in order to better define potential ironstone bodies/magnetic anomalies.

During the second tenure year Giants reef proposed a work program to drill a pattern of six shallow vertical holes around White Hill Bore to obtain assay samples and geological
information that could lead to locating gold mineralisation. It has been ascertained that White Hill Bore is located more or less exactly on meridian 134° 19'E as per the AGD94 datum. This meridian forms the boundary between EL 8879 and Giants Reef’s EL 10203 to the west. Three of the six proposed holes will therefore be in EL 8879 (see Figure 1), and three holes in EL 10203. The proposed exploration program was postponed during the term, due to the Company’s higher priority commitments on the further development and mining of the Chariot and Malbec Deposits.

During the third tenure year all the historical drill and geochemical data over the EL was collated and converted from datamine format, and combined with the Company’s database and GIS. The geology of the northern portion of the EL was assessed with the view to relinquishing at the end of the third tenure year.

5.10 EL10118 ROCKY RANGE

Exploration License 10118 was initially applied to cover a prospective area of Warramunga Formation, which includes mine workings such as Koala, Golden Mile, Lone Star, Renate and prospects such as Dolphin, Squid, C39, C21, C310, R27 (Explorer 89, C19), C17 and Welson Fold.

Dolphin Prospect

Australian Development Limited (ADL) conducted exploration work in the eastern most region of EL 10118, as part of its work associated with exploration over mine workings such as New Hope, Comstock, Tunnel, Red terror, Great Eastern and Three Thirty. The work conducted covered areas of EL 10118 in particular the Dolphin Prospect, and includes: geological mapping; percussion drilling, core drilling, geochemical and geophysical surveys.

In the 1980’s portions of the licence were held by Peko-Wallsend Operations Limited, who conducted geological mapping and geophysical programmes over the area.

Parts of the licence were included in an area covered by a high resolution airborne magnetometer survey flown by Austirex Limited in 1990. Data from this survey was used in the compilation of contour plans at 1:25000 and 1:10000 scale. Detailed interpretation of this data by Poseidon Gold Ltd and a consultant geophysicist, recognised six subtle magnetic anomalies, none of these anomalies coincide with known mines, previous prospects and no surface features of significance.

In 1992 Poseidon Gold completed a detailed structural and stratigraphic mapping at a scale of 1:12000, using detailed aerial photographs and extensive field traverses. A regional gravity survey was completed by PosGold with the primary objectives of determining the distribution of major structures and ore deposits within the Warramunga sediment pile. The survey did not define any specific features which can be related to mineralised structures. In early 1992 PosGold undertook detailed interpretation of aerial photography and a regional geomorphological regolith mapping survey. The survey involved integration of aerial photograph mapping and interpretation with colour TM
imagery and field traversing. In mid 1992 a vacuum drilling program was completed over the south west block of the licence, with the aim of testing the geochemical signature of the bedrock and to map the sub-cropping and sub-surface lithologies. 104 holes, totalling 473m were completed on a 250m x 50m spaced grid. The geochemical results were generally low with Au peaking at 8ppb and Bi peaking at 29ppb, other isolated values include 23ppm Cu and 5ppb Au.

Renate and Golden Mile Prospects

No mining of the Renate mine has been conducted since 1953, records of production for the mining previous is unavailable. The workings at Renate comprise a shallow open cut slot and adit system located on the footwall of the quartz-specularite-hematite body, with several other shallow pits, trenches and costeans extending west along the shear.

Exploration was conducted over the area by Roebuck resources NL during 1991 – 1992, work included: a photolineament evaluation of the Renate licence; a soil sampling survey around the Renate mine and area west of the Golden Mile, results returned defined four Au, Cu and Pb anomalies.

North Flinders Mines (NFM) conducted exploration work during 1992, which included an Airborne Magnetics Reinterpretation comprising the production of a variety of linear and non-linear greyscale and pseudocolour magnetic images including shaddowgrams and K, Th and U colour composite images. The aerodata digital datafiles were reformatted, gridded and produced as contoured plots at 1:100000 and 1:250000 scale.

During May 1993, NFM continued exploration, which included: geological mapping and rock chip sampling in the Golden Mile area at 1:2500 scale. 19 rock chip samples were collected, with results returning no anomalous values (the highest being 0.14ppm) a number of samples contained highly anomalous Bi.

During 1994 PosGold continued exploration in the Renate/Golden Mile region of the license, work included: Survey Gridding, totalling 4.3 line km’s of pegged grid, consisting of 100m – 200m spaced traverses, four short north – south lines were pegged around the Golden Mile area and two longer north – south lines pegged around the Renate area; Bedrock Geochemical Survey – a vacuum drilling program was undertaken over the gridded area with collars at intervals of 25m – 100m. 91 holes, totalling 543.7m. Results showed most lithologies to be turbiditic units of the Warramunga formation, with abundant siltstones and greywackes. Mineralisation intersected at Renate was limited with maximum values of 2ppb Au, 24ppm Cu and 4ppm Bi.

During the period February 1995 – October 1996 Normandy Tennant Creek (NTC) explored for Tennant Creek style Au-Cu-Bi ironstone related mineralisation. Exploration work included: Detailed Data Review – this review defined only lower order geochemical anomalies; Geological Mapping and Rock Chip Geochemistry – geological mapping was conducted at 1:5000 scale. A total of 35 rock chip samples were collected with subdue results. Peak Au values were returned from samples taken near the old Renate workings, up to 0.47g/t Au. Other peak values were returned in sheared sediments bounding a small ironstone knob west of Renate, with results up to 120ppm Cu, 25ppm Bi and 5ppm Co;
Vacuum Drilling – 158 vertical holes, totalling 790m were drilled over a 100m x 50m grid opening to 100m x 100m in the east. Peak geochemical values returned included 385ppb Au, 25ppm Cu, 121ppm Zn and 8.09% Fe, other results included 73ppm Cu, 100ppm Pb, 9.46% Fe and 8520ppm Mn; RAB Drilling – A 3 hole RAB program was completed, totalling 153m. All holes were declined to 60° at 180°. The results returned were very subdued; Ground Magnetic Survey – a ground magnetic survey was completed in March 1996 to accurately map structures related to the Rocky Range Fault System and define possible zones of dilatancy, the survey was done on 50m spaced north – south lines, for a total of 40 line km’s. They survey defined the Rocky Range Fault and associated splays. Overall the magnetic data is extremely flat and regionally of low intensity, with the exception of a magnetic high spatially corresponding to the Renate Hill workings; Sacred Site Clearance – clearance for a planned RAB drilling program was approved on 4th June 1996, the clearance outlined three sacred sites, one of which was located in the Renate Hill vicinity, and the proposed drilling program was abandoned.

During first year of tenure a reconnaissance-sampling trip of some jasper haematite outcrops in the eastern most block of the Licence area in June 2000 did not reveal any gold anomalies in eight rock sample collected. Highest Bi assays returned were 10ppm and 16ppm. Research and review of past reports and the geology and magnetics of this Licence area did not produce any immediate high priority targets in this Licence area.

The exploration work conducted during the second year of tenure focused on developing exploration models for the EL. The underlying geology of the EL is interpreted as comprising mostly Yungkulungu Formation which in turn is a member of the Ooradidgee Group (Flynn Group). The latter is intruded by series of Channingum Granite bodies. Warramunga Formation comprises less than 36% of the tenement and these are dominated by the high magnetic members (siltstone – greywacke) in the south and sandstone dominated units in the north. This formation is host to virtually all the magnetite-haematite IOCG mineralisation and ore bodies in the Tennant Creek goldfield.

Exploration work during the third year of tenure was dominated by reassessing geological models. The discovery of the non-magnetic, haematite-rich Chariot deposit resulted in a broader exploration model by Giants Reef, which allows for the presence of extensive ore grade mineralisation hosted within primary, non to weakly magnetic (haematite-rich) ironstones. Discoveries by Giants Reef of high grade mineralisation associated with haematite dominant ironstone at Marathon and Billy Boy, although small, are further examples of this style of mineralisation. The potential for the haematite ironstones to host mineralisation in non magnetic areas essentially opens up the whole Tennant Creek goldfield to new target review. A ground gravity survey was conducted at the southern end of the license and centred over the New Hope group of tenements. Gravity station readings were predominantly within the New Hope mineral leases however the survey extended into EL 10118. A reconnaissance trip to the Golden Mile prospect within the eastern border of the EL was made at the end of the third tenure year. The prospect was geologically and structurally inspected with the view to being a strike extension of the Perseverance prospect (within EL 10370, east). Joint Venture negotiations are in processes for exploration over the EL 10370 and Perseverance Leases, which will extend interest into the Golden Mile prospect. The Company has entered into a JV with Meteoric
Resources on its EL 103710 in an effort to accelerate regional exploration in this area and it is hoped that this work will assist developing exploration models to apply to EL 10118.

5.11 EL22285 SNAPPY GUM

Exploration License 22285 was initially applied to cover a prospective area of Warramunga Formation which is situated in close proximity to known mineralisation. This ranks this Licence as moderately prospective.

During the first year of tenure a preliminary assessment and reconnaissance of this small (two part-blocks) EL failed to produce any immediate high priority targets. The Licence area is located directly south of the prospective MLA 22284, which contains multiple magnetic anomalies, small mines and target areas including Metallic Hill, Leda and Ganeymede in the south.

Further work during the second year of tenure included an internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities was conducted in the second year of tenure. The future exploration potential of Exploration Licence 22285 was assessed using an integrated geological, geochemical and geophysical approach. The close proximity of the Licence area to known mineralisation ranks this Licence as moderate prospectivity. Work during the year focused on developing exploration models for the EL. The underlying geology of the EL was interpreted as predominately siltstone and greywacke of the Warramunga Formation. This formation is host to virtually all the magnetite-haematite (ironstone–hosted) gold-copper-bismuth mineralisation and ore bodies in the Tennant Creek goldfield. The underlying geology of the EL is interpreted as predominately siltstone and greywacke of the Warramunga Formation. This formation is host to virtually all the magnetite-haematite (ironstone–hosted) gold-copper-bismuth mineralisation and ore bodies in the Tennant Creek goldfield.

Exploration work conducted during the third year of tenure was dominated by the discovery of the non-magnetic, haematite-rich Chariot deposit which resulted in a broader exploration model by Giants Reef, which allows for the presence of extensive ore grade mineralisation hosted within primary, non to weakly magnetic (haematite-rich) ironstones. Discoveries by Giants Reef of high grade mineralisation associated with haematite dominant ironstone at Marathon and Billy Boy, although small, are further examples of this style of mineralisation. The potential for the haematite ironstones to host mineralisation in non magnetic areas essentially opens up the whole Tennant Creek goldfield to new target review. During the third tenure year, the Licence area was comprehensively assessed prior to statutory relinquishment. It was noted that the magnetics over the EL is relatively subdued, and there are no identified prospect areas or targets over the area. No historical drilling or surface geochemistry was identified within the Licence area. However, given Giants Reef decision to proceed with the granting of the Mineral Lease Application 22284 Billy Boy which is located due north of EL 22285, has technical and geological implications for the strategic future of the Licence.

5.12 EL10113 IVORY

EMMERSON RESOURCES PTY LTD
Exploration License 10113 was initially applied to cover a prospective area of land host to many mine workings (listed in table four) and the more immediate surrounds of the Golden Key mine (production 10.8t @ 44.4 g/t Au) and the Lone Star mine (production 9983t @ 17.6 g/t Au). Both these mines are surrounded by Mineral Claims and Leases, which cover approximately 20% of License area and will therefore not be covered by this report.

EL 10113 encompasses a large quantity of mine workings and prospects, which are listed in table 2, and will be reviewed individually.

Table 2: Mine workings and Prospects of EL 10113.

<table>
<thead>
<tr>
<th>Mines</th>
<th>Prospects</th>
</tr>
</thead>
<tbody>
<tr>
<td>True Blue</td>
<td>Explorer 205</td>
</tr>
<tr>
<td>Copper Head</td>
<td>The Aris</td>
</tr>
<tr>
<td>Mint</td>
<td>TC40 / Budgie</td>
</tr>
<tr>
<td>Aga Khan</td>
<td>Austin</td>
</tr>
<tr>
<td>Memsahib</td>
<td>Warwick Castle</td>
</tr>
<tr>
<td>Iris</td>
<td>And including five unnamed prospects.</td>
</tr>
<tr>
<td>Yellow Flame</td>
<td></td>
</tr>
<tr>
<td>Mammoth</td>
<td></td>
</tr>
<tr>
<td>Three Ways</td>
<td></td>
</tr>
<tr>
<td>Little Wonder</td>
<td></td>
</tr>
</tbody>
</table>

Prior to 1973 no exploration records exist in the library of Centralian Minerals Limited. ADL through Nobelex, in 1973 conducted an aeromagnetic survey over then existing EL 96, this led to the discovery of the Budgie magnetic anomaly. Nobelex then established a local grid system over the magnetic anomaly, and in 1974 they conducted a ground magnetic survey on 100m line spacings with a 25m or 50m sample interval. The anomaly was defined as a small intense anomaly, initial interpretation suggested a body of depth to top of 40m, width of 60m and dip of 81° S. Specular hematite outcrop is located 60m west of the Budgie magnetic centre.

A small Jacro drilling traverse was drilled across the anomaly. Six holes, totalling 33m were drilled. Results defined the top of a quartz-hematite body, intersected in three holes, with a well defined alteration zone of ferruginous-sericite sediments. Au assays peaked at
5 g/t in ironstone without Cu or Bi support. A hanging wall shear zone to the ironstone was also recorded. These results warranted further drilling, therefore four diamond holes were drilled, totalling 554.5m. All drill holes returned anomalous Au assays with the best being, BGDH-461 1m @ 6.4g/t Au from 20m, BGDH-463 1m @ 18g/t Au from 51m, BGDH-473 2m @ 2.0g/t Au from 66m and BGDH-474 4m @0.5g/t Au from 61m.

In 1989 a further six RC holes (BGRC-001 – 006) were drilled, totalling 926m. The holes were drilled to the south as re-interpretation suggested cleavage and the ironstone dipped to the north. The holes were drilled with the aim to test the eastern extent of the ironstone. Best result returned was BGRC-001 2m @ 2.6g/t Au from 19m, but was interpreted to be within quartz veining. BGRC-003 & 004 were probed with the downhole magnetometer, results determined that the intersected magnetite-hematite system is probably responsible for the Budgie magnetic anomaly. During 1989 a BLEG stream sediment geochemical survey was conducted over the area. A total of 19 samples were taken, with returned results peaking at 14ppb.

Kevron, at the request of Normandy Tennant Creek (NTC), flew an Airborne Magnetics Survey in October 1998. Survey specifications were a 40m sensor height, 50m line spacing on a north–south line orientation with 7m in line sample spacing and elevations were recorded every seventh sample for digital terrain modelling. The survey indicated a greater level of structural detail could be delineated than from earlier available surveys.

NTC conducted an environmental audit covering all historical disturbances in the Tennant Creek mineral field during 1998. The audit located and detailed all occurrences of substantial disturbance including mine workings, tracks, dumps, drill holes, excavations, buildings and rubbish.

A detailed review by NTC was conducted over the Tennant Creek leases including ML C210. Historical exploration information was compiled and all geophysical, geochemical and geological information was assessed. Potential tonnage for an ironstone body(s) at the Budgie prospect based on exploration results was calculated at 560,000 to 688,000 tonnes. Further geophysical modelling of the two ironstone bodies suggested that they have a maximum potential tonnage reduced to 350,000t of ironstone, which is based on the potential magnetic mass, and does not include that attributed to specularite.

True Blue Prospect

Historic workings on the True Blue prospect include, numerous small pits and costeans and four shafts. All pits and costeans, hematite and ferruginous sandstone outcrops had been sampled prior to 1963 (exact date not known), with results indicating that ore is limited to the bed of brecciated ferruginous sandstone, but only where intersected by north–south fracturing. Best assay result returned was 10dwt/t.

During the period 1963 – 1965 exploration work conducted included: a magnetic survey, specifications unavailable, results of this survey revealed intense, localised variations in vertical magnetic intensity over outcropping and float ironstone, but did not indicate any significant extension of the ironstone either in depth or to the east or west; Wagon drilling was designed to sample the ironstone and adjacent ferruginous sediments and to
delineate the extent of a north – south shear zone. Five holes were drilled (SWDH 496 – 500), totalling approximately 210m. Assay results returned were trace only with a highest value 1.22m @ 3g/t Au from 10.36m in hole SWDH500.

In 1987 National Gold NL collected dump samples from three dumps, best results were 5.3g/t Au.

In 1998 three RC holes (SATB 1 – 3) were drilled by Sabminco NL, the holes were drilled declined to 60˚ to intersect hematitic shales/siltstones. All three holes intersected hematitic shales/siltstones with SATB 1 drilling 18m of specular hematite from 15m, results returned were not encouraging, with the best result being SATB 1 1m @ 0.08ppm Au from 11m.

**Mint and Memsahib Prospects**

Orientation sampling was carried out in the Tennant Creek mineral field in the period 16 – 18 December 1987. The objective was to determine the parameters for geochemical search technology which might be used in exploration for gold in the area. Samples collected from the Mint prospect (Mint), reflect a strong discrete anomaly. The areal extent of the anomalous dispersion is generally greater for soils although anomaly contrast appears stronger for lags for Au and Bi. The best anomaly shown is by Cu in soils, where the total dimensions are in the order of 100m x 200m with very well defined central peak.

In 1988 Asarco Australia Limited conducted exploration work, which included: a detailed geological interpretation of the Mint area, identifying a significant alteration zone; Geochemical lag sampling over the Mint block of tenements. Line spacing was 100m with 25m sample spacing over the Mint alteration zone. Results confirmed the geological interpretation with a broad Au, Cu and Bi anomaly covering the west north-west trending shear zone, and continuing through to the Aga Khan workings further south; Detailed rock chip sampling was conducted, 90 samples were collected with assay results returning six samples >1.0ppm, the highest value being 3.22ppm Au. Numerous other samples returned better than 0.25ppm Au, with high Bi up to 3050ppm and Cu up to 6550ppm. The best results were generally from brecciated ironstone or hematitic sediments. Asarco also conducted drilling in April of 1988. Nine RC holes were drilled, totalling 532m, to test the strike extent of the Au, Cu and Bi anomalies defined by the soil and lag sampling. Two vertical, and the rest inclined at 60˚ to the north, holes were drilled over a strike of 80m. Seven of the holes intersected ironstone and/or alteration assemblages, the two that failed to intersect ironstone are believed to have been drilled below the plunging body. Best results returned were from TCRC19 1m @ 1.0g/t Au from 39m, this was from the furthest down plunge of all holes indicating the possibility of economic mineralization at greater depth. A detailed aeromagnetic and radiometric survey was flown by Aerodata Holdings Limited. The survey was flown on a line spacing of 200m, flight height of 60m.

Asarco continued exploration work in 1989, which included, 11.4 line km of infill gridding, together with 1:1000 geological mapping of the previously unmapped Mint northwest area. 32 rock chip samples were collected while mapping, with best results received 0.01ppm Au and 51ppm Cu. A ground magnetic survey was completed, totalling 12 line km. The magnetic profile from the main anomaly identified is consistent with a northerly dipping
body (assuming normal magnetization), therefore not drill tested by the previously drilled holes. Further zones of complex magnetic anomalies exist with one a possible east south-east extension of the major ironstone, the southern part has an east west strike and appears to be reversely magnetized. A more significant magnetic anomaly is centred in an area of no ironstone outcrop. This anomaly is complex but appears to trend east west, whereas the mapped structure in the area trends north-west south-east. Drilling of seven RC holes (TCRC27-30,36,37 & 42), totalling 626m, was conducted in October 1989. Drill holes TCRC27, 28, 36 and 37 tested the Mint alteration zone and its eastern extent, no anomalous results were returned. Drill holes TCRC29 and 30 tested the historically exploited Memsahib mine and its eastern extent. Results from TCRC29 support the observation that the Memsahib ironstone body and associated mineralisation have limited strike length. Intersections in TCRC30 support the observations that the ovoid bodies mineralisation developed in sheared kaolinised mudstone which bounded the ironstone body. Assays from TCRC42 showed 2m @ >1g/t Au mineralisation within sheared siltstones at the southern contact of the target ironstone.

Asarco continued exploration work in 1990 which included: seven RC holes were drilled, four (TCRC43, 43A, 43B & 44) were drilled to follow up the intercept of 2m @ 1.56 Au. Best results returned a maximum intercept TCRC43B of 2m @ 0.17g/t Au and 330ppm Bi from 48m and Cu 240ppm over 2m from 60m. Three holes (TCRC45 – 47) were drilled at the Memsahib workings, best results returned were, TCRC45 2m @ 24.8g/t Au from 79m, TCRC46 2m @ 1.10g/t Au from 34m with 16m of 0.28% Cu from 38m.

Asarco continued exploration work in 1991, which included work predominately at the Memsahib area. A detailed ground magnetic survey was conducted with the aim of locating other magnetic anomalies along the east south-easterly shear zone. The survey was conducted on a 25m line spacing with station spacing of 5m. The survey identified one distinct anomaly and several subtle anomalies. Two RC holes were drilled (TCRC60 & 61); best results returned were TCRC60 2m @ 0.161 g/t Au, 465ppm Cu and 118ppm Bi. TCRC61 2m @ 0.011g/t Au, 252ppm Cu, <1ppm Bi.

During 1994 rock chip sampling was undertaken, samples of the mullock dump at Memsahib were taken to ascertain if the dump contained a grade of mineralisation which might be recoverable. Samples MS1 – MS5 were collected but returned no favourable results.

During 1995 restoration of the Asarco grid was completed, three rock chip samples (113438 – 113440) were taken from outcrops around the Memsahib mine and two others (113441 & 113442) from crumbling ironstone wall-rock in a pit in the same area. Two diamond holes were drilled (MSD1 & MSD2), these holes were drilled to locate ore adjacent to, and below, the Memsahib mine workings, Au was found in both holes although not at ore grade.

During 1996 a detailed Airborne Geophysical Survey was engaged by World Science corporation, with specifications of north – south lines at 50m spacings, and flying height of 50m above mean terrain. The data showed a strong magnetic anomaly linking the memsahib, Hilltop and Mint prospects.
Further rock chip sampling was undertaken in 1997, three sets of old workings were investigated and rock chip samples taken. Assay results for two sets of old workings were low. The third prospect, where Asarco had returned sample results of up to 3.2g/t Au, returned assays with only some >1g/t, and they were 1.94 and 1.84g/t Au, with low Cu and Bi. Surveying was also conducted in 1997, position fixes were made on several widely separated grid pegs and claim corner posts.

In July 1998 a 1gm Au nugget was found by Kurinelli prospector Jimmy Hooker.

**Aga Khan Prospect**

In the 1960’s under the original name ‘Iris’ the lease was held under option by Australian Development NL. It is believed that some shallow holes were drilled prior to the relinquishment of the lease, but no records are available.

Exploration was conducted by National Gold NL has included: geological mapping, rock chip, dump sampling and an airborne magnetic survey. No prominent features were delineated by this survey, and only low Au values, the highest being 0.09 g/t Au, were returned.

During 1988 the area was mapped to 1:1000 scale to evaluate the prospect and also to determine the extent of any mineralisation and alteration. This mapping revealed an ironstone lode some 70m in length and trending north west lying within a sheared zone of Warramunga Group sediments, minor chlorite was recorded in the surrounding sediments. Geochemical lag and rock chip samples were taken over the area. These were analysed for Au, Cu and Bi. Although the lag results showed the area to be anomalous the rock chip samples taken around the workings have not supported the former. A large area has been flown by Aerodata for magnetics and radiometrics, of which the Aga Khan area wakes up an integral part.

**Mammoth Prospect**

The Mammoth area was explored in 1988 by J.F.Allender and A.F.G.LeBrun under MCC 789, this included: gridding of MCC 789 on a 20m x 40m grid. A ground magnetic survey was undertaken over this grid, results showed a small high amplitude anomaly coinciding with outcropping ironstones; a scintillometer survey was conducted over the grid and the results show no anomalies; a program of detailed channel sampling was conducted early in 1988. 138 samples were collected and subsequently assayed. Although the results were generally low, all but 10 of the samples returned Au values greater than the threshold. This is encouraging given the sampling was deliberately representative.

During the first tenure year Giants Reef conducted a number of reconnaissance trips to the Licence area. Targets of particular interest within the EL include the TC40/Budgie, The Aris, Warwick Castle and Austin magnetic anomalies. Other areas of interest include the Mammoth mine workings. Giants Reef undertook a preliminary assessment of magnetics in the eastern part of the Tennant Creek goldfield. The TC40/Budgie causative body was modelled and interpreted as a steeply-dipping ellipsoidal body with a depth to top of 40m and extending down plunge in a south-easterly direction to 1600m below surface. Previous
modelling by Normandy interpreted the causative body as two small bodies side by side, with maximum depth extending to less than 300m. Consequently further modelling is required to resolve the geometry of the magnetic anomaly.

In the second tenure year a literature and data search of exploration undertaken by previous companies indicates that drilling at the TC40/Budgie target encountered minor but broadly dispersed low level gold mineralisation in an ironstone body and which appears at the surface as a small outcrop of specular hematite. It was considered that a re-interpretation of the drilling and the magnetic data may produce potential drill targets. During the second tenure year the tenement over the TC40/Budgie target (ML C210) was surrendered and consequently any future exploration of the TC40/Budgie anomaly would be explored in the underlying EL 10113. The underlying geology of the EL is interpreted as comprising Warramunga Formation units, predominately siltstone and greywacke. This formation is host to virtually all the magnetite-hematite IOCG mineralisation and ore bodies in the Tennant Creek goldfield.

In the third year of tenure all previous geochemical and drill data over the EL was collated and integrated into the Company's GIS and Micromine database for technical review. A number of prospects not covered by existing Mineral Leases and Claims were identified, including Aga Khan, Memshahib, TC40/Budgie, Mint and True Blue. These prospects were reviewed for shallow oxide Au potential. Vacuum Au anomalies were investigated over the Licence area utilising the GIS database. These geochemical anomalies will be taken into account when reviewed for oxide Au potential.

5.13 EL9930 NEW MOON

Exploration License 9930 was initially applied for to cover the area over the known mine workings of New Moon, and to further investigate, review and model an isolated magnetic anomaly.

Previous exploration work conducted on EL 9930 is dominated by the New Moon mine workings. The New Moon mine was worked to a depth of 18m but no records of production could be found. The main shaft of the mine is situated on the southern side of the conical hill in the centre of the prospect.

GeoPeko conducted exploration work over the New Moon area, which included: Drilling of five airtrac holes ATH 1 – 5 and one diamond hole DDH1 into the central hill. ATH 1 – 4 intersected almost solely hematite-quartz ironstone. ATH 5 intersected hematitic sediments. Au was slightly anomalous in all holes, up to 0.26 g/t in AHT 1, while Bi was up to 1.36% in AHT 2. DDH1 was terminated at a depth of 76.2m after intersecting 9.25m of ironstone, assays returned results of 1.6m @ 15.3g/t Au, 330ppm Cu, 15440ppm Bi from 24.2m; Lead Isotope analysis was undertaken on samples from the diamond and airtrac holes. Results are listed in table 3:

Table 3: GeoPeko Lead Isotope Analyses at New Moon/Explorer 196

<table>
<thead>
<tr>
<th>208/206Pb</th>
<th>207/206Pb</th>
<th>206/204Pb</th>
<th>207/204Pb</th>
<th>208/204Pb</th>
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</thead>
<tbody>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>
Five rock chip samples were collected from around the mine area; results returned are listed in the table 4:

Table 4: New Moon Rock Chip Assays (ppm)

<table>
<thead>
<tr>
<th>Number</th>
<th>Au</th>
<th>Cu</th>
<th>Bi</th>
</tr>
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<tr>
<td>F30651</td>
<td>0.03</td>
<td>98</td>
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<td>F30652</td>
<td>0.05</td>
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<td>81</td>
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<td>F30654</td>
<td>0.22</td>
<td>291</td>
<td>64</td>
</tr>
<tr>
<td>F30655</td>
<td>0.07</td>
<td>228</td>
<td>10</td>
</tr>
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</table>

Under a Joint Venture between North Flinders Mines Ltd (NFM) and PosGold further exploration of the New Moon area was conducted during the second half of 1992. This exploration work included: Ground Magnetic Survey – With the regional aero-magnetics showing the New Moon anomaly as a small but distinct magnetic high in a sea of magnetic low material, closer and more detailed surveys needed to be conducted. Nine north south lines of ground magnetics were conducted by NFM over the tenement for a total survey of 4.5km. Lines were 50m apart and readings were taken every 10m. The diurnally corrected data was used to create a contour plan. The plan is dominated by the explorer 196 magnetic anomaly, which has a strong dipole in the south. The dipole is very even and has an approximate width of 30m, is steep sided (indicating a shallow source). Geophysical consultant Hugh Rutter expressed the opinion that it was unlikely to continue at depth, or to be laterally extensive; Vacuum drilling consisted of 432 vacuum holes, totalling 2378m, hole spacing was determined by the prospectivity of the geology encountered. A Geological map was produced from the bottom of hole geology logged. This drilling program revealed that the bedrock in the tenement was dominated by Warramunga Formation Siltstones and fine to medium grained greywackes. The rocks were moderately hematitic and sporadically quartz veined. Two main areas of ironstone
were delineated, the main ironstone body making up the central hill and a minor ironstone occurrence in the north west of the prospect. Results from the drilling returned an anomaly coinciding with the main ironstone. A peak Au value of 29ppb occurred in dark pink indurated slightly cherty siltstone with 10% white vein quartz and 2% black manganese staining. A peak Cu value of 1464ppm occurred in oxidised hematitic ironstone and yellow clay. A peak Bi value of 68ppm occurred in black hematite ironstone, partly oxidised to gossan yellow. The main zone of anomalous geochemistry is extended east by Cu values (and to a lesser extent by Au and Bi) together with minor ironstone occurrences; A seven hole RAB, totalling 392m and RC, totalling 132m, drilling program was conducted in four sections. Section one was aimed to test the south eastern extension of the main ironstone body. Section two passed through the mine hill at New Moon. Section three was aimed at testing the northern extension. Section four was aimed to test for a second ironstone zone in the northwest of the prospect. Significant results are summarised in table 5:

Table 5: Significant RAB and RC intersections.

<table>
<thead>
<tr>
<th>Hole No.</th>
<th>From</th>
<th>To</th>
<th>Au (ppm)</th>
<th>Cu (ppm)</th>
<th>Bi (ppm)</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMB001</td>
<td>15</td>
<td>18</td>
<td>0.44</td>
<td>2976</td>
<td>5</td>
<td>Siltstone with up to 80% Mn</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>21</td>
<td>0.27</td>
<td>2150</td>
<td>19</td>
<td>Siltstone with up to 80% Mn</td>
</tr>
<tr>
<td>NMB002</td>
<td>36</td>
<td>39</td>
<td>0.10</td>
<td>835</td>
<td>15</td>
<td>Slst + 60% He vns</td>
</tr>
<tr>
<td>NMR001</td>
<td>38</td>
<td>41</td>
<td>0.74</td>
<td>261</td>
<td>212</td>
<td>Mt ironstone</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>44</td>
<td>0.35</td>
<td>219</td>
<td>16</td>
<td>Mt ironstone</td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>47</td>
<td>0.25</td>
<td>152</td>
<td>20</td>
<td>Mt ironstone</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>53</td>
<td>1.02</td>
<td>300</td>
<td>109</td>
<td>Bdry b/n Mt Festone (upper) and He-q Festone (lower)</td>
</tr>
</tbody>
</table>
In 1996 Normandy conducted an evaluation of all previous exploration data over MC C1350 (MCC held within EL 9930). The Explorer 196 magnetic anomaly over the New Moon mine within MC C1350 was chosen for a Mobile Metal Ion (MMI) geochemical survey. The objective of the MMI survey was to assess the soils over Explorer 196 magnetic anomaly to determine whether there was anomalous Au, Cu, Bi and other indicator ions that may suggest the magnetic anomaly is Au/Cu/Bi mineralised. The samples were taken on 50m spaced lines at 100m intervals. A total of 38 samples were collected over MC C1350 a surrounding tenure. The results of the program were reported by Normandy as inconclusive. There was no reported follow up exploration to the results from the MMI survey. An environmental audit covering all historical disturbances in the Tennant Creek mineral field was undertaken by NTC in 1998. The audit located and detailed all occurrences of substantial disturbance including mine workings, tracks, dumps, drill holes, excavations, buildings and rubbish. The survey documented the historic New Moon workings within the Mineral Claim.

In May 1999 NFM were appointed as operators of the Central Joint Venture tenements, including MC 1350. NFM conducted no on-ground work over the Claim.

During the 1999/2000 year of tenure, Northern Gold N.L., as manager of the Mineral Claim completed evaluation studies and data compilation of the Tennant Creek region, including MC C1350.


In September 2002 an internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities included a detailed assessment of all the tenements purchased from NTC, including the Central Joint Venture tenements.

Giants Reef recognised that significant exploration potential at Explorer 196 remains, however will require a great deal of work. Giants Reef noted that the prospect ranked high on the NTC list, however is located a long way east of Tennant Creek. As part of the a rationalisation program the Claim was recommended for surrender to allow exploration over Explorer 196 to be conducted under Giants Reefs granted Exploration Licence 9930.

In the third tenure year Giants Reef’s report to DBIRD, “Mineral Claim C1350, New Moon Final Report for the period 19 September 1995 to 31 December 2003” (J Cahill, February 2004) details all the historical exploration conducted over the Mineral Claim. As a consequence all the ground previously explored under MC C1350 is now being explored under EL9930. The New Moon mine is located over a magnetic anomaly referred to as Explorer 196, and no other magnetic or gravity anomalies have been identified in EL 9930 by Giants Reef. During the third tenure year all the historical drill and geochemical data over the EL was collated and converted from datamine format, and combined with the Company’s database. This data has been reviewed for target areas with shallow oxide Au potential. Review of the vacuum and geochemical data have identified a number of small geochemical Au anomalies with a NW-SE strike over Explorer 196.

5.14 EL10203 WHITE HILL BORE

In 1988, the CSIRO conducted a series of hydrogeochemistry (water sampling and trace element analysis) exercises in the Tennant Creek mineral field. The work was largely aimed at accumulating base data for the groundwaters of the district. It involved collecting samples of groundwater from stock bores, exploration drill holes, and underground water seeping into the mines that were active at the time, with the objective of using the analytical information to help pin-point target areas for further mineral exploration. The collected samples were analysed to a very high degree of precision at the CSIRO’s North Ryde (NSW) laboratories and, after allowances were made for a number of variable factors, it was possible to compare the final results with each other. In this work, levels of gold are measured in nano-grams of gold per litre (ng Au/L). A nano-gram is one billionth of a gram. Out of 33 samples collected and analysed in 1988, only a few were found to contain gold detectable by the analytical methods of that time. The WHITE HILL BORE water sample was one of these and, at 30ng Au/L, compared well with water samples from Warrego (40ng Au/L) and Peko (100ng Au/L), however no follow-up work was undertaken, despite recommendations to do so. A repeat sample was taken from the bore in July 2000. Analysis of this sample, using techniques much improved since 1988, gave a result of 129ng Au/L. This strongly corroborated the result of the sample taken 12 years before. A water sample was also taken from Middle Bore, 3km southeast of WHITE HILL BORE, and within EL 8879. This sample assayed 16ng Au/L, much less than the WHITE HILL BORE sample, but still rated anomalous.

In Giants Reef first tenure year, the 1998 AGSO aeromagnetic data was assessed and modelled over the WHITE HILL BORE area, however due to the lack of detailed resolution in this data, no encouraging bodies were delineated and therefore no specific drill targets were produced. The various magnetic features that were noted appeared to relate to lithological units along the granite-sediment contact zone and a more detailed ground magnetic survey was recommended in order to better define potential ironstone bodies/magnetic anomalies.

During the second tenure year Giants reef proposed a work program to drill a pattern of six shallow vertical holes around WHITE HILL BORE to obtain assay samples and geological information that could lead to locating gold mineralisation. The proposed exploration
program was postponed during the term, due to the Company’s higher priority commitments on the development and mining of the Chariot and Malbec Deposits.

During the third tenure year all the historical drill and geochemical data over the EL was collated and integrated into the Company’s database and GIS.

5.15 SEL8665 SHARK

Mining at Black Boy in the south eastern area of SEL 8665 was conducted by prospectors between 1938-39. Prospectors initially mined at Red Terror, however during the 1946-1952 period the mine was owned and operated by Red Terror Gold Mines NL (RTG). This company also owned the Edna Beryl and Blue Moon mines. Red Terror closed in 1952 owing to declining gold grades. Production figures for the Red Terror workings are 605 tonnes @ 68g/t Au and Black Boy produced 45 tonnes @ 36.7g/t Au.

Exploration has been conducted in the Red Terror and Black Boy area by the Bureau of Mineral Resources (BMR) and by a number of companies including RTG, ADL, Normandy and most recently by Centralian Minerals.

The area was investigated by ADL in the late 1960s under Authority to Prospect (AP 2386) and work included auger drilling, diamond drilling and geophysical surveying.

The area has been explored by ADL since the 1960s. During the period 1966 to 1975 ADL conducted a ground magnetic survey that delineated the R20 anomaly. This anomaly was tested by three diamond holes with limited drilling success. A Jacro Auger rig was also used for bedrock geochemical testing of this target. Between 1972 and 1975 the Licence was held by ADL under EL 96 between, however no exploration activities are recorded for this period.

Between 1981 and 1986, GeoPeko explored the Licence area under EL 2535. The focus of exploration was mostly on the Peko, Argo, Juno, Golden Forty and Golden Kangaroo prospects. GeoPeko also undertook a compilation of data from the Juno and Peko Mines, compilation of topographic, geological, geophysical information onto 1:50,000 scale plans, drilling, low level airborne magnetic and gravity surveys in 1984, ground magnetic surveys over four anomalies identified from the 1984 survey and compilation of a regional geological map.

From 1984 to 1990, GeoPeko conducted exploration under EL 4536. Drilling at Explorer 26 prospect intersected several significant zones with the highest value at 5m grading 9.3g/t gold. Exploration conducted by GeoPeko included structural mapping.

PosGold explored the south eastern portion of SEL 8865 between 1986 and 1992 under EL 4929. An airborne survey flown in 1990 highlighted 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. A further 11 RC holes were drilled (1071m) at other prospects but assay results were disappointing.
From 1991 to 1994, Normandy NFM carried out exploration under EL 6343. A total of 1094 vacuum drill holes (4,377m) were drilled. Geochemical sampling, rock chipping (18 samples), soil sampling (22 samples), located several areas warranting following up. Nine RAB holes (540m) tested two ironstones but results were disappointing.

PosGold carried out exploration between 1990 and 1994 under EL 6929 and this work focused on the Kiaora prospect. 62 vacuum holes (279m) were drilled but results suggested that it was unlikely that this area will host significant mineralisation. PosGold also explored the area under EL 7274 in the early 1990s. Work completed by PosGold included a review of the historical data, rock chip and soil sampling, regional regolith, structural and photo-geological mapping, a regional gravity survey, several ground magnetic surveys, prospect scale mapping, vacuum drilling, RAB drilling, RC drilling and down-hole magnetic surveying. Several subtle, coincident Au-Cu-Bi anomalies located along two structural gold bearing corridors: the Nobles Nob and Peko lines. Zones up to 380 ppb Au and 181 ppm Bi were reported. Exploration conducted within the Red Terror prospect during between 1996 and 1997 period included the drilling of 6 RAB drill holes totalling 388m.

The Exploration Licence was originally applied for in March 1994 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included SEL 8665. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including SEL 8665.

Prior to the sale of SEL 8665 Poseidon carried soil sampling programs, however results returned only subtle anomalies. Higher gold values are more common in the sheet wash areas of the Western region of the Licence as opposed the eastern region, which includes more sub-outcrop. In the eastern EL higher values are scattered, but occur mostly in the large areas of sheet wash cover away from the hills and on the saddle between the central and eastern magnetics anomalies. This work demonstrated that there is less than 10% sub-outcrop in the eastern target area, and further follow-up was justified.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has mainly been focused on geophysical modelling of the two magnetic anomalies, which comprise the 7300 West target. Geophysical modelling of the larger anomaly calculated a depth to the top of the causative body of 353 metres, using a magnetic susceptibility of 0.09 SI units. Geophysical modelling was also undertaken on the Sexton’s Delight magnetic anomaly which forms one of an east-west string of elevated magnetic anomalies along what NTC referred to as the “Aeromagnetic Ridge”. Modelling of the Sexton’s magnetic source suggests it forms a “north-plunging 10 million tonne ironstone mass” between 160m and 480m vertical depth. An alternative explanation is that this anomaly, and others like it, is caused by disseminated magnetite. The Company is of the belief that if in-fact the magnetic source proves to be an ironstone mass, it could open up the possibly of many other ironstone masses and prospective targets along the “Aeromagnetic Ridge”. 

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Until recently, disseminated magnetite has been the generally accepted cause of the magnetic features along the Ridge. The Company also identified a vacuum geochemical Au anomaly located about 3km west of the Comet mine, referred to as the Pointer geochemical anomaly, which it planned to follow-up.

Other work completed by Centralian Minerals Limited within the Licence included data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

**5.16 EL10124 SPEEDWAY**

Many historical mine workings and prospects exist in EL 10124 and are outlined in table 6:

Table 6: Historical Mine workings of EL 10124.

<table>
<thead>
<tr>
<th>MINE WORKINGS</th>
<th>Operation Years</th>
<th>GRADE (g/t)</th>
<th>PRODUCTION (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irish Emblem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shamrock</td>
<td>1934-39</td>
<td>4.8</td>
<td>9.6</td>
</tr>
<tr>
<td>Burnt Shirt</td>
<td>1934-59, 66</td>
<td>18.8</td>
<td>2 025.5</td>
</tr>
<tr>
<td>Wedge/Golden Boy</td>
<td>1950-53</td>
<td>9.3</td>
<td>345.7</td>
</tr>
<tr>
<td>Leichardt One</td>
<td>1935-48</td>
<td>24.1</td>
<td>891.8</td>
</tr>
<tr>
<td>Ace High</td>
<td>1941-42</td>
<td>64.4</td>
<td>113.4</td>
</tr>
<tr>
<td>Leichardt Two</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leichardt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathleen/Caveman</td>
<td>1937-41</td>
<td>20.5</td>
<td>1 154.2</td>
</tr>
<tr>
<td>Ortelle Star</td>
<td>1950</td>
<td>8.4</td>
<td>9.1</td>
</tr>
<tr>
<td>PROSPECTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassawary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lynton</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In 1937 the Burnt Shirt to Kathleen areas, was subject to a ground magnetics survey, with one anomaly being defined between Burnt Shirt and Ace High at a modelled depth of 60m.
The Bureau of mineral Resources (BMR) tested the anomaly with one drill hole in 1964, the hole intersected barren quartz magnetite ironstone between 112m and 128m.

In 1967, the BMR drilled a diamond hole (DDH-001) to test an anomaly known as Burnt Shirt Anomaly 4. The hole failed to intersect any magnetic material. A second hole was drilled to investigate a small outcropping magnetic boss and intersected a thin band of ironstone at approximately 70m depth. The BRM resurveyed the area in 1967 and on the basis of new results drilled a further two holes. These two holes intercepted massive ironstone at depth but no significant assays were returned.

As a result of the 1957 aeromagnetic survey over the Tennant Creek area, the BMR defined a series of magnetic anomalies, two located east of the Ace High mine workings. The during 1971, BMR drilled one diamond hole (DDH14) into the eastern most magnetic high and intersected 11m of a quartz-magnetite lode between 267.7m – 279.2m, with the best assayed returned at 1.6m @ 0.6ppm Au, 0.16% Cu and 0.18% Bi. Subsequently both anomalies were gridded and geologically mapped at 1:3000 and a ground magnetic survey was conducted. The survey indicated the eastern most anomaly required further testing and, the source for the western most anomaly was located 260m below surface. GeoPeko drilled another diamond hole (DDH1) inclined at 75° in to the anomaly but failed to intersect the magnetic source or economic mineralisation.

Peko-Wallsend Operations Ltd (GeoPeko) explored the area covering the Burnt Shirt leases, under EL 2535 between the period 1980 – 1986. During that time the exploration that was conducted included; compilation of topographic, geological, geophysical information onto 1:50 000 scale plans; low level airborne magnetic and gravity surveys in 1984; ground magnetic surveys over four anomalies identified from the 1984 survey and compilation of a geological map.

During September 1985, Geophysical Prospecting Analysis Pty Ltd, conducted a short field survey program, with the aim of upgrading the magnetic data on certain prospects including the Burnt Shirt and Ace High Prospects within EL 10124. The survey involved a pair of long central traverses in a north south orientation. Results from the survey indicated that the anomaly at Burnt Shirt could be readily split into three. One is shallow, corresponding to depth extent of the surface ironstone. The other two are situated to the east and west of ironstone.

Nobelex NL and Australian Development Limited (Poseidon Gold Limited) during 1985, conducted exploration work in EL 10124, under a series of MCC’s 175 – 178. 12 Percussion holes (BSP1 – BSP12), totalling 587m were drilled. No significant assays were returned from these holes. During 1986 Nobelex and Poseidon, conducted a ground magnetic survey over the Burnt Shirt Prospect area. Consultant geophysicists identified deep drill hole targets.

During 1987 the deep drill targets generated in 1986 were drill tested. 6 holes (BSCRC1 – BSCRC6), totalling 1457m, were drilled, and one further RC hole (BSD7), totalling 312m, and extended by diamond drilling to 347m was drilled in 1988. Assays returned from these holes recorded some encouraging mineralised sections and the diamond drill core
intersected notable amounts of visible native Cu. Significant intersections are presented in table 7:

Table 7: Best results from drilling conducted in 1987.

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>From (m)</th>
<th>To (m)</th>
<th>(m)</th>
<th>Au (g/t)</th>
<th>Cu (ppm)</th>
<th>Bi (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSRC2</td>
<td>116</td>
<td>117</td>
<td>1 @</td>
<td>1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSRC3</td>
<td>46</td>
<td>47</td>
<td>1 @</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSRC3</td>
<td>60</td>
<td>61</td>
<td>1 @</td>
<td>0.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSRC5</td>
<td>243</td>
<td>244</td>
<td>1 @</td>
<td>0.05</td>
<td>4.85%</td>
<td>1200</td>
</tr>
<tr>
<td>BSRC5</td>
<td>244</td>
<td>245</td>
<td>1 @</td>
<td>0.12</td>
<td>2.8%</td>
<td>35</td>
</tr>
<tr>
<td>BSD7</td>
<td>315</td>
<td>316</td>
<td>1 @</td>
<td>0.22</td>
<td>9350</td>
<td>360</td>
</tr>
</tbody>
</table>

Other work conducted on EL 10124 included the installation of a lockable gate at the Burnt Shirt historical mine workings, to upgrade safety, and to close all other access to mine workings in the area.

In 1988 five grab samples from the Leichardt Two mullock stock piles were collected returning an average grade of 5.4 g/t Au.

Poseidon conducted further exploration in the area, which included studies that focused on the nature of the structural control on ironstone and Au-Cu-Bi mineralisation throughout the region. During the period 1991 – 1993 Poseidon conducted a regional gravity survey, with the aim to aid in refinement of regional geological interpretation and detection of structures possibly associated with the emplacement of ironstones and associated mineralisation. During 1992 the services of Australian Photogeological Consultants Pty Ltd was contracted to undertake a detailed Photogeological map in the Tennant Creek district.

During August 1996, all Burnt Shirt and Ace High prospects were subject to a rock chip sampling program. A total of 249 samples were collected. Significant results included: 3.26 g/t Au, 50ppm Bi and 98ppm Cu immediately north of the Ace High prospect, peak geochemistry of 12.8g/t Au, 73ppm Cu, 110ppm Bi from Kathleen, 2.75g/t Au, 200ppm Cu, 280ppm Bi from hematite altered siltstone in workings, located east north-east of Kathleen and south of Ace High.

During the period 1996 – 1997 Normandy Tennant Creek (NTC) explored the area under MLC’s 211 – 216, 281 – 284, 431, 623 and MCC 175 – 178. The exploration work conducted included the drilling of 3 RAB holes at Kathleen and 2 RAB holes at Ace High. The 2 RAB holes at Ace High were targeted to test for mineralisation extending beneath a
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quartz-hematite ironstone. There was no sign of alteration in the drill holes and best results were KTRB-002 3m @ 0.015g/t Au, 16ppm Cu and trace (TR) Bi from 36m. Drilling at Kathleen was targeted beneath two shafts to test for supergene enrichment. Two holes were drilled under a shaft on the western slope of the Kathleen hill and one hole drilled under a shaft on southern crest of the hill. The best results returned were as follows, KTRB-003 9m @ 0.025g/t Au, 63ppm Cu, 76 (inc. 3m @ 112ppm) Bi from 18m, 3m @ 0.279g/t Au, 67ppm Cu, TR Bi, KTRB-005 3m @ 8.5g/t Au, 10ppm Cu, 77ppm Bi from 6m, 3m @0.277g/t Au, 7ppm Cu, 5ppm Bi from 9m, 3m @ 0.03g/t Au, 55 Cu, 83ppm Bi from 45m.

Exploration during the period 1997 – 1999 was conducted by NTC and involved an Airborne Magnetics Survey – the survey was flown by Kevron in October 1998, with a 40m sensor height, 50m line spacing on a north south line orientation with 7m line sample spacing. Review of this data reveals greater structural detail than can be delineated from the earlier 1984 GeoPeko airborne magnetic survey. Other work involved an environmental audit covering all historical disturbances in the Tennant Creek mineral field.

The Burnt Shirt anomaly was further modelled in 1999 by NTC, and defined as an ironstone at a depth to top of 100m and a mass in the order of 1.3Mt. It was noted that the drilling to date hasn’t defined the strike extent.

In 2001 the Burnt Shirt area was visited by Giants Reef as part of a more regional reconnaissance trip, and several warning signs were erected around historical shafts and workings, as part of the companies Duty of Care.

5.17 EL10114 McDOUGALL RANGES

Historical exploration work in EL 10114 has been concentrated around the Lone Star Mine workings which is covered by a series of MLC’s (outlined in section 4.8) and is therefore not covered in this report. The Explorer 92 Prospect was identified in the south west region of EL 10114 but no exploration work has been conducted over this prospect.

During the three years of tenure under Giants Reef, exploration work involved in the licence area was concentrated around the Lone Star Mine workings, therefore the remainder of the licence has taken a lower priority. A review of all historical exploration work, geophysical data and drilling data from the Lone Star area has provided the basis to conduct a detailed review in the proceeding tenure year, with the aim of generating shallow RAB targets within the prospect area.

5.18 EL9958 RUNNING BEAR

During 1976 Australian Development Limited (ADL) drill tested areas in the eastern region of the Licence, with the aim of testing a portion of an east west trending magnetic anomaly for base metals. ADL’s drilling intersected highly chloritised, magnetite veined rocks, which they interpreted as andesites and andesitic tuffs. ADL assays showed no base
metal anomalies but identified a Bi anomaly peaking at 70ppm, and they conducted no Au analysis. In an exploration review conducted by Allchurch in January 1991, he indicated that the intersected highly chloritised, magnetite veined rocks, may in fact be intensely altered greywackes or porphyries. Allchurch also noted that the prospect was located between two interpreted faults trending north east, with the western most fault corresponding to a kink feature in the regional magnetic trend.

In 1991 Roebuck acted on Allchurches interpretations and conducted exploration work over the Eastern Prospect area. Work included a magnetic and structural interpretation. The interpretation was transcribed from published regional aeromagnetic data and therefore interpretation locations are imprecise. Vacuum drilling was conducted, and drilling west of the Eastern prospect was completed on a true north south grid using the cleared claim boundaries as base lines, with one short line completed on the old ADL 270° magnetic, cleared line and access track. 62 holes, totalling 771.5m were completed, returned results showed peak values as 3ppb Au, 25ppm Cu (with one spike of 195ppm) and 3ppm Bi.

In 1992 Roebuck continued exploration work covering the southern area of EL 9958, and the work included the collection of 249 samples. The assays returned outlined one anomaly, >40ppb Au, within the current boundaries of EL9958. The location of this anomaly is in the south western corner of the licence and is possibly a northeast extension of the Piccininny and Three Peaks Prospects located on the boundary of EL9958 and SEL 8665.

The Trump mine is located in the northwest of EL 9958. The mine workings comprise a shaft, tunnel, cross-cut and winze, carried out by Mr. M. Barker from early 1946 – 1950. One load of 15.6 tonnes was crushed and returned an assay of 31.1g/t Au. A review of the Trump Mine workings by Geopeko, at the request of Mr. H. DeVerrine, was conducted in 1988, then held under MLC 17, and originally under ML106E, jointly by Adelaide Petroleum and Mr. H. DeVerrine. Geopeko as part of their review, collected 21 samples from both underground workings and surface outcrop for analysis. All results were disappointing with assays generally only slightly elevated above the background levels. The geophysics of the area was assessed, and a subtle flexure in the residual magnetic intensity contours was identified in the vicinity of the ironstones. A reconnaissance magnetometer traverse comprising two lines was carried out over the main ironstone, the line spacing was 50m apart and was 200m in length. The first line indicated no anomaly, while the second over the ironstone encountered a marked increase in readings. Geophysical modelling of this second line indicated a limited potential for the prospect.

The Great Bear Mine is located in the central north of EL 9958, and the main workings have targeted an ironstone at the northern end of a low ridge striking north west. The workings consist of an adit, which penetrates under the ridge to the hematite/sediment contact. There are also some large cuts into the ridge on the northern side from which several hundred cubic metres of hematite and sediments have been removed.

During the period March 1988 to March 1989 exploration on EL 9958 was conducted by Metana Minerals N.L. in a joint venture with Allender/Leburn under EL 5730 ‘Great Bear South’, this EL covers the southern area of the current EL 9958. Work conducted by the
partners included: Photogeological interpretation which revealed the southern region of EL 9958 to have no outcrop or obvious photo lineaments. An aeromagnetic interpretation was made from data purchased by Metana from Austirex International Limited. Austirex conducted an aeromagnetic survey between June and July 1984, the flight line spacing was 200m with tie line spacings at 4000m and sample intervals of 30m. The results from this interpretation indicates a number of east north-east trending beds, with a north east trending structural break and associated splays east of the current EL 9958. Soil sampling was also carried out under MCC’s 536 – 587 as part of a separate joint venture between Metana Minerals N.L. and Roebuck resources ltd. The samples were collected at 80m spacings around the MCC boundaries. 120 samples were collected and returned results indicated no anomalous values.

During 1988 Asarco Gold Pty. Ltd., a wholly owned subsidiary of Asarco Australia Ltd., explored in the northern region of the EL 9958, under MCC’s 223 - 225. Exploration work included lag sampling over the Great Bear mine and White Ridge regions, located in the central north of EL 9958. 75 samples were collected on a 200m x 25m grid. The results revealed a Bi anomaly over the Great Bear ridge which decreased rapidly to the south and a slightly slower change to the north. The highest Bi and Cu values were recorded at the top of the ridge on the shear zone, and the Cu values were also high and showed strong positive correlation with the Bi anomaly. Au values were uniformly low. Rock chip sampling was also conducted, with 21 rock chip samples collected along the Great Bear ridge with the best results returned from hematitic sediment adjacent to the mine, Au values were 2.63ppm.

Asarco continued exploration in EL 9958, under MCC’s 223 – 225, during 1989. Exploration work included: infill gridding of 1.2 line km during March. Soil sampling was also conducted with 72 samples being collected at 25m x 25m spacing to give infill coverage of the geochemical anomaly identified in 1988. The results showed a wide dispersion for Au, Bi and Cu down slope from central zones corresponding to ironstone outcrop. A ground magnetic survey was conducted at 25m line spacing with 10m station spacing over the anomalous area. The results were found to be complicated and tended to be strongly influenced by two large single point lows of unknown reliability. There appeared to be at least two magnetic horizons that may be the north and south limbs of a fold structure, supported by the soil sampling. Three RC holes (TRC 34, 35 & 38), totalling 390m were drilled during October and November to test coincident lag anomalis, outcropping ironstone and historic workings. All holes were void of ironstone intersection or any alteration. Assay results for the holes were low, and from the results it was concluded that there was little potential for significant mineralisation below the geochemical targets outlined during 1988.

During the period 1995 – 1996, the three Asarco RC drill holes were rehabilitated and the sites cleaned up. A detailed aeromagnetic survey was flown by World Geoscience MCC223 is located just inside the survey area, and the Great Bear ironstone shows a coincident magnetic anomaly. Wiluna Mines Limited undertook a ‘ Review of Past Exploration, Work programmes and Budgets for the Wiluna Joint Venture Tenements ’. This in-house document noted that the three Asarco RC drill holes may have been targeted incorrectly to intersect the ironstone.
An application for renewal of MCC233 was lodged on 13th June 1997 and was granted for a period ending 15th September 2002, when Giants Reef decided to surrender the Claim rather than apply for another renewal.

During the first two years of tenure Giants Reef conducted an assessment of the geology, structure, geophysics and previous exploration work over the tenement. Whilst the tenement does not contain any significantly large deposits it includes a number of prospects which form strike extensions to more notable prospects, namely the Lone Star Mine workings. Prospects within the tenements examined during the year included Great Bear (192.1 oz), Trump (4.0 oz) and the Mineral Wealth, Central and Eastern Prospects. The extensions of the Piccaninny and Three Keys Prospects were also examined.

A review the airborne magnetics over the Licence suggests a strong structural correlation with clusters of ironstones and the three main gold camps (Caroline, Burnt Shirt and Lonestar) with areas comprising conjugate sets of major west northwest trending faults (thrust faults?) and north east trending faults. Further interpretation has highlighted target areas having favourable structural-geo logical-magnetic signatures, which warrant further investigation. These areas do not appear to have been adequately tested by either geochemistry or drilling by previous explorers.

5.19 EL9403 JESS

During the period 1935 – 1937 geophysical surveys were carried out by the Aerial Geological and Geophysical Survey of Northern Australia (AGGSNA) with the aim of identifying magnetic bodies. Results from these surveys were unavailable, although AGGSNA conducted drilling in the Eldorado area including Anomaly 3, which is located in the south west corner of EL 9403, during 1936. The results from AGGSNA No. 2 hole drilled on anomaly 3, encountered a 13m talc-carbonate-magnetite formation containing disseminated sulphides from 135m, Cu assays from this interval ranged from 0.38% - 0.88%.

Exploration work was conducted over the Eldorado area in 1961 by N.J.McMillan and A.H.Debnam. The work they conducted focussed on geochemical prospecting for copper in the Tennant Creek Gold Field and included soil sampling over magnetic anomalies with 65m line spacing and sample intervals of 30m, the samples were only assayed for Cu. 80 soil samples and 220 bedrock samples were collected, with assay results averaging approximately 4ppm. The National Lead Company drilled two holes in this area, but neither encountered any magnetic material and the core was assayed with only background Cu results returned. Two diamond holes were drilled over the Eldorado area with on being in EL 10406, the results from this hole only returned background level Cu values. It was concluded from these results that the potential for economic discoveries was low, and therefore further exploration wasn’t recommended.

Exploration work was conducted during 1973 by GeoPeko Limited, the project work was aimed at evaluating the causative body sizes and to estimate the completeness of exploration. Work conducted included the compilation and assessment of all historical data. Anomaly 3 was reviewed and conclusions were drawn that the two narrow
intersections offered encouragement for further work, DDH3 appeared to have missed to the underside of the main anomaly, but intersected a southern satellite body.

Aquitaine Australia Minerals Pty. Ltd. Conducted a further review of the Eldorado area in 1973-74. The review outlined that the known bodies needed to be further defined by geophysical and geological methods.

In 2003/4 Giants Reef assessed Normandy's 1998 detailed aeromagnetic data and generated a number of low order magnetic anomalies within EL 10406. Giants Reef view the Licences as prospective for ironstone-related gold-copper deposits due to presence of favourable structures, subtle magnetic features, and because of their position between the high-grade Juno and Eldorado mines. An internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities in September 2002 assessed the future exploration potential of EL 9403 and EL 10406. The Licence areas were individually assessed based on their prospectivity, targets and overall geological and geophysical potential.

During the second year of tenure Giants Reef conducted further exploration which included; MMP’s covering work planned in Eldorado Project Area (Eldorado Comstock Mineralised Corridor) were submitted to DBIRD in July and approved in August; Geophysical consultant Resource Potentials Pty Ltd were contracted in July to undertake geophysical data processing and interpretation work. In addition to prospect work, Resource Potentials requested to review the 1998 Kevron Nob-Line airborne magnetic data, and assist with compiling a systematic database of all the available geophysical data in the TC mineral field; A gravity survey covering some 1.7 km2 of the Eldorado Project Area including the Anomaly 3, 4 and 5 magnetic anomalies and portions of EL 9403 was planned in July. The survey also included several outcropping ironstones including those at the Mount, Ellen M and Cat's Whiskers prospects. Daishsat Geodetic Surveyors completed approximately 22 line kilometres of gravity using 40 m station centres and 80 m line spacing; Geophysical modelling and interpretation of the newly acquired gravity data together with previous magnetic survey data was undertaken by Lindeman Geophysics Pty Ltd. The gravity, magnetic and geochemical data was also provided to Resource Potentials for modelling and interpretation. The new gravity data revealed more subsurface information than the magnetic data and resulted in the delineation of some 11 gravity high anomalies, which were interpreted as potential ironstones and/or structures. A density of 1.8g/cc rather than 2.2g/cc was applied to the bouguer correction in an effort to remove the effects of terrain and make the data more interpretable. Bouguer corrections use a uniform density over an area and the reality is that hills and gullies that produce topographic anomalies in the gravity data can be caused by rocks and regolith materials that have variable density across the survey area. Therefore, the Bouguer correction will not completely remove all terrain effect. Variable density Bouguer corrections can be undertaken, but this is a subjective process that may produce as many artefacts as it is trying to remove;

5.20 EL10313 KODIAK
No historical exploration work on EL 10313 has been conducted previous to granting of EL 10313 to Giants Reef on 1st May 2003, due to an entirety of cover by Cainozoic sediments.

During the three years of tenure under Giants Reef, exploration work involved a detailed review of all available data. With no outcrop present in the licence geophysical surveys provide the best analysis tool of assessing the prospectivity of the licence. Assessment and interpretation was undertaken of regional magnetic data that covers the licence, these images outline a subtle magnetic anomalous ridges in the southern region of the licence. The subtle magnetic anomalous ridge lies on the southern flanks of a large area of subdued magnetic intensity. These identified magnetic anomalous ridges provide a target for further exploration and interpretation. A more detailed geophysical survey is required to further define the anomalous ridge, with the aim of generating shallow RAB targets within the area.

5.21 EL10406 MONTANA

The Cats Whiskers mine is a small working in an ironstone body that forms the crest of a low ridge. The mine produced 99.17 oz Au from 381.37 tons of ore.

During the period 1935 – 1937 geophysical surveys were carried out by the Aerial Geological and Geophysical Survey of Northern Australia (AGGSNA) with the aim of identifying magnetic bodies. Results from these surveys were unavailable, although AGGSNA conducted drilling in the Eldorado area including Anomaly 3, which is located in the south west corner of EL 9403, during 1936. The results from AGGSNA No. 2 hole drilled on anomaly 3, encountered a 13m talc-carbonate-magnetite formation containing disseminated sulphides from 135m, Cu assays from this interval ranged from 0.38% - 0.88%.

Exploration work was conducted over the Eldorado area in 1951 by N.J.McMillan and A.H. Debnam. The work they conducted focussed on geochemical prospecting for copper in the Tennant Creek Gold Field and included soil sampling over magnetic anomalies with 65m line spacing and sample intervals of 30m, the samples were only assayed for Cu. 80 soil samples and 220 bedrock samples were collected, with assay results averaging approximately 4ppm. The National Lead Company drilled two holes in this area, but neither encountered any magnetic material and the core was assayed with only background Cu results returned. It was concluded from these results that the potential for economic discoveries was low, and therefore further exploration wasn’t recommended. Detailed soil sampling was conducted over selected targets, which included Cats Whiskers, with the aim of checking the reliability of the sampling interval from the first soil sampling program. The results from Cats Whiskers were high Cu values at the surface and an inference was drawn for the prospect from the more explored Peko and North Star deposits, that the Cats Whiskers outcrop can be expected to have mineralisation at depth. Two diamond holes were drilled over the Eldorado area with on being in EL 10406, the results from this hole only returned background level Cu values.
Five diamond holes (DDH1 – DDH5), totalling 760m, were drilled under an agreement between Eldorado Tennant Creek Limited and Mines Branch, Northern Territory Administration. The holes were completed in August 1963. DDH1 intersected leached ironstone between 37m - 70m, with only rare hematite below this intersection. Results for DDH2 – DDH4 and assays for DDH1 – DDH4 are unavailable. DDH5 intersected the ironstone between 133m – 135m, best assays returned recorded background levels with the exception of the last 2m of the intersected ironstone where Cu values were 2.55%, the following 1m was logged as chlorite schist and Cu values were 1.1%.

Exploration work was conducted during 1973 by GeoPeko Limited, the project work was aimed at evaluating the causative body sizes and to estimate the completeness of exploration. Work conducted included the compilation and assessment of all historical data. Anomalies 4 & 5 were reviewed, anomaly 4 indicated the presence of two parallel zones of Cu mineralisation that have not been adequately defined, and either has the ironstone body. Anomaly 5 indicated that various lithologic types existed in the main body of the ironstone and warrant further work, the ironstone contains Au, Cu and Bi values which can be correlated into three pods within the main body, the intersections to date support the presence of a main body and smaller satellite deposits to the north and south.

Aquitaine Australia Minerals Pty. Ltd. Conducted a further review of the Eldorado area in 1973-74. The review outlined that the known bodies needed to be further defined by geophysical and geological methods.

An honours thesis was conducted, examining the geology of the Eldorado area of Tennant Creek by Malcolm Norris, and completed in November 1980.

During the period July 1987 to January 1988 a program of 16 shallow holes comprising 10 RC (CW3 – CW12) and 6 diamond (CW13 – CW18) holes were drilled to test mineralisation. Patchy economic Au and Bi mineralisation was intersected with best results; CW# 1m @ 36.9g/t Au, 0.04% Cu, 0.63% Bi from 47m; CW5 1m @ 17.1g/t Au, 0.27% Bi from 62m, 1m @ 193.8g/t Au, 0.02% Cu, 0.21% Bi from 63m, 3m @ 3.9g/t Au, 0.20% Cu, 0.05% Bi from 64m, 1m @ 10.0g/t Au, 0.13% Cu, 0.02% Bi from 67m; CW14 2m @ 25.4g/t Au, 0.06% Cu, 0.10% Bi from 132m; CW17 2m @ 4.6g/t Au, 0.10% Cu, 0.18% Bi from 52m, 1m @ 47.0g/t Au, 0.04% Cu, 1.16% Bi from 54m, 2m @3.9g/t Au, 0.13% Cu, 0.42% Bi from 55m; CW18 2.2m @ 6.2g/t Au, 0.07% Cu, 0.04% Bi from 90m; CW11 3m @ 38.4g/t Au, 0.05% Cu, 0.99% Bi from 110m; CW16 3.3m @ 2.5g/t Au, 0.15% Cu, 0.41% Bi from 89m

An honours thesis was conducted, examining the geology and genesis of the Eldorado Au-bearing lode by Harry S. Horvath, and was completed in January 1988.

During 1990 detailed geological mapping and rock chip sampling was conducted. The mapping area was covered with a 10m x 10m grid and the mapping was carried out by traversing along north – south grid lines and the geology was inferred between grid lines, producing a 1:250 geology plan. The chip samples were taken at 1m intervals and each sample was logged before assaying. The assays showed very thin and patchy surface Au, of generally low grade. The higher values returned were from the north associated with the gossan.

EMMERSON RESOURCES PTY LTD
In 2003/4 Giants Reef assessed Normandy’s 1998 detailed aeromagnetic data and generated a number of low order magnetic anomalies within EL 10406. Giants Reef view the Licences as prospective for ironstone-related gold-copper deposits due to presence of favourable structures, subtle magnetic features, and because of their position between the high-grade Juno and Eldorado mines. An internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities in September 2002 assessed the future exploration potential of EL 10406. The Licence area was assessed based on its prospectivity, targets and overall geological and geophysical potential.

During the second year of tenure Giants Reef conducted further exploration which included; MMP’s covering work planned in Eldorado Project Area (Eldorado Comstock Mineralised Corridor) were submitted to DBIRD in July and approved in August. Geophysical consultant Resource Potentials Pty Ltd was contracted in July to undertake geophysical data processing and interpretation work. In addition to prospect work, Resource Potentials requested to review the 1998 Kevron Nob-Line airborne magnetic data, and assist with compiling a systematic database of all the available geophysical data in the TC mineral field. A gravity survey covering some 1.7 km² of the Eldorado Project Area including the Anomaly 4 and 5 magnetic anomalies and portions of EL 10406 was planned in July. The survey also included several outcropping ironstones including those at the Mount, Ellen M and Cat’s Whiskers prospects. Daishsat Geodetic Surveyors completed approximately 22 line kilometres of gravity using 40 m station centres and 80 m line spacing. Geophysical modelling and interpretation of the newly acquired gravity data together with previous magnetic survey data was undertaken by Lindeman Geophysics Pty Ltd. The gravity, magnetic and geochemical data was also provided to Resource Potentials for modelling and interpretation. The new gravity data revealed more subsurface information than the magnetic data and resulted in the delineation of some 11 gravity high anomalies, which were interpreted as potential ironstones and/or structures. A density of 1.8g/cc rather than 2.2g/cc was applied to the bouguer correction in an effort to remove the effects of terrain and make the data more interpretable. Bouguer corrections use a uniform density over an area and the reality is that hills and gullies that produce topographic anomalies in the gravity data can be caused by rocks and regolith materials that have variable density across the survey area. Therefore, the Bouguer correction will not completely remove all terrain effect. Variable density Bouguer corrections can be undertaken, but this is a subjective process that may produce as many artefacts as it is trying to remove. RAB drilling commenced over the Eldorado Prospects in September and a total of 75 holes were completed for 1,929 meters. Of these, 7 holes (ELRB 59-65) for a total of 175 meters were sited in EL 10406. Drilling was broadly undertaken on a 50m x 50m grid pattern. The initial drilling program was designed to test the series of 11 gravity anomalies, some of which are coincident with magnetic anomalies (4 and 5) and numerous Au geochemical anomalies which lie along strike to the Eldorado Deposit. Approximately 40% of the initial designed program was precluded by the CLC, including the majority of the more highly ranked gravity/geochemical targets, due to there proximity to areas of topographical relief both within and proximal to a AAPA “Unconfirmed Recorded Sites”. These included gravity-magnetic anomalies associated with several outcropping ironstones (Mount, Ellen M and Cat’s Whiskers prospects).
Lithologies encountered in the drilling included moderate to strongly sheared intercalated Warramunga Formation siltstones, shales and sandstones. Apart from three holes approximately 100m east of the Cat’s Whiskers prospect (MLC528 & 529), magnetite – hematite – chlorite ironstone bodies were not encountered in any of the holes drilled in EL 10406. Results from the drilling were mostly disappointing and apart from the drilling in MLC528 & 529 (12m @ 103ppb Au and 853ppm Cu from 12m (ELRB028), and 12m @ 137ppb Au from 30m (ELRB031), no significant assays results were returned for the 7 holes in EL 10406. The weak Au-Cu anomalies encountered in ELRB028 are hosted by a 12m zone strongly hematitic and chloritic sheared siltstone. The Au anomalies encountered in ELRB031 are hosted within a 10m wide zone of strongly hematite-limonitic siltstone-sandstone units. Results from the drilling suggest that the gravity highs occur in association with lithology that is either sheared or more resilient to weathering (oxidation). In contrast, gravity lows appear to be associated with units that are more deeply weathered and are best described as clay saprolite.

5.22 EL10312 HOPEFUL

The License was acquired to search for IOCG deposits and to evaluate the extent of mineralisation associated with the Quartz Hill Fault zone and Hopeful Star Extended shear zone.

Most of the exploration conducted over EL 10312 has been focussed in the northern region where the Hopeful Star and Hopeful Star East(Extended) mine workings occur. During 1971, Geotecnics Australia Pty Limited carried out a geological mapping program and ground magnetic survey over an area on the northern boundary of EL 10312 and around the Hopeful Star mine.

Tennant Creek Gold (TCGL) acquired the leases in 1987 and drilled three RC holes, totalling 220m, then conducted further exploration in 1988 under a joint venture with Metana Minerals. This work included geological mapping and the collection of 183 rock chips and 430 soil samples. The results outlined the present drainage pattern with the most elevated values originating from a ironstone mesa, which is near the Hopeful Star mine workings. Anomalous values from this work included 494ppb Au from soils. A 94 hole RAB drilling program, totalling 282m and a 93 hole vacuum, totalling 198m program was completed. Significant results returned from this work 18ppb Au at the Hopeful Star Extended area and 42ppb Au from drilling on the Gail grid, which is located on the Eastern boundary of the Licence. A 6 hole RC drilling program (HRC004-HRC009), totalling 241m was also undertaken. The results from the JV exploration program identified a bedrock gold anomaly. In 1990, TCGL conducted a 50 hole vacuum drilling program, totalling 100m, with the aim of defining the limits of the north-north east trending gold anomaly. Significant results from this work included 12m @ 3.8 g/t AU from 1m.

In 1991 Roebuck drilled a further 21 RAB holes, totalling 63m, to check previous results and this was followed up in 1992 by a 14 hole inclined percussion drilling program (HSG-P01 – P11), which totalled 570m. The aim of this program was to test the previously delineated bedrock gold anomaly east of the ironstone mesa. Drilling around the Hopeful Star Extended mine workings recorded anomalous values of up to 29ppb Au, 44ppm Bi,
114ppm Cu and 82ppm Pb and showed that the anomalous zone was some 25m wide and extended for over 150m within both EL 10312 and EL 8879. The mineralisation appears to be parallel the Hopeful Star Extended shear zone.

5.23 EL9358 DELTA

Prior to the acquisition of the Licence by Centralian Minerals (Giants Reef Exploration) the area had been explored by various companies including Geopeko, North Flinders Mines Ltd (NFM), Roebuck Resources NL (Roebuck), PosGold (Normandy) and DELTA Gold Exploration Pty Ltd (DELTA).

Exploration in the Licence by Centralian Minerals (Giants Reef) and previous explorers has focused on testing the Big Heart and Desert Gold (Knave/ Craig Dhu) and Baloo South prospects. These prospects are located along the southern side of a major east-west porphyry dyke or sill at the contact with Warramunga Formation sediments. The "Desert Gold" prospect has previously been referred to as the "Knave" and "Craig Dhu", however the name "Desert Gold", which comes from a Government record dated 28 August 1936, is the original name and is therefore used here. The name of the "Big Heart" prospect comes from a Government record dated 9 February 1937 for lease or claim no. 862. The Explorer 199 (Itchy Sal/Sea Gull/C316) anomaly, which is located on southern boundary of the Licence as also received attention.

Exploration has also tested a series of magnetic anomalies, which lie along the northern contact of the porphyry body, and are referred to as the, Barracuda (C23) and Baloo (C35) targets. This 2km long east west trending ridge, which comprises low to moderate intensity magnetic anomalies, is located 4km east northeast from the Red Terror workings and is interpreted as a possible extension of the Juno-Nobles Nob line structure.

ADL tested the Baloo prospect (1970?) with two diamond drill holes (DDH362-northern hole, DDH356-southern hole) and the Explorer 199 (Itchy Sal/Sea Gull) with one diamond hole (DDH?). No assay results for these diamond drilling programmes have been located.

A detailed ground magnetic survey was completed over sections of former EL 7274 in 1991 by Poseidon Gold Ltd (PosGold). The survey covered six magnetic anomalies previously identified from airborne magnetics flown for PosGold by Austirex Ltd in 1990. At each anomaly a local grid was established and a ground magnetic survey was conducted using a GSM rapid sampling magnetometer (ref. CR93/364: EL 7274).

In 1993 NFM/Roebuck tested the series of magnetic anomalies in Baloo (Barracuda) area with a programme of bedrock geochemistry. This work demonstrated the geology comprised a porphyry dyke or sill in contact siltstone (Warramunga Formation) in the north, with the contact trending east west. Results from this work showed a 150m wide by 1km strike Cu anomaly (>10ppm Cu), coincident with the porphyry/sediment contact. Weakly anomalous gold values (max. 3ppb Au) were also returned for the area over the western end of the copper anomaly. The source for the magnetic body was not intersected in the near surface drilling.
PosGold undertook mapping, rock chip sampling and two RC holes at the Desert Gold (Knave) prospect in 1993. The Desert Gold prospect includes a hematite-quartz ironstone, which outcrops fairly continuously over a strike length of 340m. Drilling intercepted an ironstone body dipping shallowly to the south and in contact with a porphyry body, however no significant intercepts were returned. The highest results from the rock chip sampling included 194ppm Cu and 43ppm Bi from a small mullock heap.

PosGold also completed two RC percussion holes at the Explorer 199 (Itchy Sal/Sea Gull) and while drill logs for this were no located, dolerite chips were observed in drill cuttings. An evaluation of the prospect by NFM proposed that he presence of dolerite provides a plausible cause for the magnetic anomaly. In 1993 NFM/Roebuck carried out RAB drilling over the area. A porphyry dyke/sill was encountered, however results were disappointing.

In 1995 PosGold tested a corridor, including the Desert Hope (SEL 8687) to New Hope prospects, by regional vacuum geochemical drilling, however results were generally low.

No exploration was carried out by DELTA Gold, however Giants Reef undertook magnetic modelling, gravity surveys, rock chips and completed one diamond drill hole. Geophysical modelling of the Baloo South anomaly suggests it is approximately 160m below surface, however this target remains untested. Modelling of magnetic data for Big Heart and Desert Gold prospects suggests they are deep mineralised targets. The two gravity survey traverses across the Big Heart and Desert Gold prospects failed to produce any significant gravity anomalies. Results from rock chip sampling of ironstone outcrops were generally low, however maximum values included 45.5 g/t Au (Big Heart prospect) and 0.05 g/t Au (Desert Gold prospect).

During the first year of exploration Giants Reef established a survey grid over the area, undertook gravity traverse surveys over the Big Heart, Desert Gold, Explorer 199 targets and carried out rock chip sampling at the Desert Gold, Desert Gold East and Big Heart prospects, however only encouraging results were received from the Big Heart prospect.

During the second year of reporting Giants Reef undertook open hole percussion drilling at the Big Heart (15 holes) and Desert Gold (16 holes) prospects. Although drilling intercepted ironstones at both prospects no significant Au assays were returned. The completion of one diamond hole at the Barracuda magnetic anomaly in the north of the Licence area has down graded this target as drilling intercepted magnetite-bearing porphyritic granodiorite. Down-hole magnetic logging further supports that that the magnetic anomaly is due to this unit.

Exploration during the third year included a detailed aeromagnetic and radiometric survey flown in 1998 by Kevron Geophysics Pty Ltd on behalf of Normandy Gold Pty Ltd, which incorporated the Licence. Geophysical modelling of magnetic anomalies in the Licence was undertaken. This work suggested that the magnetic anomaly at Big Heart is caused mainly by a substantial east-west body at depth, with a shallow ellipsoidal body (presumably the surface ironstone) contributing a lesser component to the overall anomaly. The anomaly at Desert Gold is believed to be a shallow ellipsoidal body, which appears to contribute little to the overall anomaly, and is likely to be caused by two larger, deeper sources.
5.24 EL10324 PANDA

The Licence was explored by Uranerz Australia Pty Ltd (Uranerz) during the 1980’s under EL 1745. Uranerz explored the Renate prospect area utilising magnetic prospecting, gamma logging, scintillometry, drilling and rock chip geochemistry in search of ironstone and unconformity related uranium mineralisation.

Between 1991 and 1992 Roebuck Resources NL (Roebuck) and North Flinders Mining (NFM) explored regions of the eastern half of the Licence under EL 7453. Exploration focussed on Renate prospect and a north west trending structural/shear corridor, which extends into EL10324. In 1991 Roebuck undertook photo-lineament evaluation and carried out mapping of ironstones and a “M” magnetic fraction surface soil sampling programme over the Renate prospect. This work extended into the eastern region of what is now EL10324. The soil sampling and rock chip sampling indicated four Au-Cu-Pb anomalies. Of these only anomaly “D” (7,828,450mN; 436,840mE GDA94) falls within EL10324 and this located within a north west structural corridor, 1.5 kms north west of the Renate prospect. Values of up to 3 ppb Au (+copper +lead) were found in conjunction with a small outcrop of hematite. Overall these were considered as low order anomalies. In 1992 NFM acquired aeromagnetic/radiometric data over the area and undertook a structural – geological interpretation over the area.

Between 1995 and 1998 PosGold explored the Licence under EL8947. PosGold explored the Licence for iron oxide copper gold deposits and carried out mapping, rock chip sampling and vacuum geochemical drilling. Results for this work were not sufficiently encouraging to warrant further work.

Exploration Licence 10324 was originally applied for by Giants Reef in 2004 to explore the extensions of the Quartz Hill and Mary Lane Faults which extend eastwards from the Lone Star and Mulga Hill group of prospects. The Licence is also considered highly prospective given its proximity to the Company’s Billy Boy deposit, which contains an inferred resource of 5,100 oz Au.

6. WORK DONE DURING THE REPORT PERIOD

Exploration Licences (“ELs”) in the Eastern Project Area (EPA) were explored by Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco for Tennant Creek style iron oxide
copper-gold deposits (IOCG deposits). Giants Reef Exploration Pty Ltd (Giants Reef) and Santexco Pty Ltd are wholly owned subsidiaries of Emmerson Resources Pty Ltd.

The following sections records the exploration work completed on these ELs during the EPA Combined Reporting period from 16 November 2005 to the 15 November 2006.

6.1 EL 8199 CARLSBERG

Geological review and assessment of a series of west northwest trending magnetic anomalies in the south western region, identified during the remodelling of detailed airborne magnetics and structural interpretation over the Licence areas during the last year of tenure, has continued during the reporting period. Emmerson Resources believes these anomalies coincide with interpreted high-magnetic members of the Warramunga Formation and may potentially represent ironstones bodies, which remain untested.

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8199. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Further refinement of the target geological and geophysical models is planned preparatory to geochemical test and/or regolith drilling work in the next year.

6.2 EL 8279 BINTANG

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure, during the reporting period Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8279. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Giants Reef ranked the tenement “Core A” which includes regions of Warramunga Formation with strong magnetic anomalies and within proven corridors of mineralisation, therefore Emmerson have earmarked EL 8279 as high priority review area.

The licence will also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers. Exploration as a result of this work included vacuum geochemical drilling, RAB and RC drilling. While this work was restricted to MLC’s (Comet prospect) within the Licence, it has demonstrated the potential for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover.

Work during the year included review of all past exploration techniques and results. Further refinement of the target geological and geophysical models is planned preparatory to geochemical test and/or regolith drilling work in the next year.

EL 8279 was included in a package of tenements as a part of an SEL Application made to DPIFM in December 2006, with status to be determined during the next year of tenure.

6.3 EL 8280 SAN MIGUEL

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8280. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Giants Reef ranked the tenement “Core A” which includes regions of Warramunga Formation with strong magnetic anomalies and within proven corridors of mineralisation, therefore Emmerson have earmarked EL 8280 as high priority review area.

The licence will also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers. Vacuum, RAB and RC drilling was carried out at The Susan and Argo prospects during the year and whilst this work was restricted to MLC’s within EL 8280, it has demonstrated the potential...
for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover. This area is earmarked for further work including geochemical sampling, ground magnetic surveys and follow up Vacuum, RAB, or RC drilling.

Work during the year included review of all past exploration techniques and results. Further refinement of the target geological and geophysical models is planned preparatory to geochemical test and/or regolith drilling work in the next year.

The proximity of EL 8280 to the Argo and Peko mines and other high-grade historical gold producing mines combined with numerous smaller prospects provides significant encouragement in terms of the Licence prospectivity.

6.4 EL 8705 BOSEIVER

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8705. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Work on the Exploration Licence during the year further assessed the prospectivity of a west northwest trending magnetic ridge that appears to form a strike extension to the Juno and Nobles Nob magnetic anomalies, reviewed by Giants Reef Staff during the previous tenure year.

Further review and interpretation of the magnetic survey data processed by Vector Research Pty Ltd, using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping the high-frequency “textural noise” associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final MAGSURF response).
The Magsurf filter was applied to an area comprising some 20 km² and covers EL 8705. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the Licence. Interpretation of geophysical signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef's Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef's Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The Nobline RTP 1VD magnetic data showed strong magnetic anomalies over the Juno and Nobles Nob deposits and a more subtle magnetic ridge extending west northwest through EL 8705, however only very minor magnetic peaks occur along this trend. Interesting the Nobline RTP 1VD magnetic data and Magsurf filters do not highlight many of the mapped ironstones in the survey area.

Neither the Nobline RTP 1VD magnetic data nor Magsurf filters provide a good correlation between any of the anomalies directly over the Nobles Nob deposit, however this is most likely due to the effects of the open cut and irregular, artificial anomalies resulting from magnetite in waste dumps. Probably the best correlation with the deposit is the Nobline RTP 1vd data, which at least covers the eastern end of the pit. The waste dumps surrounding the Nobles Nob deposit is probably best mirrored by the Nobline RTP 1vd anomalies, however there is also some correlation with 400 series Magsurf filters. Interestingly all anomalies extend well beyond the waste dumps, suggesting that deeper source bodies exist or there are perhaps broader haloes of disseminated magnetite surrounding the main ironstone bodies. Another possibility is that the responses result from aerial dispersion of magnetite from the waste dumps and mine haulage activities. Not all of the waste dumps have a magnetic signature, suggesting that they comprise mullock material derived from the barren magnetite ironstone and non-magnetic Warramunga.

The Juno deposit is located centrally within the main Nobline RTP 1vd anomaly and correlates reasonably well with the 200 series Magsurf filters. The 400 series Magsurf filters appear to provide the best correlation to the Juno ironstone and defines a western anomaly which may represent a separate ironstone body. Unfortunately Exploration Licence 8705 does not include any significant 400 series Magsurf filter anomalies of interest. Further filtering (600 and 800 series) appears to only break the responses up into a myriad of anomalies that do not appear to correlate with any particular geological, regolith or topographical features.

The 200 series Magsurf filters defined the prominent north east trending fault structure at Nobles Nob which is also readily observed in the Nobline RTP 1vd magnetic data. This fault structure extends south west through the southern region of EL 8430, however no additional structures were observed elsewhere in the Exploration Licences. Interestingly none of the Magsurf filters reflected the prominent north west structure at Juno which is so clearly defined in the Nobline RTP 1vd magnetic data.
None of the filters appeared to correlate with drainage systems either emanating from known deposits or in the Exploration Licences which comprise sheet wash colluvium and minor drainage systems. Likewise areas of topographic relief, including low ridges of outcropping Warramunga Formation were not reflected in any of the Magsurf filtering.

The application of the Magsurf filtering of the magnetic data over the Licence has yet to delineate any new targets for exploration, nor has the data provided any additional information on the structural or geological framework of the area.

6.5 EL 8786 FIRST LIGHT

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8786. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The majority of previous exploration in these areas has focussed on testing magnetic deep primary targets. EL 8786 falls within the Gosse Road Project MMP and approval for exploration was by DBIRD on 18 August (Authorisation No. 0040-02).

Further review of the selection of the 7300 West target, for follow-up as part of the 2005 exploration program which was not completed to company satisfaction. The 7300 West target is located approximately 17km east southeast of Tennant Creek and lies close to the southeast boundary of EL 8786. Geophysical modelling and interpretation of regional gravity data together with previous magnetic survey data was undertaken by Lindeman Geophysics Pty Ltd precatory to the design of a ground gravity survey. Modelling of previously obtained regional gravity was not possible as the data was found to be particularly noisy and not sufficiently detailed, having a line spacing of 500m and a station spacing of 100m. Modelling of the 3 main magnetic anomalies suggest that they are all deep ironstone bodies >300m below surface.

Further review of a detailed ground gravity survey comprising 2.85 km2, that was carried out over the 7300W target (of which 1.67 km2 was located within EL 8786) with the aim of detecting potential ironstone-related gold orebodies in the upper regolith zone and any gravity anomalies that may be co-incident with two prominent magnetic anomalies, during the previous tenure year. The survey area contains numerous vacuum Au geochemical anomalies and two prominent magnetic anomalies lying within the prospective Nob-Line shear structure. Daishsat Geodetic Surveyors completed approximately 28 line kilometres
of gravity (of which 14.4 lined kms were located within EL 8786) using 40 m station centres and 80 m line spacing.

Data for the gravity survey was provided in digital format to DPFIM together with the anniversary report for EL8786 in March 2005.

Further review and interpretation of the magnetic survey data processed by Vector Research Pty Ltd, using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping the high-frequency “textural noise” associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final MAGSURF response).

The Magsurf filter was applied to an area comprising some 20 km² and covers EL 8705. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the Licence. Interpretation of geophysical signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef’s Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef’s Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The Nobline RTP 1VD magnetic data showed strong magnetic anomalies over the Juno and Nobles Nob deposits and a more subtle magnetic ridge extending west northwest through EL 8705, however only very minor magnetic peaks occur along this trend. Interesting the Nobline RTP 1VD magnetic data and Magsurf filters do not highlight many of the mapped ironstones in the survey area.

Neither the Nobline RTP 1VD magnetic data nor Magsurf filters provide a good correlation between any of the anomalies directly over the Nobles Nob deposit, however this is most likely due to the effects of the open cut and irregular, artificial anomalies resulting from magnetite in waste dumps. Probably the best correlation with the deposit is the Nobline RTP 1vd data, which at least covers the eastern end of the pit. The waste dumps surrounding the Nobles Nob deposit is probably best mirrored by the Nobline RTP 1vd anomalies, however there is also some correlation with 400 series Magsurf filters. Interestingly all anomalies extend well beyond the waste dumps, suggesting that deeper source bodies exist or there are perhaps broader haloes of disseminated magnetite surrounding the main ironstone bodies. Another possibility is that the responses result from aerial dispersion of magnetite from the waste dumps and mine haulage activities. Not
all of the waste dumps have a magnetic signature, suggesting that they comprise mullock material derived from the barren magnetite ironstone and non-magnetic Warramunga.

The Juno deposit is located centrally within the main Nobline RTP 1vd anomaly and correlates reasonably well with the 200 series Magsurf filters. The 400 series Magsurf filters appear to provide the best correlation to the Juno ironstone and defines a western anomaly which may represent a separate ironstone body. Unfortunately Exploration Licence 8705 does not include any significant 400 series Magsurf filter anomalies of interest. Further filtering (600 and 800 series) appears to only break the responses up into a myriad of anomalies that do not appear to correlate with any particular geological, regolith or topographical features.

The 200 series Magsurf filters defined the prominent north east trending fault structure at Nobles Nob which is also readily observed in the Nobline RTP 1vd magnetic data. This fault structure extends south west through the southern region of EL 8430, however no additional structures were observed elsewhere in the Exploration Licences. Interestingly none of the Magsurf filters reflected the prominent north west structure at Juno which is so clearly defined in the Nobline RTP 1vd magnetic data.

None of the filters appeared to correlate with drainage systems either emanating from known deposits or in the Exploration Licences which comprise sheet wash colluvium and minor drainages systems. Likewise areas of topographic relief, including low ridges of outcropping Warramunga Formation were not reflected in any of the Magsurf filtering.

The application of the Magsurf filtering of the magnetic data over the Licence has yet to delineate any new targets for exploration, nor has the data provided any additional information on the structural or geological framework of the area.

Work during the next term will focus on the eastern region of Exploration Licence 8786 which includes a number of discrete magnetic anomalies. Some regional geochemical work may be undertaken in the area of these magnetic anomalies to provide further data in the aim of generating further drill targets.

EL 8786 was included in a package of tenements as a part of an SEL Application made to DPIFM in December 2006, with status to be determined during the next year of tenure.

6.6 EL 8991 SUN RISE

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8991. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The north western half of the tenement, which includes a number of subtle magnetic anomalies and a major east northeast fault was subject to geophysical modelling using a magnetic surface filter (MAGSURF™). MAGSURF™, which is developed by Vector Research Pty Ltd, is a geophysical data processing algorithm which detects the high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals. MAGSURF™ was applied to the 1999 airborne magnetic data (Nob Line) to map the high-frequency “textural noise” associated with the surface geology, resolve details in overburden, and delineate the noisy surface magnetic response or sub-surface features such as structures and rock formation.

The MAGSURF™ filtering over the magnetic anomalies within the tenement suggests that the west southwest trending anomaly as indicated in the 200 series filters warrant further investigation.

Exploration during the next term will focus on the two weak magnetic anomalies that lie within the west southwest trending structural corridor extending from Nobles Nob. The series of 200 series filter anomalies should also be investigated. Work proposed includes vacuum drilling testing of these anomalies and pending favourable results, follow-up RAB drilling.

6.7 EL9293 JOKER

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 9293. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.
Only about one third of the area within the Licence boundaries is available for exploration under EL 9293. The remainder of the Licence is covered by Mineral Leases surrounding the Golden Kangaroo and Nobles Nob deposits.

The south western corner of the tenement was included as part of a magnetic surface filter analysis of the detailed airborne magnetic data between the Nobles Nob and Juno deposits. Further review and interpretation of the magnetic survey data processed by Vector Research Pty Ltd, using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping the high-frequency "textural noise" associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final Magsurf response).

The Magsurf filter was applied to an area comprising some 20 km2 and covers ELs 9293, 8430, 8786, 8705 and 8991. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the two ELs. Interpretation of geophysical signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef's Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef's Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The application of the Magsurf filtering of the magnetic data over the Licence has yet to delineate any new targets for exploration, nor has the data provided any additional information on the structural or geological framework of the area.

During the year further review of all RC drilling previously undertaken at the JOKER Prospect. The JOKER Prospect is located in the south western region of the Exploration Licence, approximately 1.3 kms north east of the Nobles Nob deposit. The JOKER Prospect produced 3,226 tonnes @ 6.9 g/t Au for a total of 714 ounces of gold. Whilst the magnetic anomaly over the JOKER Prospect is very weak, it lies directly adjacent to the major north east structure which is associated with the Noble Nob deposit. Two of the 6 RC holes (JORC5 and JORC6) intercepted mineralisation associated with zones of hematitic alteration, however stopping intercepted in JORC6 precluded sampling. Significant intercepts encountered in JORC5 included 7m @ 2.15 g/t Au from 26m (EOH 33m).

Work during the next term will focus on the eastern region of Exploration Licence 9293 which includes a number of discrete magnetic anomalies. Some regional geochemical
work may be undertaken in the area of these magnetic anomalies to provide further data in the aim of generating further drill targets

EL 9293 was included in a package of tenements as a part of an SEL Application made to DPIFM in December 2006, with status to be determined during the next year of tenure.

**6.8 EL 8879 MT CLELAND**

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8879. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The main work completed during the year comprised collection and entry of exploration data into the company’s databases. This data is currently and will continue to be reviewed for target areas with shallow oxide Au potential. A number of prospects in the southern half of the EL were reviewed in close detail, including Hopeful Star, Black Cat, Mauretania and Mt Margaret. As part of a regional review of the Licence area the Hopeful Star prospect was assessed to identify local mineralisation structures. The prospect displays a number of significant Au intersections, indicating a mineralised shear system which may extend out into the Licence area. During a reconnaissance trip conducted during the previous tenure year it was noted that the Hopeful Star mineralisation is within a WNW-ESE shear and at the foot of a large ironstone blow known as the ‘Tooth’. The host rock is an ironstone breccia. Modelling of the mineralisation is closed off 40m to the east and 50m down dip, but is open to the west, this warrants further review and interpretation.

**6.9 EL 10118 ROCKY RANGE**

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10118. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Continuation of the detailed review and compilation of previous exploration work including, vacuum geochemistry, geological mapping, rock chip sample data, and geophysical surveys for the License area, with the aim of identifying target areas with shallow oxide Au potential occurred during the reporting year.

From the detailed review conducted a number of anomalies were defined that warrant further investigation. In the north of the licence the defined anomaly is associated with the Renate workings, in the east the defined anomaly is associated with the Golden Mile workings and may be a possible extension to the perseverance leases. In the south of the license the defined anomalies at the Dolphin and R27 prospects and also another defined anomaly, located just north of the New Hope Prospect, all present scope to be extensions of the existing Prospects. The defined anomalies within EL 10118 all warrant further investigation.

6.10 EL22285 SNAPPY GUM

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 22285. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Work during the next term will focus on the eastern region of Exploration Licence 22285 which includes a number of discrete magnetic anomalies. Some regional geochemical work may be undertaken in the area of these magnetic anomalies to provide further data in the aim of generating further drill targets

6.11 EL10113 IVORY

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists
and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10113. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Work during the forth year of tenure included further geological reviews of a detailed review of all previous exploration work conducted within the licence area. The review continues to define numbers of geophysical anomalies in the licence area, some of which have had exploration work conducted on them. From the detailed review a requirement for re-interpretation of recently collated drilling to be conducted.

6.12 EL9930 NEW MOON

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 9930. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Work during the forth year of tenure included further geological reviews of a detailed review of all previous exploration work conducted within the licence area. The detailed review defined a geophysical anomaly which coincides with the historical mine workings at New Moon. Further refinement to previous geophysical assessments of the defined magnetic anomaly was conducted and continues, with the view to generating shallow RAB targets within the prospect area.

6.13 EL10203 WHITE HILL BORE

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas,
including EL 10203. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The assessment undertaken during the previous year concluded that there was not sufficient encouragement to support the proposed drilling programme which was aimed at testing the granites in the vicinity of the WHITE HILL BORE, as outlined in previous annual reports for EL 10203. The assessment did however highlight a moderate magnetic anomaly (Anomaly A) close to the southern boundary of the tenement (427,900mE, 7,838,300mN GDA94), and an the anomalous Au results obtained by the CSIRO in the Hydrogeochemistry testing of water bores in the Tennant Creek Region, which warrants further investigation. Although the magnetic anomaly is concealed beneath alluvial deposits on floodplains and channels, interpretation of airborne geophysics suggests that the basement geology is the high magnetic Warramunga Formation member \([Pw>m(hm)]\) which forms the major host to gold and copper mineralisation within the Tennant Creek Mineral Field. Refer to section 5.14 for further details in relation to the CSIRO anomalous results.

Work proposed for the next term will include further review of the CSIRO anomalous results as well as geophysical modelling of the magnetic anomaly (Anomaly A) to determine if the target’s tenure, source, depth and to assist in planning the next phase of exploration i.e. geochemical surveys, gravity surveys or drilling.

6.14 EL8430 RED BACK

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 8430. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Further review and interpretation of the magnetic survey data processed by Vector Research Pty Ltd, using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping
the high-frequency “textural noise” associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final MAGSURF response).

The Magsurf filter was applied to an area comprising some 20 km² and covers EL 8705. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the Licence. Interpretation of geophysical signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef’s Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef’s Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The Nobline RTP 1VD magnetic data showed strong magnetic anomalies over the Juno and Nobles Nob deposits and a more subtle magnetic ridge extending west northwest through EL 8705, however only very minor magnetic peaks occur along this trend. Interesting the Nobline RTP 1VD magnetic data and Magsurf filters do not highlight many of the mapped ironstones in the survey area.

Neither the Nobline RTP 1VD magnetic data nor Magsurf filters provide a good correlation between any of the anomalies directly over the Nobles Nob deposit, however this is most likely due to the effects of the open cut and irregular, artificial anomalies resulting from magnetite in waste dumps. Probably the best correlation with the deposit is the Nobline RTP 1vd data, which at least covers the eastern end of the pit. The waste dumps surrounding the Nobles Nob deposit is probably best mirrored by the Nobline RTP 1vd anomalies, however there is also some correlation with 400 series Magsurf filters. Interestingly all anomalies extend well beyond the waste dumps, suggesting that deeper source bodies exist or there are perhaps broader haloes of disseminated magnetite surrounding the main ironstone bodies. Another possibility is that the responses result from aerial dispersion of magnetite from the waste dumps and mine haulage activities. Not all of the waste dumps have a magnetic signature, suggesting that they comprise mullock material derived from the barren magnetite ironstone and non-magnetic Warramunga.

The Juno deposit is located centrally within the main Nobline RTP 1vd anomaly and correlates reasonably well with the 200 series Magsurf filters. The 400 series Magsurf filters appear to provide the best correlation to the Juno ironstone and defines a western anomaly which may represent a separate ironstone body. Unfortunately Exploration Licence 8705 does not include any significant 400 series Magsurf filter anomalies of interest. Further filtering (600 and 800 series) appears to only break the responses up into
a myriad of anomalies that do not appear to correlate with any particular geological, regolith or topographical features.

The 200 series Magsurf filters defined the prominent north east trending fault structure at Nobles Nob which is also readily observed in the Nobline RTP 1vd magnetic data. This fault structure extends south west through the southern region of EL 8430, however no additional structures were observed elsewhere in the Exploration Licences. Interestingly none of the Magsurf filters reflected the prominent north west structure at Juno which is so clearly defined in the Nobline RTP 1vd magnetic data.

None of the filters appeared to correlate with drainage systems either emanating from known deposits or in the Exploration Licences which comprise sheet wash colluvium and minor drainage systems. Likewise areas of topographic relief, including low ridges of outcropping Warramungu Formation were not reflected in any of the Magsurf filtering.

The application of the Magsurf filtering of the magnetic data over the Licence has yet to delineate any new targets for exploration, nor has the data provided any additional information on the structural or geological framework of the area.

Work during the next term will focus on the eastern region of Exploration Licence 8786 which includes a number of discrete magnetic anomalies. Some regional geochemical work may be undertaken in the area of these magnetic anomalies to provide further data with the aim of generating drill targets.

6.15 SEL8665 SHARK

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexo Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including SEL 8665. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The area was also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers. This work has highlighted the potential in the area for shear zone type gold mineralisation, with only very weak geophysical responses.

The exploration approach utilised detailed gravity and shallow regolith drill traverses (RAB) to define anomalies, with the aim of testing any resultant anomalies with RC drilling. The
initial focus was the detection of ironstone-hosted oxide gold deposits, and any indications of primary gold deposits at depth. The majority of previous exploration in these areas has focussed on testing magnetic deep primary targets.

The 7300 West Target is located approximately 17km east southeast of Tennant Creek and lies close to the southwest boundary of SEL 8665. Geophysical modelling and interpretation of regional gravity data together with previous magnetic survey data was undertaken by Lindeman Geophysics Pty Ltd preparatory to design of a ground gravity survey. Modelling of the regional gravity was not possible as the data was found to be particularly noisy and is not sufficiently detailed, having a line spacing of 500m and a station spacing of 100m. Modelling of the 3 main magnetic anomalies suggest that that they are all deep ironstone bodies >300m below surface.

The detailed ground gravity survey comprising 2.85 km2 that was carried out over the 7300W target (of which 1.18 km2 was located within SEL 8655), during the previous tenure year, with the aim of detecting potential ironstone-related gold orebodies in the upper regolith zone and any gravity anomalies that may be co-incident with two prominent magnetic anomalies. The survey area contained numerous vacuum Au geochemical anomalies and two prominent magnetic anomalies lying within the prospective Nob-Line shear structure. Daishsat Geodetic Surveyors completed approximately 28 line kilometres of gravity (of which 13.6 lined kms were located within SEL 8665) using 40 m station centres and 80 m line spacing.

Data for the gravity survey was provided in digital format to DPFIM together with the anniversary report for SEL8665 in March 2005.

Work during the next term will focus on the eastern region of Exploration Licence 8786 which includes a number of discrete magnetic anomalies. Some regional geochemical work may be undertaken in the area of these magnetic anomalies to provide further data with the aim of generating drill targets.

Due to SEL 8665 expiration in March 2007 it has been included in a package of tenements as a part of an SEL Application made to DPIFM in December 2006, with status to be determined during the next year of tenure.

6.16 EL10124 SPEEDWAY

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10124. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

From the detailed review conducted a number of geophysical anomalous targets were defined, many coinciding with the numerous historical mine workings located in the central part of the eastern region of the licence. These defined anomalies require further evaluation and refinement of interpretation with the aim of generating future drill targets to confirm previous results and further define existing prospects.

6.17 EL10114 McDougall Ranges

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10114. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

An in-house detailed review of past exploration work and further refinement of geophysical assessments of the defined magnetic anomalies continues. From this detailed review conducted a number of geophysical anomalies were identified, including a north west trending subtle anomalous ridge in the northern half of the licence. Consideration will be given to a more detailed geophysical survey over these defined anomalies, with the view to generating shallow RAB targets within the prospect area.

6.18 EL9958 Running Bear

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 9958. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

A detailed review of past exploration work conducted a number of geophysical anomalous features were defined, most prominent of these is a subtle magnetic anomalous series of north west trending ridges, which stretch from the southern half of the licence into the north west part of the licence. Further refinement of these anomalies will be required to allow the generation of shallow RAB drilling targets, the refinement may require a more detailed geophysical survey of the anomalous area.

6.19 EL9403 JESS

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 9403. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef's/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

An in-house detailed review of past exploration work and of geophysical assessments continues. The prospectivity of the defined prospects in the licence remains high, the dominate work related to the licence was conducted in the MLC's that cover the southern region of the licence, but extensions to these prospects will allow consideration for a more detailed geophysical survey with the view to generating shallow RAB targets within the licence area.

6.20 EL10313 KODIAK

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10313. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.
Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

A detailed analysis of regional geophysics, local geology and previous exploration work conducted in the licence area defined a number of geophysical features, with the most prominent of the features being a small group of magnetic anomalous ridges in the southern region of the licence. These identified targets will be given consideration for a more detailed geophysical survey with the view to generating shallow RAB targets within the licence area in the next tenure year.

6.21 EL10406 MONTANA

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10406. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

An in-house detailed review of past exploration work and defined a magnetic anomalous ridge located in the north of the licence. The defined anomalous ridge coincides with the Cats Whiskers and Ellen M prospects. Further refinement of geophysical assessments of the magnetic anomalies continues. The prospectivity of the defined magnetic anomalous ridge in the north of the licence remains high, the dominate work related to the licence will therefore be conducted in the MLC’s that cover the northern region magnetic anomalous ridge, but extensions to these prospects will allow consideration for a more detailed geophysical survey with the view to generating shallow RAB targets within the EL area.

6.22 EL10312 HOPEFUL

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10312. Emmerson Resources endeavour to employ the most up-to-date
exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

The results from the detailed review defined a number of geophysical anomalies, with the most prominent anomalies coinciding with the historical mine workings at Hopeful Star Extended/East on the northern boundary of the licence. Further refinement and re-interpretation of previous exploration data collected is needed to assess target generation for shallow RAB drilling on the northern boundary of the Licence area.

6.23 EL9358 DELTA

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 9358. Emmerson Resources endeavour to employ the most up-to-date exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Results from the geophysical work carried out in previous tenure years, has down graded the prospectivity of the series of magnetic anomalies in the northern region of the tenement.

EL 9358 expired during the reporting period and the final report has been submitted to DPIFM.

6.24 EL10324 PANDA

Emmerson Resources Pty Ltd, purchased Centralian Minerals Limited and became the owner and operator of all Centralian Minerals Limited, Giants Reef Mining Limited, Giants Reef Exploration Pty Ltd, Santexco Pty Ltd and TC8 assets including all tenure. Emmerson Resources is currently undertaking and is well advanced in the appointment of a CEO/MD who will then be charged with building a team of experienced Geoscientists and support staff to manage exploration activities over the Tennant Creek Project Areas, including EL 10324. Emmerson Resources endeavour to employ the most up-to-date
exploration techniques utilising a full range of geological, geochemical and geophysical techniques.

Work was heavily restricted during the year due to Giants Reef’s/Centralian Minerals undergoing Administration before being purchased by Emmerson Resources Pty Ltd in August of 2006.

Work proposed for the next term will include geophysical modelling of the subtle east west magnetic ridge which runs parallel with the Mary Lane and Quartz Hill faults and an assessment of regolith types to determine whether geochemical surveys could be utilised as an appropriate exploration methodology.
7. REHABILITATION

All exploration was limited to non-invasive geophysical gravity surveys and reconnaissance mapping programmes, with no in-ground exploration conducted over the Licence during the reporting period, therefore rehabilitation was not required.
CONCLUSIONS

The work completed during the report period has indicated good potential for the discovery of shallow concealed oxide (i.e. hematite) gold deposits. Further work is planned to refine gravity and geochemical anomalies for reconnaissance drilling. Several of these targets are located on poorly prospected west-northwest trending structures.

Review of historical exploration data and geophysical modelling of magnetic data during the year has highlighted deeper primary targets requiring further work. The size of the ironstone, and consequent target size may have previously been underestimated, and depths to target overestimated. This is interpreted to be due to higher haematite content, which typifies some of the known ironstones below the oxide zone in this area (e.g. Marathon). Further refinement of the target geological and geophysical models is planned preparatory to drilling in the next year.

7.1 EL8199 CARLSBERG

Exploration work carried out during the year included an assessment and modelling of low-medium order magnetic targets and structural interpretation over the License area has defined additional magnetic anomalies in the south west of EL 8199, which warrant further investigation.

Evaluation of the historical exploration data reveals that no surface geochemical surveys have been undertaken in the area, and that there are several low to medium order magnetic anomalies requiring follow-up, which appear to have not been previously tested.

Geophysical modelling of magnetic data next year will be aimed at modelling both oxide and deeper primary targets for drill testing. Work is also planned to undertake surface geochemistry surveys prior to any drilling.

7.2 EL8279 BINTANG

The quantitative/qualitative ranking, based on geological, geophysical & geophysical characteristics and other parameters covering work status, target type, land status and economics, conducted by Giants Reef, has ranked ELs 8279 as a highly prospective “Core A” area. The tenement was also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers.

The area was also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers. Exploration as a result of this work included vacuum geochemical drilling, RAB and RC drilling. While this work was restricted to MLC’s (Comet prospect) within the Licence, it has demonstrated the potential for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover.
7.3 EL8280 SAN MIGUEL

The quantitative/qualitative ranking, based on geological, geophysical & geophysical characteristics and other parameters covering work status, target type, land status and economics, conducted by Giants Reef, has ranked ELs 8280 as a highly prospective “Core A” area. The tenement was also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers.

The area was also reviewed for oxide gold potential based upon either old gold workings and or exploration carried out on prospects generated by former explorers.

Vacuum, RAB and RC drilling was carried out at The Susan and Argo prospects during the year and whilst this work was restricted to MLC’s within EL 8280, it has demonstrated the potential for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover. This area is earmarked for further work including geochemical sampling, ground magnetic surveys and follow up Vacuum, RAB, or RC drilling.

7.4 EL8705 BOSEIVER

Exploration during the next term will focus on the southern region of Exploration Licence 8705 which contains subtle magnetic ridge, which appears form part of the same east west structure that hosts the Noble Nob and Juno deposits. Some regional geochemical work may be undertaken along the discrete magnetic ridge which extends east west through the Exploration Licences.

7.5 EL8786 FIRST LIGHT

The application of the Magsurf filtering of the magnetic data over the Licence has yet to delineate any new targets for exploration, nor has the data provided any additional information on the structural or geological framework of the area.

Work during the next term will focus on the eastern region of Exploration Licence 8786 which includes a number of discrete magnetic anomalies. Some regional geochemical work may be undertaken in the area of these magnetic anomalies to provide further data in the aim of generating further drill targets

EL 8786 was included in a package of tenements as a part of an SEL Application made to DPIFM in December 2006, with status to be determined during the next year of tenure.

7.6 EL8991 SUNRISE

The tenement lies within a major structural lineament that trends west southwest and forms the western boundary to the Nobles Nob deposits, some 1 to 2 kms east north east.
The application of the Magsurf filtering of the magnetic data over the Licence did not delineate any new targets for exploration. Nor did the data provide any additional information on the structural or geological framework of the area.

Exploration for next term will focus on the two weak magnetic anomalies that lie within the west southwest trending structural corridor extending from Nobles Nob. The series of 200 series filter anomalies should also be investigated. Work proposed includes vacuum drilling testing of these anomalies and pending favourable results, follow-up RAB drilling.

7.7 EL9293 JOKER

The application of the Magsurf filtering of the magnetic data over the south west corner of Exploration Licences 9293 did not delineate any new targets for exploration. Nor did the data provide any additional information on the structural or geological framework of the area.

Work proposed for the next term will include geochemistry over the JOKER Prospect with the aim of ascertaining the geometry of mineralisation and assist in planning the next phase of drilling.

7.8 EL8879 MT CLELAND

Hopeful Star

Results from exploration at the Hopeful Star area such as; results coming from the NW of the tooth @ 2.5g/t Au; an RC hole drilled beneath the shaft south of the tooth intercepting the shear zone – 26m @ 1.04g/t (6m @ 3.92g/t Au); the Identification of a bedrock Au anomaly; ground magnetic surveys identifying a weak magnetic anomaly below ‘the tooth’; two 20m vacuum holes drilled 5m apart on the eastern side of the ‘slot’ – 12m @ 3.8g/t Au from1m (1m @ 10.26g/t Au); 4 holes drilled across the slot, anomalous values in Au, Bi, Cu and Pb recorded in the last few metres, follow-up work defined an anomaly 25m wide x 150 in length, interpreted to trend parallel to the Hopeful Star Extended Shear Zone and traverses both EL 8879 and EL10312; the least explored part of the ‘hopeful Star prospect is that which extends from north-west of the Tooth to the east-southeast through the ‘Tooth’ and the Hopeful Star mine. A potential target zone 150m long exists in this area. All these results give scope to potential discoveries of shallow concealed oxide (i.e. hematite) gold deposits.

Mt Margaret

Results from exploration at the Mt Margaret area such as; Samples collected from a single traverse across the Mt Margaret area is characterised by two strong coincident anomalies for all three elements in both soils and lags; structural analysis of the ironstone interpreted the major faulting in the area to be along north west – south east trends and appears to either have broken up the ironstone in smaller en echelon bodies or controlled its emplacement. Further interpretation identifies a later set of faults on north north-east –
south south-west trends often occupied by thin ‘buck quartz +/- specular hematite reefs, clearly cutting earlier structure and truncates the iron stone to the west; samples taken from the 30m shaft returned results – 3200ppm Cu, 0.50ppm Au; a ground magnetic survey identified 3 features suggestive of Ironstone, one of these targets had a lower magnetic susceptibility than a typical ironstone, gravity also indicated a greater average density, but not as high as a typical ironstone; gravity worked also revealed a gravity high that corresponds to the termination of a thin mapped ironstone against a NNE – SSW trending fault, one gravity high does not coincide with a magnetic feature or mapped ironstone. Of the three targets identified by the ground magnetics, one magnetic high corresponded to a gravity low, this was drilled with results returned of 550 – 3900ppm Cu, 0.08 – 1.2ppm Au, 59ppm Bi. The second of the magnetic highs was drilled with results returned – 0.06ppm Au and 350 – 1350ppm Cu; lag sampling identified two anomalous zones; rock chip sampling from the alteration zone and shaft gave best returned results of 1.35g/t Au. All these results give weight to potential discoveries of shallow concealed oxide (i.e. hematite) gold deposits.

Black Cat

Some potential may exist at Black Cat for the development of chlorite rich-hematite bodies at depth which may host gold mineralisation. The presence of pervasive hematization and chloritization in drill holes SAMS 7 and 9 may warrant follow up by deeper drilling. Encouraging results returned from the area, such as; holes drilled in 1959 returned results between 3.65m @ 2.5g/t – 1.23m @ 5.4g/t; sampling of the dumps in 1987 returned results indicating potential for Au lodes to continue below existing workings in a shear zone, support the potential for discoveries of shallow concealed oxide (i.e. hematite) gold deposits.

7.9 EL10118 ROCKY RANGE

From the detailed review and compilation of previous exploration work conducted a number of anomalies were identified that require further definition. These identified anomalies, located in the south eastern corner of the licence demonstrate, from the work that has been completed, a good indication to future potential discoveries of shallow concealed oxide (i.e. hematite) gold deposits.

The further exploration work is required to refine the anomalies, preparatory to generation of drill targets. The aim at further defining and then drill testing some these anomalies will be to examine their possible extensions. Anomalies in the north associated with the Renate workings, in the east associated with the Golden Mile workings and extension of the perseverance leases, and in the south at the Dolphin and R27 prospects, also a magnetic anomaly located just north of the New Hope Prospect.

7.10 EL22285 SNAPPY GUM

The future exploration potential of Exploration Licence 22285 was assessed using an integrated geological, geochemical and geophysical approach. The close proximity of the
Licence area to known mineralisation ranks this Licence as moderate prospectivity. Work has been focused on developing exploration models considering the underlying geology of the EL was interpreted as predominately siltstone and greywacke of the Warramunga Formation. This formation is host to virtually all the magnetite-haematite (ironstone–hosted) gold-copper-bismuth mineralisation and ore bodies in the Tennant Creek goldfield.

No historical drilling or surface geochemistry was identified within the Licence area. However, given Giants Reef decision to proceed with the granting of the Mineral Lease Application 22284 Billy Boy which is located due north of EL 22285, this has technical and geological implications for the strategic future of the Licence.

7.11 EL10113 IVORY

The compilation and review of vacuum geochemistry for the License area has defined a number of anomalies in the eastern area of 10113 which warrants further investigation.

Samples collected from the Mint prospect, reflect a strong discrete anomaly. The areal extent of the anomalous dispersion is generally greater for soils although anomaly contrast appears stronger for lags for Au and Bi. The best anomaly shown is by Cu in soils, where the total dimensions are in the order of 100m x 200m with very well defined central peak. The significant gold intercept at the Memsahib prospect requires follow-up drilling, and both these identified anomalous results have indicated good potential for the discovery of shallow concealed oxide (i.e. hematite) gold deposits. Further work is planned to refine gravity and geochemical anomalies for reconnaissance drilling. Several of these targets are located on poorly prospected northwest and east north-east trending structures.

The detailed review of historical exploration data and geophysical modelling of magnetic data has also highlighted deeper primary targets requiring further work. The size of the ironstone, and consequent target size may have previously been underestimated, and depths to target overestimated. Further refinement of the target geological and geophysical models is planned preparatory to drilling in the next year.

7.12 EL9930 NEW MOON

The detailed review of previous exploration work has outlined significant results for follow up exploration work, such as; DDH1 (76.2m) intersected 9.25m of ironstone with results returned – 1.6m @ 15.3g/t Au, 330ppm Cu, 15440ppm Bi from 24.2m; ground magnetic survey identification of the Explorer 196 anomaly; vacuum drilling (432 holes) (2378m) revealed two main areas of ironstone. One main ironstone making up the hill, one smaller ironstone in the NW of the hill; the main ironstone was drilled with results of 29ppb Au, 1464 Cu and Bi 68ppm, with the anomalous zone extending east, defined by Cu values; mineralisation occurs on the edges of the main body, around hematite veining, in faults and occasionally associated with supergene manganese.
Scope remains for further drill testing due to the apparent shallow nature of the ironstone. Extension of the main body is still open to the south (towards the Hopeful Star Extended shear zone).

7.13 EL10203 WHITE HILL BORE

Groundwater sampling of the White Hill Bore has confirmed that the water in this bore is carrying highly anomalous levels of gold, and an assessment of the target concluded that there was not sufficient encouragement to support the proposed drilling programme which was aimed at testing the granites in the vicinity of the White Hill Bore. The assessment did however highlight a moderate magnetic anomaly (Anomaly A) which warrants further investigation and geophysical modelling.

Work proposed for the next term will include further geophysical modelling of the magnetic anomaly (Anomaly A) to determine if the target’s tenure, source, depth and to assist in planning the next phase of exploration i.e. geochemical surveys, gravity surveys or drilling.

7.14 EL8430 RED BACK

The application of the Magsurf filtering of the magnetic data over the Licence did not delineate any new targets for exploration. Nor did the data provide any additional information on the structural or geological framework of the area.

Work during the next term will focus on the southern region of Exploration Licence 8430 which contains a number of discrete magnetic anomalies and the south west extension of the Noble Nob fault structure. Some regional geochemical work may be undertaken along the discrete magnetic ridge which extends east west through the Exploration Licences.

7.15 SEL8665 SHARK

The Licence was reviewed for oxide gold potential based upon either old gold workings & or exploration carried out on prospects generated by former explorers. This work has highlighted the potential in the area for shear zone type gold mineralisation, with only very weak geophysical responses.

Work during the next term will focus on the southern region of SEL 8665 which contains a number of discrete magnetic anomalies and the south west extension of the Noble Nob fault structure. Some regional geochemical work may be undertaken along the discrete magnetic ridge which extends east west through the Exploration Licences.

7.16 EL10124 SPEEDWAY

EL 10124 remains as a prospective licence, with encouraging previous exploration work, focus needs to be on, follow-up RAB drilling of geochemical anomalous rock chip samples in favourable structural positions and a ground magnetic survey of the Ace High Prospect.
with maximum line spacing of 50m. Further scope exists for a shallow close spaced vacuum bedrock drilling in sheet-wash areas in the north east of Ace High Prospect.

Follow-up drilling at the Burnt Shirt anomaly is required to further define the remodelling work conducted by NTC in 1999. NTC defined the anomaly as an ironstone at a depth to top of 100m and a mass in the order of 1.3Mt, and they noted that the drilling to date hadn’t defined the strike extent of the anomaly.

7.17 EL10114 McDougall Ranges

Exploration work that has been conducted in the licence has been focussed around the Lone Star Mine, therefore the remainder of the EL has had little exploration.

With significant Warramunga Formation units present as outcropping ridges in the licence area and combined with significant magnetic anomalies, gravity anomalies coinciding with the Explorer 92 Prospect demonstrates a case to warrant further exploration, particularly in the south western region of the EL.

A subtle magnetic anomalous ridge can be identified in the northern region of the licence, although not supported by gravity data, it lies between two north west trending interpreted faults. Mapped ironstones present are associated with, the southern most, interpreted north west trending fault and also with north northwest and east west trending smaller interpreted faults. More detailed geophysical data is warranted to further refine the anomaly. Although anomalies are limited in size the vast majority of the licence remains in Greenfield status.

7.18 EL9958 Running Bear

Review of historical exploration data revealed a note in the ‘Review of Past Exploration, Work programmes and Budgets for the Wiluna Joint Venture Tenements’, conducted by Wiluna Mines, that the three Asarco RC drill holes drilled to test coincident lag anomalism, outcropping ironstone and historic workings, may have been targeted incorrectly to intersect the ironstone. Therefore a remodelled drilling program may be warranted to follow-up these interpretations.

Further definition of the geochemical anomaly identified at the south eastern corner of the licence is warranted, the work that has been completed has indicated good potential for the discovery of shallow concealed oxide (i.e. hematite) gold deposits. Further work is planned to refine the geochemical anomaly for reconnaissance drilling with the aim at testing the anomalies north east extension, as it is possibly an extension of the Piccaninny and Three Keys Prospects.

Although past exploration results haven’t been promising, the detailed magnetic data identifies prominent magnetic anomalous ridges trending east west, in the southern region of the licence, that warrant further exploration.
7.19 EL9403 JESS

Much scope remains for future exploration work within EL 9403, although previous work and any near future work would be predominately confined within the MLC’s that cover the southern region of the licence, potential still exists for further extension of the current prospects from the MLC’s into the licence area. Whilst the results from the RAB drilling conducted during the second year of tenure, over the near by anomaly 5 target, indicated that there is little potential for shallow oxide mineralisation there still exists potential to test these magnetic anomalies further, supported by the significant intercept returned from EL5-003B which returned 8.40m @ 11.60 g/t Au, 0.44% Cu from 289m (including 1.20m @ 77.57g/t Au, 0.3% Cu from 294m) which remains open up plunge.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this. Giants Reef considers the potential for the discovery of mineralisation in hematite dominant ironstones in this licence area is excellent.

7.20 EL10313 KODIAK

A subtle magnetic anomalous ridge was identified from the regional magnetic data in the southern region of the licence, supported by more detailed Nobles Nob magnetics which reveals a series of magnetic anomalies forming a west north-west trending feature. Although not supported by gravity data, being limited in size and Greenfield in exploration status these targets represent an area for further exploration, with the view at generating shallow RAB drilling targets.

7.21 EL10406 MONTANA

Much scope remains for future exploration work within EL 10406, although it would be predominately within the MLC’s that cover the northern region of the licence, potential still exists for further extension of the current prospects from the MLC’s into the licence area. Whilst the results from the RAB drilling conducted during the second year of tenure, over the anomaly 5 target, indicate there is little potential for shallow oxide mineralisation there still exists potential to test these magnetic anomalies further supported by the significant intercept returned from EL5-003B which returned 8.40m @ 11.60 g/t Au, 0.44% Cu from 289m (including 1.20m @ 77.57g/t Au, 0.3% Cu from 294m) which remains open up plunge.

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7.22 EL10312 HOPEFUL

The work completed has indicated the potential for the discovery of typical Tennant Creek style gold deposits or gold-copper deposits within ironstone of the Warramunga Formation. Geophysical modelling and further detailed analysis of magnetic data next year will be aimed at delineating in greater detail the bedrock gold anomalous zone to generate further targets, pending favourable results, drill testing.

Geological setting similarities to that of other deposits in the region, lack of detailed geophysical data and anomalous results from previous exploration work provides great encouragement for further discoveries.

7.23 EL9358 DELTA

EL 9358 includes metasediments of the Palaeoproterozoic Warramunga Formation and lies within the easterly strike extension of the Eldorado-Juno-Nobles Nob trend of mines and mineral occurrences.

A ground gravity survey, covering some 1.78 km$^2$ of the DELTA target area, was undertaken over EL9358, however this work failed to delineate any potential ironstone body either in the upper regolith zone or co-incident with magnetic anomalies. Results from the geophysical work carried out this year have down graded the prospectivity of the series of magnetic anomalies in the northern region of the tenement.

No work is proposed for next term as the EL has now expired.

7.24 EL10324 PANDA

EL 10324 is ranked as a moderate-priority exploration area, given its proximity directly along strike from the Lone Star and Mulga prospects, the presence significant structures such as the Mary Lane and Quartz Hill faults and its proximity to the Billy Boy prospect.

Work proposed for the next term will include geophysical modelling of the subtle east west magnetic ridge which runs parallel with the Mary Lane and Quartz Hill faults and an assessment of regolith types to determine whether geochemical surveys could be utilised as an appropriate exploration methodology.
# GIANTS REEF MINING LIMITED

## HARD COPY REPORT META DATA FORM

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<td>PROSPECT NAMES(s):</td>
<td>CARLSBERG, BINTANG, SAN MIGUEL, BOSEIVER, FIRST LIGHT, SUN RISE, RUNNING BEAR, McDougall Ranges, KODIAK, SPEEDWAY, IVORY, NEW MOON, SNAPPY GUM, MT CLELAND, ROCKY RANGE, HOPEFUL, JESS, MONTANA, DELTA, PANDA, SHARK, RED BACK, WHITE HILL BORE, JOKER</td>
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<td>GROUP PROSPECT NAME:</td>
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<td>TENEMENT NUMBERS(s):</td>
<td>EL 8199, EL 8279, EL 8280, EL 8705, EL9293, EL 8991, EL 9958, EL 10114, EL 10313, EL 10124, EL 10113, EL 8786, EL 22285, EL 8879, EL 10118, EL 10312, EL 9403, EL 10406, EL 9930, EL 10203, EL 8430, SEL 8665, EL 9358, EL10324</td>
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<tr>
<td>ANNIVERSARY DATE:</td>
<td></td>
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<tr>
<td>OWNER/JV PARTNERS:</td>
<td>EMMERSON RESOURCES PTY LTD, GIANTS REEF EXPLORATION PTY LTD, SANTEXCO PTY LTD</td>
</tr>
<tr>
<td>AUTHOR(s):</td>
<td>A. WALTERS</td>
</tr>
<tr>
<td>COMMODITIES:</td>
<td>GOLD, COPPER</td>
</tr>
<tr>
<td>MAPS 1:250 000:</td>
<td>TENNANT CREEK SE53-14</td>
</tr>
<tr>
<td>MAPS 1:100 000:</td>
<td>FLYNN 5759, TENNANT CREEK 5758</td>
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<td>MAPS 1:25 000</td>
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<td>TECTONIC UNIT(s):</td>
<td>TENNANT CREEK INLIER</td>
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<tr>
<td>STRATIGRAPHIC NAME(s)</td>
<td>WARRAMUNGA FORMATION, CAMBRIAN WISO BASIN</td>
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<td>AMF GENERAL TERMS:</td>
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<td>AMF TARGET MINERALS:</td>
<td>GOLD, COPPER, LEAD, ZINC</td>
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<tr>
<td>AMF GEOPHYSICAL:</td>
<td>MAGNETIC INTERPRETATION, GRAVITY SURVEY</td>
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<td>AMF GEOCHEMICAL:</td>
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<td>AMF DRILL SAMPLING:</td>
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<td>HISTORIC MINES:</td>
<td>RIA'S REVENGE, BOSEIVER, QUEEN ALEXANDRIA, EDNA BERYL, GOLDEN SLIPPER, WHIPPET, GREAT BEAR, TRUMP, IRISH EMBLEM, SHAMROCK, BURNT SHIRT, WEDGE/GOLDEN BOY, LEICHARDT, LEICHARDT ONE, ACE HIGH, LEICHARDT TWO, KATHLEEN/CAVEMAN, ORTELLE STAR, TRUE BLUE, MINT, AGA KHAN, MEMSAHIB, IRIS, YELLOW FLAME, MAMMOTH, THREE KEYS, COPPER HEAD, LITTLE WONDER, NEW MOON, BLACK CAT, MT MARGARET, HOPEFUL STAR, RENATE, KOALA, GOLDEN MILE,</td>
</tr>
</tbody>
</table>

EMMERSON RESOURCES PTY LTD
HOPEFUL STAR EXTENDED, JESS, MONTANA
PEKO, NOBLES NOB, KATHREEN, BURNT SHIRT, GOLDEN KEY,
BLACK CAT, LONE STAR, ARGO, RED TERROR, RISING SUN,
COMSTOCK, HOPEFUL STAR, MEMSAHIB, MINT, ORTELLE STAR,
RENADE, GOLDEN MILE, CATS WHISKERS
PEKO, NOBLES NOB, KATHREEN, BURNT SHIRT, GOLDEN KEY,
BLACK CAT, LONE STAR, ARGO, RED TERROR, RISING SUN,
COMSTOCK, HOPEFUL STAR, MEMSAHIB, MINT, ORTELLE STAR,
RENADE, GOLDEN MILE, CATS WHISKERS, RIA’S REVENGE,
BOSEIVER, QUEEN ALEXANDRIA, EDNA BERYL, GOLDEN SLIPPER,
WHIPPET, GREAT BEAR, TRUMP, IRISH EMBLEM, SHAMROCK,
BURNT SHIRT, WEDGE/GOLDEN BOY, LEICARDT, LEICARDT
ONE, ACE HIGH, LEICARDT TWO, KATHLEEN/CAVEMAN, ORTELLE
STAR, TRUE BLUE, MINT, AGA KHAN, MEMSAHIB, IRIS, YELLOW
FLAME, MAMMOTH, THREE KEYS, COPPER HEAD, LITTLE
WONDER, NEW MOON, BLACK CAT, MT MARGARET, HOPEFUL
STAR, RENADE, KOALA, GOLDEN MILE, HOPEFUL STAR
EXTENDED, JESS, MONTANA
CARLSBERG, BINTANG, SAN MIGUEL, BOSEIVER, FIRST LIGHT,
SUN RISE, RUNNING BEAR, McDOUGALL RANGES, KODIAK,
SPEEDWAY, IVORY, NEW MOON, SNAPPY GUM, MT CLELAND,
ROCKY RANGE, HOPEFUL, JESS, MONTANA