



ANNUAL AND FINAL REPORT
EL 29260 (ALLAMBER PROJECT)
NORTHERN TERRITORY

TENEMENT EXPIRING 30/07/2015

TENEMENT HOLDER: ELEMENT 92 PTY LTD

(Target Commodity – Copper, Gold, Uranium)

250K Map Sheet
100K Map Sheet

Pine Creek SD5208
Pine Creek 5270

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Element 92 Pty Ltd (Thundelarra Ltd)

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SUMMARY

Exploration Licence (EL) 29260 is located in the central part of the Pine Creek Orogen which is a world-class mineral province, and has significant potential for gold, base metals, iron ore and uranium mineralisation. The EL is situated about 175 km SSE of Darwin and approximately 30 km east of Pine Creek township. The tenement was granted to Element 92 Pty Ltd, a wholly owned subsidiary of Thundelarra Limited, on 31 July 2013 for a six year period and is part of the Allamber project.

The project area is located within the central part of the Pine Creek Orogen (PCO) which is a tightly folded sequence of Palaeoproterozoic rocks, >4km in thickness, laid down on granitic and gneissic Archaean basement unconformably. The sequence is dominated by clastic, carbonate and carbonaceous sedimentary volcanics. Pre-orogenic mafic sills of the Zamu Dolerite intruded the sequence prior to regional metamorphism and deformation. The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic magma into the sequence in the period ~1830–1800 Ma. Within EL 29260, lithologies of the Masson Formation (Namoon Group) and Mundogie Sandstone (Mt Partridge Group) are present, which have been intruded by the Minglo and Frances Creek Granites, part of the Cullen Supersuite. Sills and dykes of the Zamu dolerite are also present in the western part of the project area.

During the tenement life, a technical review of the project area was undertaken in order to assess mineral potential of the project area. Processing and interpretation of geological, historical and geophysical was conducted. In addition a number of field visits were undertaken for ground-truthing. Two rock chip samples were taken on the EL but results were not conclusive. Geological, historical geochemical and geophysical data processing and interpretation show that project area appears to have potential for base metals and gold mineralisation. However Element 92 has decided not to renew EL29260 after its expiry date on 30/07/2015.

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1. INTRODUCTION

Exploration Licence (EL) 29260 is located in the central part of the Pine Creek Orogen which is a world-class mineral province, and has significant potential for gold, base metals, iron ore and uranium mineralisation. The EL is situated in the Allamber Project which Element Pty Ltd 92 is exploring for base metals, uranium and gold mineralisation, and has achieved success at a number of localities with the discovery of significant base metals prospects (e.g., Hatrick, Nipper, Ox-Eyed Herring) and new areas of uranium mineralisation. The tenement is reaching its expiration date on the 30/07/2015 and will not be renewed by Element 92. This report documents the exploration activities undertaken by Element 92 during the life of EL29260.

2. LOCATION AND ACCESS

The EL is located about 175 km SSE of Darwin and approximately 30 km east of Pine Creek township (Figure 1). The tenement can be approached by the main access road into Mary River Station off Kakadu Highway and thence along station tracks connecting with the Frances Creek Mine access road. Vehicle access within the tenement is possible by station tracks which may be impassable during wet season.

3. TENEMENT DETAILS

The tenement was granted to Element 92 Pty Ltd, a wholly owned subsidiary of Thundelarra Limited, on 31 July 2012 for a six year period. Details of the title are given in the table below. The EL comprised of 2 graticule blocks only. It forms part of a contiguous area explored as the Allamber project. Adjacent tenure is reported under GR201-11 Allamber Group of tenements.

EL NO	Date Granted	Expiry Date	Area
29260	31/07/2012	30/07/2015	2 sub-blocks

Underlying tenement belongs to Mary River Station which is currently operated as hunting and fishing safari park under the name of Mary River Australian Safaris. The property is now specially fenced to accommodate various species of deer, antelope, water buffalo and banteng, which are bred for hunting purposes.

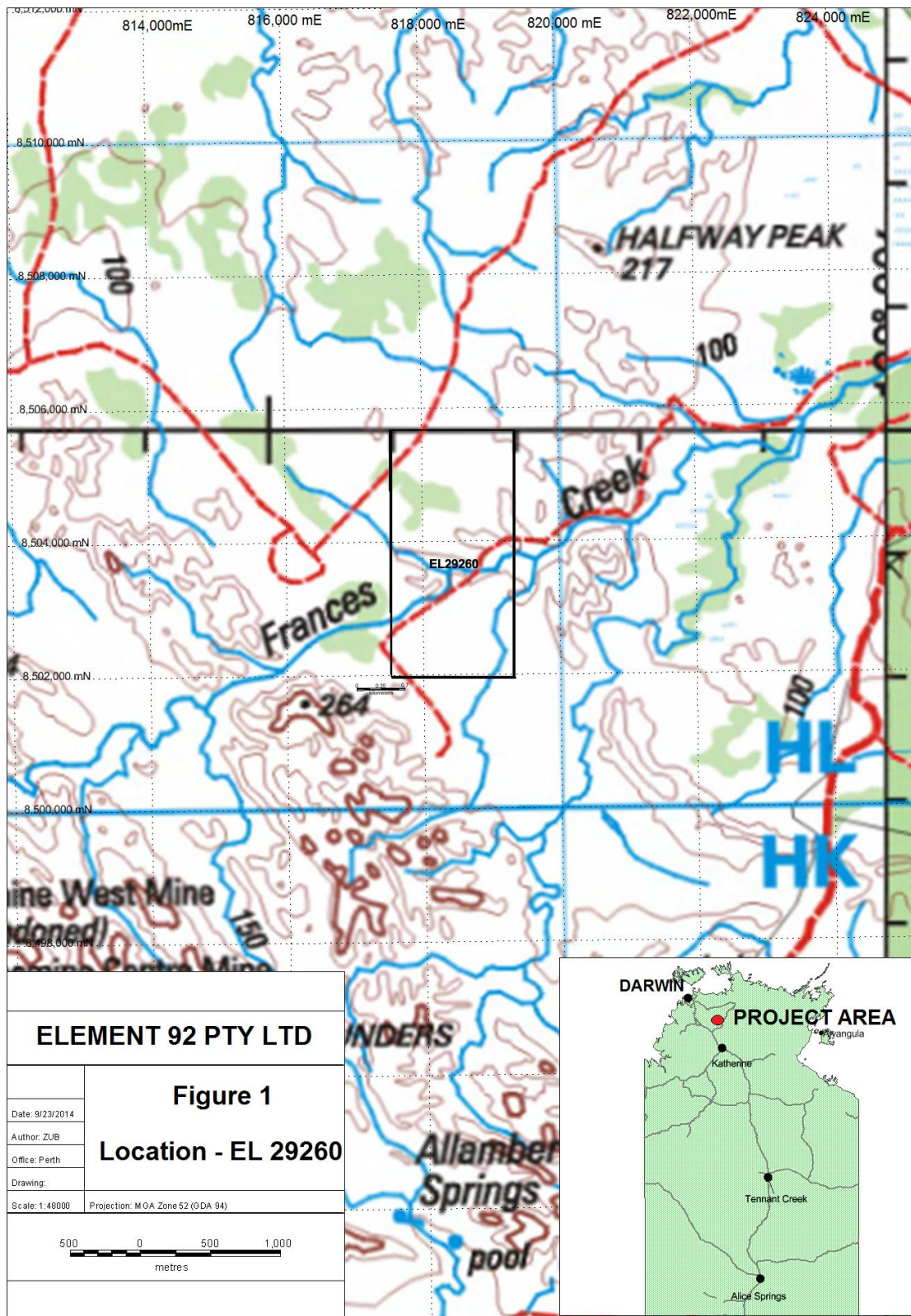


Figure 1: Location of EL 29260

4. GEOLOGICAL SETTING

The project area is located within the central part of the Pine Creek Orogen (PCO) which is a tightly folded sequence of Palaeoproterozoic rocks, >4km in thickness, laid down on granitic and gneissic Archaean basement unconformably (Ahmad and Munson, 2013). The sequence is dominated by clastic, carbonate and carbonaceous sedimentary volcanics. Pre-orogenic mafic sills of the Zamu Dolerite intruded the sequence prior to regional metamorphism and deformation.

The sequence was tightly folded and pervasively altered with metamorphic grade averaging greenschist facies to phyllite in a period ca 1867–1850 Ma. The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic magma into the sequence in the period ~1830–1800 Ma. During emplacement, magma experienced differentiation and fractionation which subsequently led to the emanation of hydrothermal fluids responsible for gold, uranium and base metals mineralisation in the adjacent meta-sediments (Bajwah, 1994; Ahmad et al., 1993).

Within EL 29260, lithologies of the Masson Formation (Namoona Group) and Mundogie Sandstone (Mt Partridge Group) are present, which have been intruded by the Minglo and Frances Creek Granites, part of the Cullen Supersuite (Figure 2). Sills and dykes of the Zamu dolerite are also present in the western part of the project area.

The Masson Formation is the oldest rock unit which is exposed in the NW part of EL 29260 (Figure 2), and has been intruded by the Minglo Granite towards east. It is a thick sequence of carbonaceous phyllite, slate, siltstone and dolomite. The dolomitic sediments are exposed towards the base of the formation. Some massive ironstone and muscovite-tremolite marble horizons are also present. The Masson Formation hosts significant uranium mineralisation in the south at Cleo's, Twin, Dam and Cliff South (Bajwah and Vieru, 2014).

The Mundogie Sandstone is exposed in a small area in the NE corner of the project area (Figure 2). Generally, it contains a thick sequence of coarse clastic sediments deposited in shallow marine and fluvial environment. Pyritic lithologies are present at places and contain sedimentary structures such as graded bedding, cross-bedding and load clasts. Thin haematitic interbeds of phyllite, carbonaceous phyllite and sandy siltstone probably comprise less than 50% of the formation. Minor occurrences of vein type base metals and gold mineralisation are hosted by the Mundogie Sandstone. The formation has been intruded by Minglo/Frances Creek granites towards east of the project area.

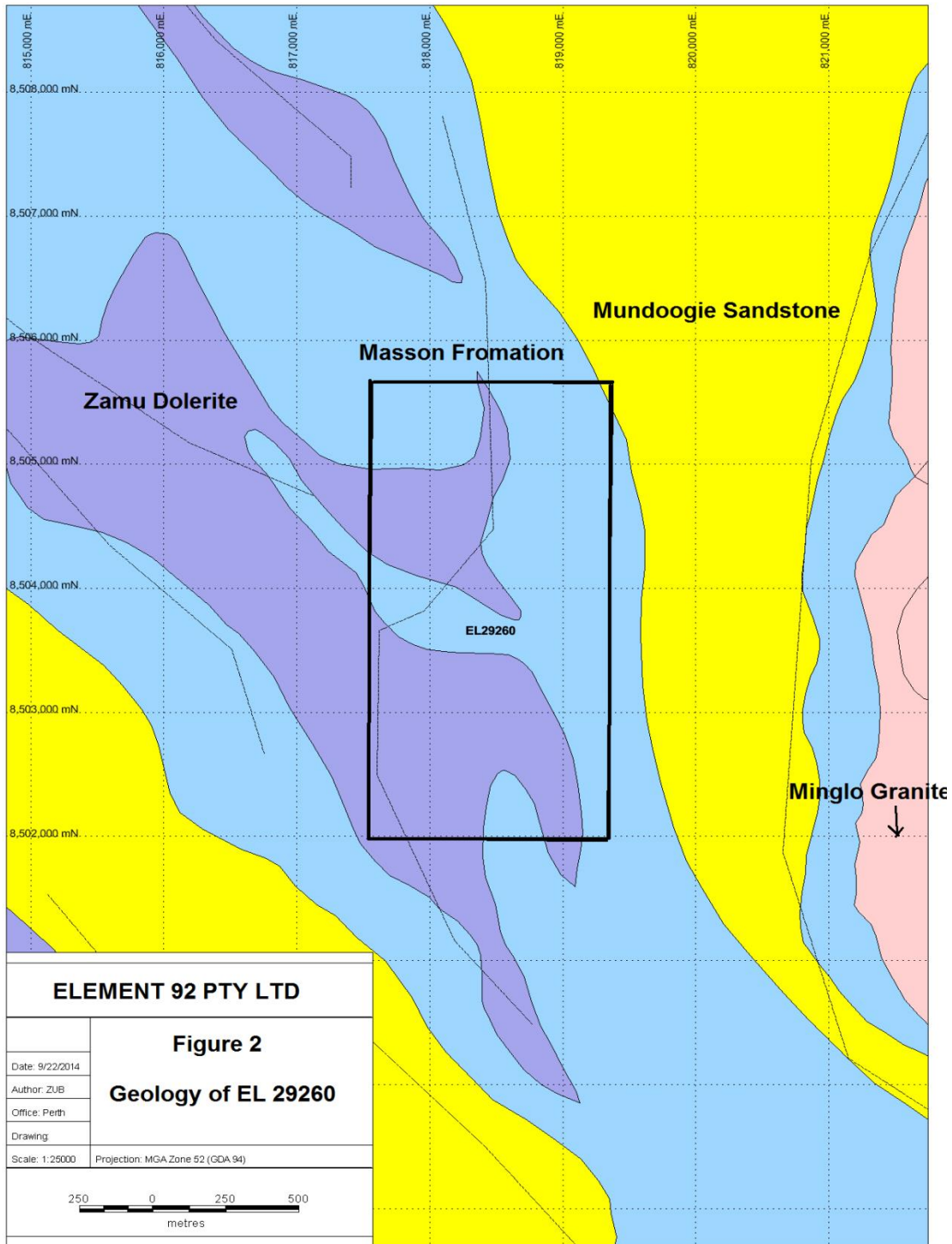


Figure 2: Geological setting of the project area

The Zamu Dolerite covers large part of the Licence and represents a suite of continental tholeiites with a composite thickness of about 1.5 km elsewhere. It was intruded mainly as sills, which were folded and metamorphosed with the enclosing stratigraphy. Mapping of the project area shows that the Zamu Dolerite is folded into south-plunging anticlinal structure. The main lithology is massive, medium- to coarse-grained, grey quartz dolerite, in which primary textures and some primary minerals are usually preserved. A weak metamorphic foliation is developed in some thin sills. The dolerite has an ophitic texture, consisting of plagioclase, clinopyroxene and interstitial intergrowths of quartz and K-feldspar, anhedral quartz, minor euhedral K-feldspar, magnetite, biotite and rare apatite.

5. PREVIOUS EXPLORATION HISTORY

According to open file records, modern company exploration of the area of EL29260 commenced in 1976, when the area was held under tenure by CRA Exploration Ltd. CRA carried out geological mapping and regional soil sampling traverses. (Open file reports CR1979/0060, CR1978/0062).

The area was geologically mapped by the NTGS-BMR at a scale of 1:25,000 in 1980.

From 1979 to 1981 the area was explored for uranium and base metals by Australian and New Zealand Exploration Company (Anzeco). Anzeco carried out systematic stream sediment sampling, including heavy mineral sampling and car borne radiometric traversing. It was concluded that “there is little evidence for significant uranium, tin, tungsten or molybdenum potential in the area, and the size and base-metal grade potential of weakly mineralised ferruginous lenses appear totally inadequate for the development of an economic mineralised body” (CR81-0013). Analysis of the Anzeco geochemistry results show that their survey clearly outlined the rim of copper anomalism along the western margin of the Cullen Granite.

Greenex (a division of Greenbushes Tin Ltd) explored the area of EL29260 from 1992 to 1983 for both gold and tin—tantalum mineralisation. Exploration was limited to photogeological interpretation, field traverse mapping and ironstone sampling. All samples collected lie outside EL29260. It was concluded that there was no significant potential for the discovery of gold mineralisation associated with ironstone beds or tin-tantalum mineralisation associated with the Cullen Granite (CR1983/0005). Following Greenex’ withdrawal the area was from 1985 held by Casey Consolidated Holdings who carried out exploration for alluvial gold deposits. A heavy mineral concentrate stream sediment sampling programme was carried out. Later four traverses of shallow holes were drilled on the Frances Creek flats using a Gemco rig or a posthole borer, and resultant samples were analysed for gold and tin by gravity concentration. Gold and tin values were reported to be erratic and sub-

economic. (CR1990-224). CSR carried out hard rock gold exploration of over the Casey tenement in the period 1985-1988. Work consisted of photogeological mapping, an airborne magnetic survey, and BLEG stream geochemical surveys.

Follow-up work focussed on areas outside EL29260. (CR1987/158) Ashton Exploration carried out gold exploration over part of the area of EL29260. (CR1991/0054) BLEG Stream sediment sampling and rock chip sampling was carried out.

From 1991 to 1998 the area was held by Dominion Mining in joint venture with Aztec Mining Limited. The target for these companies was gold and base-metal mineralisation. Work carried out consisted of geological mapping, sieved stream sediment sampling and soil and rock chip sampling (CR1995-301).

Earthrowl, White and Douglas held the tenement area as part of EL10167 from 2002 to 2010 when it was relinquished. Element 92 Pty Ltd carried out exploration activities for uranium under a JV arrangement with Earthrowl et al. Work carried out included RC drilling (5 holes for 154m), ground magnetics, soil sampling, one rock chip sample and an airborne radiometric and magnetic survey. The tenement area was relinquished in 2010. Full details are given in De Kever (2011).

6. EXPLORATION ACTIVITY BY ELEMENT 92 ON EL29260

During the tenement life, a technical review of the project area was undertaken in order to assess mineral potential of the project area. Processing and interpretation of geological, historical and geophysical was conducted. In addition a number of field visits were undertaken for ground-truthing. During field visits, two rock chip samples were taken on the EL and results were not conclusive (Appendix A). Samples location is displayed on Figure 5.

a. Significance of Geological Setting

Geological setting of the project area shows that EL 29260 is located in the most prospective part of the PCO, which is well known for its mineral potential for gold, base metals and uranium and iron ore mineralisation. Since the last century, it has produced significant quantities of gold, uranium, base metals and iron ore. The tenement is part of the Allamby project area, where Element 92 has made significant discoveries of base metals and uranium mineralisation in the last a few years. The Palaeoproterozoic rocks of the Masson Formation which has been intruded by members of the Cullen Batholith, and this geological setting is significant for the formation of base metals and uranium

mineralisation in the Allamber project area. Dedicated exploration programs have discovered several base metal prospects such as Hatrick, Ox-Eyed Herring and Nipper towards east and south-east of the Licence (Element 92 ground). It may be noted that whole granite-sediment contact is marked by Cu anomalism (Figure 3). The Mundogie Sandstone also contains some gold occurrences indicating its potential.

The presence of extensive rocks of the Zamu Dolerite is also significant for the mineral potential of the project area. In some areas within the PCO, the Zamu dolerite is folded into anticlinal structure along with meta-sedimentary sequence, where it hosts significant gold deposit at dolerite-metasediment contact. Perhaps, the best example is shown by the Cosmo Howley project area (Crocodile Gold Australia) where a significant gold resource is confined to similar geological setting. It is recommended that within the project area, the Masson Formation – Zamu Dolerite should be tested for the presence of gold mineralisation.

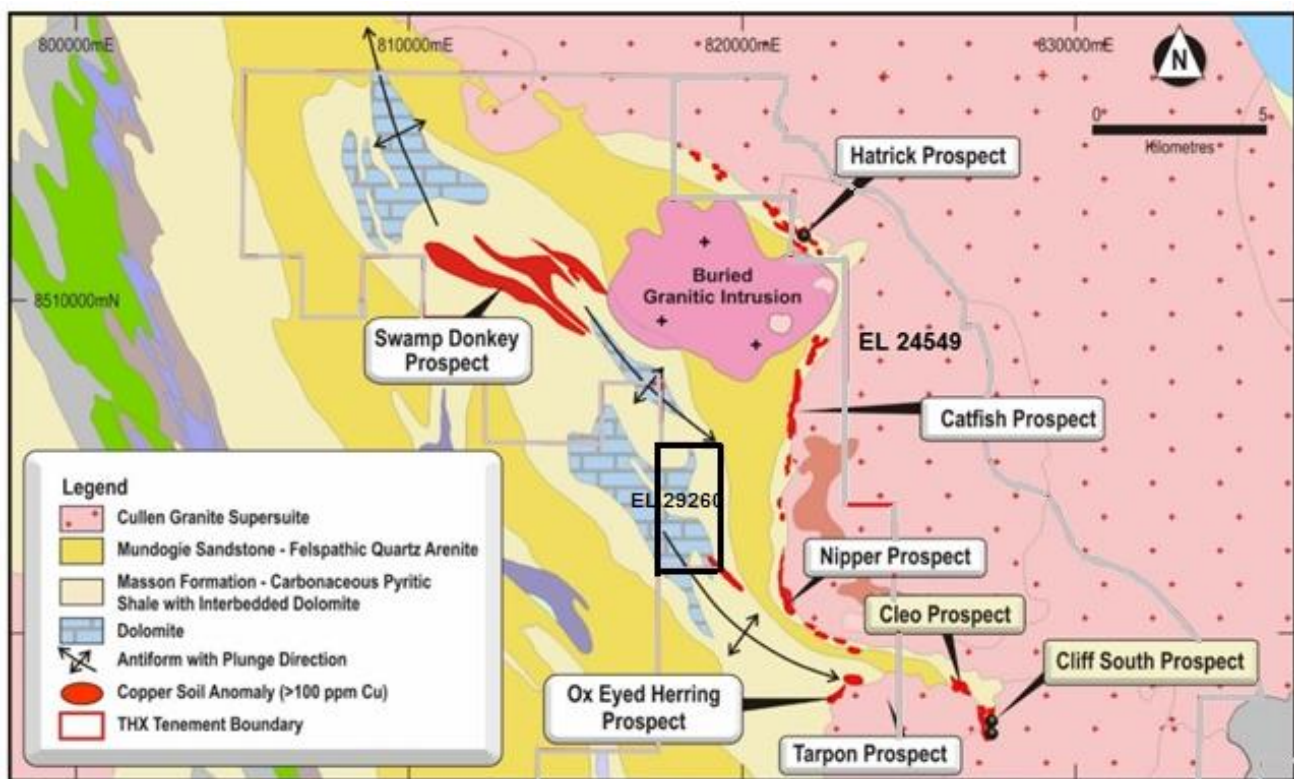


Figure 3: Cu anomalism along granite-metasediment contact in the Allamber project

b. Historical Geochemical Sampling

Figure 4 shows historical soil sampling undertaken within the project area. All raw data was lodged with the Department of Mines and Energy in 2013 annual report (Mees, 2013). Statistical analyses of data show Cu anomalism and concentrations as high as 170 ppm has been observed. Similarly, Zn and Pb are also characterised by higher than normal values in soil samples. Although, gold was not assayed from these samples but arsenic is good indicator of gold mineralisation in the PCO. There are significant arsenic anomalies from these soil samples which show the gold potential of the project area.

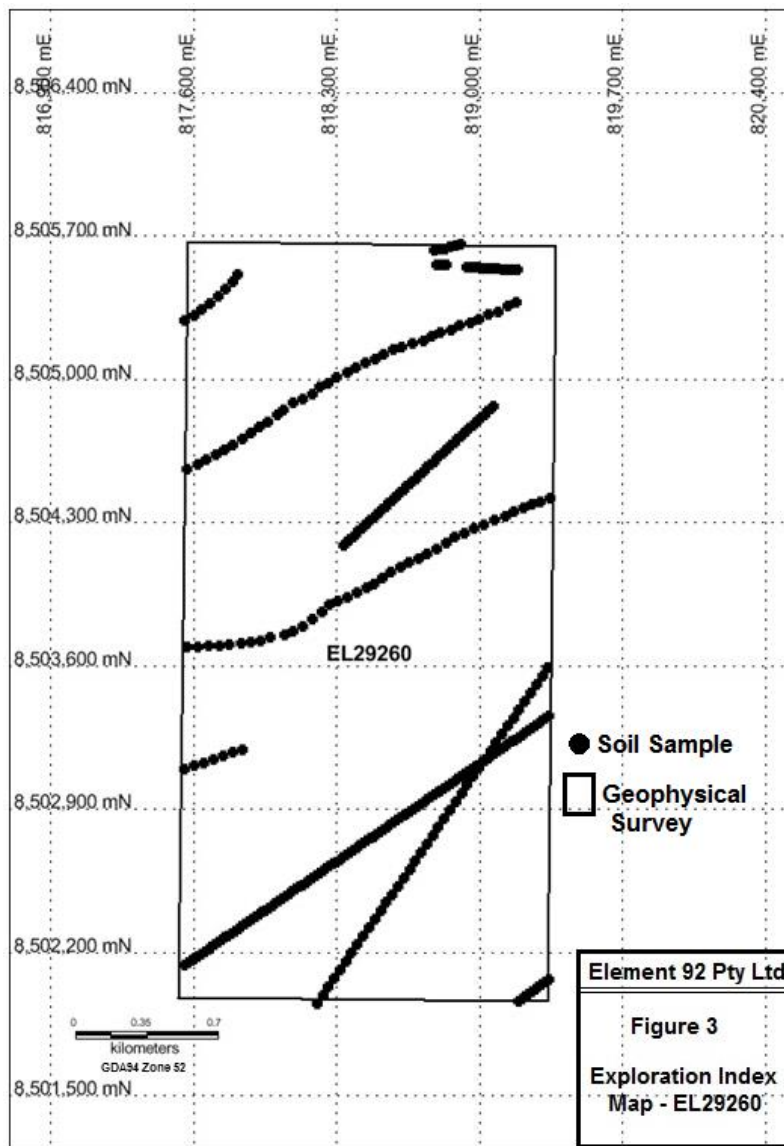


Figure 4: Exploration Index map of the project area and historical soil samples.

c. Geophysical Interpretation

Magnetic image of EL 29260 is shown in Figure 5. In this image areas of high magnetic responses together with magnetically recessive areas can be seen. The Zamu Dolerite is characterised by magnetic ridges, running NS approximately. Magnetically recessive areas are seen towards south or in the north-eastern corner of the Licence, which are underlain by the Masson Formation. Structural mapping of the area also shows that the Zamu dolerite and the Masson Formation are folded into south plunging anticlinal structure (Figure 4) and this observation is supported by the magnetic image of the project area. It may be noted that small “Bulls Eyes” magnetic anomalies are confined to the Zamu Dolerite and Masson Formation which indicate mineral potential of EL 29260. Geophysical image (Figure 5) further indicates that contact between the Zamu Dolerite and Masson formation may be faulted which could be significant site for gold mineralisation.

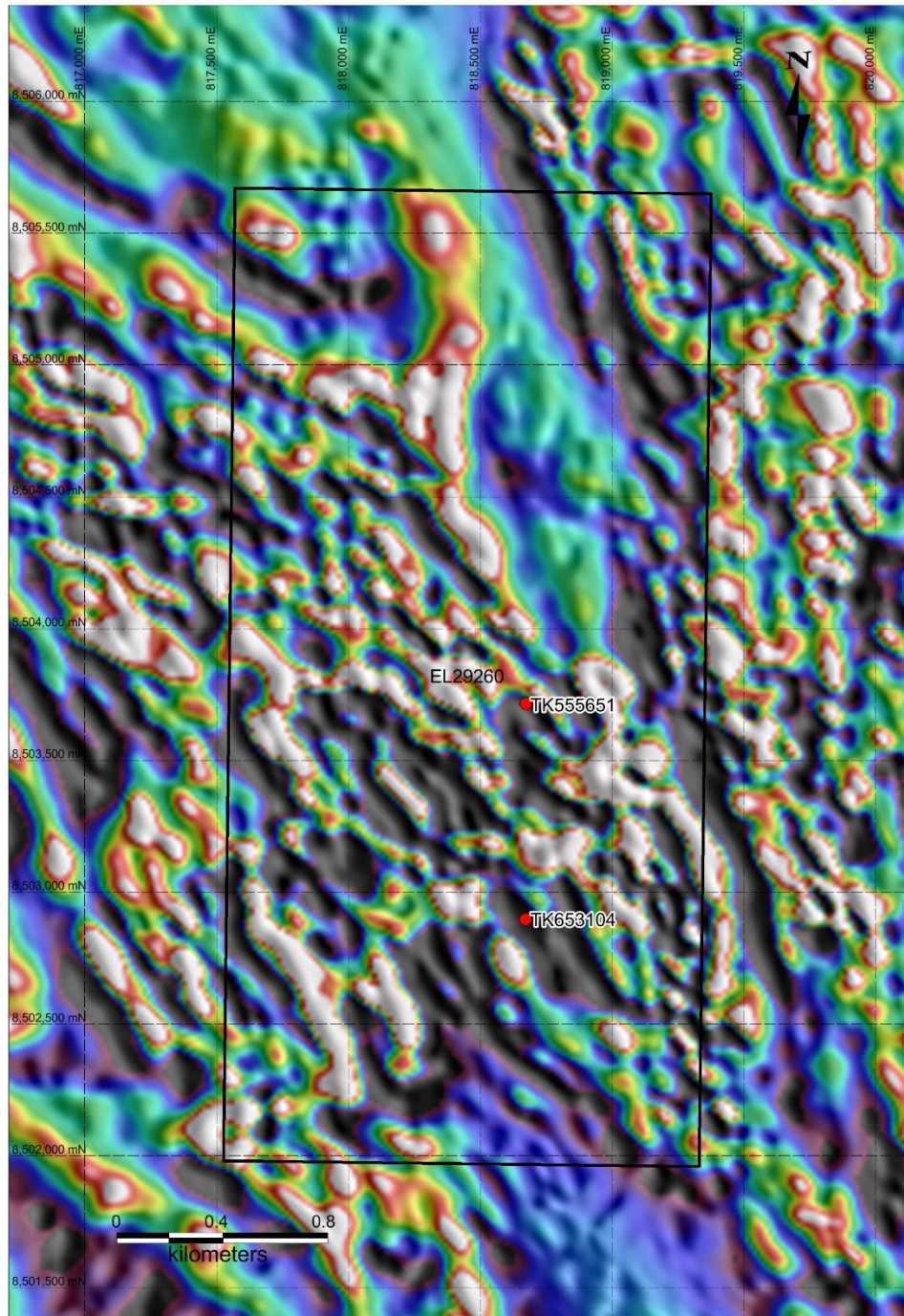


Figure 5: Magnetic image of the project area and rock chip samples location

7. CONCLUSIONS

A technical review of EL 29260 shows that it is located in the prospective part of the PCO and has mineral potential for base metals and gold mineralisation. Analyses of historical geochemical data have identified copper and gold anomalies which are consistent with recent geochemical sampling and assaying programs undertaken by Element 92 in the Allamber project area in general. Geophysical data further indicates presence of magnetic ridges/anomalies, indicating significant potential of the project area. However Element 92 has decided not to renew EL29260.

8. REFERENCES

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