FALCON MINERALS LIMTED

ACN 009-256-535

ANNUAL TECHNICAL REPORT

EXPLORATION LICENCE 4350

"Mt Margaret"

22nd October 2009 to 21st October 2010

Volume 1 of 1

HELD BY: FALCON MINERALS LIMITED
MANAGER and OPERATOR: FALCON MINERALS LIMITED

Author: Graeme Cameron
Submitted By: Richard Diermajer
December 2010

Distribution:

- Primary Industries and Resources SA
- Falcon Minerals Limited

MAP SHEETS:	1:250,000	Warrina (SH53-03)
	1:100,000	Umbum (6141)
		Anna Creek (6140)
		Boorthana (6040)

GEOGRAPHIC COORDINATES:

Mt Margaret Area, approximately 150 km east of Coober Pedy, bounded as follows:

Commencing at a point being the intersection of latitude 28^{0}19’55”S and longitude 136^{0}00’05”E, thence east to longitude 136^{0}10’05”E, south to latitude 28^{0}34’55”S, west to longitude 136^{0}08’05”E, south to latitude 28^{0}37’55”S, west to longitude 136^{0}04’05”E, north to latitude 28^{0}34’55”S, west to longitude 135^{0}59’05”E, north to latitude 28^{0}31’55”S, east to longitude 136^{0}00’05”E and north to the point of commencement, all the within latitudes and longitudes being geodetic and expressed in terms of the Geodetic Datum of Australia 1994.

COMMODITY: Copper and Gold

KEY WORDS:
Mt Margaret, Warrina, Umbum, Spring Hill, Peake-Denison Inlier, Gawler Craton

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SUMMARY

Exploration activities carried out within the “Mt Margaret” Exploration Licence (EL) 4350 during the reporting period involved the following:

- Aboriginal Heritage clearance negotiations.
- Review and validation of previous exploration data.
- Geophysical filtering and regional targeting.
- 3D modelling of detailed magnetic and gravity data.
- Design of follow-up drilling programmes.
- Report preparation.
- Administration.

Exploration statistics are summarised below.

TABLE 1. EXPLORATION STATISTICS ‘MT MARGARET EL 4350		
Exploration Activity	**EL 4350**	**TOTALS**
Aboriginal heritage consultants	Part EL	25 sq km
Exploration data review	Whole EL	498 sq km
Geophysical processing and target generation	Whole EL	498 sq km
3D modelling of detailed magnetic and gravity data	Part EL	178 sq km
Work planning	Whole EL	498 sq km
Report preparation	Whole EL	498 sq km
Administration	Whole EL	498 sq km

1. INTRODUCTION

This report describes the exploration activities completed by Falcon Minerals Ltd. (Falcon) over the "Mt Margaret" Exploration Licence 4350 for the period 22nd October 2009 to 21st October 2010. EL4350 encompasses 498.2 km^2 and was granted on the 22nd October 2009.

TABLE 2. TENEMENT SUMMARY				
Tenement Number	Initial Date Subsequent Application	Date of last Grant	Expenditure Commitment	Area Sq km
EL4350	**22 October 2009**	**22 October 2009**	**$80,000**	**498.2**

The Mt Margaret Project is located on the western margin of Lake Eyre in northern South Australia, midway between the townships of Oodnadatta and William creek on the Warrina SH53-03 1;250,000 map sheet (Figure 1). Access is via station tracks north from William creek and east from the Peake homestead via the Oodnadatta Track. The tenement area is the subject of a Native Title claim by the Arabunna People (Claim SC98/002).

The Mt Margaret Project incorporates parts of the Proterozoic Peake and Denison Inliers that are considered prospective for large iron oxide-copper-gold (IOCG) style deposits.

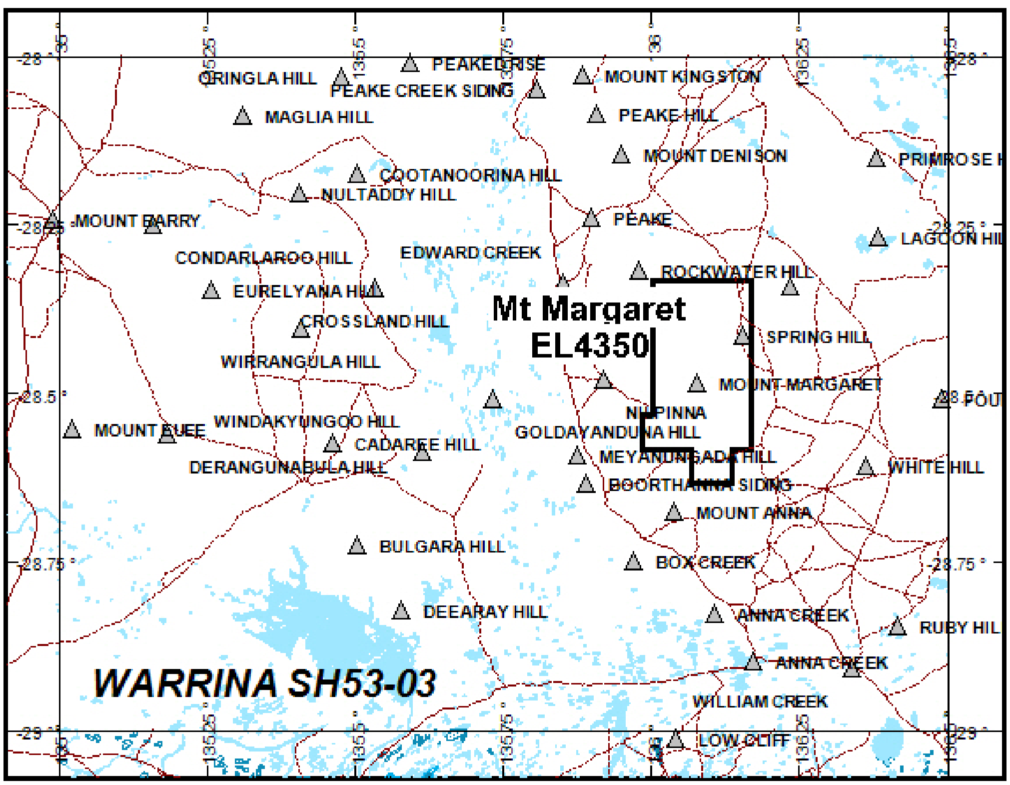

Figure 1 - Location of Mt Margaret tenement EL 4350 within the eastern portion of the Warrina 1:250,000 map sheet.

2. GEOLOGY AND MINERALISATION (derived from Ambrose, 1981)

The Mt Margaret project area is located on the rifted northeast margin of the Gawler Craton within the northwest extension of the Adelaide Orogenic Belt, midway between the Musgrave Block and Curnamona Craton.

The project area incorporates parts of the Proterozoic Peake and Denison Inliers comprised of Palaeoproterozoic metamorphosed volcano-sedimentary rocks surrounded by Neoproterozoic brecciated lithologies (Figure 2). Palaeoproterozoic (1800-1780 Ma) basement lithologies are exposed within the inliers as large enclaves surrounded by Neoproterozoic “diapiric” breccias and further to the east as isolated exposures at Spring Hill, Mt Charles, Lagoon Hill and Milne Springs. The basement rocks are dominated by interlayered metabasalt and quartzite with subordinate porphyritic rhyolite, granite, phyllite, schist and calc-silicate.

A second volcano-sedimentary cycle is recognised at 1750-1740 Ma equated with the Wallaroo Group of the Northern Yorke Peninsula. These rocks comprise felsic metavolcanics, quartz-feldspar schist, gneiss, calc-silicate and quartzite. Anorogenic felsic plutonism around 1530 Ma is evident within the inliers but is restricted to an occurrence of massive to coarse-grained granite and aplite dykes at Lagoon Hill. The age of these intrusives is important and provides evidence for potential fluid/metal sources with a spatial and temporal relationship to known IOCG mineralising events.

Drilling in the vicinity of Spring Hill has revealed that the rock sequences have been subjected to high temperature Na-Ca-Fe alteration, overprinted by retrograde actinolite-chlorite-epidote assemblages and partial oxidation of magnetite by haematite. Later stage and overprinting quartz-carbonate-biotite-sulphide (K-alteration) formed in shears and veins has been subjected to weak supergene upgrade.

The inliers also contain a large number of historic small pits and shafts that were developed on copper oxide mineralisation hosted by structurally controlled quartz-haematite veins and haematite breccia pipes. The rock types and their metamorphic and metasomatic alteration paragenesis draws similarities to Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier in northwest Queensland.

Mesozoic sediment cover of the Eromanga Basin largely conceals the Proterozoic metamorphic basement to the east and west of the inliers. Tertiary gibber lag, gypsiferous clays, alluvial gravels, silts/clays, aeolian dune sands, lacustrine and mound spring deposits overlie the Mesozoic sediments and dominate the surficial cover away from the inliers.

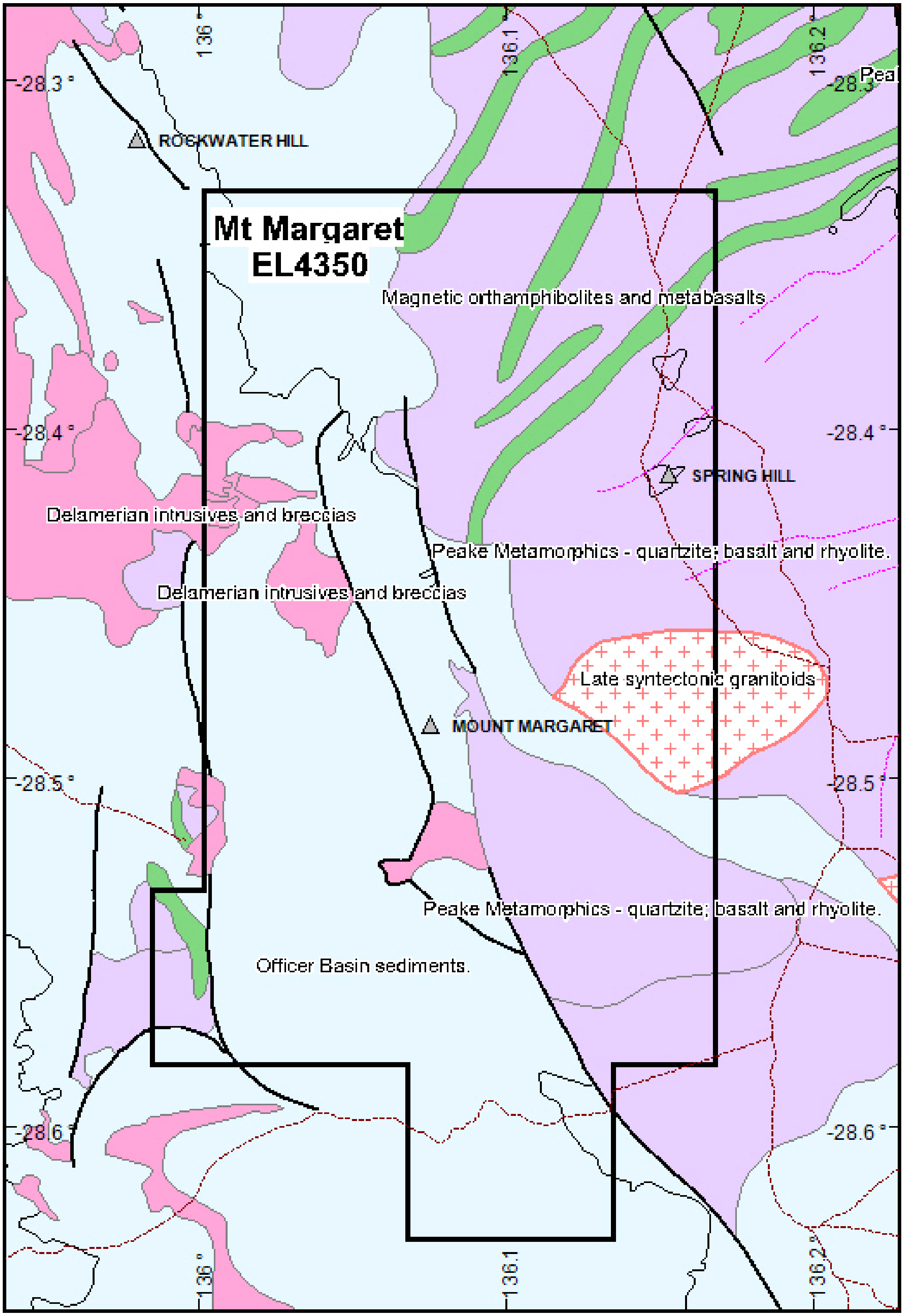

Figure 2 - Mt Margaret EL 4350 interpreted geology.

3. HISTORY AND PREVIOUS EXPLORATION

Whilst mining in the Peake and Denison region has been limited to relatively small scale copper exploitation prior to 1920, exploration has been active since the 1960s by a number of companies for a variety of commodities. These have included North Broken Hill (copper); Uranerz, Chevron (uranium); BHP (copper-gold); WMC, Carpentaria (gold) and Stockdale, with various joint venture partners (diamonds).

In more recent times, Pancontinental Mining Limited, Renison Goldfields and Rio Tinto Exploration in joint venture with BHP Minerals and Red Metal/Phelps Dodge Australasia have explored the Mt Margaret area for copper, gold or uranium.

A summary of previous copper-gold exploration efforts on EL4350 (from 1993-2009) is shown in Figure 3 and described below:

Pancontinental Mining (1993-1995)

- Geochronology by SHRIMP U/Pb dating at the Research School of Earth Sciences, ANU.
- Landsat Mapper interpretation.
- Aeromagnetic interpretation.
- Aerial photography and geological mapping.
- Stream sediment and rockchip sampling and petrography.

This work identified an extensive, highly prospective magnetic complex east of Mt Margaret showing evidence of magnetic metasediments, granitoids and related skarn development.

Renison Goldfields Exploration (1995-1998)

- RGC conducted diamond drilling in the Spring Hill area to target various styles of magnetic anomaly. 5 vertical holes were drilled for a total of 802m. Drilling intersected basement lithologies including granite, felsic volcanics, amphibolites and minor haematite “ironstones”. Alteration consisted of varying degrees of magnetite, haematite replacing feldspar and silica alteration. No significant assay results were recorded.
- A detailed magnetic and radiometric survey of the Spring Hill area was flown in April 1996.
- Recovery and re-processing of CRAE gravity data over Spring Hill.

Rio Tinto Exploration/BHP Minerals JV(2000-2003)

Work completed by the Rio Tinto-BHP joint venture between 2000 and 2003 focussed on identifying large IOCG deposits in areas under shallow cover. Work included:

- Data compilation and interpretation of IP, magnetic and gravity data.
- Grid-based dipole-dipole IP/resistivity survey. A well-defined, moderate amplitude chargeability response was identified on one line in the Spring Hill area.

Phelps Dodge Australasia/Rio Tinto Exploration/BHP Billiton JV(2003-2009)

- In late 2003, Phelps Dodge through their operator Red Metal Limited, reprocessed aeromagnetic and gravity data and produced a magnetic/structural interpretation of the project area.
- Detailed gravity surveys totalling1539 stations on were completed by Red Metal over EL4350 between 2004 and 2006. The survey was conducted on 1000m x 200m and 500m x 100m grids and outlined a major gravity anomaly up to 2milligal at Spring Hill.
- Between 2004 and 2007, five (5) vertical mud rotary/diamond drill holes were drilled for a total of 994 m on EL4350 to test gravity targets identified by the detailed surveys. Drilling intersected dense calc-silicate alteration, magnetite ironstones and/or magnetite overprinted by haematite. No significant assays were achieved.

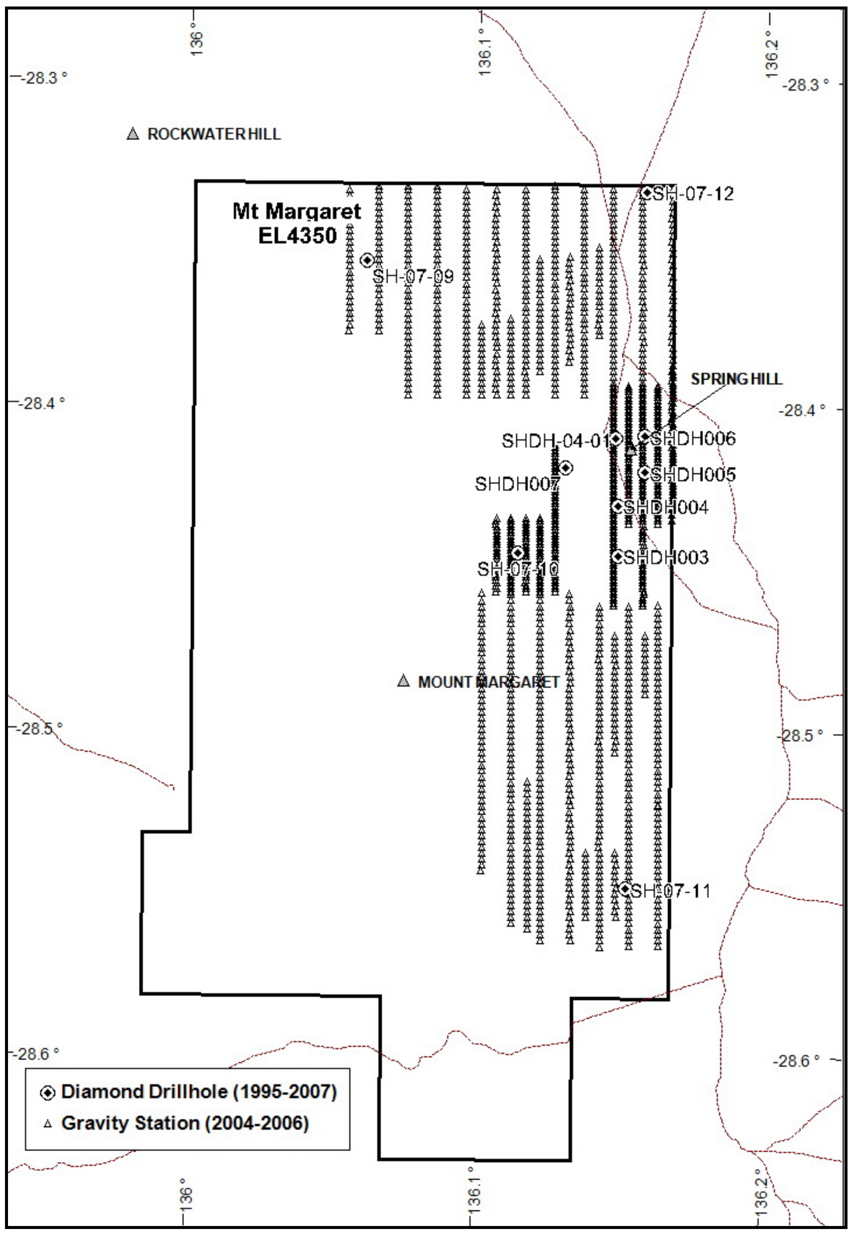

Figure 3- Mt Margaret EL4350 historical exploration activities.

4. EXPLORATION RATIONALE

The Mt Margaret Project is located in the prospective northern Gawler Craton region of South Australia (Figure 4). The primary target within the project is Iron Oxide-Copper-Gold (IOCG) style mineralisation with notable economic mineralisation currently being mined from the (relatively) nearby Olympic Dam, Prominent Hill and Cairn Hill deposits.

Falcon Minerals Limited applied for tenement EL4350 on the grounds that the Peake-Denison region also has good potential to host significant IOCG mineralisation. An evaluation of the historic exploratory drilling results from the surrounding area indicates that the basement rocks have been subjected to high temperature magnetite-albite-calc silicate alteration, overprinted by retrograde actinolite-chlorite-epidote-chalcopyrite assemblages and partial oxidation of magnetite by haematite. These observations draw similarities to mineralised Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier in northwest Queensland.

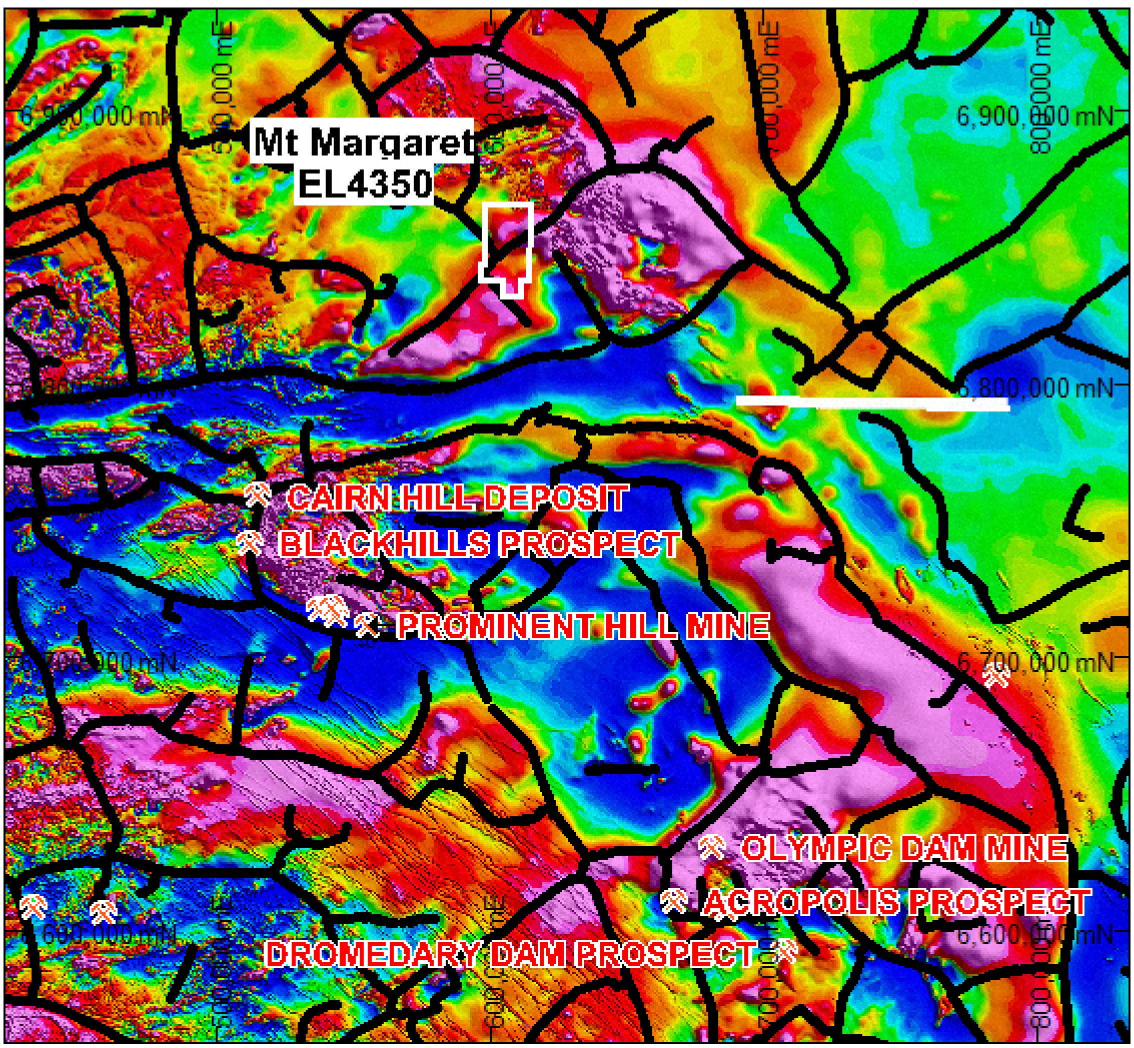

Figure 4 - Location of EL4350 and major copper-gold occurrences in the northern Gawler Craton on aeromagnetic image.

5. WORK COMPLETED IN THE CURRENT REPORTING PERIOD

5.1 Aboriginal Heritage Clearance

During the reporting period, Falcon entered into consultations with the Arabunna People regarding re-commencement of on-ground gravity surveying in 2010. This work was not completed as detailed historical gravity data was compiled and found to be a sufficient quality to identify drilling targets without acquiring further gravity data.

Further consultations with the Arabunna People will be sought with respect to clearance of proposed drilling programs to test geophysical targets in 2011.

5.2 Exploration Data Review

Following the grant of EL4350 in October 2009, all available historic data was downloaded from the South Australia Resources Information Geoserver (SARIG). It became apparent that a significant quantity of exploration data was not immediately available on SARIG and a request was lodged with PIRSA to acquire the outstanding annual reports and associated data. PIRSA acknowledged that the annual reports for the period 1993 to 2009 had not been completely scanned and would need to be digitally captured and sent to Falcon.

On 10th September 2010 Falcon received a large data package from PIRSA containing all relevant exploration reports for the area now covered by EL4350. These data included PIRSA reports ENV8810, ENV8953 and ENV09741. (see 7.0 Bibliography)

During the remainder of the reporting period, Falcon completed a comprehensive assessment of all available data including extensive compilation of detailed gravity and magnetic data collected between 2004 and 2006. At the same time, Falcon completed processing, modeling and interpretation of the regional geophysical data and identified a number of IOCG target areas within the tenement (see below).

5.3 Geophysical Processing and Target Generation

Fully integrated ore system targeting (i.e. Source-Pathway-Focus-Trap) was conducted by Falcon in 2009 and showed that potential exists in the Peake-Denison region for a major Iron Oxide-Copper-Gold (IOCG) style deposit.

The Falcon targeting approach uses sophisticated geophysical processing to generate input layers that represent different components of an IOCG ore system model. Magnetic and gravity data have been filtered to highlight major crustal structures (gradients) associated with coincident radically-symmetric magnetic and dense bodies that may reflect iron oxide-sulphide assemblages. A final probabilistic gridding algorithm combines the layers and defines those target areas that are most likely to host all of the components of the mineralisation model and therefore, provide the best chance of exploration success.

Five components make up the IOCG exploration model:

1) **Source –** Large oxidised intrusive complexes are thought to be a possible source for the metals that are contained in IOCG deposits. The gravity data was processed to extract dense bodies possibly related to high-level iron oxide alteration zones associated with mineralising granitic bodies

2) **Pathway –** Deep structures that could act as a pathway for magmas or fluids from deep in the crust. The deep structure was extracted in the form of major gradients (edges) from the gravity and magnetic data.

3) **Structural focus –** Intersections of intermediate-scale structure indicating high structural complexity in the area. The structural intersections were extracted from the high frequency Reduced-to-the-Pole (RTP) magnetic data.

4) **Fluid focus –** Local-scale indication of focussed magnetite-albite-calc silicate alteration. Radial magnetic anomalies were extracted from the RTP magnetic data.

5) **Trap –** Detailed-scale indication of iron oxide-sulphide-metal enrichment. The trap layer was extracted from both the gravity and RTP magnetic data.

Falcon's 2009 regional targeting work clearly indicates that the Mt Margaret Project area satisfies all components of the IOCG exploration model and several discrete targets were identified for further detailed examination (Figure 5).

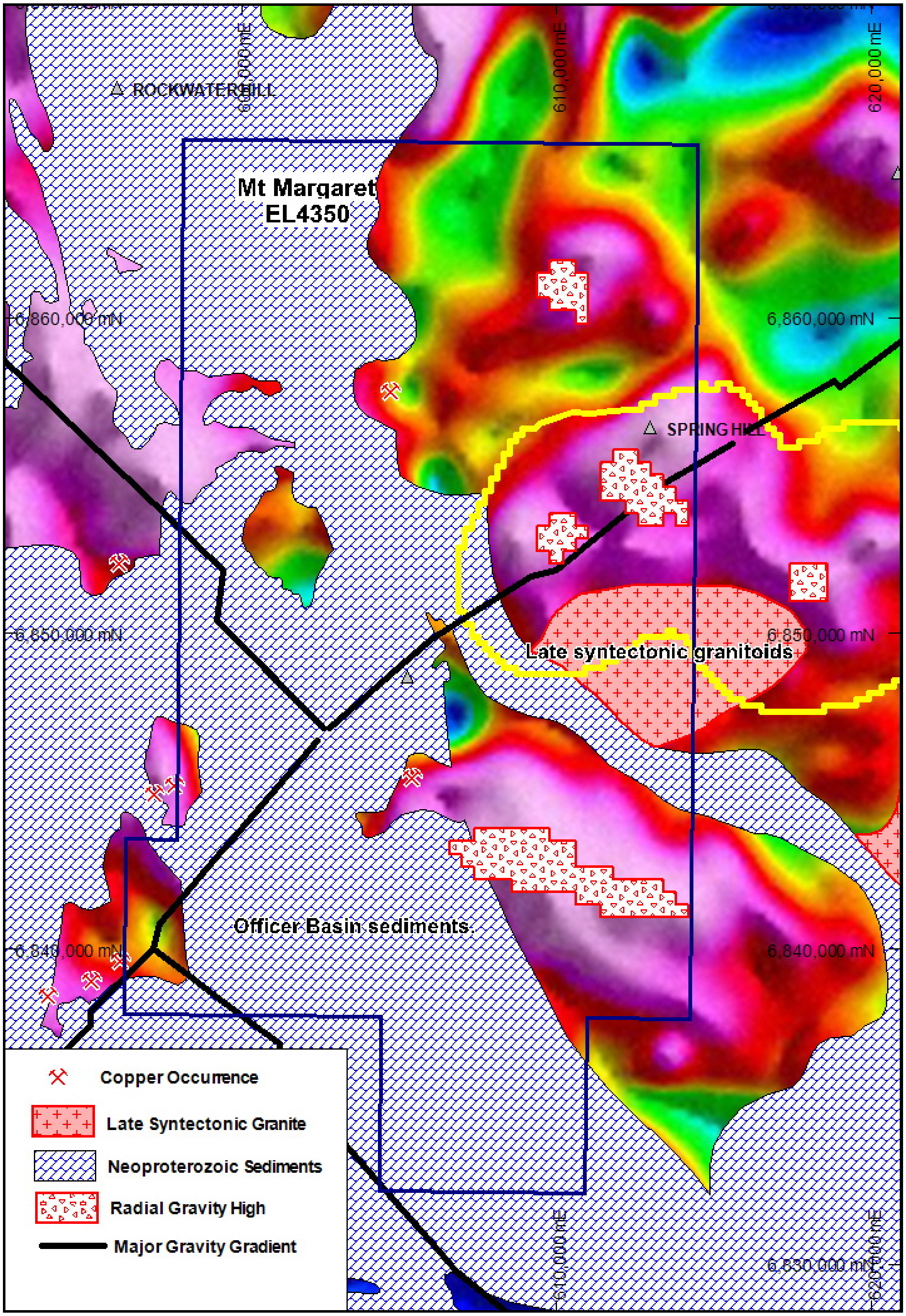

Figure 5 - Peake-Denison IOCG targets (yellow) with selected geological features on a residual gravity image.

5.4 Detailed 3D Geophysical Modelling

During the year, Falcon Minerals completed further processing of the compiled detailed gravity and magnetic data over the Mt Margaret project area to determine the amplitude and significance of the regional targets and to better define prospective 3D targets for on-ground follow-up in 2011.

3D modelling of the detailed gravity data utilised the latest University of British Columbia (UBC) smooth inversion software, and indicated that the geophysical expressions of the Spring Hill target/s are consistent with known large iron-oxide-copper-gold alteration systems such as the Prominent Hill deposit and the Osborne copper-gold deposit in the Mt Isa Inlier.

The Spring Hill target comprises at least two steeply dipping, elongate to pipe-like bodies with densities ranging from 3.1 to 3.3 g/cc and coincident offset magnetic anomalies with susceptibilities up to 2.0 SI units (Figure 6). The main gravity anomalies have lower magnetic signatures that may be due to the dominance of haematite over magnetite alteration.

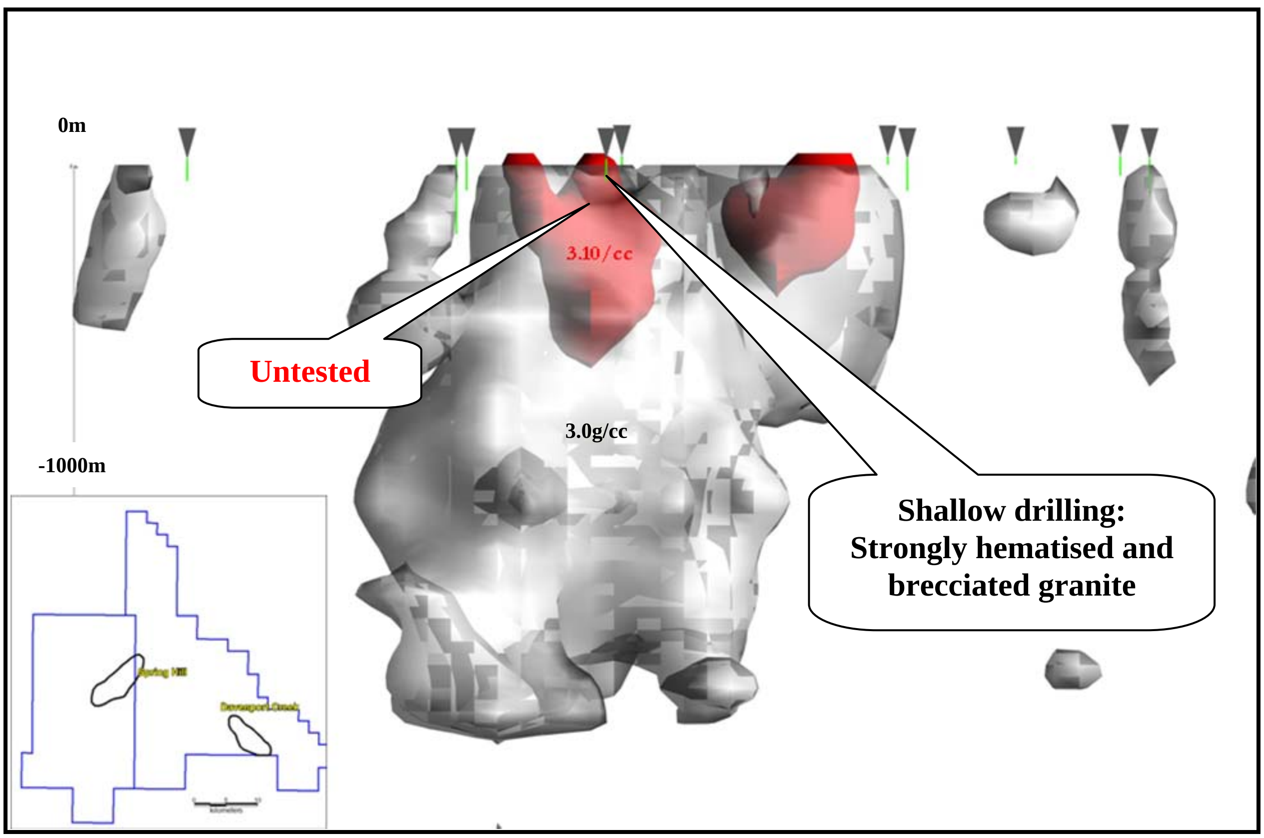

Figure 6 – 3D gravity inversion model for Spring Hill Prospect (looking to the north) with historic drillhole positions.

The gravity model for the north-eastern body indicates a diameter of about 1.3km and a depth-to-source of about 160m below the surface. The south-western target is about 1km in diameter and is at a depth of about 385m. Neither of these anomalies have been conclusively tested by previous vertical drilling in the area.

5.5 Proposed Work Programmes for 2011

The Peake and Denison Inliers are considered to be highly prospective for the discovery of significant IOCG deposits. The geophysical results to date, combined with proven copper mineralisation in limited drilling have proved to be sufficiently encouraging to progress towards an initial drilling program on EL4350 in early 2011.

It is proposed to complete the following work programme during the next 12 months:

- Aboriginal Heritage clearance consultations.
- Geological mapping and rock chip sampling.
- Diamond drilling; at least two angled mud rotary/diamond drillholes are proposed for approximately 800m to test two major gravity targets at the Spring Hill Prospect.
- Geochemical and lithochemical analysis of diamong drill core.
- Hyper-spectral analysis of diamond drill core.
- Assessment of results.
- Report preparation.

6. EXPENDITURE STATEMENT

Expenditure during the current year of tenure for ‘Mt Margaret’ EL4350 is presented below.

TABLE 4.
EXPLORATION EXPENDITURE EL4350

Exploration Activity	Period ending 21st October 2010
Aboriginal heritage clearance negotiations	$4,874
Exploration data review	$3,744
Regional geophysical processing and target generation	$9,699
Detailed 3D geophysical modelling	$5,167
Work planning	$3,744
Report preparation	$1,692
Administration/Tenements	$5,976
OVERHEADS	**$5,229**
Totals	**$40,125**

Total exploration expenditure for the 12 month period from 22nd October 2009 to 21st October 2010 was $40,125.

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Volume 1 of 1

Tenement Holder: Falcon Minerals Limited
Tenement Operator: Falcon Minerals Limited
Author: Ron Smit
Date: December 2011

SPATIAL DATUM:

GDA94

MGA Zone 53

MAP SHEETS:

1:250,000	Warrina (SH53-03)
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LOCATION:

Approximately 150 km east of Coober Pedy

KEY WORDS:

Mt Margaret, Warrina, Umbum, Spring Hill, Peake-Denison Inlier, Gawler Craton, IOCG, copper, gold

TARGET:

IOCG style mineralisation

SUMMARY

EL4350 is located 130 km southeast of Oodnadatta, South Australia. Falcon is exploring the tenement for large iron-oxide copper-gold (IOCG) deposits within the Proterozoic metamorphic basement.

Mineral exploration undertaken during the reporting period involved the following:

- Review, digital capture and validation of historical exploration data.
- Further geophysical filtering and regional targeting for IOCG style mineralisation.
- Further 3D inversion modelling of detailed magnetic and gravity data.
- Target selection for proposed diamond drill testing.

The outcome from this work indicates that the Spring Creek Prospect has potential for IOCG style mineralisation. A small drill program consisting of two deep diamond holes is being planned.

Activity summary for EL4350, Mt Margaret

Activity	**Prospect**	**Results**
Historical data review	Regional	
Geophysical processing and target generation	Regional	
3D modelling of detailed magnetic and gravity data	Spring Hill	Defined drill target

CONTENTS

TABLES

FIGURES

1. INTRODUCTION

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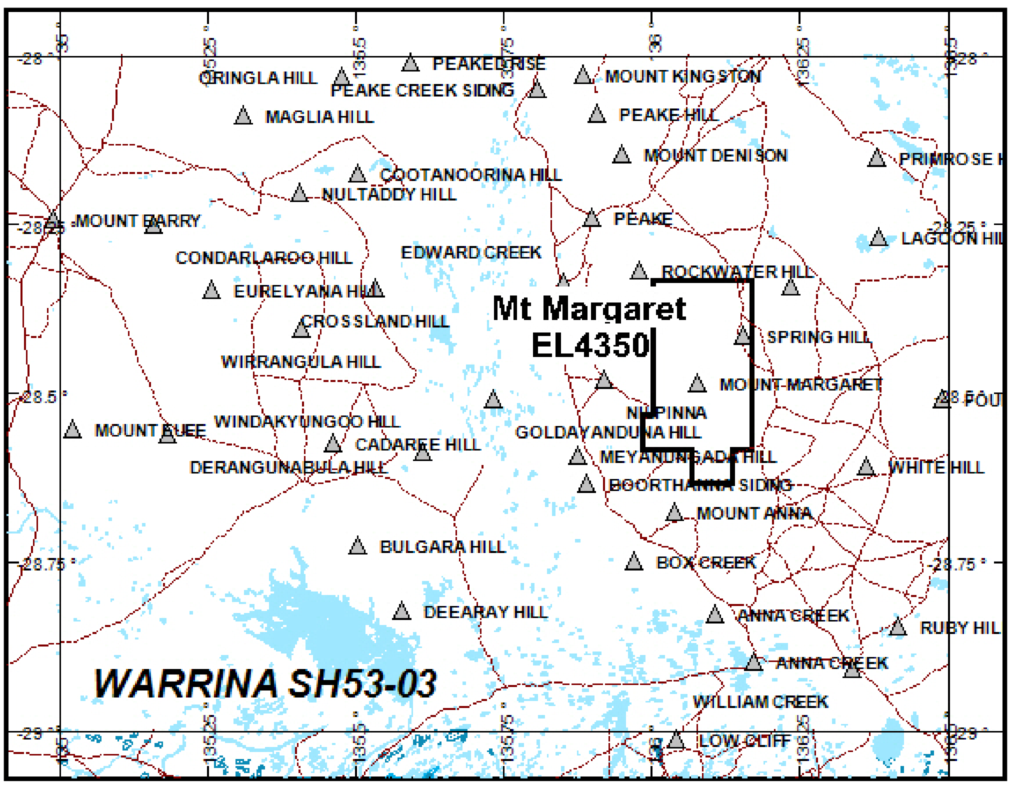

Figure 1 - Location of Mt Margaret EL 4350

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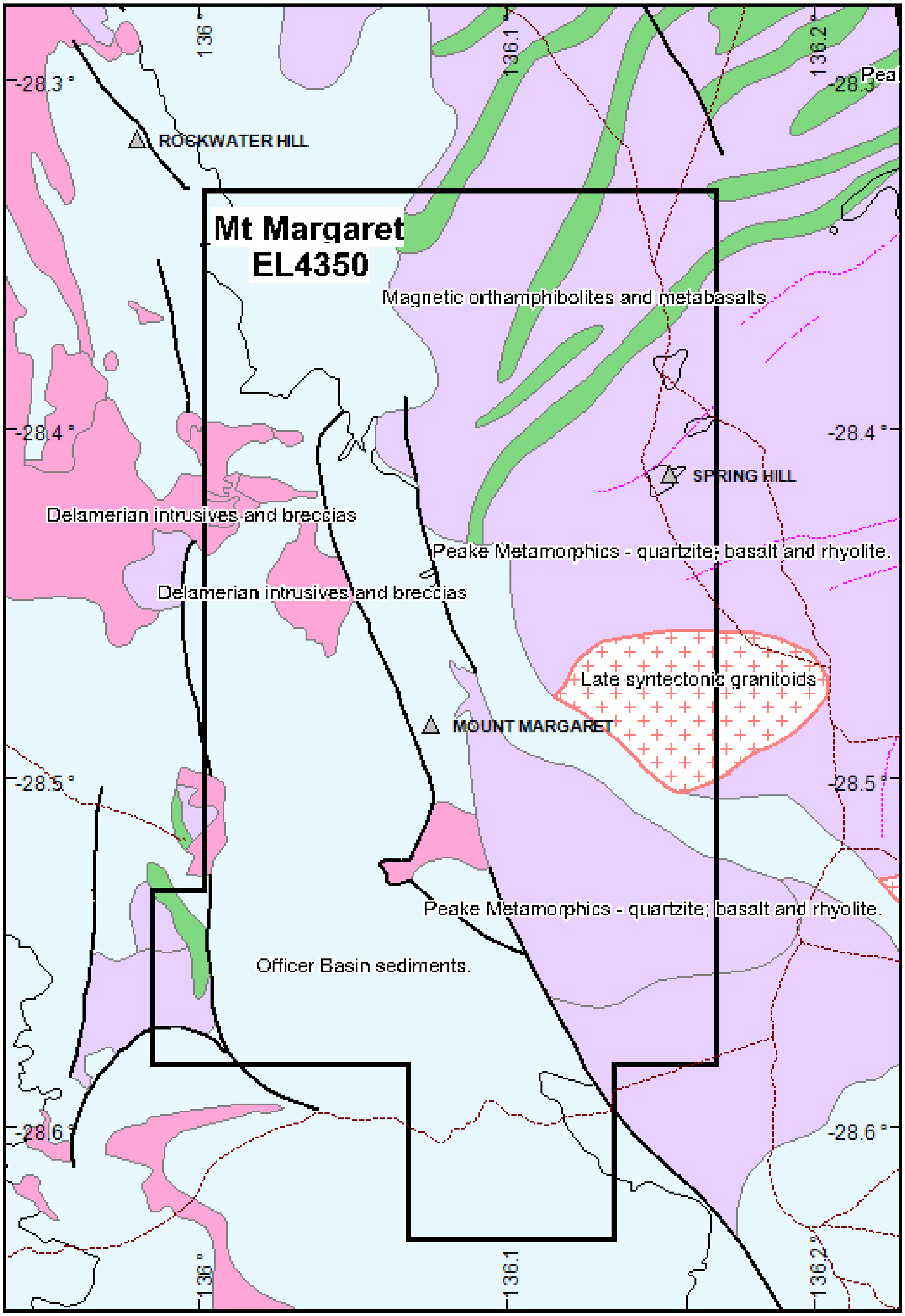

Figure 2 - Mt Margaret EL 4350 interpreted geology.

3. HISTORY AND PREVIOUS EXPLORATION

A summary of historical exploration was presented in the First Annual Report for the tenement and is not duplicated here. A summary of previous copper-gold exploration efforts on EL4350 (from 1993-2009) is shown in Figure 3.

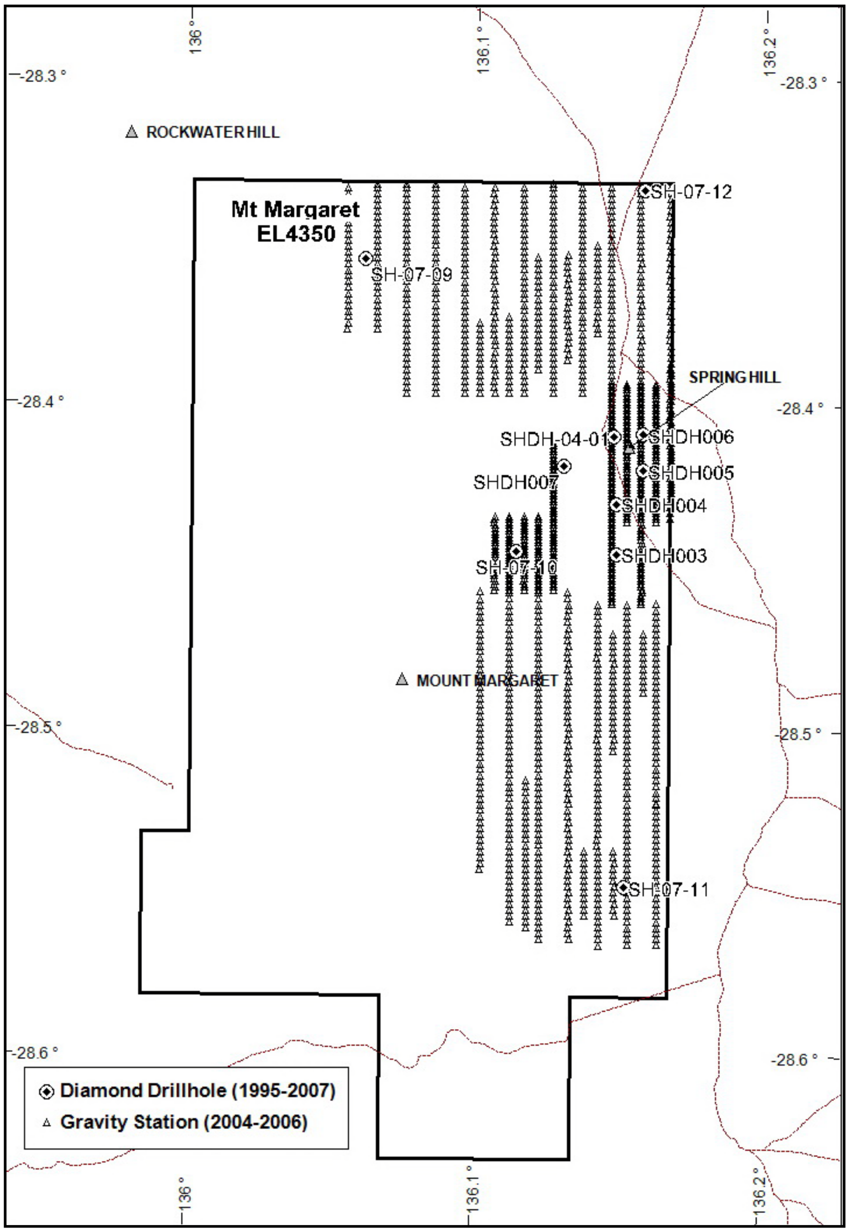

Figure 3- Mt Margaret EL4350 historical exploration activities

4. EXPLORATION RATIONALE

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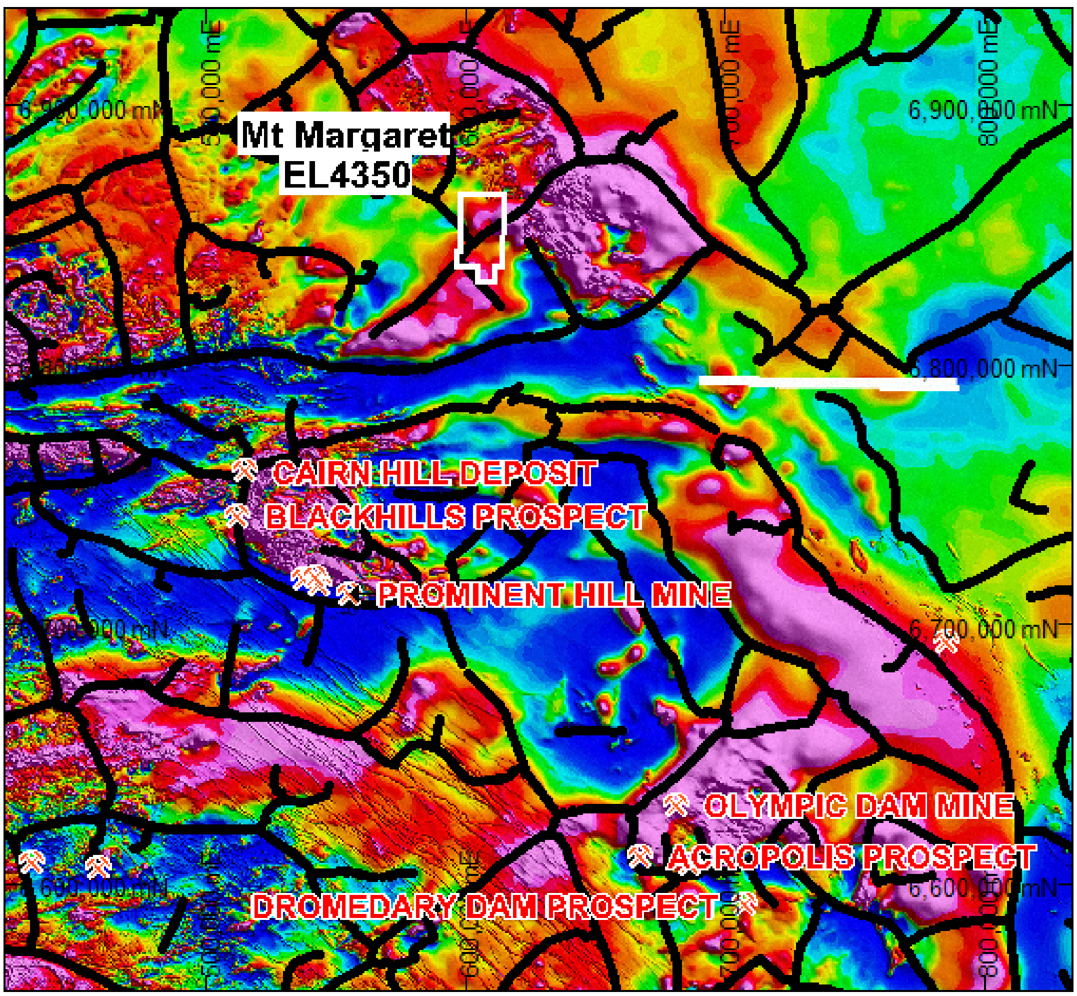

Figure 4 - Major copper-gold occurrences in the northern Gawler Craton on aeromagnetic image.

5. WORK COMPLETED IN THE CURRENT REPORTING PERIOD

5.1 Geophysical Processing and Target Generation

The fully integrated ore system targeting (i.e. Source-Pathway-Focus-Trap) conducted by Falcon in 2009/2010 was refined. The targeting approach uses sophisticated geophysical processing to generate input layers that represent different components of an IOCG ore system model. The data processing and the model criteria are detailed in the first annual report.

Magnetic and gravity data have been filtered to highlight major crustal structures (gradients) associated with coincident radically-symmetric magnetic and dense bodies that may reflect iron oxide-sulphide assemblages (Figure 5). A final probabilistic gridding algorithm combines the layers and defines those target areas that are most likely to host all of the components of the mineralisation model and therefore, provide the best chance of exploration success.

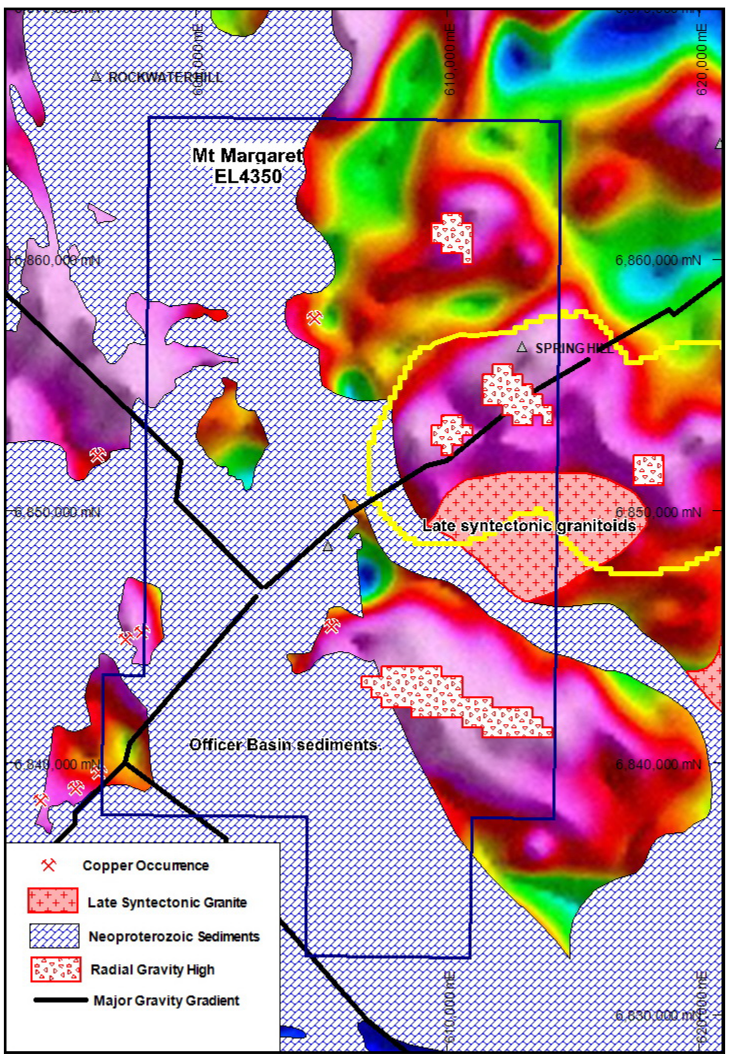

Figure 5 - Peake-Denison IOCG targets (yellow) with selected geological features on residual gravity

5.2 Detailed 3D Geophysical Modelling

During the year, slight refinements were made to the 3D geophysical model. The Spring Hill target comprises at least two steeply dipping, elongate to pipe-like bodies with densities ranging from 3.1 to 3.3 g/cc and coincident offset magnetic anomalies with susceptibilities up to 2.0 SI units (Figure 6). The main gravity anomalies have lower magnetic signatures that may be due to the dominance of haematite over magnetite alteration.

The gravity model for the north-eastern body indicates a diameter of about 1.3km and a depth-to-source of about 160m below the surface. The south-western target is about 1km in diameter and is at a depth of about 385m. Neither of these anomalies have been conclusively tested by previous vertical drilling in the area.

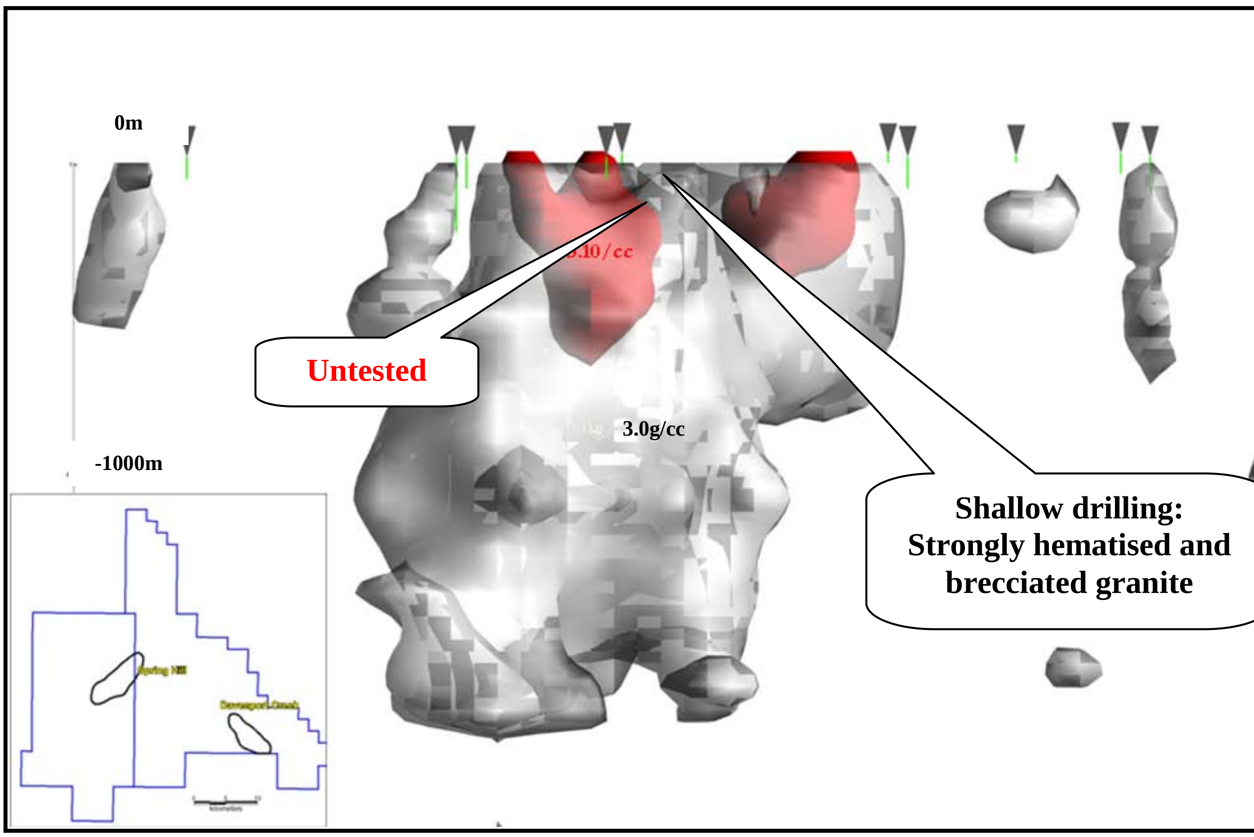

Figure 6 – 3D gravity inversion model for Spring Hill Prospect (looking to the north) with historic drillhole

5.3 Proposed Work Programmes for 2012

The Peake and Denison Inliers are considered to be highly prospective for the discovery of significant IOCG deposits. The geophysical results to date, combined with proven copper mineralisation in limited drilling have proved to be sufficiently encouraging to progress towards an initial drilling program on EL4350 in 2012.

It is proposed to complete the following work programme during the next 12 months:

- Land access negotiations;
- Two diamond drill holes (800m) to test major gravity targets at the Spring Hill Prospect;

6. EXPENDITURE STATEMENT

Expenditure during the current year of tenure for Mt Margaret EL4350 is presented below.

TABLE 1 EXPLORATION EXPENDITURE EL4350	
Exploration Activity	**Period ending 21st October 2010**
Aboriginal heritage clearance negotiations	$750
Regional geophysical processing and target generation	$4,758
Work planning	$4,999
Administration/Tenements	$6,048
OVERHEADS	$2,482
Totals	**$19,037**

Total exploration expenditure for the 12 month period from 22nd October 2010 to 21st October 2011 was $19,037.

FALCON MINERALS LIMTED

ACN 009-256-535

ANNUAL TECHNICAL REPORT

EXPLORATION LICENCE 4350

Mt Margaret

22nd October 2011 to 21st October 2012

Volume 1 of 1

Tenement Holder: Falcon Minerals Limited
Tenement Operator: Falcon Minerals Limited
Author: Ron Smit
Date: November 2012

SPATIAL DATUM:

GDA94

MGA Zone 53

MAP SHEETS:

1:250,000	Warrina (SH53-03)
1:100,000	Umbum (6141), Anna Creek (6140), Boorthana (6040)

LOCATION:

Approximately 150 km east of Coober Pedy

KEY WORDS:

Mt Margaret, Warrina, Umbum, Spring Hill, Peake-Denison Inlier, Gawler Craton, IOCG, copper, gold

TARGET:

IOCG style mineralisation

SUMMARY

EL4350 is located 130 km southeast of Oodnadatta, South Australia. Falcon is exploring the tenement for large iron-oxide copper-gold (IOCG) deposits within the Proterozoic metamorphic basement.

There were no field exploration activities completed during the period.

The previously identified gravity / magnetic targets were reviewed and it was concluded that these are still valid drill targets. However, due to the current difficult market conditions for raising capital the Company has been required to curtail its exploration activities and rationalize its portfolio of projects. The Company has decided to divest EL 4350 (and the adjoining EL 4536). Falcon is currently in negotiations with a prospective joint venture partner.

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FIGURES

1. INTRODUCTION

EL4350, Mt Margaret is located on the western margin of Lake Eyre in northern South Australia, midway between the townships of Oodnadatta and William Creek (Figure 1). Access is via station tracks north from William Creek and east from the Peake homestead via the Oodnadatta Track. The tenement area is the subject of a Native Title claim by the Arabunna People (Claim SC98/002).

The tenement incorporates parts of the Proterozoic Peake and Denison Inliers that are considered prospective for large iron oxide-copper-gold (IOCG) style deposits.

This Annual Report describes the exploration activities completed by Falcon Minerals Limited (**Falcon**) over the EL4350, Mt Margaret for the period 22 October 2011 to 21 October 2012. There were no field activities conducted during this period.

EL4350 was granted for one year on the 22 October 2009 over an area of 497 km^2. A renewal was granted for two years on the 22 October 2010 over a reduced area of 307 km^2.

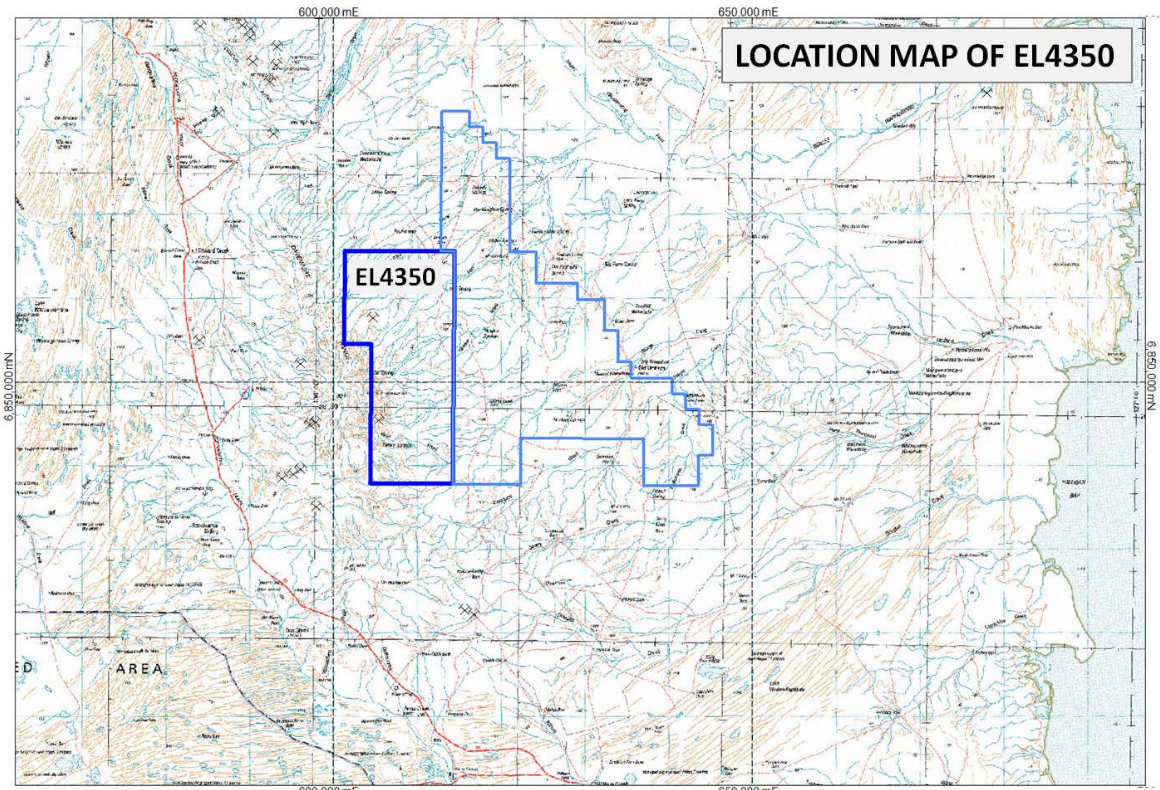

Figure 1 - Location of EL4350

2. GEOLOGY AND MINERALISATION

The Mt Margaret project area is located on the rifted northeast margin of the Gawler Craton within the northwest extension of the Adelaide Orogenic Belt, midway between the Musgrave Block and Curnamona Craton.

The project area incorporates parts of the Proterozoic Peake and Denison Inliers comprised of Palaeoproterozoic metamorphosed volcano-sedimentary rocks surrounded by Neoproterozoic brecciated lithologies (Figure 2). Palaeoproterozoic (1800-1780 Ma) basement lithologies are exposed within the inliers as large enclaves surrounded by Neoproterozoic "diapiric" breccias and further to the east as isolated exposures at Spring Hill, Mt Charles, Lagoon Hill and Milne Springs. The basement rocks are dominated by interlayered metabasalt and quartzite with subordinate porphyritic rhyolite, granite, phyllite, schist and calc-silicate.

A second volcano-sedimentary cycle is recognised at 1750-1740 Ma equated with the Wallaroo Group of the Northern Yorke Peninsula. These rocks comprise felsic metavolcanics, quartz-feldspar schist, gneiss, calc-silicate and quartzite. Anorogenic felsic plutonism around 1530 Ma is evident within the inliers but is restricted to an occurrence of massive to coarse-grained granite and aplite dykes at Lagoon Hill. The age of these intrusives is important and provides evidence for potential fluid/metal sources with a spatial and temporal relationship to known IOCG mineralising events.

Drilling in the vicinity of Spring Hill has revealed that the rock sequences have been subjected to high temperature Na-Ca-Fe alteration, overprinted by retrograde actinolite-chlorite-epidote assemblages and partial oxidation of magnetite by haematite. Later stage and overprinting quartz-carbonate-biotite-sulphide (K-alteration) formed in shears and veins has been subjected to weak supergene upgrade.

The inliers also contain a large number of historic small pits and shafts that were developed on copper oxide mineralisation hosted by structurally controlled quartz-haematite veins and haematite breccia pipes. The rock types and their metamorphic and metasomatic alteration paragenesis draws similarities to Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier in northwest Queensland.

Mesozoic sediment cover of the Eromanga Basin largely conceals the Proterozoic metamorphic basement to the east and west of the inliers. Tertiary gibber lag, gypsiferous clays, alluvial gravels, silts/clays, aeolian dune sands, lacustrine and mound spring deposits overlie the Mesozoic sediments and dominate the surficial cover away from the inliers.

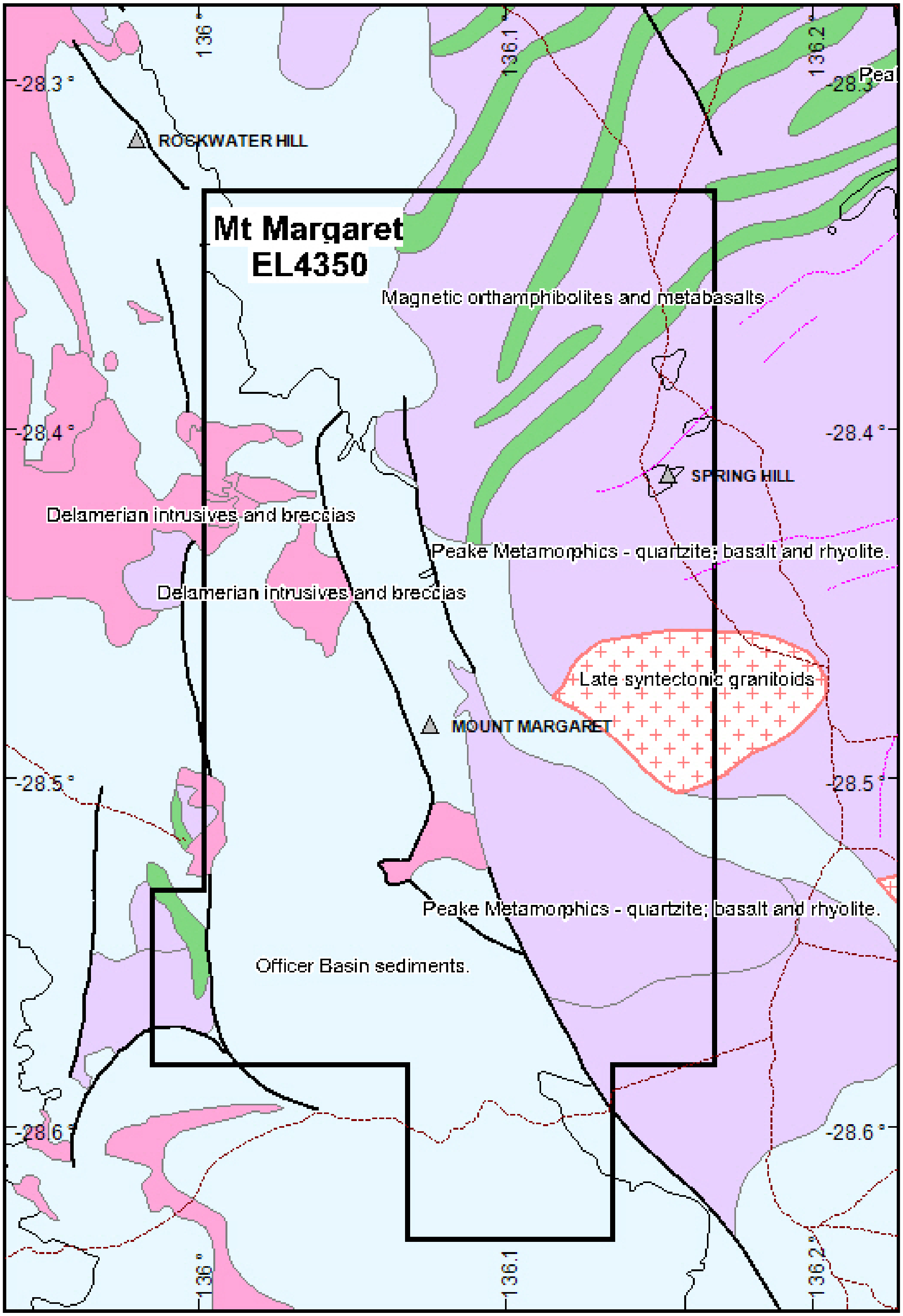

Figure 2 - EL 4350 interpreted geology.

3. HISTORY AND PREVIOUS EXPLORATION

A summary of historical exploration was presented in the First Annual Report for the tenement and is not duplicated here. A summary of previous copper-gold exploration efforts on EL4350 (from 1993-2009) is shown in Figure 3.

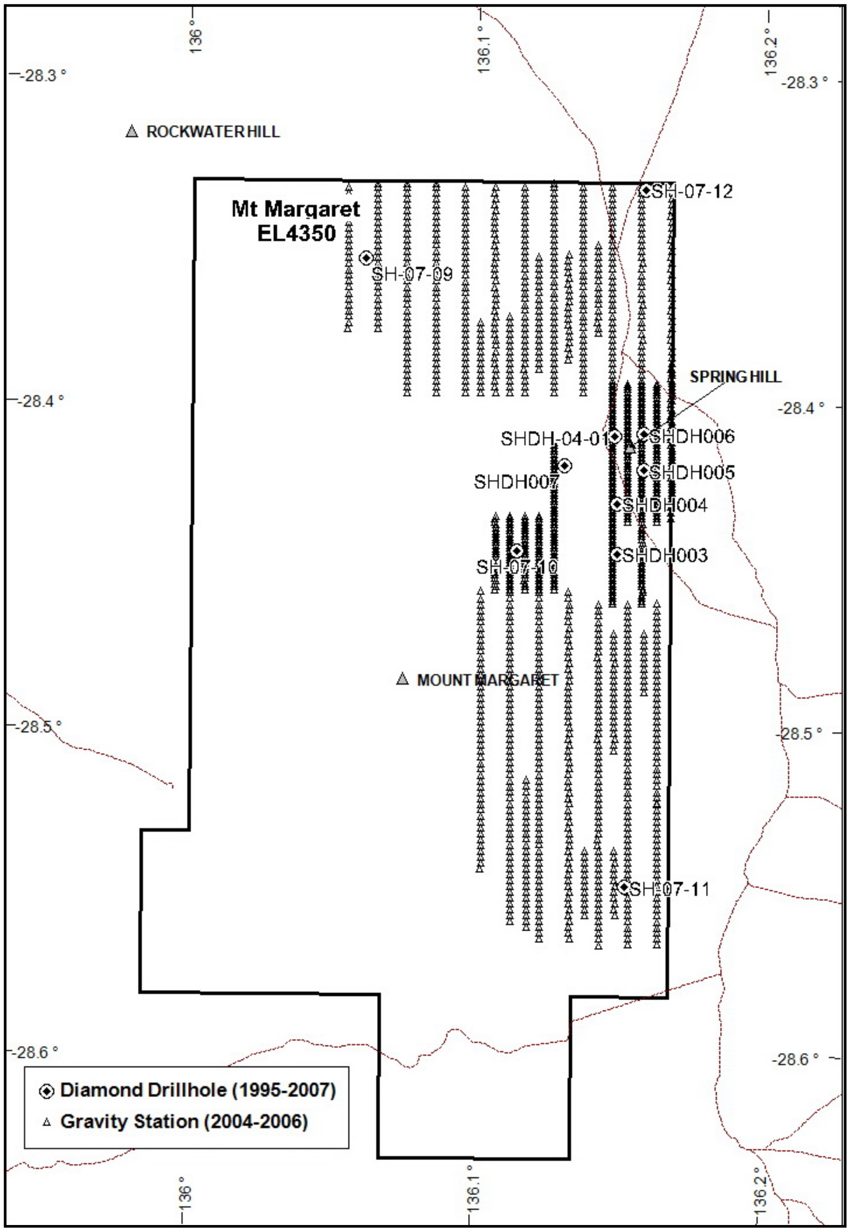

Figure 3- EL4350 historical exploration activities

4. EXPLORATION RATIONALE

The Mt Margaret Project is located in the prospective northern Gawler Craton region of South Australia (Figure 4). The primary target within the project is Iron Oxide-Copper-Gold (IOCG) style mineralisation with notable economic mineralisation currently being mined from the (relatively) nearby Olympic Dam, Prominent Hill and Cairn Hill deposits.

Falcon applied for tenement EL4350 on the grounds that the Peake-Denison region also has good potential to host significant IOCG mineralisation. An evaluation of the historic exploratory drilling results from the surrounding area indicates that the basement rocks have been subjected to high temperature magnetite-albite-calc silicate alteration, overprinted by retrograde actinolite-chlorite-epidote-chalcopyrite assemblages and partial oxidation of magnetite by haematite. These observations draw similarities to mineralised Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier in northwest Queensland.

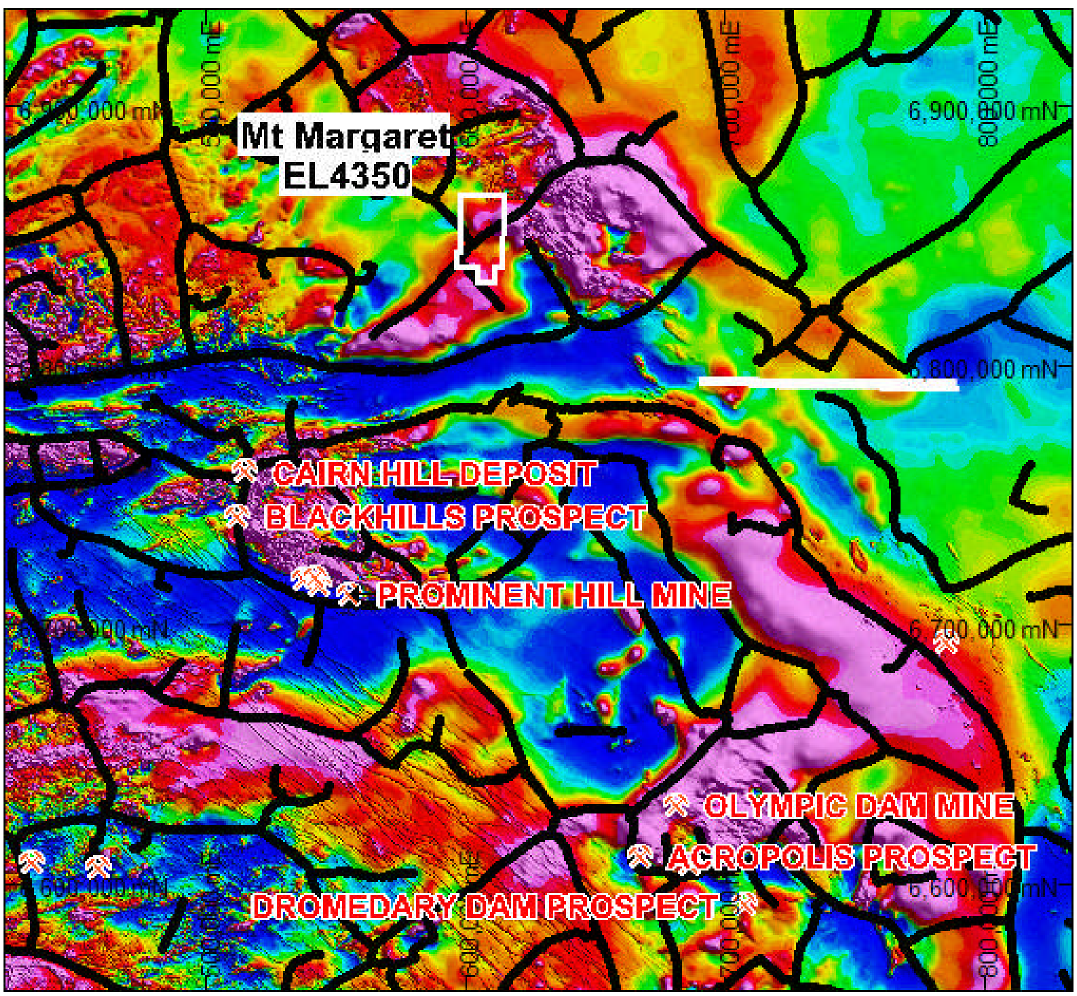

Figure 4 - Major copper-gold occurrences in the northern Gawler Craton on aeromagnetic image

5. WORK COMPLETED IN THE CURRENT REPORTING PERIOD

There were no field / site activities completed during the report period. The previously identified targets were reviewed and it was concluded that these are still valid drill targets. However, due to the current difficult market conditions for raising capital the Company has been required to curtail its exploration activities and rationalize its portfolio of projects. The Company has decided to divest EL 4350 (and the adjoining EL 4536). Falcon is currently in negotiations with prospective joint venture partner.

6. EXPENDITURE STATEMENT

Expenditure during the current year of tenure for Mt Margaret EL4350 is presented below.

TABLE 1 EXPLORATION EXPENDITURE EL4350	
Exploration Activity	**Period ending 21st October 2012**
Regional geophysical review & target generation	$9,355
OVERHEADS	$1,045
Totals	**$10,400**

Total exploration expenditure for the 12 month period from 22nd October 2011 to 21st October 2012 was $10,400.

FALCON MINERALS LIMTED

ACN 009-256-535

FINAL TECHNICAL REPORT

EXPLORATION LICENCE 4350

Mt Margaret

22nd October 2012 to 6 th August 2013

Volume 1 of 1

Tenement Holder:	Falcon Minerals Limited
Tenement Operator:	Falcon Minerals Limited
Author:	Ron Smit
Date:	August 2013

SUMMARY

EL4350 is located 130 km southeast of Oodnadatta, South Australia.

In December 2012, Falcon Minerals Limited (**Falcon**) granted Monax Alliance Pty Ltd (**Monax Alliance**) an Option to Purchase Falcon's interest in the Peak-Denison Project (including EL4350). The Peak-Denison Project is located on the western margin of Lake Eyre in northern South Australia and is considered prospective for iron-oxide copper-gold mineralisation (IOCG) within the Proterozoic metamorphic basement

Within EL4350, Monax Alliance completed land access negotiations and a detailed gravity survey over the Tarlton Spring target. Subsequent geophysical modelling of the new data set did not identify a target suggestive of a large iron-oxide copper-gold body. As a consequence, in June 2013 Monax Alliance withdrew from the Option to Purchase Agreement.

Falcon has since reviewed all the new technical data and has decided to surrender the tenement.

Field activity summary for EL4350, Mt Margaret

Activity	**Prospect**	**Results**
Gravity Survey (432 stations)	Tarlton Springs	No targets generated

SPATIAL DATUM
GDA94
MGA Zone 53

MAP SHEETS:
1:250,000 Warrina (SH53-03)
1:100,000 Umbum (6141), Anna Creek (6140), Boorthana (6040)

KEY WORDS:
Mt Margaret, Warrina, Umbum, Spring Hill, Peake-Denison Inlier, Gawler Craton, IOCG, copper, gold

TARGET:
IOCG style mineralisation

ACTIVITIES:
Gravity Survey

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1. INTRODUCTION

EL4350, Mt Margaret is located on the western margin of Lake Eyre in northern South Australia, midway between the townships of Oodnadatta and William Creek (Figure 1). Access is via station tracks north from William Creek and east from the Peake homestead via the Oodnadatta Track. The tenement area is the subject of a Native Title claim by the Arabunna People (Claim SC98/002).

EL4350 incorporates parts of the Proterozoic Peake and Denison Inliers that are considered prospective for large iron oxide-copper-gold (**IOCG**) style deposits.

In December 2012, Falcon granted Monax Alliance an Option to Purchase Falcon's interest in the EL4350. Monax Alliance completed a gravity survey over the Tarlton Spring target (Figure 2). No IOCG targets were generated and as a consequence Monax Alliance withdrew from the Option to Purchase Agreement. Falcon has since surrender EL4350.

This Final Technical Report for EL4350 describes the field activities undertaken by Monax Alliance this year and includes a summary of activities undertaken by Falcon in previous years.

EL4350 was granted to Falcon on 22 October 2009 (Table1) and surrendered on 6 August 2013.

Table 1: Tenement Details – EL4350, Mt Margaret

Tenement Id	Date of Grant	Expiry Date	Area
EL4350	22 October 2009	21 October 2014	307 sq. km

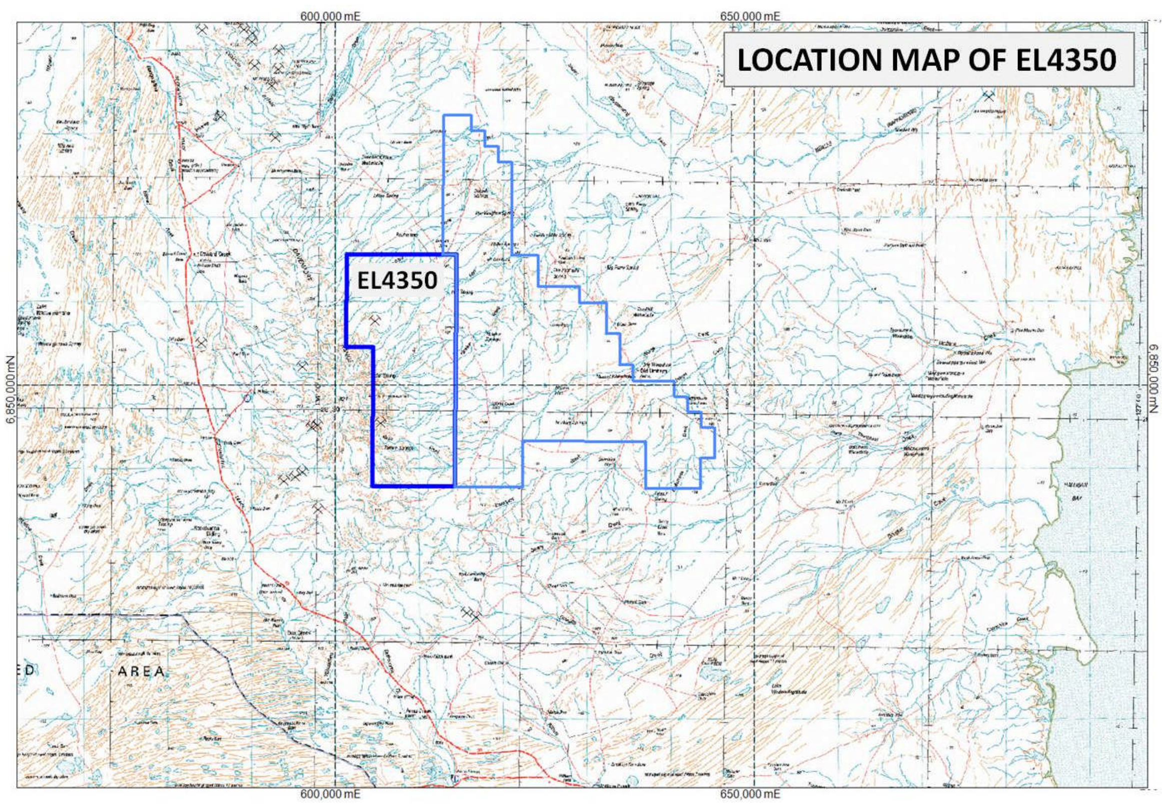

Figure 1 - Location of EL4350

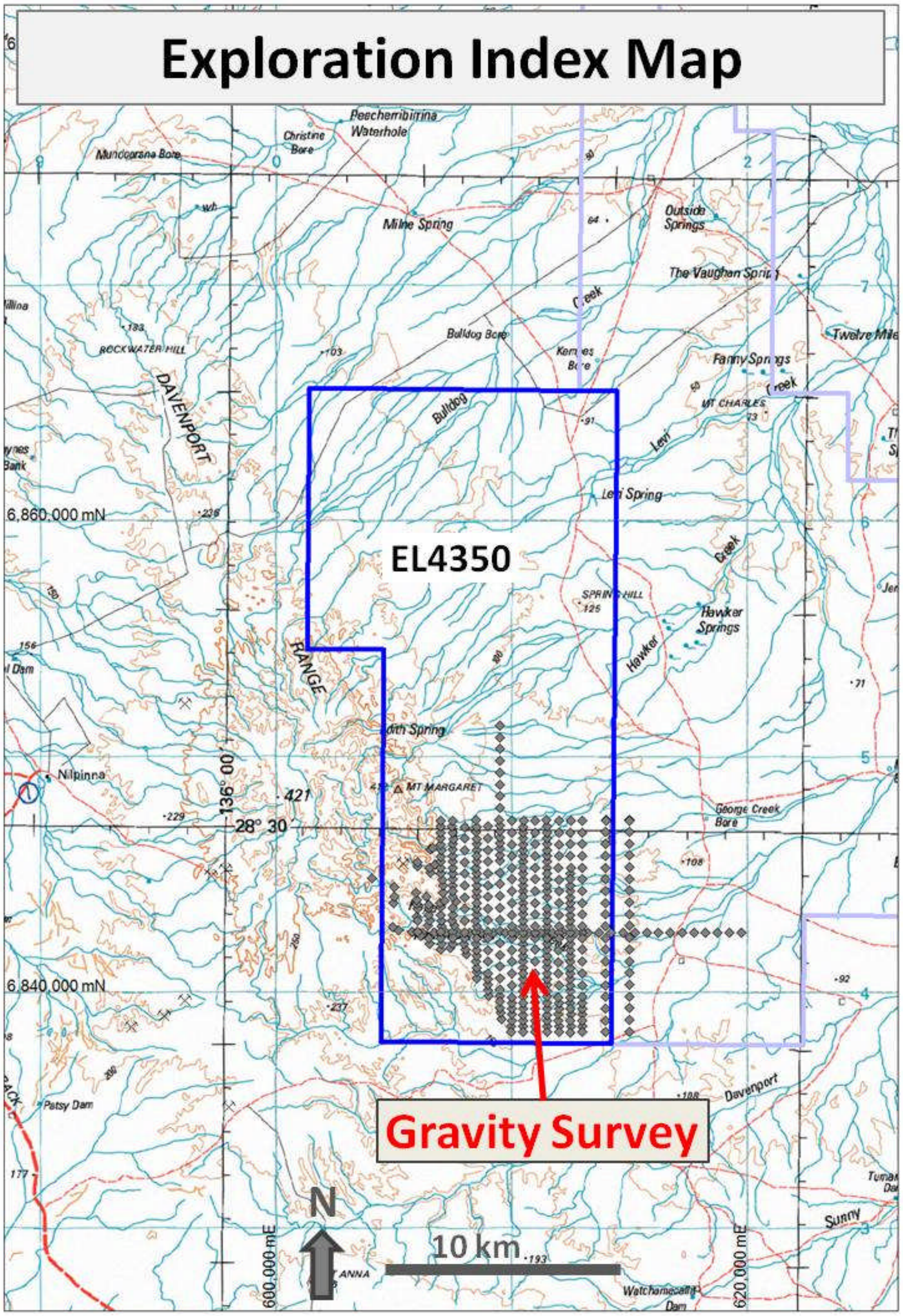

Figure 2 – Exploration Index Map

2. GEOLOGY AND MINERALISATION

EL4350 is located on the rifted northeast margin of the Gawler Craton within the northwest extension of the Adelaide Orogenic Belt, midway between the Musgrave Block and Curnamona Craton.

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Drilling in the vicinity of Spring Hill has revealed that the rock sequences have been subjected to high temperature Na-Ca-Fe alteration, overprinted by retrograde actinolite-chlorite-epidote assemblages and partial oxidation of magnetite by haematite. Later stage and overprinting quartz-carbonate-biotite-sulphide (K-alteration) formed in shears and veins has been subjected to weak supergene upgrade.

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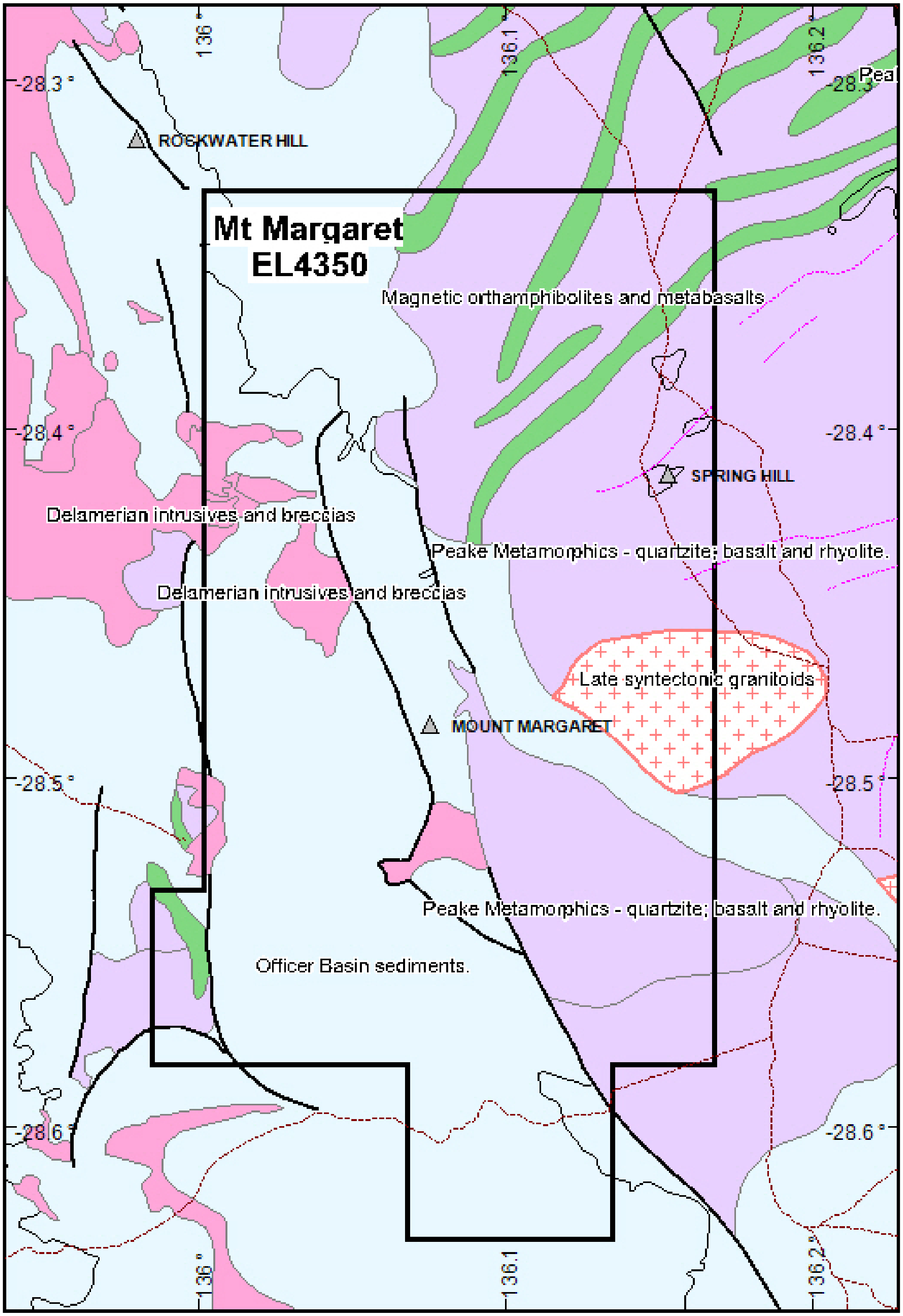

Figure 3 - EL 4350 interpreted geology.

3. HISTORY AND PREVIOUS EXPLORATION

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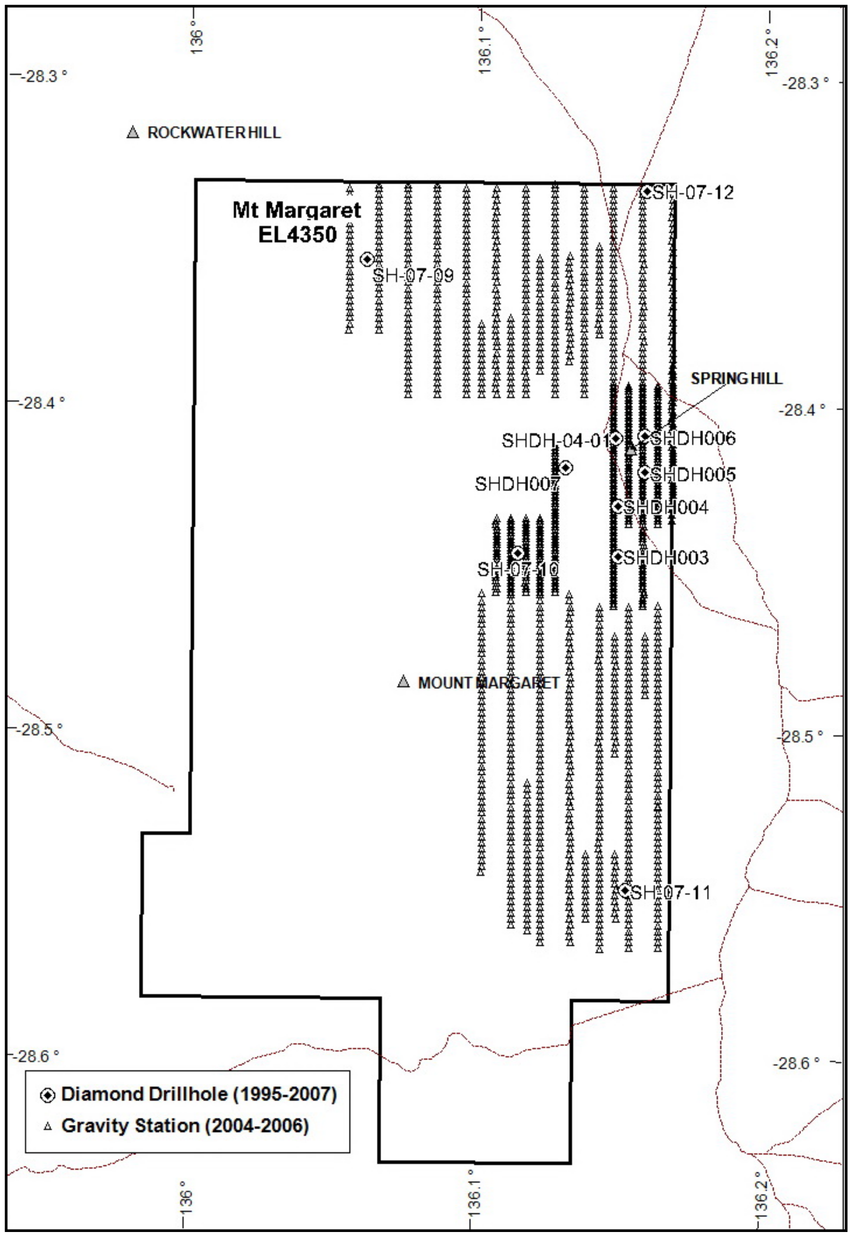

Figure 4- EL4350 historical exploration activities

4. EXPLORATION RATIONALE

EL4350 is located in the prospective northern Gawler Craton region of South Australia. The primary target within the project is Iron Oxide-Copper-Gold (IOCG) style mineralisation with notable economic mineralisation currently being mined from the (relatively) nearby Olympic Dam, Prominent Hill and Cairn Hill deposits.

Falcon applied for tenement EL4350 on the grounds that the Peake-Denison region also has good potential to host significant IOCG mineralisation. An evaluation of the historic exploratory drilling results from the surrounding area indicates that the basement rocks have been subjected to high temperature magnetite-albite-calc silicate alteration, overprinted by retrograde actinolite-chlorite-epidote-chalcopyrite assemblages and partial oxidation of magnetite by haematite. These observations draw similarities to mineralised Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier in northwest Queensland.

5. SUMMARY OF WORK COMPLETED BY FALCON IN PREVIOUS YEARS

Mineral exploration undertaken during the 2009 to 2012 period involved the following:

- Review, digital capture and validation of historical exploration data;
- Geophysical filtering and regional targeting for IOCG style mineralisation. Magnetic and gravity data were filtered to highlight major crustal structures associated with coincident radically-symmetric magnetic and dense bodies that may reflect iron oxide-sulphide assemblages;
- 3D inversion modelling of detailed magnetic and gravity data was completed over the Spring Hill Prospect which is shown to comprise of two steeply dipping, elongate to pipe-like dense bodies with a coincident offset magnetic anomaly; and
- A brief field inspection to assess the general access to the district.

6. WORK COMPLETED BY MONAX ALLIANCE IN 2013

The exploration work described below was undertaken by Monax Alliance under an Option to Purchase Agreement. Monax Alliance held discussions with the local aboriginal community and completed a gravity survey over the Tarlton Spring target. No IOCG targets were generated and as a consequence Monax Alliance withdrew from the Option to Purchase Agreement. The information below was prepared by Monax Alliance.

6.1 Heritage Work

Monax Alliance met with representatives of the Arabunna Aboriginal Corporation to outline their planned exploration activities. The gravity survey was deemed a low impact / non ground disturbing activity and as a consequence this activity did not require a heritage clearance survey.

6.2 Gravity Survey

A detailed gravity survey (432 gravity stations) was undertaken to investigate the Tarlton Spring anomaly and determine the viability of the target as an IOCG prospect. The new data was merged with open file data followed by geophysical modelling (Figure 5).

The gravity response at Tarlton Spring is characteristic of a shallow body with a density contrast of 0.13 g/cc. The gravity anomaly has a strong coincident magnetic signal. Residual gravity anomalies within the larger feature can be shown to correlate with discrete magnetic anomalies. A small discrete gravity anomaly on the western side of the main gravity feature, although characteristic of an IOCG gravity response, is considered too small to warrant further investigation. The Tarlton Springs gravity magnetic feature is likely to be related to a shallow igneous body with a density of 2.8 g/cc, the main intrusive penetrated by several later mafic plugs accounting for the isolated magnetic anomalies. There is some evidence of zones within the intrusive that are richer in magnetite.

It is concluded that the Tarlton Springs gravity anomaly is not related to an IOCG complex.

Gravity information collected this year is attached as Digital Appendix 1.

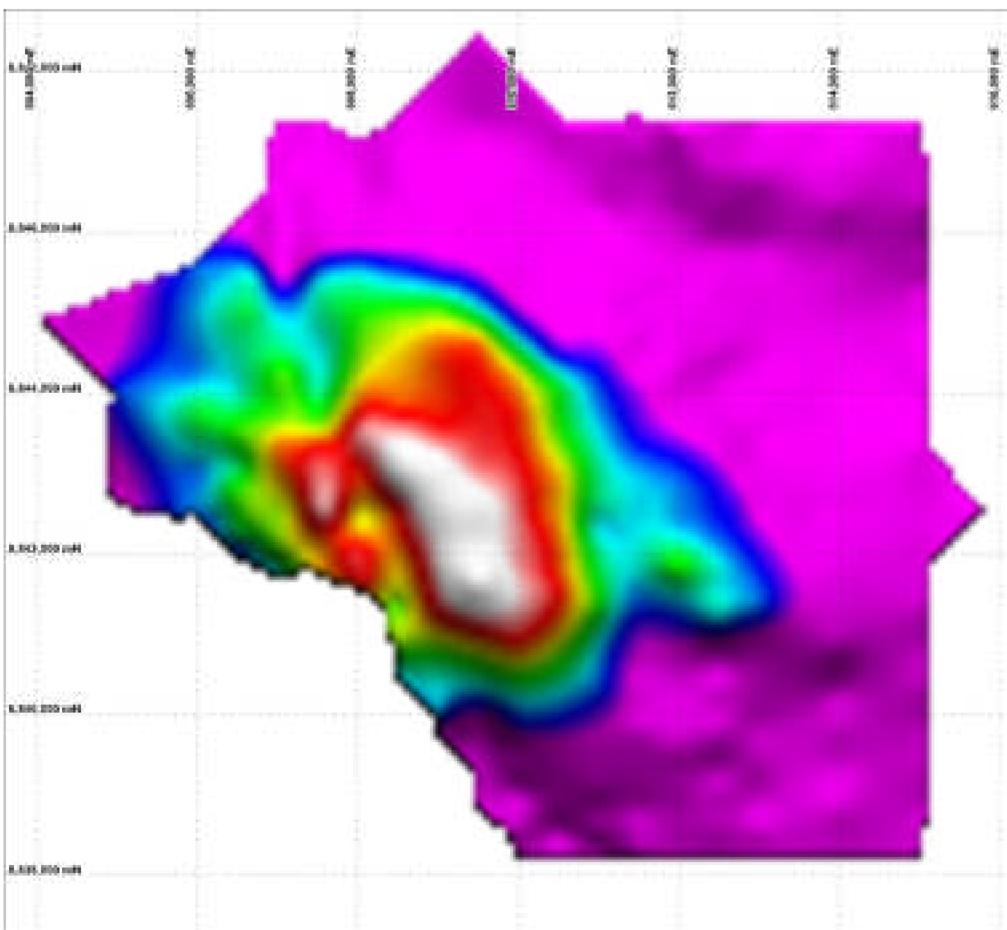

Figure 5: Gravity image of Tarlton Spring anomaly; linear colour stretch, sun from North

7. CONCLUSION

Falcon granted Monax Alliance an Option to Purchase Falcon's interest in the Peak-Denison Project (including EL4350) which is considered prospective for IOCG mineralisation within the Proterozoic metamorphic basement.

Monax Alliance completed a detailed gravity survey over the Tarlton Spring anomaly and concluded that the geophysical response was not characteristic of an IOCG complex. As a consequence, Monax Alliance withdrew from the Option to Purchase Agreement.

Falcon has since reviewed all the new technical data and has decided to surrender EL4350.

APPENDIX 1

Gravity Survey Data

Tarlton Spring Prospect

(refer to digital attachment)

Atlas Geophysics Memorandum M2013023

William Creek Gravity Surveys

Monax Mining Limited

Memo completed by:

David King
Geophysicist

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12 June 2013

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2.0 Equipment and Instrumentation

The following instrumentation was used for acquisition of the gravity data:

- Three CG5 Autograv Gravity Meters (Serial Numbers 40803, SF 1.000000, 40382, SF 1.000000, & 40298, SF 1.000000)
- Three Leica System 1200 GPS-Glonass receivers

Ancillary equipment included:

- Two HP Laptop computers for data download and processing
- Magellan FX324 autonomous GPS receivers for navigation
- Iridium satellite phones for long distance communications
- Personal Protective Equipment for all personnel
- Batteries, battery chargers, solar cells, UPS System
- Survey consumables
- Tools, engineering and maintenance equipment for vehicle servicing
- First aid and survival kits
- Tyres and recovery equipment

3.0 Calibration and Control

The gravity meters used for survey have been recently calibrated on the Guildford Cemetery – Helena Valley Primary School calibration range (2010990117- 2010990217) in Western Australia. The calibration process has validated the gravity meters scale factor to ensure reduction of the survey data produces correct Observed Gravities from measured dial reading values.

A GPS-Gravity control station, 201302300001 'George Creek Bore' was established on 10th May, 2013 to control all field observations.

Primary GPS control was established by submitting static data to Geoscience Australia's AUSPOS processing system to produce first-order geodetic coordinates accurate to better than 10mm for the x, y and z observables. Multiple days of static GPS data have been submitted to ensure accuracy and reliability of the solution. The details of the control process have been summarised in a table included in Appendix C.

Primary gravity control was established at the same location as the primary GPS control station. Once tied to the Australian Fundamental Gravity Network (AFGN), the gravity control station allowed all field gravity observations to be tied to the Australian Absolute Gravity Datum 2007 (AAGD07). An accurate observed or absolute gravity value for the control station was established via multiple 'ABA' ties with the project meters to AFGN Station 1992932018 ' Coober Pedy Airstrip Terminal' on 12th and 18th May 2013. Expected accuracy of the tie survey would be 0.01 mGal (0.1gu).

4.0 GPS-Gravity Acquisition

Gravity data were acquired concurrently with GPS data using Scintrex CG5 gravity meters. Data were acquired in a single shift of 10 hours duration, with each shift consisting of a single loop controlled by observations at the gravity control station. Each loop contained a minimum of two repeated readings so that an interlocking network of closed loops was formed. A total of **6.33%** repeats were acquired for quality control purposes. Repeat readings were evenly distributed on a time-basis throughout each of the gravity loops.

GPS data were acquired with the rover receivers operating in post-process kinematic (PPK) mode. When carrying out acquisition with a UTV, the GPS-Glonass sensor is mounted on the roof the UTV (fixed antenna height of 1.810m) and the PPK data are logged by the receiver inside a protective case mounted to the rear tray of the UTV. Static data were logged at the control stations for submission to AUSPOS for delivery of final coordinates.

5.0 GPS Processing and QA

The acquired GPS and Glonass raw data were processed nightly in the field using Novatel Waypoint GrafNav v8.4 post-processing software. The resulting data (in Atlas Geophysics PPK standard format) were then imported into Atlas Geophysics Reduction and Interpretation Software (AGRIS) for QA and use in the reduction of the gravity data.

Projection from GPS-Glonass derived WGS84/GDA94 coordinates to Map Grid of Australia (MGA) coordinates was performed in GrafNav. For most practical applications where a horizontal accuracy of only a metre or greater is required, GDA94 coordinates can be considered the same as WGS84. MGA coordinates were obtained by projecting the GPS-derived WGS84 coordinates onto MGA Zone 53S using a Universal Transverse Mercator (UTM) projection. Elevations above the Australian Height Datum (AHD) were modelled using GrafNav software and the AUSGEOID09 geoid model.

A module built into AGRIS allowed the user to import the positional data from GrafNav and examine quality factors such as station repeatability between multiple control stations, coordinate velocity, dilution of precision, coordinate quality factor and standard error for each gravity station location. The procedure is carried out before merging the positional data with gravity data for final reduction to Bouguer anomaly. Comprehensive statistics, repeatability analysis and histogram plotting are also performed.

Quality control procedures were applied to the GPS-Glonass data on a daily basis and any gravity stations not conforming to the quoted specifications were repeated by the company at no cost to the client.

6.0 Gravity Processing and QA

The acquired gravity data were processed using the company's in-house gravity pre-processing and reduction software, AGRIS. This software allows for full data pre-processing, reduction to Bouguer Anomaly, repeatability and statistical analysis, as well as full quality analysis of the output dataset.

Once downloaded from the gravity meters, the data are analysed for consistency and preliminary QA is performed to check that observations meet specification for standard deviation, reading rejection, temperature and tilt values. Once the data are verified, the software averages the multiple readings and performs a merge with the GPS data (which it has also previously verified) and performs a linear drift correction and earth tide correction. Any gravity stations not conforming to the quoted specifications were repeated by the company at no cost to the client.

The following corrections were applied to the dataset to produce Spherical Cap Bouguer Anomalies on the GRS80 ellipsoid and AAGD07 gravity datum. For legacy reasons, Geoidal Bouguer Anomalies on the Australian Height Datum (AHD) and ISOGAL84 gravity datum have also been calculated. The formulae below produce data in μms^{-2} or gravity units. To convert to mGal, divide by a factor of 10.

Instrument scale factor: This correction is used to correct a gravity reading (in dial units) to a relative gravity unit value based on the meter calibration.

$$r_c = 10 \cdot (r \cdot S(r))$$

where,

r_c corrected reading in gravity units
r gravity meter reading in dial units
$S(r)$ scale factor (dial units/milliGal)

Earth Tide Correction: The earth is subject to variations in gravity due to the gravitational attraction of the Sun and the Moon. These background variations can be corrected for using a predictive formula which utilises the gravity observation position and time of observation. The Scintrex CG5 gravity meter automatically calculates ETC but uses only an approximate position for the gravity observation so is not entirely accurate. For this reason, the Scintrex ETC is subtracted from the reading and a new correction calculated within AGRIS software.

$$r_t = r_c + g_{tide}$$

where,

r_t tide corrected reading in gravity units
r_c scale factor corrected reading in gravity units
g_{tide} Earth Tide Correction (ETC) in gravity units

Instrument Drift Correction: Since all gravity meters are mechanical they are all prone to instrument drift. Drift can be caused by mechanical stresses and strains in the spring mechanism as the meter is moved, knocked, reset, subjected to temperature extremes, subjected to vibration, unclamped etc. The most common cause of instrument drift is due to extension of the sensor spring with changes in temperature (obeying Hooke's law). To calculate and correct for daily instrument drift, the difference between the gravity control station readings (closure error) is used to assume the drift and a linear correction is applied.

$$ID = \frac{r_{cs2} - r_{cs1}}{t_{cs2} - t_{cs1}}$$

where,

ID Instrument Drift in gu/hour
r_{cs2} control station 2nd reading in gravity units
r_{cs1} control station 1st reading in gravity units
t_{cs2} control station 2 time
t_{cs1} control station 1 time

Observed Gravity: The preceding corrections are applied to the raw gravity reading to calculate the earth's absolute gravitational attraction at each gravity station. The corrections produced Observed Gravities on the AAGD07 and ISOGAL84 datums.

$$G_o = g_{cs1} + (r_t - r_{cs1}) - (t - t_{cs1}) \cdot ID$$

where,

G_o Observed Gravity in gravity units (ISOGAL84 or AAGD07)
g_{cs1} control station 1 known Observed Gravity in gravity units
r_t tide corrected reading in gravity units
r_{cs1} control station 1 reading in gravity units
t reading time
t_{cs1} control station 1 time
ID instrument drift in gravity units/hour

Theoretical Gravity 1980: The theoretical (or normal) gravity value at each gravity station is calculated based on the assumption that the Earth is a homogeneous ellipsoid. The closed form of the 1980 International Gravity Formula is used to approximate the theoretical gravity at each station location and essentially produce a latitude correction. Gravity values vary with latitude as the earth is not a perfect sphere and the polar radius is much smaller than the equatorial radius. The effect of centrifugal acceleration is also different at the poles versus the equator.

$$G_{t80} = 9780326.7715((1 + 0.001931851353(sin^2 l)/(SQRT(1 - 0.0066943800229(sin^2 l)))$$

where,

G_{t80} Theoretical Gravity 1980 in gravity units
l GDA94 latitude at the gravity station in decimal degrees

Theoretical Gravity 1967: The theoretical (or normal) gravity value at each gravity station is calculated based on the assumption that the Earth is a homogeneous ellipsoid. The 1967 variant of the International Gravity Formula is used to approximate the theoretical gravity at each station location and essentially produce a latitude correction. Gravity values vary with latitude as the earth is not a perfect sphere and the polar radius is much smaller than the equatorial radius. The effect of centrifugal acceleration is also different at the poles versus the equator.

$$G_{t67} = (9780318.456 \cdot (1 + 0.005278895 \cdot sin^2(l) + 0.000023462 \cdot sin^4(l)))$$

where,
G_{t67} Theoretical Gravity 1967 in gravity units
l GDA94 latitude at the gravity station in decimal degrees

Atmospheric Correction: The gravity effect of the atmosphere above the ellipsoid can be calculated with an atmospheric model and is subtracted from the theoretical gravity.

$$AC = 8.74 - 0.00099 \cdot h + 0.0000000356 \cdot h^2$$

where,
AC Atmospheric Correction in gravity units
h elevation above the GRS80 ellipsoid in metres

Ellipsoidal Free Air Correction: Since the gravity field varies inversely with the square of distance, it is necessary to correct for elevation changes from the reference ellipsoid (GRS80). Gravitational attraction decreases as the elevation above the reference ellipsoid increases.

$$EFAC = -(3.087691 - 0.004398\, sin^2 l) \cdot h + 7.2125 \cdot 10^{-7} \cdot h^2$$

where,
$EFAC$ Ellipsoidal Free Air Correction in gravity units
l GDA94 latitude at the gravity station in decimal degrees
h elevation above the GRS80 ellipsoid in metres

Geoidal Free Air Correction: Since the gravity field varies inversely with the square of distance, it is necessary to correct for elevation changes from the reference geoid (AHD). Gravitational attraction decreases as the elevation above the reference geoid increases.

$$GFAC = (3.08768 - 0.00440 sin^2(l)) \cdot h - 0.000001442 \cdot h^2$$

where,
$GFAC$ Free Air Correction in gravity units
l GDA94 latitude at the gravity station in decimal degrees
h elevation above the reference geoid (AHD) in metres

Spherical Cap Bouguer Correction: If a gravity observation is made above the reference ellipsoid, the effect of rock material between the observation and the ellipsoid must be taken into account. The mass of rock makes a positive contribution to the gravity value. The correction is calculated using the closed form equation for the gravity effect of a spherical cap of radius 166.7km, based on a spherical Earth with a mean radius of 6,371.0087714km, height relative the ellipsoid and rock densities of 2.67, 2.40 and 2.20 tm^{-3} (gm/cc).

$$SCBC = 2\pi G\rho((1 + \mu) \cdot h - \lambda R)$$

where,

$SCBC$ Spherical Cap Bouguer Correction in gravity units
G gravitational constant = $6.67428 \cdot 10^{-11} m^3 kg^{-1} s^{-2}$
ρ rock density (2.67, 2.40 and 2.20 tm^{-3})
h elevation above the GRS80 ellipsoid in metres
R $(R_o + h)$ the radius of the earth at the station
R_o mean radius of the earth = 6,371.0087714 km (on the GRS80 ellipsoid)
μ & λ are dimensionless coefficients defined by:

$$\mu = ((1/3) \cdot \eta^2 - \eta)$$

where,

η h/R

$$\lambda = (1/3)\{(d + f\delta + \delta^2)[(f - \delta)^2 + k]^{\frac{1}{2}} + p + m \cdot ln(n/(f - \delta + [(f - \delta)^2 + k]^{\frac{1}{2}})\}$$

where,

d $3 \cdot cos^2\alpha - 2$
f $cos\alpha$
k $sin^2\alpha$
p $-6 \cdot cos^2\alpha \cdot \sin(\alpha/2) + 4 \cdot sin^3(\alpha/2)$
δ (R_o/R)
m $-3 \cdot k \cdot f$
n $2 \cdot [sin\,(\alpha/2) - sin^2(\alpha/2)]$
α S/R_o with S = Bullard B Surface radius = 166.735 km

Geoidal Bouguer Correction: If a gravity observation is made above the reference geoid, the effect of rock material between the observation and the ellipsoid must be taken into account. The mass of rock makes a positive contribution to the gravity value. The slab of rock makes a positive contribution to the gravity value. Rock densities of 2.67, 2.40 and 2.20 t/m^{-3} (gm/cc) were used in the correction.

$$GBC = 0.4191 \cdot \rho \cdot h$$

where,

GBC Geoidal Bouguer Correction in gravity units
ρ rock density (2.67, 2.40 and 2.20 tm^{-3})
h elevation above the reference geoid (AHD) in m

Terrain Correction: The terrain correction accounts for variations in gravity values caused by variations in topography near the observation point. The correction accounts for the attraction of material above the assumed Bouguer slab and for the over-correction made by the Bouguer correction when in valleys. The terrain correction is positive regardless of whether the local topography consists of a mountain or a valley. Terrain corrections were not applied on this project as the survey area was flat and devoid of any appreciable topography.

Ellipsoidal Free Air Anomaly: The Ellipsoidal Free Air Anomaly is the difference between the observed gravity and theoretical gravity that has been computed for latitude and corrected for the elevation of the gravity station above or below the reference ellipsoid.

$$EFAA = G_{oAAGD07} - (G_{t80} - AC) - EFAC$$

where,

$EFAA$ Ellipsoidal Free Air Anomaly in gravity units
G_o Observed Gravity on the AAGD07 datum in gravity units
G_{t80} Theoretical Gravity 1980 in gravity units
AC Atmospheric Correction in gravity units
$EFAC$ Ellipsoidal Free Air Correction in gravity units

Geoidal Free Air Anomaly: The Geoidal Free Air Anomaly is the difference between the observed gravity and theoretical gravity that has been computed for latitude and corrected for the elevation of the gravity station above or below the reference geoid.

$$GFAA = G_{oISOGAL84} - G_{t67} + GFAC$$

where,

$GFAA$ Free Air Anomaly in gravity units
G_o Observed Gravity on the ISOGAL84 datum in gravity units
G_{t67} Theoretical Gravity 1967 in gravity units
$GFAC$ Geoidal Free Air Correction in gravity units

Spherical Cap Bouguer Anomaly: The Spherical Cap Bouguer Anomaly is computed from the Ellipsoidal Free Air Anomaly above by removing the attraction of the spherical cap calculated by the Spherical Cap Bouguer Correction.

$$SCBA = EFAA - SCBC$$

where,

$SCBA$ Spherical Cap Bouguer Anomaly in gravity units
$EFAA$ Ellipsoidal Free Air Anomaly in gravity units
$SCBC$ Bouguer Correction in gravity units

Geoidal Bouguer Anomaly: The Geoidal Bouguer Anomaly is computed from the Geoidal Free Air Anomaly above by removing the attraction of the slab calculated by the Geoidal Bouguer Correction.

$$GBA = GFAA - GBC$$

where,

GBA Geoidal Bouguer Anomaly in gravity units
$GFAA$ Geoidal Free Air Anomaly in gravity units
GBC Geoidal Bouguer Correction in gravity units

Complete Bouguer Anomaly: This is obtained by adding the terrain correction to the Bouguer Anomaly (Spherical Cap or Geoidal). The Complete Bouguer Anomaly is the most interpretable value derived from a gravity survey as changes in the anomaly can be directly attributed to lateral density contrasts within the geology below the observation point.

$$CBA = BA + TC$$

where,

CBA	Complete Bouguer Anomaly in gravity units
BA	Bouguer Anomaly in gravity units
TC	Terrain Correction in gravity units

7.0 Results

The gravity survey was completed with 20 days of acquisition. An average combined acquisition rate of around 121 stations per day of production was achieved over the duration of the project. Production was hampered by minor delays caused by heavy rain and terrain. Inaccessible terrain in the south west corner and the western end of the east-west line at Tarlton Springs resulted in a number of stations being omitted. A delay in acquisition occurred for one crew, when their survey gravity meter malfunctioned and was replaced a few days later. A copy of the full production report is contained on the data DVD.

Final raw data have met and exceeded quoted project specifications. Repeatability of the data was good, with the standard deviation of the elevation repeats at **0.030** m and the standard deviation of the gravity repeats at **0.020** mGal. The production report contains summary statistics and histograms for repeatability.

8.0 Data Formats and Deliverables

Final reduced ASCII data for the project have been delivered in standard Atlas format. Table 3 overleaf details the format of the final gravity database supplied. All fields are comma delimited.

Appendix B contains plots of final station locations, images of GPS Derived Elevation (GRS80), Spherical Cap Bouguer Anomaly and first vertical derivative of Spherical Cap Bouguer Anomaly.

Raw GPS-GNSS and gravity data in their respective native formats have been included on the data DVD as Appendix D. Table 2 below summarises the deliverables.

Final Delivered Data	Format	Data DVD	Hardcopy
Gravity Database	Comma Space Delimited .csv	•	
Gravity Database	Geosoft Database .gdb	•	
Raw Positional Data	AGRIS format, comma delimited	•	
Raw Gravity Data	Scintrex CG5 format	•	
Final Grids	ER Mapper Grids .ers	•	
Final Images	GIS compatible Geotiff .tif	•	•
Acquisition Memo	PDF .pdf	•	•

Table 2: Final Deliverables

Field Header	Field Description	Format	Units
PROJECT	Atlas Geophysics Project Number	A9	None
STATION	Unique Station ID	I8	None
STATIONCODE	Unique Station Code	A13	None
LINE	Line ID	I8	None
TYPE	Observation Type : Base, Field or Repeat	A8	None
MGAEAST	Coordinate Easting MGA94/GDA94	F11.3	M
MGANORTH	Coordinate Northing MGA94/GDA94	F12.3	M
ZONE	MGA Zone Number	F8.0	NA
GDA94LAT	Coordinate Latitude GDA94	F15.10	DD
GDA94LONG	Coordinate Longitude GDA94	F15.10	DD
ORTHOHTM	Coordinate Elevation Orthometric	F9.3	M
GRS80HTM	Coordinate Elevation Ellipsoidal	F9.3	M
NAG09	Geoid Separation	F8.3	M
AMG84EAST	Coordinate Easting AMG84	F11.3	M
AMG84NORTH	Coordinate Northing AMG84	F12.3	M
DATE	Observation Date	I8	None
TIME	Observation Time	I8	None
DIALMGAL	Gravity Dial Reading	F9.3	mGal
ETCMGAL	Earth Tide Correction (Longman)	F8.3	mGal
SCALE	Scale Factor Applied to Dial Reading	F9.6	None
OBSG84MGAL	Observed Gravity ISOGAL84	F11.3	mGal
OBSG84GU	Observed Gravity ISOGAL84	F11.2	Gu
OBSGAAGD07GU	Observed Gravity AAGD07	F13.2	Gu
OBSGAAGD007MGAL	Observed Gravity AAGD07	F16.3	mGal
DRIFTMGAL	Drift Applied to Dial Readings	F10.3	mGal
TGRAV67GU	Theoretical Gravity 1967	F11.2	Gu
TGRAV67MGAL	Theoretical Gravity 1967	F12.3	mGal
TGRAV80GU	Theoretical Gravity 1980	F11.2	Gu
GFACGU	Geoidal Free Air Correction	F8.2	Gu
GFACMGAL	Geoidal Free Air Correction	F9.3	mGal
GFAAGU	Geoidal Free Air Anomaly	F8.2	Gu
GFAAMGAL	Geoidal Free Air Anomaly	F9.3	mGal
GBC267GU	Geoidal Bouguer Correction 2.67 tm^-3	F9.2	Gu
GBC240GU	Geoidal Bouguer Correction 2.40 tm^-3	F9.2	Gu
GBC220GU	Geoidal Bouguer Correction 2.20 tm^-3	F9.2	Gu
GBC267MGAL	Geoidal Bouguer Correction 2.67 tm^-3	F11.3	mGal
GBC240MGAL	Geoidal Bouguer Correction 2.40 tm^-3	F11.3	mGal
GBC220MGAL	Geoidal Bouguer Correction 2.20 tm^-3	F11.3	mGal
GBA267GU	Geoidal Bouguer Anomaly 2.67 tm^-3	F9.2	gu
GBA240GU	Geoidal Bouguer Anomaly 2.40 tm^-3	F9.2	gu
GBA220GU	Geoidal Bouguer Anomaly 2.20 tm^-3	F9.2	gu
GBA267MGAL	Geoidal Bouguer Anomaly 2.67 tm^-3	F11.3	mGal
GBA240MGAL	Geoidal Bouguer Anomaly 2.40 tm^-3	F11.3	mGal
GBA220MGAL	Geoidal Bouguer Anomaly 2.20 tm^-3	F11.3	mGal
TGRAV80ACGU	Theoretical Gravity 1980 Atmospheric Corrected	F11.2	gu
EFACGU	Ellipsoidal Free Air Correction	F9.2	gu
EFAAGU	Ellipsoidal Free Air Anomaly	F8.2	gu
SCBC267GU	Spherical Cap Bouguer Correction 2.67 tm^-3	F10.2	gu
SCBC240GU	Spherical Cap Bouguer Correction 2.40 tm^-3	F10.2	gu
SCBC220GU	Spherical Cap Bouguer Correction 2.20 tm^-3	F10.2	gu
SCBA267GU	Spherical Cap Bouguer Anomaly 2.67 tm^-3	F10.2	gu
SCBA240GU	Spherical Cap Bouguer Anomaly 2.40 tm^-3	F10.2	gu
SCBA220GU	Spherical Cap Bouguer Anomaly 2.20 tm^-3	F10.2	gu
SCBA267MGAL	Spherical Cap Bouguer Anomaly 2.67 tm^-3	F12.3	mGal
SCBA240MGAL	Spherical Cap Bouguer Anomaly 2.40 tm^-3	F12.3	mGal
SCBA220MGAL	Spherical Cap Bouguer Anomaly 2.20 tm^-3	F12.3	mGal
TCINNERGU	Inner Terrain Correction	F8.2	gu
TCINNERMGAL	Inner Terrain Correction	F8.3	mGal
QFINNER	Quality Factor Inner TC	I2	None
TCOUTERGU	Outer Terrain Correction	F8.2	gu
TCOUTERMGAL	Outer Terrain Correction	F8.3	mGal
QFOUTER	Quality Factor Outer TC	F2	None
TCTOTALGU	Total Terrain Correction	F8.2	gu
TCTOTALMGAL	Total Terrain Correction	F8.3	mGal
CGBA267GU	Complete Geiodal Bouguer Anomaly 2.67 tm^-3	F11.3	gu
CGBA267MGAL	Complete Geiodal Bouguer Anomaly 2.67 tm^-3	F11.3	mGal
CSCBA267GU	Complete Spherical Cap Bouguer Anomaly 2.67 tm^-3	F12.2	gu
CSCBA267MGAL	Complete Spherical Cap Bouguer Anomaly 2.67 tm^-3	F12.2	mGal
DIFFEASTM	Repeat Error for Easting Observation	F8.3	m
DIFFNORTHM	Repeat Error for Northing Observation	F8.3	m
DIFFHTM	Repeat Error for Elevation Observation	F8.3	m
DIFFOBSGMGAL	Repeat Error for Observed Gravity	F8.3	mGal
DIFFOBSGGU	Repeat Error for Observed Gravity	F8.2	gu
METERSN	Serial Number of Gravity Instrument	I8	None
CLOSUREGU	Loop Closure in gu	F8.2	gu
CLOSUREMGAL	Loop Closure in mGal	F8.3	mGal
GRVBASE	Gravity Base	A11	None
GPSBASE	GPS Base	A11	None

Table 3: Final Gravity Database Format

9.0 Project Safety

Prior to survey commencement, a Hazard Identification and Risk Assessment (HIRA) was carried out for all new tasks not covered under Atlas Geophysics Standard Operating Procedures (SOP's) or the company's Health Safety Environment (HSE) field manual.

Weekly toolbox meetings were held to discuss project safety and address any staff member concerns. No incidents were reported on this project.

APPENDIX A
Control Station Descriptions

201302300001 – George Creek Bore

GDA94/GRS80		MGA Z53		AMG Z53	
Latitude	-28 29 22.3195	*Easting*	618,219.032	*Easting*	618,090.280
Longitude	136 12 28.1269	*Northing*	6,847,973.172	*Northing*	6,847,801.657
Ellipsoidal Height	86.440	*Orthometric Height*	78.923	*Orthometric Height*	78.923

OBSERVED GRAVITY

Date established: 10/05/2013

gu AAGD07	9791901.32
mGal ISOGAL84	979190.210

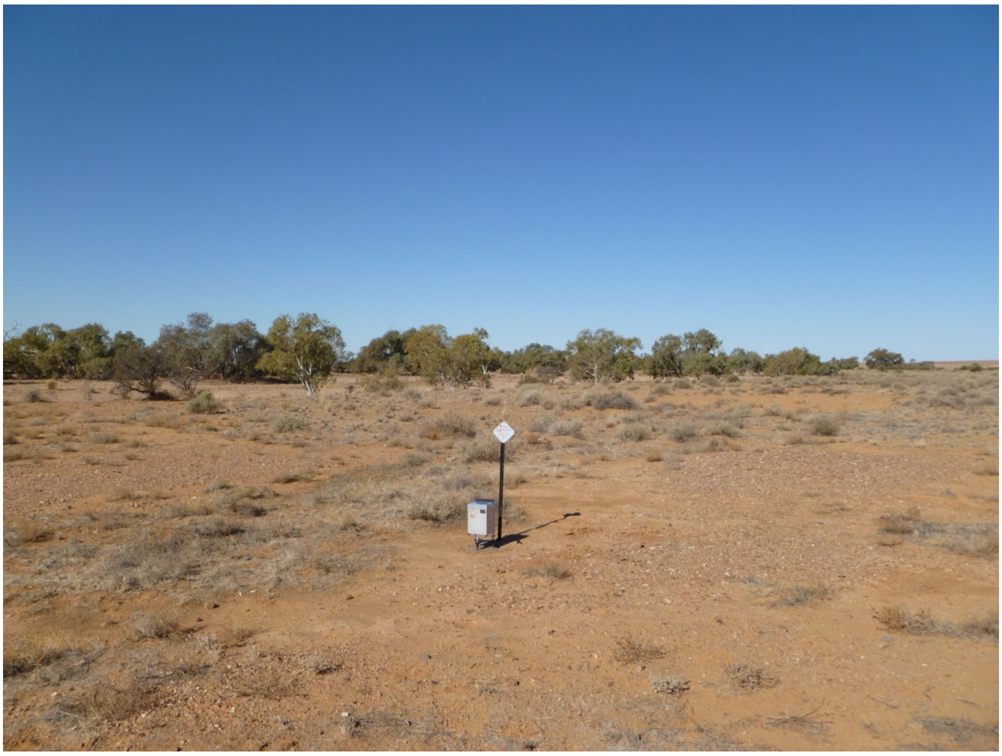
Occupation Method/Location Details

At this control station, the GPS control point consists of a steel picket driven into the ground with approximately 15cm protruding. The gravity control point consists of a small concrete slab set into the ground, opposite the GPS control point. The control station is witnessed by an Atlas Geophysics survey plaque (reading 201302300001) attached to a 1.5 metre steel picket placed within 0.5m of the both control points.

Gravity Control was established via multiple 'ABA' loops with the project meters to AFGN 'Coober Pedy Airstrip Terminal' gravity station 1992932018. Expected accuracy would be better than 0.01 mGal.

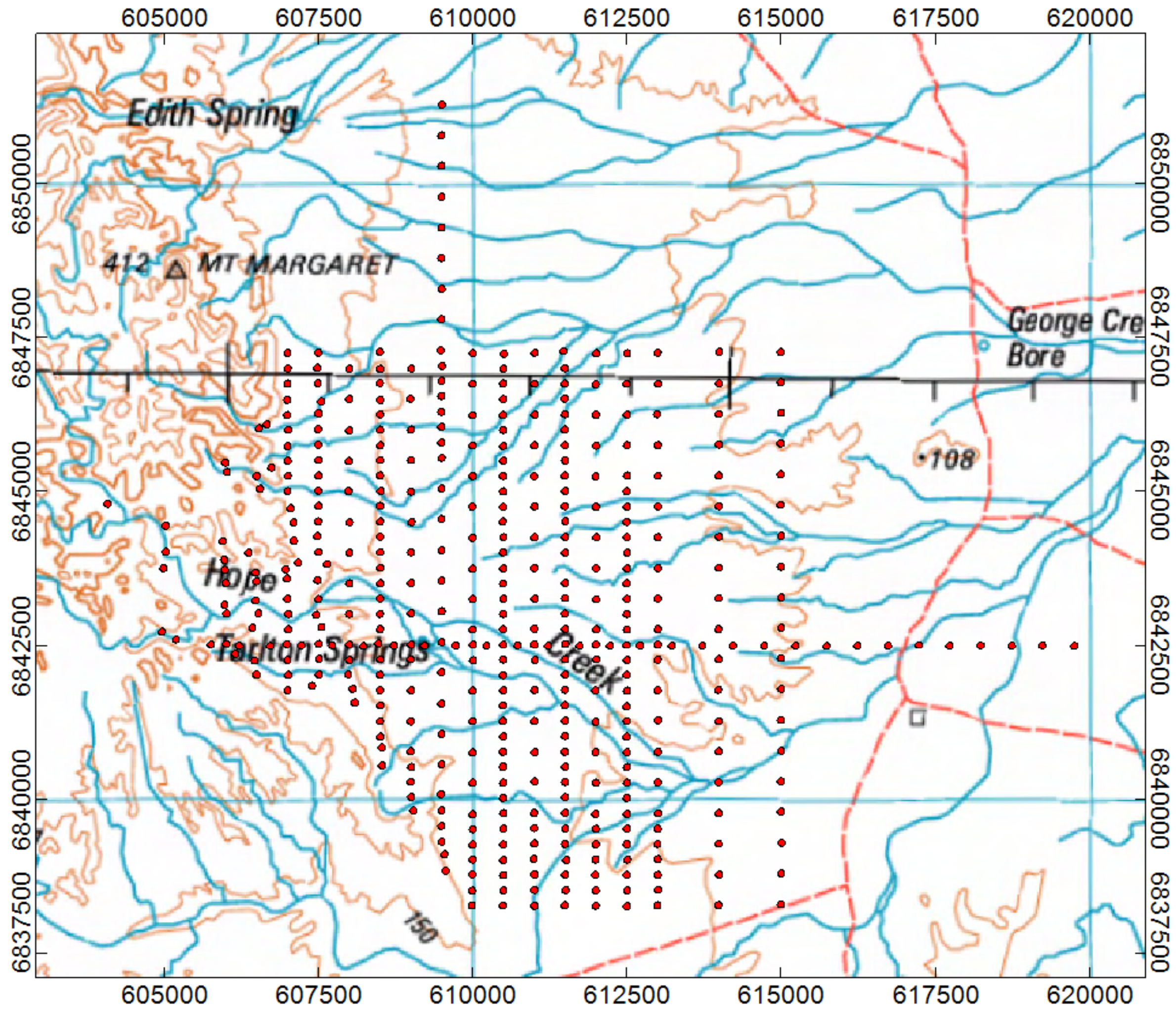
GPS Control was established using AUSPOS. Three separate 10 hour sessions were submitted to AUSPOS's online processing systems where returned coordinates were accurate to better than 0.01m.

The station can be reached by the following directions. From William Creek take the Oodnadatta track north west towards for approximately 20km. You will come to a cross road that runs south to Anna Creek Station and north towards George Creek Bore. Take the north track for approximately 3.5km and you will pass Kangaroo dam on your left. Continue heading north on this track for 17.5 km until reaching Watchmacallit Dam on your left. Follow the track for a further 21km until a cattle holding yard. The control station is 500m east of the southernmost point of the holding yard.



Photograph of Control Station 201302300001 and surrounds

APPENDIX B
Plots and Imagery



Scale 1:116000

2500 0 2500

(meters)

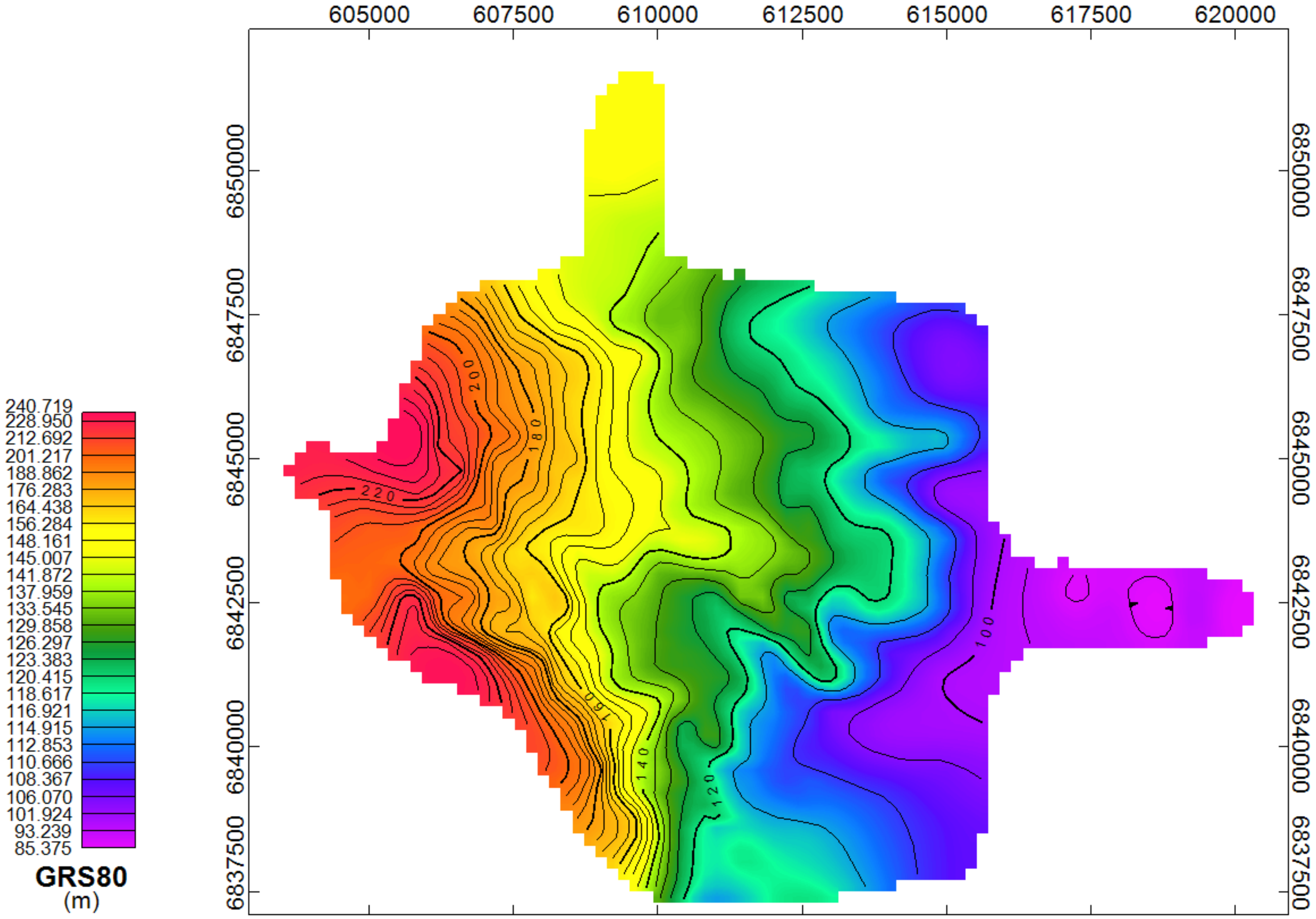
GDA94 / MGA zone 53

MONAX MINING LIMITED

P2013023 William Creek Gravity AB06_07 Tarlton Springs
Plot of Gained Gravity Stations
Varied Configurations

ATLAS GEOPHYSICS PTY LTD
FINAL DATA RELEASE
www.atlasgeo.com.au

drawn by : DBK



N

Scale 1:116000

2500 0 2500

(meters)

GDA94 / MGA zone 53

MONAX MINING LIMITED

P2013023 William Creek Gravity AB06_07 Tarlton Springs

Pseudocoloured Image of GPS Derived Elevation (GRS80)

Shade = None, Contours = 5m, Histo = Equalised

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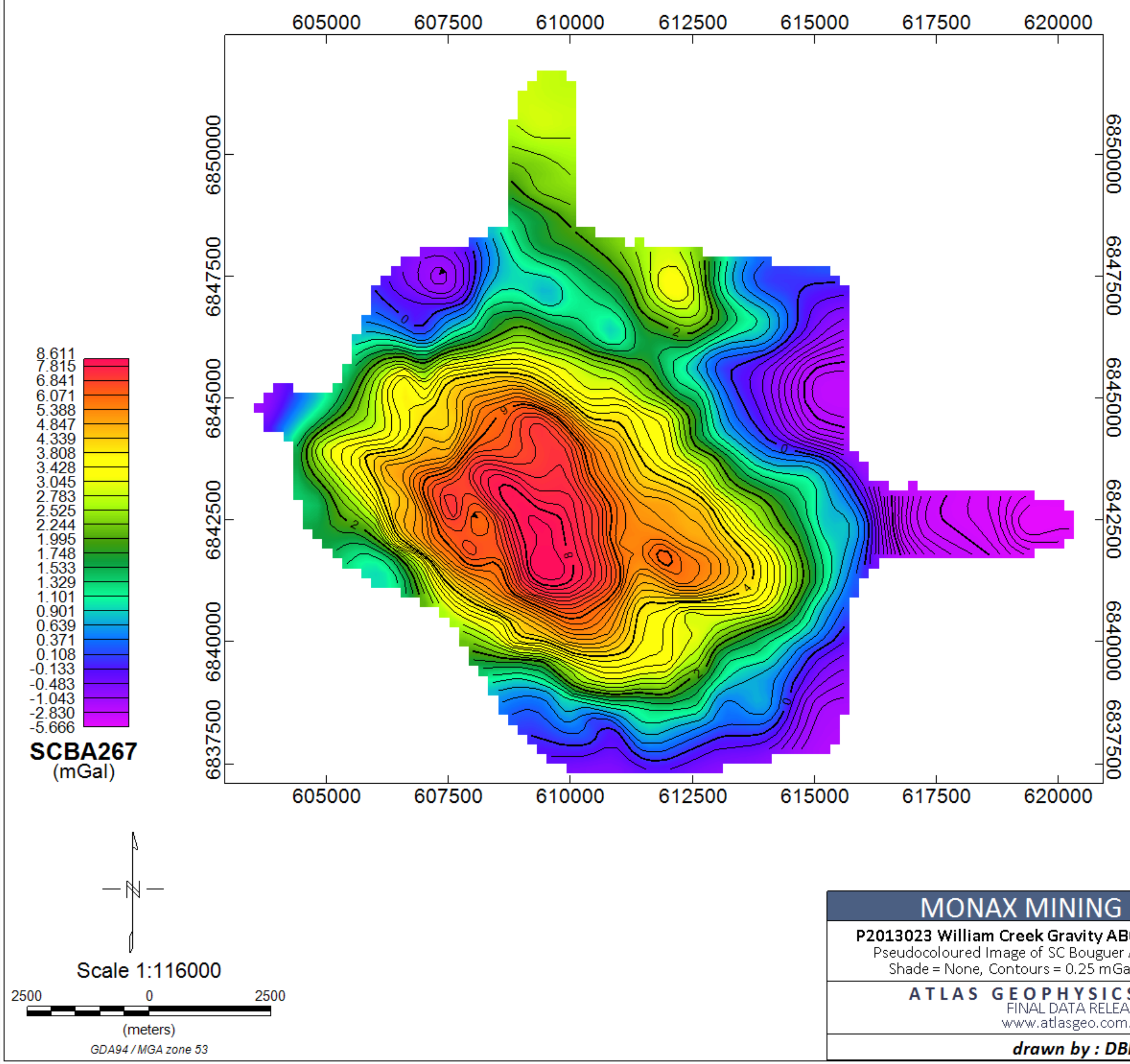
drawn by : DBK



MONAX MINING LIMITED

P2013023 William Creek Gravity AB06_07 Tarlton Springs

Pseudocoloured Image of SC Bouguer Anomaly (2.67gm/cc)

Shade = None, Contours = 0.25 mGal, Histo = Equalised

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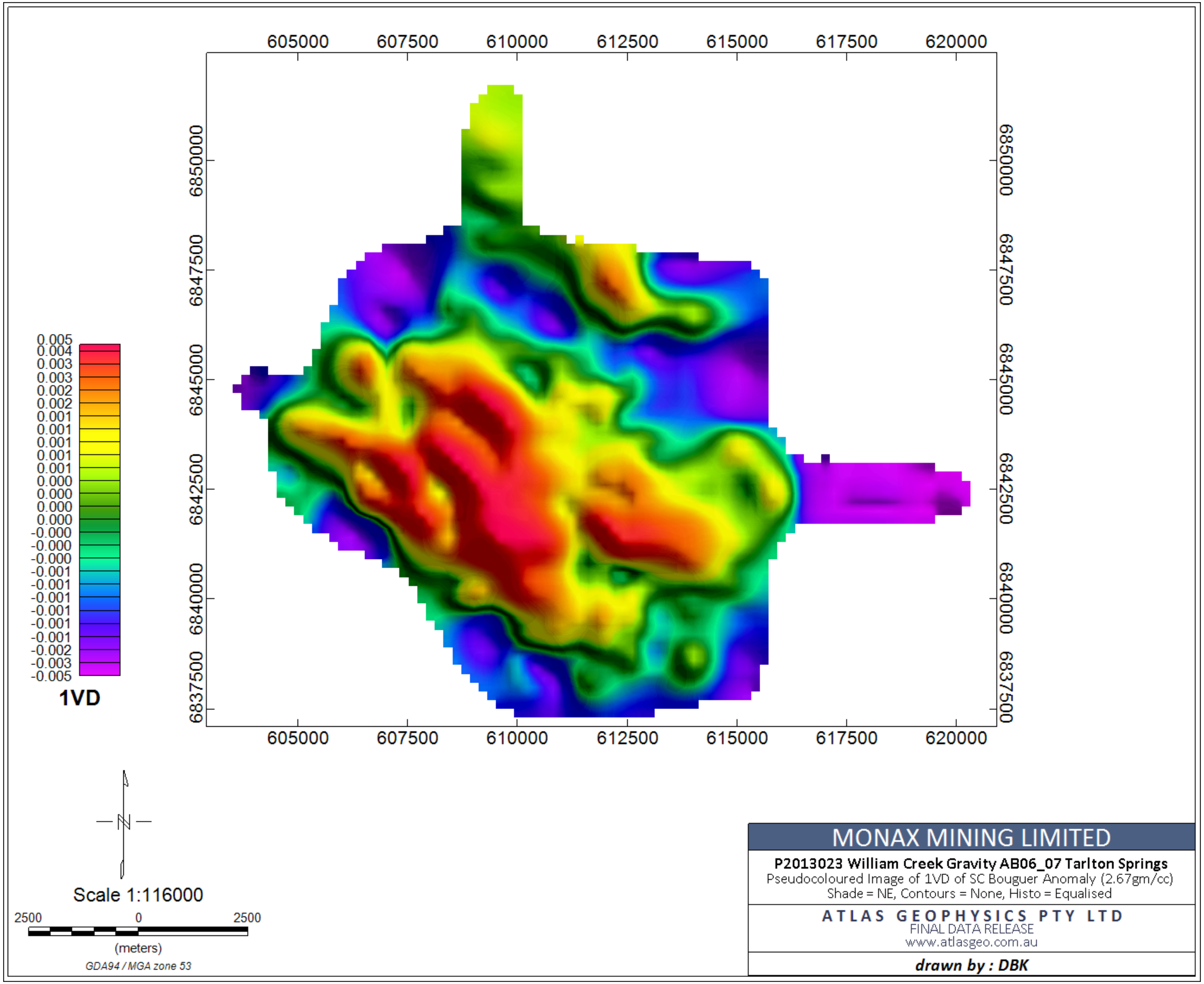
605000
607500
610000
612500
615000
617500
620000
6850000
6847500
6845000
6842500
6840000
6837500
0.005
0.004
0.003
0.003
0.002
0.002
0.001
0.001
0.001
0.001
0.001
0.000
0.000
0.000
0.000
-0.000
-0.000
-0.000
-0.001
-0.001
-0.001
-0.001
-0.001
-0.001
-0.002
-0.003
-0.005
1VD
N
Scale 1:116000
2500
0
2500
(meters)
GDA94 / MGA zone 53
MONAX MINING LIMITED
P2013023 William Creek Gravity AB06_07 Tarlton Springs
Pseudocoloured Image of 1VD of SC Bouguer Anomaly (2.67gm/cc)
Shade = NE, Contours = None, Histo = Equalised
ATLAS GEOPHYSICS PTY LTD
FINAL DATA RELEASE
www.atlasgeo.com.au
drawn by : DBK

APPENDIX C
GPS Control Information

201302300001
0001 -28 29 22.31949 136 12 28.12694 86.438 78.921 GDA94
0510 -28 29 22.31952 136 12 28.12688 86.441 78.924 GDA94
0510 -28 29 22.31952 136 12 28.12689 86.441 78.924 GDA94

GDA94AVE
-28 29 22.3195
136 12 28.1269

-28.48953319
136.20781303

GRS80HT
86.440

AHDHT
78.923

N
7.517

MGA53
618219.032
6847973.172

AMG53
618090.280
6847801.657