ABSTRACT

Location
The tenement is within the Warramunga Province of the Tennant Region, and is 37 kms north-west of the town of Tennant Creek. It occupies an area of about 19.5 square kilometres, and forms part of Castile’s Tennant Creek Project.

Geology
The project is located within the within the Warramunga Province of the Tennant Region. EL25372 lies centrally within the highly productive Tennant Creek mineral field, and is underlain by rocks known to host mineralisation nearby at Peko, Nobles Nob and Argo. The sedimentary sequence is comprised of a thick weakly metamorphosed turbiditic succession of partly tuffaceous sandstones and siltstones which includes argillaceous banded ironstones locally referred to as 'haematite shale'. The Warramunga Formation hosts major IOCG deposits of Au-Cu-Bi, temporally associated with the Tennant Suite granites, intruded into the Warramunga Province. Deposits of this type represent the most important mineral production in Au and Cu and remain the most important exploration target, for the region.

Work Completed
Exploration for the year ending 20 February 2013 included continuation of negotiations for a heritage agreement over the tenement along with continuous review of historic data and report writing. No on-ground field work was completed as the company has agreed with the Central Land Council not to undertake ground disturbing activities until a heritage agreement is finalised.

Results/Conclusions
Future work will assess the potential for a new style of mineralisation away from the typical magnetic targets which may yield shallower targets than the deeper seated magnetic targets. Proposed work activities being assessed include ground IP and helicopter-borne EM surveys.
TABLE OF CONTENTS

1.0 INTRODUCTION ................................................................................................................. 2
1.1 LOCATION AND ACCESS ............................................................................................... 2
1.2 TENEMENT DETAILS ....................................................................................................... 4
2.0 GEOLOGY .......................................................................................................................... 4
2.1 REGIONAL GEOLOGY ....................................................................................................... 4
2.2 LOCAL GEOLOGY .............................................................................................................. 6
3.0 WORK COMPLETED DURING THE REPORTED PERIOD .............................................. 9
4.0 RESULTS ............................................................................................................................ 9
5.0 ENVIRONMENTAL / REHABILITATION REPORT .......................................................... 10
6.0 CONCLUSION AND RECOMMENDATIONS ................................................................. 10
7.0 REFERENCES ..................................................................................................................... 10

LIST OF FIGURES

Figure 1: Location Plan showing relative positions of tenement with Tennant Creek ................................................................. 3
Figure 2: Regional Geological Setting, EL 25372, Tennant Creek, NT. (After Ahmad et al 2004) ............................................... 5
Figure 3: Local Geological Setting, EL 25372. (After Donnellan, 2004) 1:50,000 ................................................................. 6
Figure 4 - Colour Drape image of 2010 Helimag, EL25372 .................................................................................. 9

LIST OF TABLES

Table 1: Tenement details ........................................................................................................ 4
1.0 INTRODUCTION

EL25372 lies within the highly prospective Proterozoic Tennant Creek province, noted for its rich copper-gold deposits associated with the iron oxides magnetite and hematite (IOCG deposits). The tenement was granted to Castile Resources Pty Ltd (Castile) on 13 February 2008 to cover a small area of land on the Peko – Argo line, 4.5kms west of the Peko mine, and 1km east of the Argo mine.

Metals X, through its wholly-owned subsidiary Castile, has a large tenement holding in the region, mostly within the Rover Field which lies under Palaeozoic cover to the west and southwest of Tennant Creek. The exploration targets are IOCG deposits in the shales and greywacke of the Warramunga Group.

Exploration efforts by Castile in the region for the 2012 year concentrated on regional work throughout the Rover, Navigator, and Explorer Fields, where deep penetrating IP was completed with selected follow-up drilling testing. Work on EL25372 for the year was restricted to desk-top reviews pending the signing of an exploration agreement with the aboriginal Traditional Owners. Additional assessment of the potential for new styles of mineralisation away from the typical magnetic ironstone targets based on recent result reported by Emmerson Resources in the Tennant Creek Region was also undertaken.

1.1 Location and Access

EL25372 is located 37 kms NNW of the town of Tennant Creek, NT. Access to the tenement is 30 kms from Tennant Creek via the Warrego Road, then about 14 kms north along small tracks (Figure 1. The sealed Stuart Highway passes through Tennant Creek, and is 12 kms to the east of the tenement. The Alice Springs to Darwin railway line is about 10 kms to the south-west of the tenement.
Figure 1: Location Plan showing relative positions of tenement with Tennant Creek
1.2 Tenement Details

EL25372 consists of six graticular blocks, and totals about 19.5 square kilometres. (Figure 1) It was granted on 21 February 2008. An exemption from the statutory partial relinquishment was granted for the tenement for the 2011 year.

The tenement title is held 100% by Castile Resources Pty Ltd, a wholly owned subsidiary of Metals X Limited.

Table 1: Tenement details

<table>
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<tr>
<th>Lease</th>
<th>Project</th>
<th>Granted Area</th>
<th>Approximate Area ha</th>
<th>Application Date</th>
<th>Grant Date</th>
<th>Expiry Date</th>
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<tbody>
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<td>EL25372</td>
<td>Tennant Creek</td>
<td>6 Blocks</td>
<td>1,944</td>
<td>15-May-06</td>
<td>21-Feb-08</td>
<td>20-Feb-13</td>
</tr>
</tbody>
</table>

2.0 GEOLOGY

2.1 Regional Geology

The Tennant Creek Region contains three different geological provinces, the Warramunga Province, and the unconformably overlying Palaeo - to Mesoproterozoic Davenport Province to the south, and the Tomkinson Creek Province to the north. To the east and west the Palaeozoic Georgina and Wiso basins overlie Proterozoic rocks of the Tennant Creek Region. The Aileron Province of the Arunta Region occurs to the south of the area, the contact between it and the Tennant Creek Region being obscured by Palaeozoic basinal cover sequences.

The 1860-1850Ma Warramunga Province is approximately centred on the township of Tennant Creek, and contains the Palaeoproterozoic Warramunga Formation. This is a weakly metamorphosed turbiditic succession of partly tuffaceous sandstones and siltstones which includes argillaceous banded ironstones locally referred to as ‘haematite shale’.

Rocks of the Warramunga Formation show open to close folding about approximately east-west-orientated, open, upright fold axes, and there is a well-developed axial-planar slaty cleavage. This 1850-1845Ma deformation, the Tennant Event (Barramundi Orogeny), is contemporaneous with predominantly felsic magmatism of the Tennant Creek Supersuite. Two overprinting cleavages and associated kink bands are also present, which are attributed to the superimposition of the ~1700Ma Davenport Event deformation. Volcano-sedimentary rocks of the Warramunga Province are intruded by granite and porphyry of the Tennant Creek Supersuite, (~1850Ma) the Treasure Suite (~1810Ma) and the Devils Suite. (~1710Ma) The Tennant Creek Supersuite includes the Tennant Creek, Cabbage Gum, Channingum, and Hill of Leeders granites, and the Mumbilla Granodiorite. In the Warramunga Province, the Treasure Suite includes felsic and mafic volcanic rocks, porphyry, granophyre, monzodiorite, diorite and dolerite, but granite is not represented in outcrop. The Devils Suite represented by the Warrego Granite and Gosse River East Syenite Lamprophyre is penecontemporaneous with the Devils Suite.

The Woodenjerrie beds outcrop in the south of the province and are correlated with the Warramunga Formation. The Woodenjerrie beds apparently lack the massive ironstone bodies that are associated with the Warramunga Formation.

The Junalki Formation is also approximately correlated with both the Warramunga Formation and Woodenjerrie beds, but includes a greater proportion of intercalated volcanic rocks than the latter unit. Volcanic rocks have not been recognised in the Warramunga Formation.

Volcano-sedimentary rocks of the Ooradidgee Group (~1850-1820Ma) unconformably overlie the Warramunga Formation and its correlatives, extending to the south into the adjacent Davenport Province.
The Tomkinson Creek Province (1800-1400Ma) unconformably overlies the Palaeoproterozoic Warramunga Province to the north. Three successions outcrop in the province, the Tomkinson Creek, Namerinni and Renner groups. These are all predominantly sedimentary successions and contain sandstone, siltstone and shale. The Tomkinson Creek Group also includes a mafic volcanic unit. The oldest succession in the province, the Tomkinson Creek Group, is mildly deformed but unmetamorphosed and is correlated with the Hatches Creek Group of the Davenport Province. The successively unconformable Namerinni and Renner groups are correlated with the McArthur and Roper groups respectively.

The Davenport Province (1800-1700Ma) unconformably overlies the Warramunga Province to the south. It contains the Hatches Creek Group, which is composed predominantly of sandstone, siltstone and shale, with felsic volcanic beds in the lower part of the sequence, and a mafic volcanic unit in the middle parts. The ~1710Ma felsic Devil’s Suite intrudes the sequence. The ~1700Ma Davenport Event has produced widespread concentric and disharmonic folding in the Davenport Province succession.

Palaeozoic rocks of the Georgina and Wiso basins unconformably overlie the Proterozoic sequence of the Tennant Creek Region to the east and west respectively. These are largely covered by a thin veneer of unconsolidated Cainozoic cover.

The Warramunga Formation hosts major IOCG deposits of Au-Cu-Bi, temporally associated with the Tennant Suite granites, intruded into the Warramunga Province. Deposits of this type represent the most important mineral production, and remain the most important exploration target, for the region. Occurrences of W-Sn, U, Ni, Cu, Pb, Zn are known from the Davenport Province. The “Tomkinson Creek” Province hosts manganese deposits at Bootu Creek.

Figure 2: Regional Geological Setting, EL 25372, Tennant Creek, NT. (After Ahmad et al 2004)
2.2 Local Geology

EL25372 lies about 37kms to the NNW of the town area of Tennant Creek. It lies between the Short Range, which is formed of arenites and dolerites of the Tomkinson Creek Group, and low-lying areas underlain by the Warramunga Formation.

NTGS mapping indicates that the tenement itself is mainly underlain by arenites, siltstones and shales of the Wundirgo Formation, (Ooradidgee Group) with Warramunga Formation rocks outcropping immediately to the south of the tenement. The contact between the two is obscured by recent sediments, but appears to strike ENE along the southern boundary of EL25372. A NNW-trending fault passes through the centre of the tenement.

The Warrego, Orlando, Gecko and Argo mines occur in Warramunga Group sediments to the south of EL25372, while the North Star mine is in Warramunga sediments 8kms east of the tenement.

![Figure 3: Local Geological Setting, EL 25372. (After Donnellan, 2004) 1:50,000](image)

2.2.1 Exploration History

Small traces of gold were discovered in the creeks and gullies south of the telegraph station at Tennant Creek in 1879. In 1926 a miner named Charlie Windley worked a claim in weathered rock on what was to be the site of the Great Northern Mine, and made enough to justify his efforts. One of the telegraph operators, 'Woody' Woodforde, had enlisted local Aborigines in the search for gold and, in 1932, an Aboriginal man brought Woodforde a lump of ironstone containing visible specks of gold. This led to the discovery of gold in ironstone deposits returning as much as 1.2 kg Au per tonne, and led to Australia's last great goldrush. By 1934 population numbers prompted the government to gazette a new township, to be called Tennant Creek.
The Eldorado Mine, which opened in 1932 and closed in 1958, produced nearly 175,000 ounces of gold. It was also a significant producer of copper, and was the only mine in the field to continue production throughout World War II. The discovery of the copper deposits in the field proved very profitable, and dominantly copper-producing mines were established.

The Nobles Nob Mine was founded by Jack Noble, and became an open-cut operation in 1967 after the main shaft collapsed. Nobles Nob produced assays which regularly exceeded 100oz (3.2kg) of gold per metric ton. One particularly rich area within the ore body produced over 300oz per ton. Nobles Nob produced over a million ounces (32 tonnes) of gold.

Historical production from the Tennant Creek field has been in excess of 5 million ounces of gold and 500,000 tonnes of copper.

The Tennant Creek 1:250,000 map sheet was geologically mapped in 1970-71 by the then BMR (Dodson, 1978). The Tennant Creek 1:100,000 map sheet was mapped by NTGS in 1995, and reported as the combined Flynn-Tennant Explanatory Notes.

In 2008 Kevron completed an airborne magnetic and spectrometer survey of the Tennant Creek 1:250,000 map sheet. Lines were flown at 180° at a spacing of 200m.

The Tennant Inlier gravity survey, which covered the area approximately bounded by 324,000 - 500,000E and 7,733,000 - 7,897,000N was completed in 2001. Station spacing was approximately 4kms. The region is also included in the wide-spaced Australia-wide gravity dataset.

The area of EL25372 has undergone several programs of exploration since 1970.

**1970/71**
Kenneth McMahon & Partners explored AtoP 2090 on behalf of the Westmorland Joint Venture. The AtoP abuts the western edge of EL25372. They completed a detailed aeromagnetic survey on 660ft (200m) line spacing and 50ft (150m) terrain clearance. Three magnetic anomalies were recorded immediately to the west of EL25372. Follow-up ground magnetics, soil sampling and percussion drilling showed the anomalies to be caused by magnetite-bearing dolerite dykes. Minor copper and lead anomalism was associated with the dykes.

**1973**
Nobelex NL explored EL871, which covers the eastern 75% of EL25372, with an aeromagnetic survey at 200m line spacing and 90m terrain clearance. They located 4 anomalies, 3 of which lie within EL25372. Follow-up ground magnetics and mapping suggested that the anomalies were caused by magnetic dolerites. Early work by the BMR (1967) had previously located one of these anomalies, and the NTGS drilled DDH8 close by. It intersected a magnetite-bearing monzonite.

**1977-79**
Australian Ores and Minerals, and later Marathon, explored EL1388, which covers the eastern 80% of EL25372. The Golden Slipper and Queen of Sheba workings lie in the tenement, 5kms to the south of EL25372. They flew an aeromagnetic / scintillometric survey over the tenement, completed a photogeological assessment and drilled specific prospects with no success. None of the work was within the area of EL25372.

**1978-80**
Uranerz explored EL1668 for uranium. The tenement is immediately to the west of EL25372. They completed mapping, ground radiometrics, radon surveys and sampling, and drilled 4 percussion holes with no anomalous results. None of the work was on EL25372.

**1979-81**
Marathon / AOG completed ground magnetics on EL2082, and drilled a line of 6 percussion drill holes for 320m. (partly in EL25372). They located weak copper anomalism in sediments adjacent to a magnetic dolerite. Later RAB drilling was outside the area of EL25372.
1983-87  Peko Operations Limited held EL4179, which surrounds EL25372 to the west and south. They carried out data compilation, and aeromagnetics at 200m spacing and 100m height. Anomaly 4, which lies just to the west of EL25372, probably coincides with one of the anomalies located on Atop 2090 in 1970. The area near EL25372 was relinquished, and their work concentrated to the south near Olando and Gecko.

1985-89  CEGB explored EL4895 for uranium. Their work concentrated on the White Ridge and Windgap prospects, well outside EL25372.

1987-93  Nick Byrne & Associates explored EL5122, which covered a large part of EL25372. They completed data compilation, re-logging and sampling of BMR hole DDH8, and ground sampling. In 1989 WMC joint ventured into the tenement, and completed detailed investigations on 2 prospects, Skink and Goanna. Both prospects lie only a few hundred metres outside the south-central boundary of EL25372. They were tested with ground magnetics, vacuum drilling and ground EM, and one diamond drill hole was drilled on Skink. This intersected chloritic clays and weak magnetite-pyrite development with minor quartz-chlorite veining. No anomalous assays were returned.

1989-91  Poseidon Gold Limited explored CEGB’s EL4895, which covered a small portion of EL25372. They completed aeromagnetics, and multi-element region stream sediment sampling. Three anomalous areas were delineated, over which they carried out gravity surveys, soil sampling and RC drilling. None of the anomalies was on EL25372. RC drilling on the Chook anomaly, about 35kms to the west of EL25372, returned a best intersection of 4m @ 2.37% Cu.

1990-2001  Between 1990 and 1994 Poseidon explored a number of EL’s in the general region of EL25372. They compiled and reinterpreted the 1984 Aerodata and 1989 Austrex airborne magnetic surveys, identifying anomalous areas based on magnetic response and the intersection of magnetic features with structural zones. Selected anomalies were explored with ground magnetics, gravity surveys, soil sampling, and vacuum drill multi-element geochemistry. RAB and RC drilling was completed on targets outside EL25372. Work done within the area of EL25372 included:

- 1994  Vacuum drilling 32 holes – CDVC prefix (EL7898). This located up to 240 ppm Cu.

In 1994 Poseidon amalgamated EL’s 8748, 7526, 7609, 7766, 7898, 8086, 8234 and 8391 into a single substitute exploration licence, SEL8748. This covered parts of EL25372. They carried out a global interpretation of the region, and selected 3 areas for ground magnetics, vacuum drilling, and completed ground EM, RAB and RC drilling on selected targets. Area 3 is within EL 25372. A total of 218 vacuum holes were completed on EL25372 (TEV prefix), with heavy-mineral assays from the transported material in the upper parts of the holes returning up to 1,258ppm Cu, 892ppm Zn, and 48ppm Mo. Later work was concentrated on the Golden Slipper area, well south of EL25372, and it appears that these anomalies were not followed-up. Giants Reef acquired all of Normandy Poseidon’s assets in the Tennant Creek region in 2001, and the SEL was relinquished in 2002.
3.0 WORK COMPLETED DURING THE REPORTED PERIOD

No on-ground field work was carried out in EL25372 during the reporting period. Exploration activities were restricted due to the lack of a signed heritage agreement, and included:

- Continued negotiation of a draft exploration deed of agreement with the Traditional Owners through the CLC;
- Review of historical data;
- Assessment of the potential for a new styles of mineralisation in the Tennant Creek region;
- Report writing.

4.0 RESULTS

It is considered prudent to defer on-ground exploration until an exploration agreement is signed with the CLC and the local Traditional Owners. A draft agreement has been prepared and is in the process of being edited and modified by the CLC and Castile.

The 2010 high-resolution helimag survey located several anomalies in northeast of the tenement (Figure 4). The largest of these lies in the central east of the area, and was located by the 1966 MMR magnetic survey. Two lower-order anomalies lie in the northeast. The more westerly of these is probably the ground magnetic anomaly, PC2, located by Nobelex, and on which the NTGS drilled diamond drill hole DDH8. Geochemical anomalies have been identified and will be investigated if they have links to the structural setting. Appropriate additional geophysics such as IP and helicopter borne EM will also be considered.

Figure 4 - Colour Drape image of 2010 Helimag, EL25372
Mineral exploration has been carried out in the general area of by EL25372 by numerous companies over a 22-year period. A small amount of work, mainly limited to aeromagnetic data acquisition and interpretation and vacuum drill geochemistry, but with minor stratigraphic percussion drilling, has been completed within the boundaries of EL25372. Copper, zinc and molybdenum anomalism was located by this work, but this has not been followed-up. Magnetic anomalies located within the tenement have been interpreted to reflect underlying dolerite dykes. However, one anomaly was drilled by the NGTS and found to be underlain by magnetite-bearing monzonite, and these anomalies should be reassessed.

5.0 ENVIRONMENTAL / REHABILITATION REPORT

No environmental rehabilitation has occurred during the reporting period as no exploration work of a ground-disturbing nature was carried out.

6.0 CONCLUSION AND RECOMMENDATIONS

EL25372 lies on the northern edge of the belt of Warramunga Formation rocks which contain several IOCG deposits, including the 1.6 million-ounce Warrego Mine. Work by previous companies has demonstrated that magnetic and geochemical anomalism occur within the tenement, but this has not been followed-up with detailed work.

Discussions with the CLC will be advanced to finalise the draft exploration access agreement.

7.0 REFERENCES

