POSEIDON GOLD LIMITED
for
TENNANT CREEK OPERATIONS PTY LTD

ANNUAL REPORT ON

EXPLORATION LICENCE 7484

for the period 10.8.91 TO 9.8.92

TENNANT CREEK MINERAL FIELD

NORTHERN TERRITORY

PREPARED FOR: NORTHERN TERRITORY DEPARTMENT
OF MINES AND ENERGY

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1:250000 SHEET: TENNANT CREEK No. 53
REPORT NO:

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SUMMARY

Poseidon Gold Limited's wholly owned subsidiary, Tennant Creek Operations Pty Ltd, was granted Exploration Licence 7484 on September 6, 1991. The licence is situated approximately 15 kilometres NE of Nobles Nob Mine, and 25 kilometres ESE of Tennant Creek township.

Poseidon Gold Ltd is responsible for all exploration and statutory reporting responsibilities.

The primary commodities sought on the licence are Au, Cu and Bi, found associated with magnetite-haematite ironstone bodies and in shear zones in the Tennant Creek mineral field.

Exploration during the period has included detailed structural mapping, aerial photographic interpretation, regional gravimetric surveying, geomorphological mapping and reconnaissance field checking.

During 1992/93 activities will involve integration of all previous work to delineate targets for detailed geochemical surveys and RC or diamond drilling.

1.0 INTRODUCTION

Exploration licence 7484 covers 12.8 sq kms and is located 25 kms ESE of Tennant Creek. The tenement can be accessed for most of the year via the sealed road to Nobles Nob then along a well formed dirt road past the Golden Forty and Golden Kangaroo mines.

The licence covers broad expanses of open grassland with hills of moderate relief in the southern and eastern portions of the tenement. No historical mines with recorded production are known on the tenement.

2.0 REGIONAL GEOLOGY

Exploration Licence 7484, is situated within the Lower Proterozoic Tennant Creek Inlier which consists of Warramunga Group sediments and acid volcanics for which Le Messurier et al (1990) proposes a maximum thickness of 6000 metres. The sediments are turbiditic in origin and consist of interbedded siltstone, sandstone and greywacke units with minor concordant acid volcanics and porphyry dykes.

The Warramunga Group has been sub-divided into the Carraman Formation, Black Eye Member, Bernborough Formation (volcanics) and the Whippet Formation. Sediments within the upper two units contain broad zones of disseminated magnetite and local horizons of laminated haematitic and magnetite bearing shale. All units in the Warramunga Group have been metamorphosed to greenschist facies.

The Warramunga Group has been subjected to at least three phases of deformation resulting in refolded isoclinal folds occurring about east-west axes and plunging both east and west. Two major episodes of faulting have been recognised consisting of a WNW trending set of shear zones sub-parallel to fold axes and a NW-SE set which are commonly quartz-filled and show sinistral movement.

Two phases of granite intrude the area, as well as numerous small intrusions of quartz porphyry, dolerite and lamprophyre dykes. The central and eastern sections contain the earlier Tennant Creek Granite, which predates all deformation. The western part of the field contains the Warrego granite, which post-dates the first two deformation phases.

3.0 LOCAL GEOLOGY

Exploration Licence 7484 covers an area of minor to moderate relief hills and soil covered flats, with the majority of outcrop occurring in the south-western and far eastern portions of the tenement.

In the far eastern section of the EL, outcrop comprises the prominent quartz-filled Rocky Range Fault, transecting sheared quartz porphyry.

The south-western section of the Licence contains moderate relief hills of hornfelsed siltstones, sandstones and tuffs, encompassed on the northern edges by low outcrops of granite hosting quartz-serecite-tourmaline veins.

The remainder of the tenement covers flat colluvial and aeolian sand and soil covered expanses.

4.0 EXPLORATION UNDERTAKEN IN THE PERIOD 6.9.91 TO 7.9.92

4.1 PREVIOUS DATA REVIEW

Poseidon Gold's previous exploration data for the area dates back to the 1930's and is being utilised in an ongoing review covering EL 7484. As such, data is continually revised and integrated both regionally and on a prospect scale.

Most exploration has been undertaken by Australian Development Limited (ADL) in the search for gold deposits in the Nobles Nob environs. Numerous programmes of mapping, percussion drilling, core drilling, geochemical and geophysical surveys have been completed over the region. Small scale mining was carried out by numerous operators on several ironstones and shear zones including New Hope, Comstock, Tunnel, Red Terror, Great Eastern and Three Thirty mines.

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

4.2 AIRBORNE MAGNETIC INTERPRETATION

Exploration Licence 7484 was included in an area covered by a high resolution airborne magnetometer survey flown in 1990 by Austirex Ltd. The survey covers the area from 423400mE and 440900mE, and 7815900mN to 7825600mN. Data from this survey was used to produce contour plans at 1:25000 and 1:10000 scale.

Detailed interpretation of this data by Poseidon Gold Ltd and a consultant geophysicist was aimed at selecting targets for detailed ground magnetics and/or drill testing.

The magnetic interpretation involved grouping magnetic anomalies into three categories based on the form of the magnetic expression, and stratigraphy, structure and previous work. These categories are as follows:

1. Well defined magnetic "high-low" pairs (typical Tennant Creek style ironstone signatures).

2. Magnetic "high" with or without associated "lows".

3. Subtle magnetic and structural expressions.

From this exercise 6 anomalies were recognised all in category three. None of these anomalies coincide with known mines and previous prospects.

Field checking of all the magnetic expressions was undertaken and no obvious surface features of significance coincide with the magnetics. The anomaly locations are presented on Figure 2.

4.3 STRUCTURAL MAPPING

In mid 1992 Poseidon Gold contracted the services of Colleen Elliott, a post-doctoral research fellow, and Merren Jones, an honours graduate to undertake a programme of detailed structural and stratigraphic mapping in the Tennant Creek region.

All mapping was completed in August 1992, (at a scale of 1:12000, utilising aerial photographs and extensive field traverses) and drafted plans and reports are awaited.

The area within EL 7484 was not covered by the detailed mapping. Approximately 90% of the licence comprises flat alluvial cover, and limited structural and stratigraphic mapping were completed in the 1970's by Australian Development Limited (now Poseidon Gold Limited) and Peko Wallsend Limited.

4.4 REGIONAL GRAVITY SURVEY

A regional gravity survey incorporating EL 7484 is currently being undertaken by PosGold in the Tennant Creek region. The survey is in the final stages of data collection and interpretation. The primary objectives of the survey are to determine the distribution of major structures and ore deposits within the Warramunga sediment pile. Preliminary 1:50000 scale Bouguer Gravity contour plans have been produced, but no prospect scale interpretation has been attempted. This will be done once all data has been collected and processed. Interpretations and relevant data covering EL 7484 will be detailed in the next annual report.

4.5 AERIAL PHOTOGRAPHIC INTERPRETATION

In early 1992 PosGold contracted the services of Australian Photogeological Consultants, (Canberra) for purposes of specialist geological interpretation of aerial photography. The work is in it's final stages and will provide a detailed interpretation of the Tennant Creek region at a scale of 1:50000. The photography interpretations are supported by extensive field mapping traverses, and interpretations of aeromagnetics and Thematic Mapper (TM) imagery to provide a stratigraphic and structural framework for the region.

At time of writing the final draft plans and report are awaited and will be included in subsequent reports. Once received, the data will be integrated with the structural mapping and gravity survey to provide a detailed interpretation of all stratigraphic, structural and mineralisation elements in EL 7484.

4.6 GEOMORPHOLOGICAL MAPPING

In early 1992 a regional geomorphological regolith mapping exercise was completed by PosGold in the Tennant Creek region. The survey involved integration of aerial photograph mapping and interpretation with colour TM imagery and field traversing. The objective of the exercise was to establish and map a framework of geomorphological units within which geochemical sampling programmes can be planned with greater effectiveness.

The programme defined 9 units in the region, ranging from prominent outcrop and moderate relief to alluvium in braided wash valleys and active flood plains.

Within EL 7484 the landform study indicates that 80% of the licence area comprises mixed colluvial, alluvial and aeolian cover from 0.5 to 3 metres in thickness. The south-western corner comprises prominent hills with abundant outcrop, as does the eastern portion of the licence. The landform study effectively displays areas on the licence which are not amenable to soil geochemistry, but can be tested with shallow bedrock drilling.

3.0 EXPENDITURE INCURRED DURING THE REPORT PERIOD

Expenditure incurred on EL 7484 during the period 6/9/91 to 5/9/92 totals $7047. A breakdown of this is as follows:

	$
Administration	745
Consultants - Geophysical	308
Consultants - Geotechnical	3,487
Consumables	143
Data Acquisition	936
Laboratory and Assays	-
Lease Expenses	40
Motor Vehicle - Expenses	650
Salaries and Wages	738
	$7,047

4.0 PROPOSED EXPLORATION PROGRAMME - YEAR TWO 6/9/92 TO 5/9/93

The exploration programme for EL 7484 in year two of tenure will follow on progressively from the data assimilation and integration undertaken in year one.

All data including the magnetic survey, gravity, structural mapping, aerial photograph interpretation and regolith mapping will be integrated and interpreted in detail to provide a set of targets considered prospective for economic mineralisation. These targets will then be prioritised, and systematically tested using geological mapping, geochemical soil sampling, shallow geochemical bedrock drilling and ground-based geophysical surveys. Any prospects enhanced by this programme will be tested with RC or diamond drilling if warranted.

The regional gravity survey will be finalised in the next period and will be detailed in the next report for EL 7484, along with results of the geological aerial photograph interpretation.

5.0 PROPOSED EXPENDITURE - YEAR TWO

To complete the programme outlined above, an estimated expenditure of $15,000 is envisaged. This will ensure the continued economic potential of the area, and assumes that several potentially economic targets will be generated to be tested by RC or diamond drilling in year three of tenure.

A breakdown of this is detailed below:

	$
Administration	1,500
Consultants	1,000
Consumables	200
Drilling - Vacuum	4,500
Laboratory and Assays	3,500
Motor Vehicles	300
Salaries and Wages	4,000
	$15,000

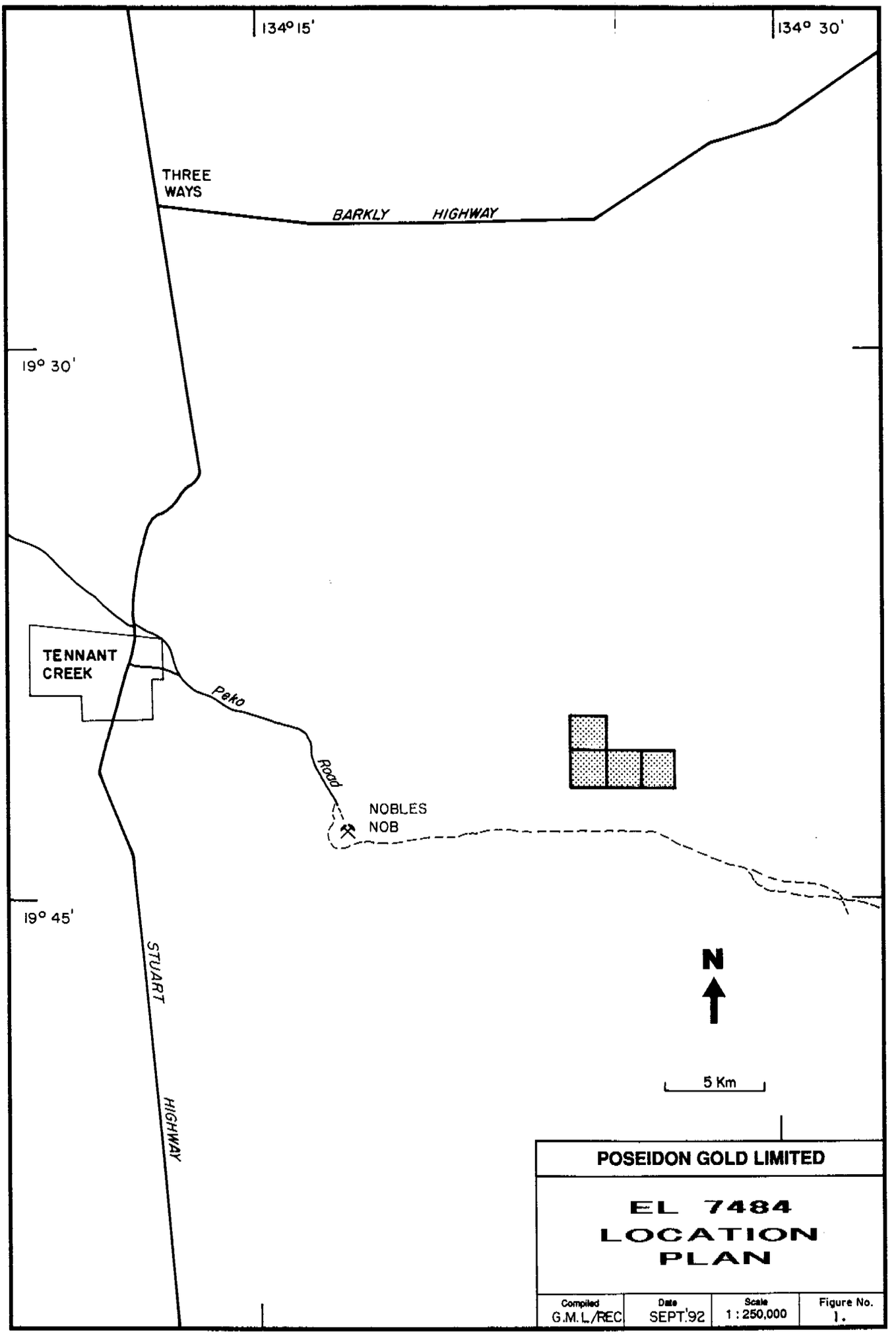
6.0 KEYWORDS

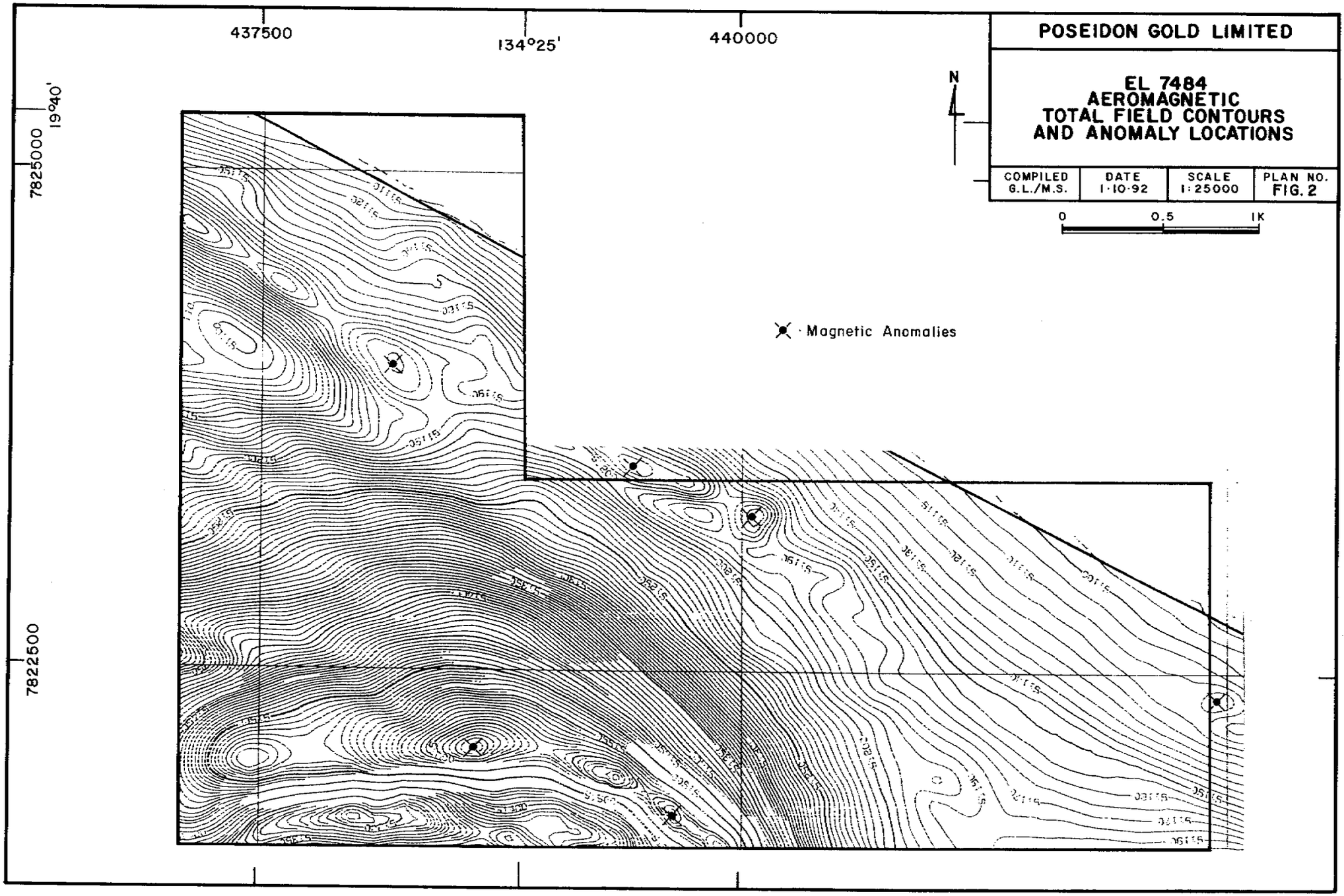
EL 7484, Magnetics, Gravity, Geomorphology, Aerial Photography, ironstone, gold, copper, bismuth.

7.0 REFERENCES

McMillan, N J, and Debnam, A H, 1961: Geochemical Prospecting for Copper in the Tennant Creek Goldfield, Northern Territory. Department of National Development, Bureau of Mineral Resources, Geology and Geophysics.

Skirrow, R, 1991: Structural Mapping in the Orlando-Gecko and Red Terror - Mt Rugged Areas, Tennant Creek District, NT. Unpublished internal progress report.


134° 15'
134° 30'
THREE WAYS
BARKLY HIGHWAY
19° 30'
TENNANT CREEK
Peko Road
NOBLES NOB
19° 45'
STUART HIGHWAY
N
5 Km
POSEIDON GOLD LIMITED
EL 7484 LOCATION PLAN
Compiled G.M.L./REC
Date SEPT.'92
Scale 1 : 250,000
Figure No. 1.



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EL 7484
AEROMAGNETIC
TOTAL FIELD CONTOURS
AND ANOMALY LOCATIONS

COMPILED	DATE	SCALE	PLAN NO.
G.L./M.S.	1-10-92	1:25000	FIG. 2