



30 April 2024

## COPPER PORPHYRY POTENTIAL GROWS AT GEORGETOWN PROJECT

### Highlights

- High grade copper veins have developed adjacent to a copper porphyry system at Fiery Creek prospect, within the Georgetown Project in Queensland
- High-grade copper assays of up to 23.5% Cu
- Mineralogy review strongly supports the presence of a shallow, constrained significant copper mineralised porphyry system
- Geochemistry favourably compares to similar geologically aged projects including Mount Leyshon, Kidston, Red Dome and nearby Mt Turner
- Copper mineralised zone of the Fiery Creek porphyry system is interpreted to lie close to surface
- Outcropping vein areas indicative of pencil porphyry type systems as documented at North Parkes and Ridgeway, NSW
- Extended geochemistry sampling program underway at Fiery Creek with planned detailed geologic mapping activity
- Geophysics survey (pole dipole, IP, resistivity, MT) scheduled for August 2024

EMU NL (“**EMU**” or “the **Company**”) is pleased to provide an exploration update on the Georgetown Project in Queensland where the Company has extended a geochemistry program to further investigate potential it has identified for a copper porphyry discovery.

**Emu Non-Executive Chairman Peter Thomas** commented,

*“Emu is increasingly confident the Fiery Creek prospect has the makings of a massive multi-million-tonne copper porphyry system. In addition to Mr Maund’s assessment, the results of our geochemistry work to date at Fiery Creek have confirmed the potential for a near-surface, high-grade deposit which warrants further investigation. Emu intends to strengthen its understanding of this discovery in 2024 by applying modern exploration techniques not previously used in the area. This includes the next key step for the Company which is to undertake a definitive geophysical survey of the Fiery Creek Prospect area in August this year.”*

For personal use only

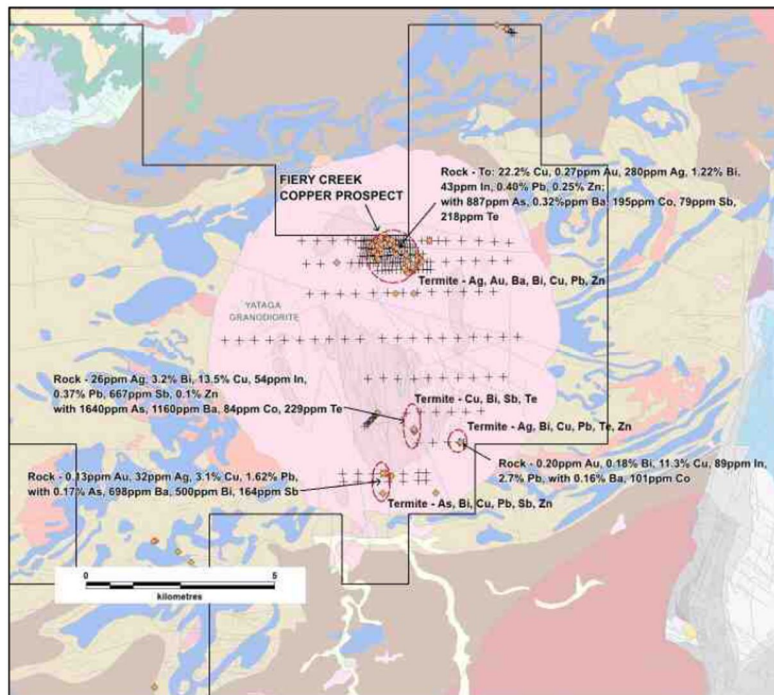
Emu has contracted Independent Consulting Economic Geologist and Fellow of the AusIMM and AIG, Mr Nigel Maund, to assess the Company’s Fiery Creek prospect, within the Georgetown Project.

The scope of Mr Maund’s assessment includes:

- a comprehensive mineralogical investigation of the Fiery Creek vein samples<sup>1</sup>,
- review of EMU exploration data, and
- an update to his interim report<sup>2</sup>.

In his interim report, Mr Maund suggested the Fiery Creek quartz, copper oxide, sulphide vein array system appears to be developed within the cupolas of two possible, closely spaced “pencil porphyry – type” mineralised systems.

Further research work undertaken by Mr Maund, relying on the updated EMU geologic exploration database, has strengthened his view and interpretation of the system. Indeed, evidence of feldspar porphyry intrusive bodies and phreatic breccias and advanced argillic alteration have been confirmed from Fiery Creek samples viewed under microscope.



**Figure 1.** Fiery Creek Copper/Yataga Granodiorite summarising rock (brown diamonds) and termite mound sample results (black crosses)

<sup>1</sup> ASX Release “Exploration Update Georgetown, Scale Potential Confirmed” 4 March 2024

<sup>2</sup> An Interim Report – The Fiery Creek Copper Prospect, Georgetown Inlier, North Queensland - Nigel Maund MSc, DIC, MBA, FAusIMM, FAIG,FSEG,FGS,MMSA, Consultant Economic Geologist, 31 January 2024

## Fiery Creek Geochemistry Suggests Shallow Copper Mineralisation

Substantial high-grade copper assays of up to 23.5% Cu were recorded with anomalous associated elements: bismuth (up to 1.88%), silver (up to 480 g/t), arsenic (up to 1,650 ppm), antimony (up to 667 ppm), zinc (up to 1,470 ppm), barium (up to 1.25 %) and tellurium (up to 215 ppm). Mr Maund noted that the system is copper dominated with significant bismuth and silver. Referencing Dr Scott Halley's<sup>3</sup> work, Mr Maund noted the level of erosion within a porphyry copper system can be pinpointed by its geochemical footprint and its silicate and sulphide mineralogy. See Figures 2 and 3 below. These diagrams illustrate that the Fiery Creek system is likely to have been eroded to the upper potassic alteration shell of a porphyry copper system with high grade copper impregnated veining currently exposed to surface.

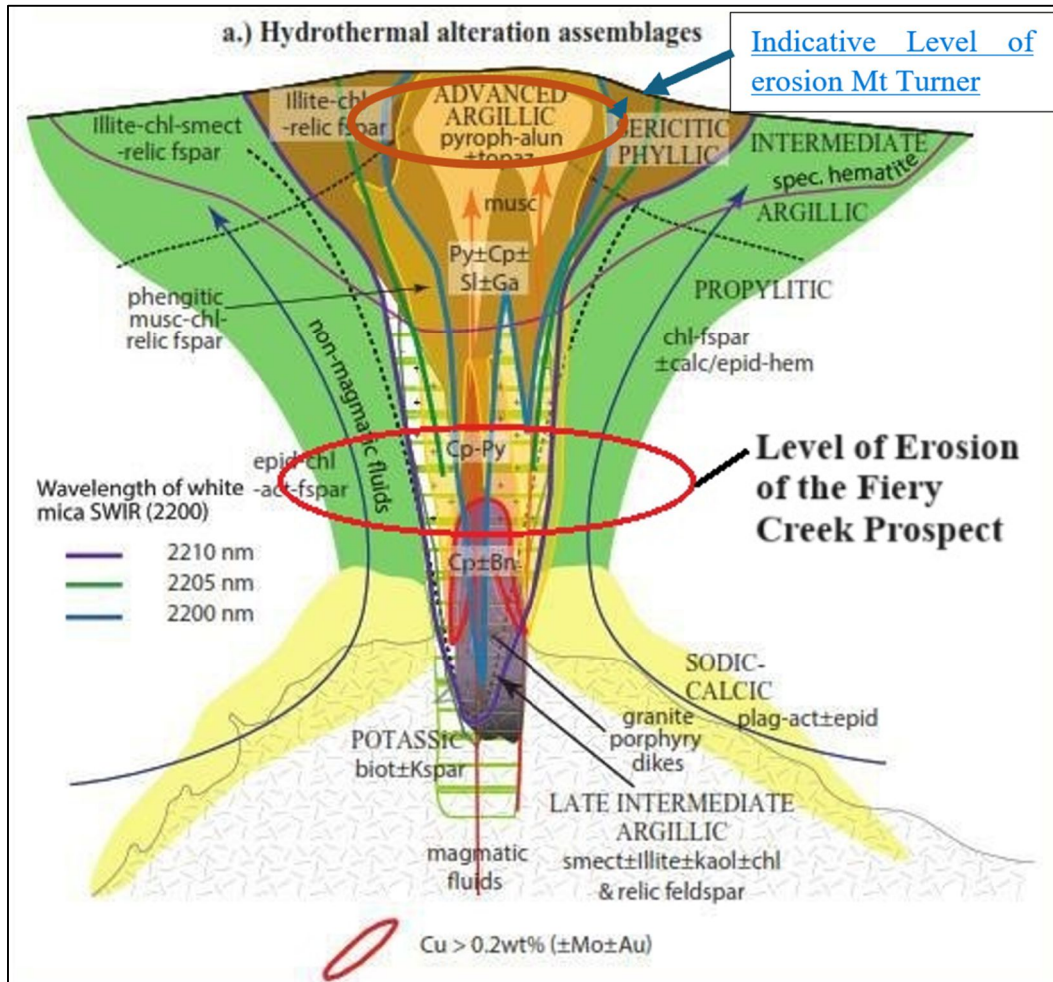
It has further been interpreted, from geochemistry and mineralogical studies, that the Fiery Creek porphyry system has not vented, being entrapped, and constrained by the Yataga Igneous Complex thus maintaining the copper mineralisation, metals, and volatiles within the system. By comparison, the nearby Mt Turner porphyry caldera, 13kms to the SW, clearly has vented and further has not been eroded to the extent that Fiery Creek has. Mt Turner, in contrast to Fiery Creek, has not been subjected to the levels of erosion seen at Fiery Creek as determined from its hydrothermal signatures and collapsed breccia.

Prospect	Sample ID	Easting	Northing	Au ppm	Ag ppm	As ppm	Ba ppm	Bi ppm	Cu %	In ppm	Mo ppm	Pb %	Sb ppm	Te ppm	Zn ppm
Fiery Ck	ESS02481	775670	8007511	0.023	36	112	3220	685	7.53	17.1	2.6	0.38	12.8	22.3	207
Fiery Ck	ESS02482	775693	8007466	0.091	280	107	771	1450	6.91	19	8.9	0.04	4.5	63.3	1470
Fiery Ck	ESS02483	775981	8007917	0.023	360	241	663	18800	1.34	5.67	4.3	0.29	341	215	148
Fiery Ck	ESS02485	775434	8007406	0.002	30	68.7	646	126	7.50	6.74	12.4	0.01	4.4	2.6	200
Fiery Ck	ESS02491	775362	8007548	<0.001	16	26.6	448	32.4	5.61	2.24	19.9	0.00	2.4	1.99	239
Fiery Ck	ESS02492	775571	8007144	<0.001	36	138	87.8	158	6.55	11	13.9	0.01	4.8	3.12	199
Fiery Ck	ESS02493	775524	8007220	0.011	130	48.9	391	7.21	8.99	11.6	1.3	0.00	1.1	0.41	29
Fiery Ck	ESS02494	773511	8007365	0.019	460	40.1	12500	395	23.51	13.9	1.5	0.01	4.2	1.61	92.5
Fiery Ck	ESS02496	775377	8007106	0.108	55	20.4	713	18.6	5.31	12.2	11.2	0.00	1.5	2.75	330
Fiery Ck	ESS02497	775407	8007053	0.268	73	68.3	1250	28.2	13.54	16.1	7.7	0.01	6.1	2.63	238
Fiery Ck	ESS02498	775291	8007197	0.066	10	164	432	149	22.21	16.3	7.3	0.00	5.2	15.2	108
Fiery Ck	ESS02499	775515	8002850	0.024	8.8	599	627	1970	13.52	33.4	31.4	0.22	397	96.1	966
Fiery Ck	ESS02500	775512	8002856	0.043	6.6	1640	1160	2840	9.07	54.3	15.9	0.37	667	91.2	653
Fiery Ck	ESS02502	776728	8002532	0.029	44	75.8	1110	671	11.30	89.2	21.9	0.19	17.1	23.6	625
Fiery Ck	ESS02504	774667	8001756	0.131	32	1670	427	500	3.10	11.7	8.5	1.62	164	10	414
Snake Ck	ESS04715	705506	7928092	0.004	390	12.7	740	0.85	0.00	6.62	1.5	22.40	464	-0.1	256
Snake Ck	ESS04716	705508	7928095	0.002	290	12.1	302	0.51	0.01	0.972	0.9	18.90	411	-0.1	81.7
Snake Ck	ESS04718	705647	7927991	0.025	91	39.1	226	0.44	0.00	0.235	1.2	1.26	34.6	-0.1	63.5

**Table 1.** Significant Assays Results from Emu's sampling program

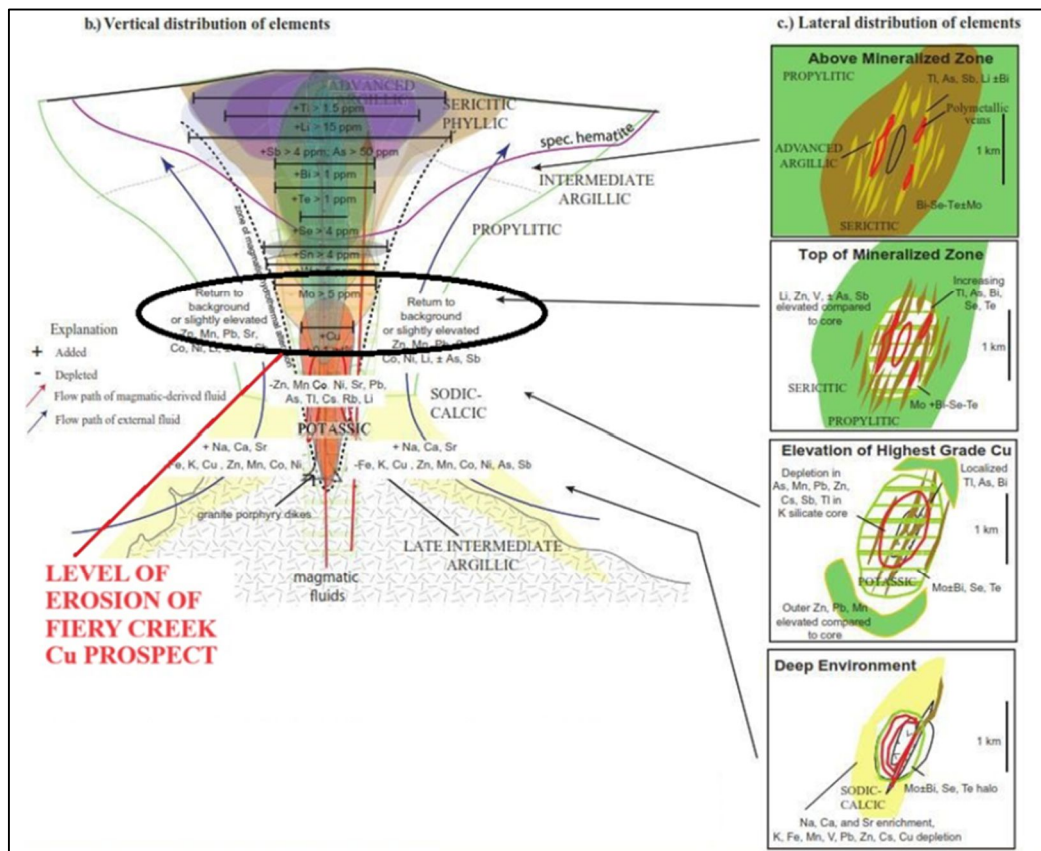
<sup>3</sup> "Footprints: Hydrothermal Alteration and Geochemical Dispersion around Porphyry Copper Deposits", SEG "Discovery Magazine", January 2015 Dr Scott Halley

For personal use only



**Figure 2:** Vertical cross section of a typical porphyry Cu deposit showing distribution of hydrothermal alteration and sulphide minerals. Also shown are generalised contours of the 2,200-nm peak measured in SWIR instruments; adapted from Dr Scott Halley's work, (SEG Discovery Magazine January 2015)





**Figure 3:** Dr Scott Halley's SEG Discovery, January 2015, Mineralogical & Geochemical characterisation of a Porphyry Cu System. Insets show the character of the mineralisation and alteration at successively deeper levels in the system.

The outcropping Fiery Creek quartz dominated veins observed to date vary in width from 30cm to 2m wide and display polyphase (many) geologic events comprising early quartz pyrite (mainly as oxyhydroxides goethite and limonite), overprinted chalcopyrite (34.6% Cu), pyrite (now oxidised to the supergene enriched assemblage chalcocite, dark grey sulphide with 80% Cu) and tenorite (a black acicular mineral containing 80% Cu), cuprite (red oxide of copper with 89% Cu), malachite (a green copper carbonate containing 57.5% Cu), chrysocolla (a hydrated sky blue copper silicate containing 33.9% Cu). See Figure 4 and 5.

The most intense overprinting of the early quartz veins and veinlets occurs as pervasive semi massive to locally massive copper sulphide replacement with development of disseminated chalcopyrite typically attended by a stockwork for fracture filling veins and veinlets both within the quartz veins and in the intensely hydrothermally altered, silicified and sericitized coarse grained equigranular granodiorite host rock.

Evidence of feldspar porphyry intrusive rocks are shown as Figure 6 below, which also shows the presence of upper level, vuggy, advanced argillic alteration of a feldspar porphyry igneous

For personal use only

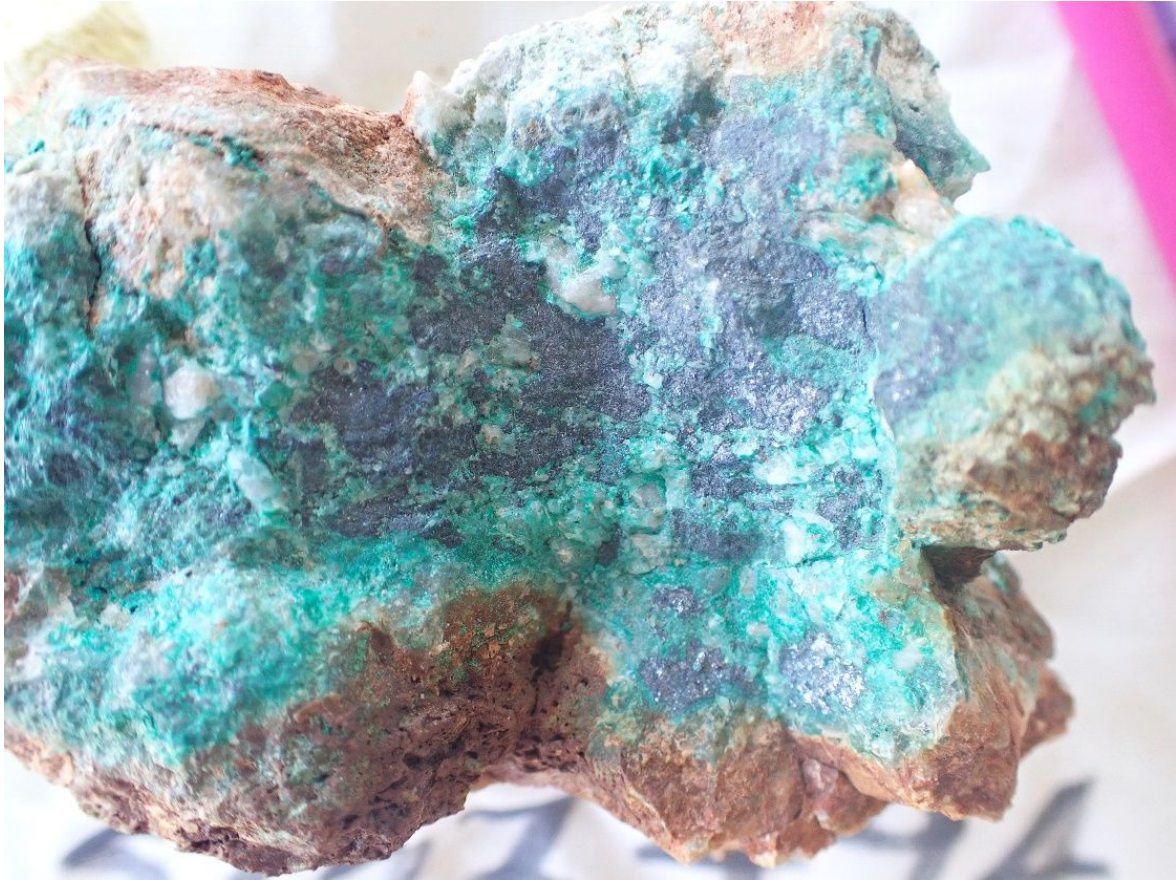
host with the vugs developed after the feldspar porphyry crystals leaving a residual pervasively silicified groundmass.

The geochemical characteristics of the rock types have clearly served to underpin the interpretation of the system to be a porphyry system. This has also been supported by Mr Maund's observations particularly with reference to his mineralogical studies under the microscope. Further, the characterisation modelling shows that Fiery Creek's outcropping veins have formed at the top of a constrained, unvented cupola potentially containing economic copper mineralisation. The geochemistry highlights mineral enrichment in Cu, Bi, Ag, Pb, Zn, As, Sb and lesser Au, which may be favourably compared with other Early Permian (age dated) porphyry related Cu Au systems in Queensland such as Mount Leyshon, Kidston Red Dome and nearby Mount Turner.



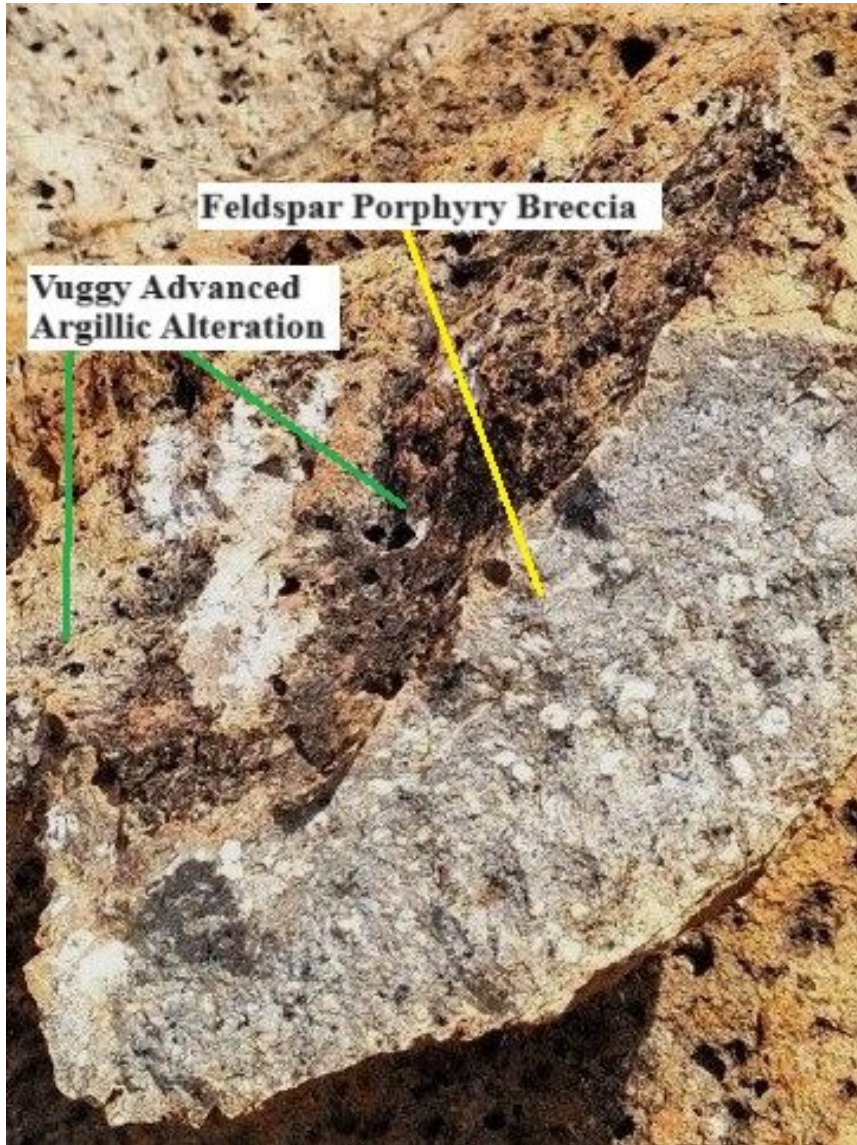
**Figure 4:** Sample ESSO 2116. (63ppm Ag, 815ppm Bi, 6.26% Cu, 2090ppm Pb) Intensely weathered and oxidised, quartz (vein and veinlet replacement) + sericite + goethite + limonite + chrysocolla + malachite altered granodiorite with secondary drusy cavities infilled with late-stage prismatic quartz.





**Figure 5:** Sample ESSO 2494 intensely weathered and oxidised, quartz + sericite + goethite + limonite + chrysocolla + malachite + tenorite + chalcocite rock with 2nd stage replacement of the quartz vein by semi – massive sulphides now oxidised to chalcocite and copper oxides tenorite + cuprite + malachite + chrysocolla.

For personal use only



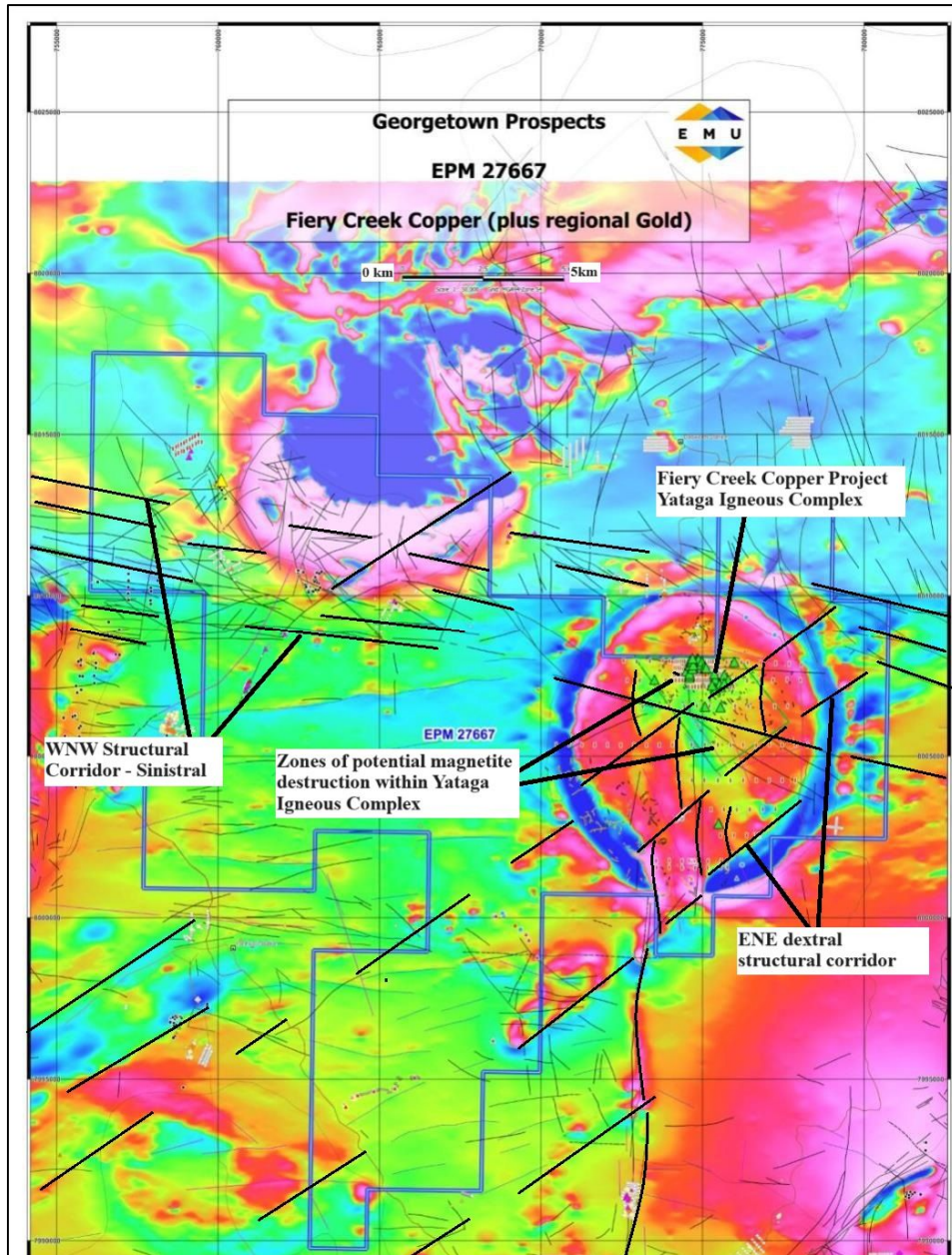
**Figure 6:** Remnant Feldspar Porphyry Breccia within a zone of vuggy (acid sulphate leached out feldspars) advanced argillic alteration from the SW copper mineralised vein array system at Fiery Creek.

### Geophysics Highlight Fiery Creek as Porphyry System

Airborne aeromagnetic and gravity surveys have highlighted Fiery Creek’s geophysical anomalism. The prospect and its granitoid host lie in regional structural settings that have facilitated the intrusion of porphyry systems throughout the tenement area.



For personal use only



**Figure 7:** The TMI aeromagnetic map of the northern part of the Georgetown Inlier showing the EMU mineral claims inside blue borders, and the interpreted, by Maund (2024), geologic structures.

As documented in Mr Maund's report, the control on metallogenic zones appears to be strongly influenced by the intersection of geologically long lived, sinistral WNW and NNW striking structures. The detailed geologic mapping in this part of the Georgetown Inlier also demonstrates the structural influence of a prominent ENE structure, which is apparent on the aeromagnetic map shown as Figure 7.

The Yataga Igneous Complex is located at the confluence of three structural corridors where it forms an oblate 29km<sup>2</sup>, 8km NS and 5km WE Permo Carboniferous intrusive body. These structures comprise the dextral WNW striking shear corridor and an ENE striking dextral shear corridor. The 3<sup>rd</sup> and apparently later structure is the irregular, NS striking Delaney Fault, mapped by the Geological Survey of Queensland (QGS). The aeromagnetic signature of the Yataga Igneous Complex is **unique** within the Georgetown Inlier, with its pronounced annular, alternate low (blue) and high (red) magnetic signature developed at its contact with the intensely folded Palaeozoic metavolcanics and metasediments. In detail, the Yataga Igneous Complex aeromagnetic signature has been disrupted by internal dextral dislocation about ENE striking shears and apparent magnetite destruction in the central and eastern portion of the Yataga Igneous Complex at the Fiery Creek copper prospect and to the west and southwest. This may be caused by intense hydrothermal alteration and pyritic alteration in this area where the porphyry copper system is suggested. Furthermore, it is also possible, and it has been interpreted that the mineralized system is a structurally controlled cluster of the "pencil porphyry- type" intrusions.

Figure 8 below shows a gravity high based upon a 400m grid ground survey. The map has been constructed utilising Klondike Exploration Pty Ltd's structural geologic map created in conjunction with Terra Search Pty Ltd, Townsville and with EMU's geochemical data. The anomalous gravity data coincides with the internal zone of magnetite destruction within the Yataga Igneous Complex which requires follow up and further assessment.

Both the Permo – Carboniferous Yataga Igneous Complex and the superimposed copper – bismuth – silver mineralisation event at the Fiery Creek prospect are located at the confluence of several significant long lived geologic structural corridors, the Delaney Fault and coincident gravity and magnetic lows. The two structural corridors intersect in the immediate vicinity of the YIC and are suspected of playing a key role in the emplacement of this substantial, 28km<sup>2</sup> in areal extent, igneous complex. Furthermore, the subregional gravity high extends to the SSE beyond Georgetown and terminates to the north against the northern corridor boundary of the WNW striking structural feature.



Mr Maund has interpreted this gravity feature as a possible aborted Lower Permian age rift zone. It is interesting that a further such structure is associated with the Mount Turner porphyry Cu Au prospect, located to the WSW.

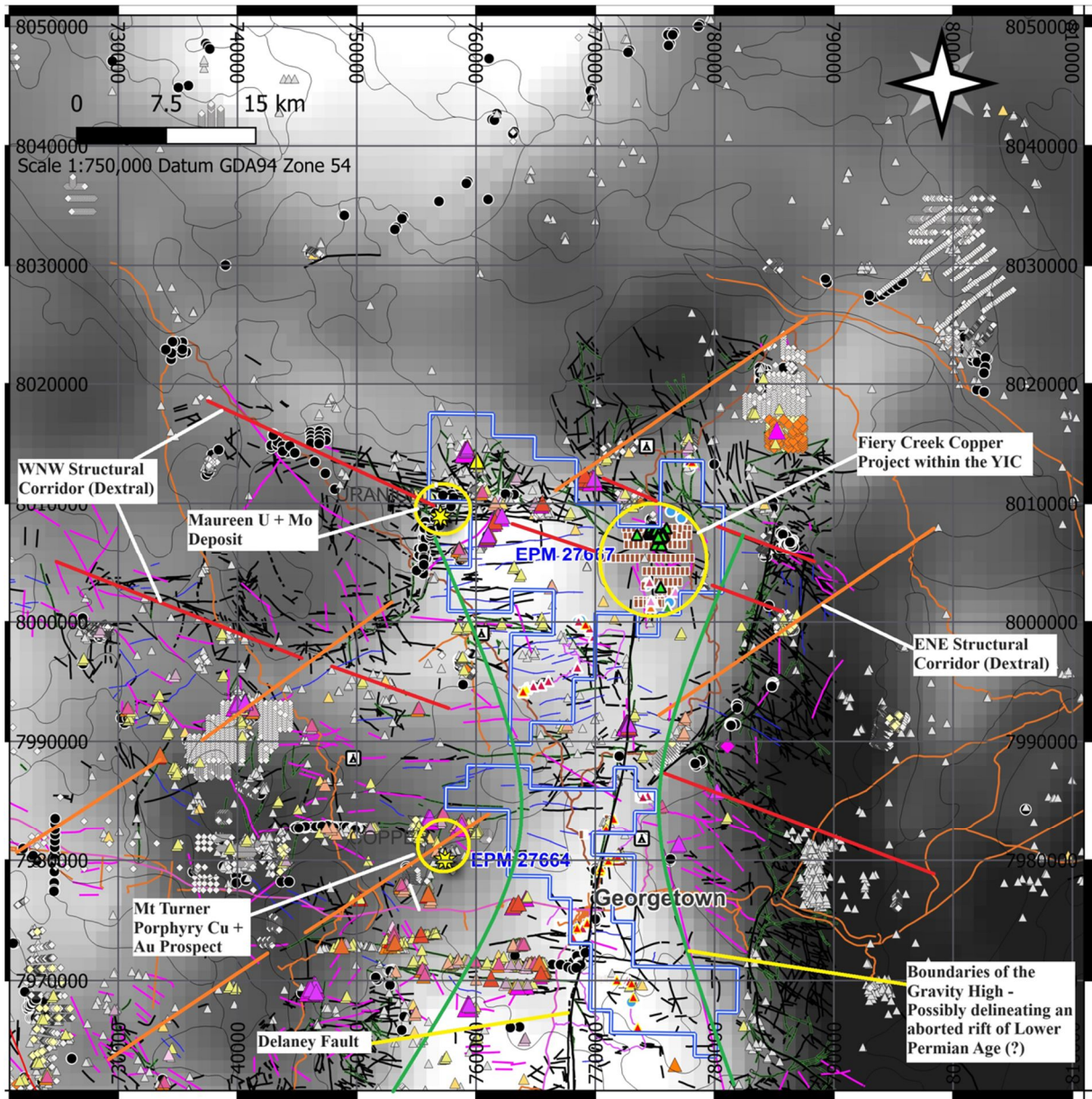


Figure 8: EMU's geochemical sampling results overlaying the geologic structures derived from Terra Search Pty Ltd. & Klondike Exploration Services Metallogenic Report on the Georgetown Inlier.



### Next Steps

An extended sampling program has resumed at Fiery Creek prospect with a detailed 1:500 scale geologic mapping activity scheduled. Additional reconnaissance exploration work is being undertaken within the geophysical aeromagnetic lows areas to the west and south of Fiery Creek within the Yataga Igneous Complex.

An XRF sampling programme over the outcropping vein areas of Fiery Creek to build a “heat map” of pathfinder elements has been scheduled. The heat map will generate possible vectors for early drilling. The geochemistry work will precede a ground-based grid-controlled, 20.6km line of pole dipole IP, resistivity, MT Geophysics survey designed to test the potential porphyry copper system at depth. EMU expects results of this survey to lead to the immediate scheduling of a drilling programme.

The geochemistry sampling programmes will take place during May 2024 with the geophysics survey scheduled in August 2024. Drill planning will follow results from the surveys however due to wet season access first drilling is likely to be scheduled in March 2025.

In addition to EMU’s identified significant scale copper porphyry prospect at Fiery Creek, the Company will also follow up a number of other scale potential prospects, including the epithermal bonanza style gold structures located (a few kilometres to the west of Fiery Creek) at the Camp Oven Creek prospect. This system is interpreted to be related to the porphyry intrusions situated within the same structural settings as Fiery Creek. Other prospects to be evaluated further include Dagworth, Georgetown, Ancient Britton, Mistletoe, Munitions Creek, and Snake Creek.

EMU will update the market following the return of assay results from the laboratories with 2,000 -2,500 samples scheduled for fire assay followed by 61 suite multi element assessment.

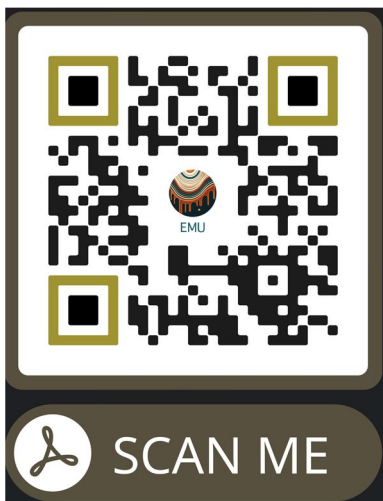
**AUTHORISED FOR RELEASE BY THE BOARD**

**For further information, please contact:**

Doug Grewar  
**Chief Executive Officer**  
EMU NL  
[info@emunl.com.au](mailto:info@emunl.com.au)

Investors can sign into our interactive investor hub and join in on the conversation with Emu NL.

<https://investorhub.emunl.com.au/auth/signup>



For personal use only

**EMU NL**

ABN 50 127 291 927

**ASX Codes: EMU and EMUCA**

10 Walker Ave  
West Perth, WA 6005  
T +61 8 9226 4266  
E [info@emunl.com.au](mailto:info@emunl.com.au)

PO Box 1112  
West Perth, WA 6872

**Post Consolidation Securities****Fully paid shares (listed)**

67,492,376 (including 18.6m the subject of the ATM which EMU can buy back for nil consideration)

**Contributing Shares (listed)**

1,349,502 paid to \$0.03, \$0.03 to pay

**Contributing Shares (Unlisted)**

1,166,667 paid to \$0.003, \$1.20 to pay, no call before 31 December 2025

**Options (unlisted)**

5,748,454 options to acquire fully paid shares, exercisable at \$0.30 each, on or before 7 October 2024

10,579,167 options to acquire fully paid shares, exercisable at \$0.09 each, on or before 31 December 2026

**Performance Rights (Unlisted)**

1,619,048 performance rights in relation to acquisition of Gnows Nest project

**Directors:**

**Peter Thomas**  
Non-Executive Chairman

**Terry Streeter**  
Non-Executive Director

**Gavin Rutherford**  
Non-Executive Director

**Tim Staermose**  
Non-Executive Director

**Investor enquiries:**

**Doug Grewar CEO**  
M +61 419833604

E [info@emunl.com.au](mailto:info@emunl.com.au)

**COMPETENT PERSON'S STATEMENT**

The information in this report that relates to exploration results is based on, and fairly represents information and supporting documentation prepared by compiled by Mr Nigel Maund, a Competent Person who is consulting economic geologist. Mr Maund is a Fellow of the Australian Institute of Geoscientists, a Fellow of the Australian Institute of Mining and Metallurgy. Mr Maund is a consultant to EMU NL and has sufficient experience in the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Maund consents to the inclusion herein of the matters based upon his information in the form and context in which it appears.

**FORWARD LOOKING STATEMENTS**

As a result of a variety of risks, uncertainties and other factors, actual events and results may differ materially from any forward looking and other statements herein not purporting to be of historical fact. Any statements concerning mining reserves, resources and exploration results are forward looking in that they involve estimates based on assumptions. Forward looking statements are based on management's beliefs, opinions, and estimates as of the respective dates they are made. The Company does not assume any obligation to update forward looking statements even where beliefs, opinions and estimates change or should do so given changed circumstances and developments.

**NEW INFORMATION OR DATA**

EMU confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, which all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not materially changed from the original market announcement.