

# **FALCON MINERALS LIMITED**

ACN 009-256-535

## **ANNUAL TECHNICAL REPORT**

**EXPLORATION LICENCE 13639**

**"MT MCDONALD"**

**GALILEE AND DRUMMOND BASIN REGION CENTRAL EAST  
QUEENSLAND**

**23<sup>rd</sup> May 2003 to 22nd May 2004**

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**HELD BY: FALCON MINERALS LIMITED**

**MANAGER and OPERATOR: FALCON MINERALS LIMITED**

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<b>GALILEE AND DRUMMOND BASIN REGION CENTRAL EAST QUEENSLAND.....</b>	<b>1</b>
<b>SUMMARY.....</b>	<b>3</b>
<b>KEYWORDS .....</b>	<b>3</b>
<b>1. INTRODUCTION.....</b>	<b>4</b>
<b>2. LOCATION AND ACCESS.....</b>	<b>4</b>
<b>3. TENEMENT .....</b>	<b>4</b>
<b>4. PREVIOUS EXPLORATION .....</b>	<b>4</b>
<b>5. GEOLOGY .....</b>	<b>6</b>
<b>5.1 Regional Geology.....</b>	<b>6</b>
<b>5.2 Local Geology .....</b>	<b>6</b>
<b>6. WORK COMPLETEED BY FALCON MINERALS .....</b>	<b>6</b>
<b>6.1 Geophysics – Gravity Survey .....</b>	<b>7</b>
<b>7. EXPENDITURE STATEMENT.....</b>	<b>7</b>
<b>8. CONCLUSIONS.....</b>	<b>7</b>
<b>9. REFERENCES.....</b>	<b>8</b>

#### **LIST OF TABLES**

<b>1. Tenement Summary</b>	<b>4</b>
<b>2. Expenditure Statement</b>	<b>7</b>

#### **LIST OF FIGURES**

<b>1. EL 13639 “Mt McDonald” Tenement Location Plan</b>	<b>Scale</b>	<b>5</b>
	<b>1:100 000</b>	

#### **LIST OF APPENDICES**

<b>1. Gravity Data and plan</b>	<b>8</b>
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## **SUMMARY**

Falcon Minerals Limited was granted Exploration Licence EL 13639 on 10<sup>th</sup> May 2002 for a term of three years. Exploration is focused on intrusive volcanic hosted gold and copper sulphides or iron oxide hosted copper sulphides and gold. There is also some potential for epithermal vein hosted gold.

In 2003, Falcon carried out a literature research and purchased geophysical data for assessment. Research included geochemistry and geological fact mapping. Falcon completed a ground gravity survey and planned to undertake modeling of results and a field geological inspection prior to planning drilling.

## **KEYWORDS**

Geographical (East Central Queensland, Drummond Basin, Galilee Basin, Springsure).

Commodities (copper, gold, base metals).

Ages (Devonian, Paleozoic).

Geological Province (Drummond Basin, Galilee Basin, Nogoia Anticline).

Gravity data.

## 1. INTRODUCTION

Exploration Permit 13639 is located in the southeast portion of central Queensland. Work completed by Falcon in 2003 included assessment of geophysics, literature research and assessment of past exploration results and preparation for a ground geophysical survey. During the current reporting period Falcon has carried out a ground gravity survey by Furgo.

## 2. LOCATION AND ACCESS

Exploration Licence 13639 is located at 24 deg 12 minutes South and 147 deg 40 minutes East on the Springsure 1:250,000 Geology Sheet and on the Nandowrie 1:100,000 Cadastral map.

The tenement straddles the Dawson Developmental Road, 40 km west of Springsure township. Emerald is situated to the north. The tenement is about 7.5 km wide by 7.5 km long over part of the Nogoia River and homesteads of Telemon and Emu Plains in the north, and Shadeville to the south.

## 3. TENEMENT

Tenement EL 13639 Mt McDonald was granted to Yardarino Limited on 10<sup>th</sup> May 2002. In December 2002 Yardarino changed its name to Falcon Minerals Limited and vested the tenement in that name.

Tenement details are given in Table 1.

<b>Tenement Number</b>	<b>Initial Date of Application</b>	<b>Blocks Sub blocks</b>	<b>Area Sq km</b>
EL 13639	10 <sup>th</sup> May 2002	188 (k, p, u) 189 (d, f, g, h, j, l, m, n, o, q, r, s, t, v, w, x, y)	60

## 4. PREVIOUS EXPLORATION

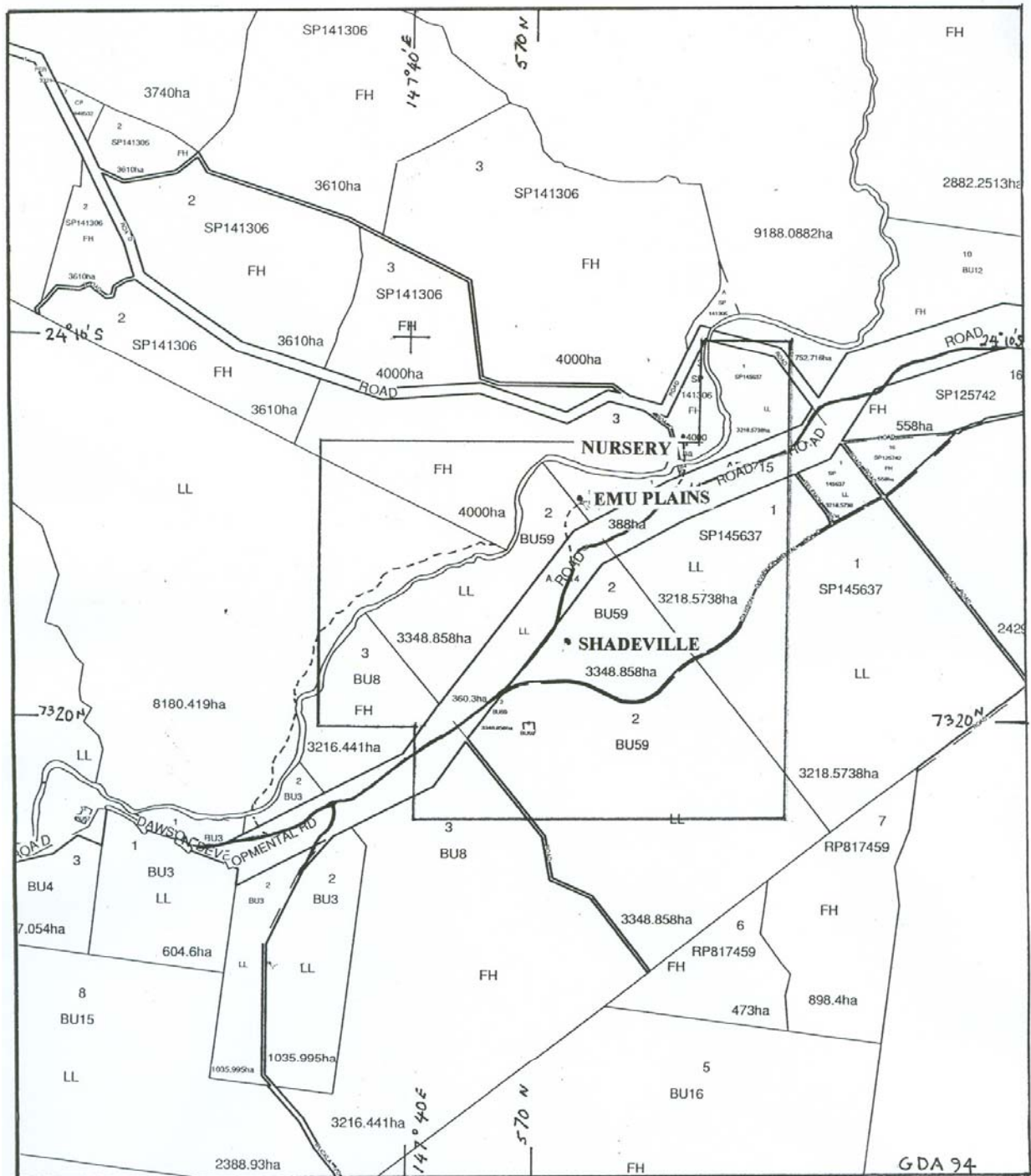
Exploration for base metals commenced in 1972 mainly around Emu Plains containing Silurian-Devonian Dunstable volcanics of andesite lavas and pyroclastics interbedded with lenses of shale and reef limestone on the western margin. These volcanics are extensively fractured and exhibited minor chloritization and sericitization. One part in the Emu Creek area, underlain by Silver Hills Volcanics, defined an anomalous copper halo over 700m x 2,000m with a partly coincident zinc anomaly.

During 1987 to 1989 a regional geochemistry survey included gold. Some anomalous gold results were obtained north of Emu Plains.

The best rock chip gold value of 0.15 ppm Au was from a cropping out dolerite / diabase-gabbro dyke, but this did not relate to the drainage anomalies. Two float rocks downstream of the diabase-

gabbro, were of green botryoidal (possibly epithermal silica or quartz) showing well-preserved carbonate replacement. This material assayed anomalous copper at 620 ppm.

**Figure 1.** Location of EL 13639 Mt McDonald within the southeast part of Queensland.



FALCON MINERALS

MT McDONALD  
EPM 13639

SCALE 1:100,000

LOCATION, TENEMENT,  
CADASTRAL, REPORT  
LOCALITIES PLAN



## **5. GEOLOGY**

Regionally the tenement is on the southern end of the Drummond Basin that hosts a number of significant gold and gold-copper deposits to the north, where Paleozoic rocks of Ordovician through to Permian exist with some Tertiary cover of volcanics and sediments.

### **5.1 Regional Geology**

The Springsure 1:250,000 geological sheet 1967, shows Carboniferous and younger Permian sandy sediments and large expanses of Tertiary basalt. Horizontal valley fill sheets and occasional Tertiary basaltic plugs are mainly to the east and southeast parts of the sheet. Inliers of older rocks of Devonian to Lower Paleozoic ages are exposed along the Telemon and Nagoa anticlines.

Basement to the Drummond basin basement are the Anakie Metamorphics of Lower Paleozoic age (570 to 440 million years) that do not crop out along the Nagoa anticline, but do at the western Telemon anticline. The Anakie metamorphics comprise quartz sericite schists, gneisses and coarse-grained augen granite with NNE foliation, and in places, has an overlying band of ferruginous brecciated quartzite (Pioneer Minerals, 1988).

Massive grandioritic granite (Devonian age?) is also poorly exposed in the Telemon anticline core and not exposed along the Nagoa. This granite has intruded into the Telemon anticline more or less along its axis, along a fault-weakened zone.

The Nagoa anticline has fault controlled exposures of Silurian-Devonian (440 to 345 million years) Dunstable Volcanics that are composed of andesite vesicular lava flows, pyroclastics, and finely laminated black shales, with some coralline limestone whereas the parallel Telemon anticlinal zone, 20 km to the west, has some exposures of Lower Paleozoic rocks.

The remainder of the region has younger rocks of Carboniferous (345 to 280 million years old) to Devonian sediments including algal limestone.

### **5.2 Local Geology**

The tenement lies along the NNE trending Nagoa anticlinal structure at the southern extremity of the Drummond Basin. Ten kilometres to the west of the tenement is the Mistake syncline. The Telemon anticline is 5 km further west, forming an open folded sequence. To the south is the deepening Surat Basin and to the west the Galilee Basin.

Common to Falcon's tenement are exposures of Devonian Silver Hills Volcanics. These are described as "volcanics draped over the older Dunstable core rocks of the anticlines and mentioned they were sulphidic" (Pioneer, 1989). They consist of intermediate, basic and acid volcanics with some associated sediments of conglomerate, sandstone and shale.

## **6. WORK COMPLETED BY FALCON MINERALS**

During the reporting period a gravity survey was conducted by Fugro Ground Geophysics Pty Ltd. The survey was completed using a Scintrex CG-3 gravity meter and Trimble 4000Ssi dual frequency receivers. Data was collected and post processed using a 10 second logging time. The resulting data was modelled to locate targets for drill testing.

## 6.1 Geophysics – Gravity Survey

The primary base station for the survey was situated within the northern area to be surveyed (Mt McDonald). A secondary base station was established for surveying within the southern area (Racehorse). The base stations were tied by a single loop tie and can be considered to be relatively tied to an accuracy of better than 0.05 mGals. The northern base station has an arbitrary value of 978850 mGal. The southern base station has a difference of +2.4 mGal to the northern with a relative gravity value of 978852.4 mGal. Two GPS base stations were established immediately adjacent to the gravity base stations. If further work is conducted at the site, the northern base station could be tied to the state survey network and AGSO fundamental gravity network and the data from this survey reprocessed.

The final data file "Raymond final xyz" contains X and Y in WGS84 and AGD66X and AGD66Y in AGD66 as described in the header information. The jpg images (mtmcdonald\_1.jpg and racehorse\_1.jpg) are in WGS84.

Some work commenced on further modelling of the gravity data that was not completed by the anniversary date, nor in time for this report. The regional government gravity data may also be integrated with the Fugro data.

The data file appears in Appendix 1.

## 7. EXPENDITURE STATEMENT

<b>Exploration Activity</b>	<b>Period ending 22/05/04</b>
Data acquisition	193.00
Landowner access dealings	864.00
Ground gravity survey and processing of data	7942.00
Review and assessment of data	1800.00
Report preparation	2500.00
Overheads 15%	1995.00

## 8. CONCLUSIONS

The Drummond Basin is known to host some significant gold deposits. Evidence from geochemical anomalism indicates some mineralising processes occurred and the causes of that anomalism have not been adequately determined to explain it.

The company's objectives of looking for larger mineralised intrusives along the anticline that may not have cropped out to any significant extent will form a focus of the next exploration phase. The existence of epithermal vein systems also remains a conceptual target.

## 9. REFERENCES

Muskett, R. (June 2003) Annual Technical Report Exploration Licence EL 13639. Annual Report for 12 month period ending May 2003. Unpublished Report.

Gardner, N. (1988) Authority to Prospect 4890M (Telemon) and 4892 (Nogoa) Joint Final and 6 monthly Report 25<sup>th</sup> Feb 1988 – 24<sup>th</sup> Aug 1988. Technical Report No 153 Pioneer Minerals Australia Ltd.



**APPENDIX 1**

**GRAVITY IMAGES AND DATA FILE**

