



OCTOBER 2024

# GULF CREEK COPPER ACQUISITION

One of Australia's highest grade copper mines  
that history forgot

ASX:OD6



# IMPORTANT INFORMATION

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## No New Information

The information in this report relating to the Mineral Resource estimate for the Splinter Rock Project is extracted from the Company's ASX announcement dated 29 May 2024. OD6 confirms that it is not aware of any new information or data that materially affects the information included in the original announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply.

This document contains information extracted from ASX market announcements reported in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (**2012 JORC Code**) and available for viewing at <https://www.od6metals.com.au/investors/asx-announcements/>. OD6 confirms that it is not aware of any new information or data that materially affects the information included in any original ASX market announcement.

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Certain statements contained in this presentation, including information as to the future financial or operating performance of OD6 and its projects, are forward looking statements. Such forward looking statements:

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- are necessarily based upon several estimates and assumptions that, while considered reasonable by OD6, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; and
- involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements.

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No representation is made that, in relation to the tenements the subject of this presentation, OD6 has now or will at any time in the future develop further resources or reserves within the meaning of the Australian Code for Reporting of Exploration Results, Mineral resources and Ore Reserves (**The JORC Code**).

## Cautionary Statement

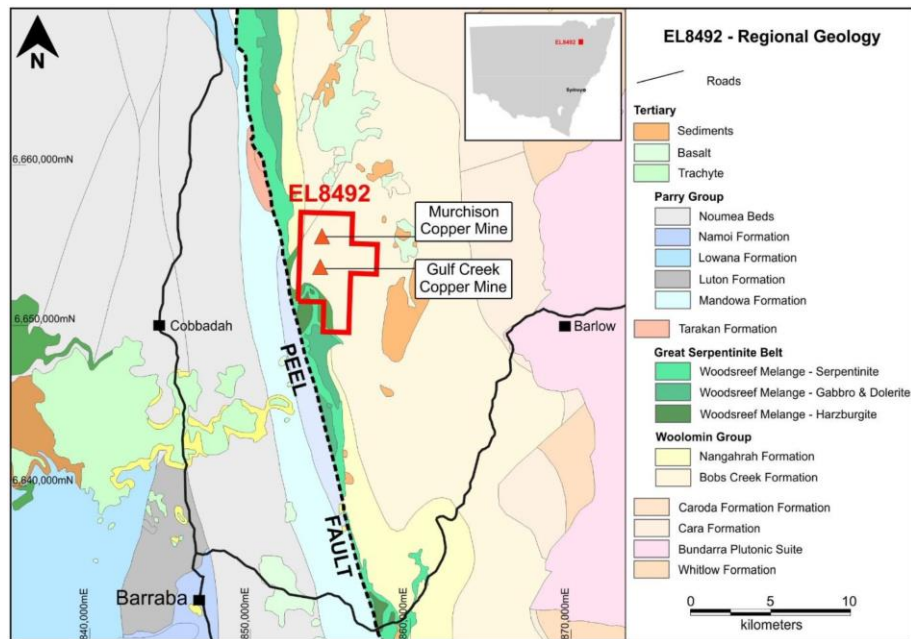
Front page: Upper image – Gulf Creek workings, with shaft and smelter stack. Lower left – photograph of mine-spoil Gulf Creek. Lower right – photograph of slag material from historic smelting operations at Gulf Creek. Approximate location: ~GDA94) -30.1957°S, 150.6843°E

In relation to photographs of mine-spoil material, from Gulf Creek no representation as to the composition of the rocks is presented here. Laboratory assay results are required to determine the grade of mineralisation and the Company will update the market when check sampling and assay results are received and compiled. The Competent Person advises that the photographs contained in this Presentation are not necessarily representative of the geology exploited by historic mines at Gulf Creek and are not to be construed as being representative of potentially economic mineralisation.

# Key Acquisition Points

Strong near-term catalysts on a historic, underexplored high-grade VMS copper system

- **High Grade Copper** – Zinc VMS style deposit
- Mined over 100 years ago (1896-1912) with **+100m vertical and +300m strike**
- Underexplored with limited modern exploration completed - only 2 holes ever drilled back in the 1960's, and virtually untouched since then
- Mineralisation associated with **magnetite** which shows repeat structures to the north and west
- Potential of **>3km** of untested strike in immediate mine-stratigraphy, **>10km** across the tenement
- Favourable deal metrics and structure
- Strong near-term catalysts with a **fully permitted drill program** commencing imminently



Located in the New England Orogen Region in NSW, Australia

Peters, J. (2023);  
NSW Geological Survey "Seamless Geology"

# COPPER MACRO<sup>1</sup> – ECONOMIES AND ELECTRIFICATION

Strong Demand-Supply Fundamentals Driving Strong Run for Copper

## Copper Demand

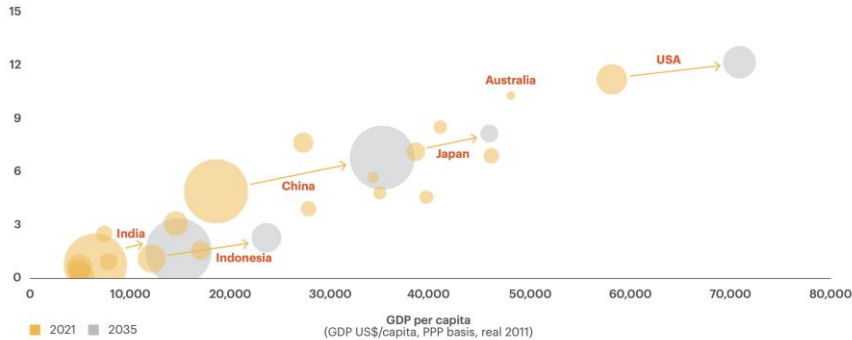
- In modern times, copper has been driven by demand for electricity with global CAGR of 3% over the last 75 yrs
- As economies with large populations (eg. China, India) modernise, copper demand grows
- New age technologies (eg. electric vehicles, data centres) require large volumes of copper

## Copper Supply

- The world's currently producing mines can only supply ~50% of the demand over the next decade
- Current mines face depleted grades
- Copper exploration is not delivering substantial new deposits

### Electrification: a 20th century megatrend set to continue

(Electricity consumption, MWh per capita)



Source: World Bank, UN, BHP analysis.  
Note: Bubble size represents population size

### Today's mines are getting older...

(Age of mines of operating in 2023, copper production)

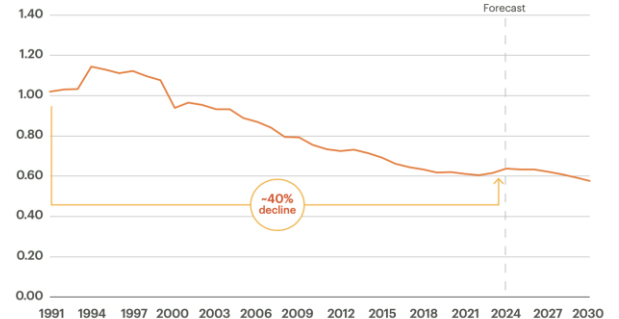


0-10 years 11-20 years  
21-30 years 31-40 years  
41-50 years 50+ years

Source: S&P Global Market Intelligence.  
Note: Only includes mines >15 ktpa copper.

### ...and lower grade

(Mined head grade, % Copper)

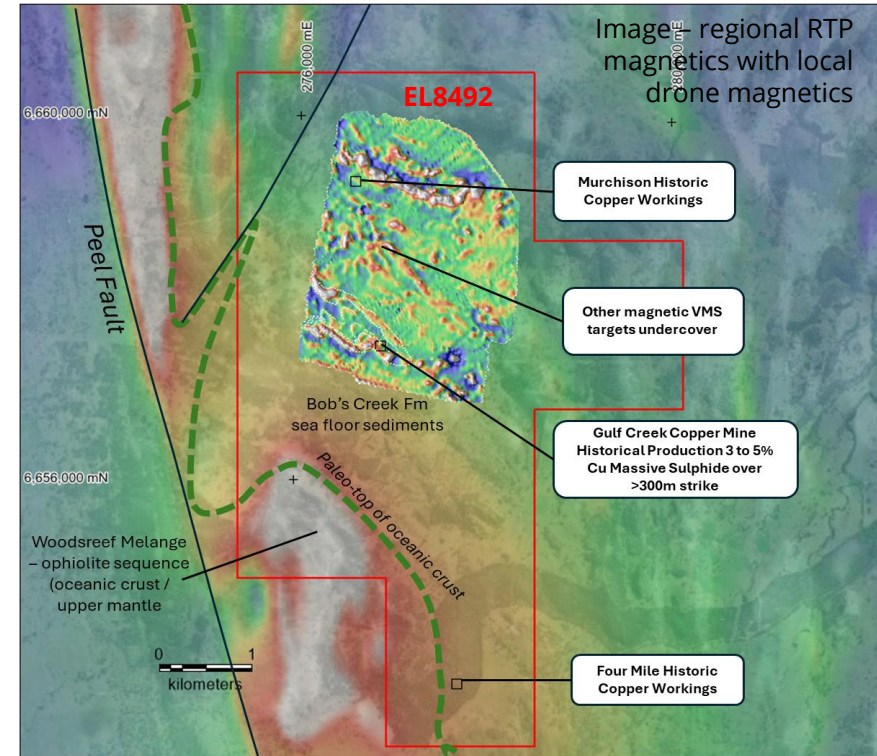
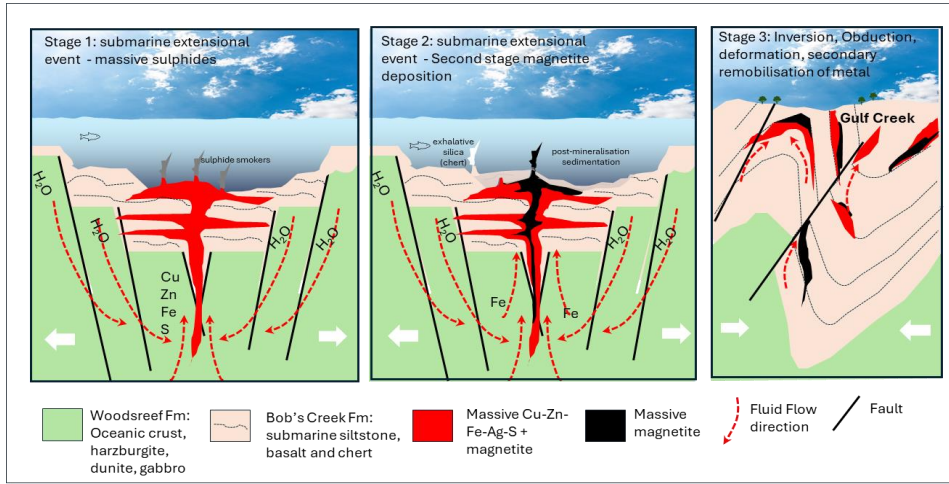


Source: S&P Global Market Intelligence (1991-1999), Wood Mackenzie (2000-2030).

# Gulf Creek – Regional Setting for Classic VMS

VMS systems are known to have multiple, high grade repeat structures

- Classic setting for Besshi Style Volcanogenic Massive Sulphide Deposit (VMS)<sup>1</sup>
- Silurian-Devonian age geologically **comparable to Woodlawn Deposit (>20Mt @ 1.6% Cu, 9.1% Zn endowment)**<sup>2</sup> owned by Develop Global Ltd

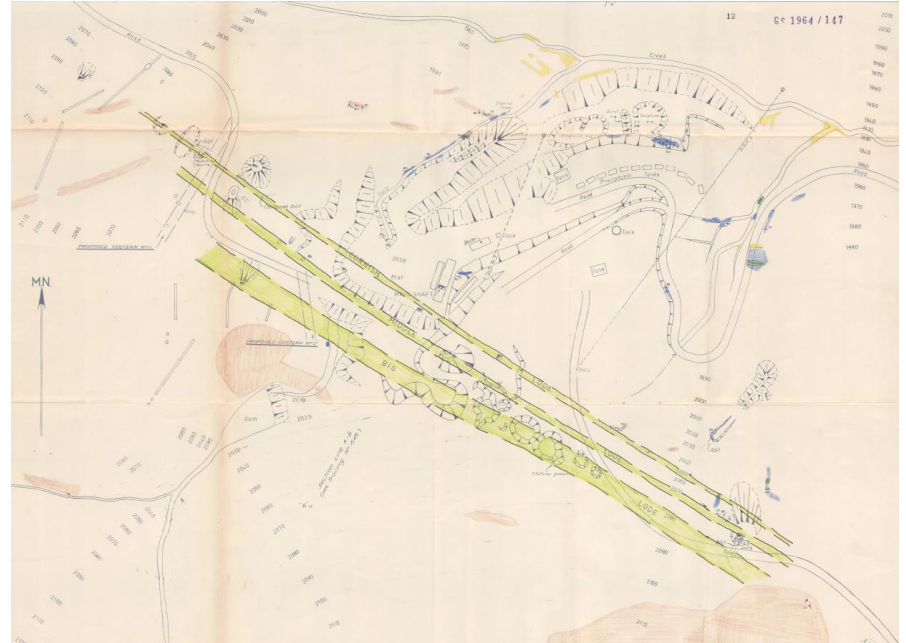


1. Association with magnetite occurring in VMS – refer: Yildirim, Y *et al.* (2016), Watanabe *et al.* (1993)
2. Total endowment past production and resources compiled from <https://portergeo.com.au/database/mineinfo.asp?mineid=mn295>

# High Grade Copper Production History

One of Australia's highest grade historic copper mines

- At Gulf Creek the copper occurs within three parallel sulphide lenses
  - Cornish Lode averaged **6 - 6.5% Cu**
  - Middle Lode averaged **3 - 3.5% Cu**
  - Big Lode averaged **2 - 2.5% Cu**
- Mine samples show visible mineralisation in the areas surrounding the main lodes
- Zinc assays show similar copper values
- No drilling has occurred based on modern day exploration techniques

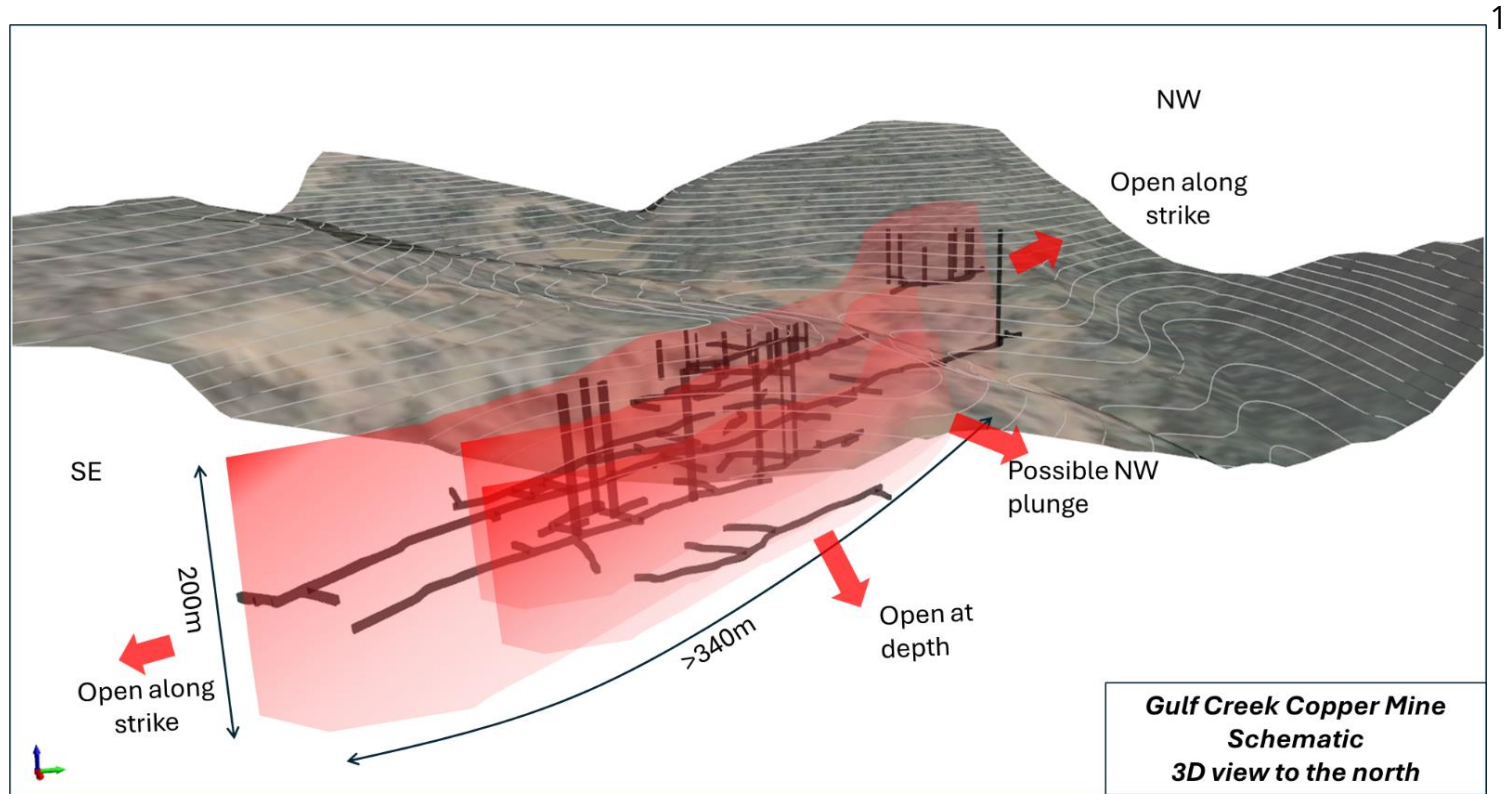


Historic mine plan showing 3 main lodes

As disclosed in publications by the Geological Survey of New South Wales such as:  
Brown, R. (1987); Brown, R.E. *et al.* (1992)  
NSW Geol. Survey (1901, 1904-1982);

# Gulf Creek Historic Copper Mine

Virtually untouched since 1912 with significant potential for untested extensional repeat lodes



1. Historic workings reconstructed from plans and sections digitised from NSW Geol Survey, 1901, 1904-1982, Assorted historic plans and maps.



After driving through sixteen feet of country rock, impregnated with metallic copper, a lode of black sulphide ore was struck averaging twelve per cent copper, which, without a doubt, is one of the finest copper lodes found in Australia. Other crosscuts were driven, and these proved that this enormous (second) ore body is running parallel with the old one. When the ore was proved in the forty-eight feet level, crosscuts were driven west at the ninety-eight feet level and these proved that the lode was going down. From the old lode the north drives forty-eight feet, and ninety-eight feet have produced some fine ore. The old main shaft was sunk by the new Company to 168 feet, and a winze was also sunk in the old lode to this level, from the 98, carrying ore all the way down.

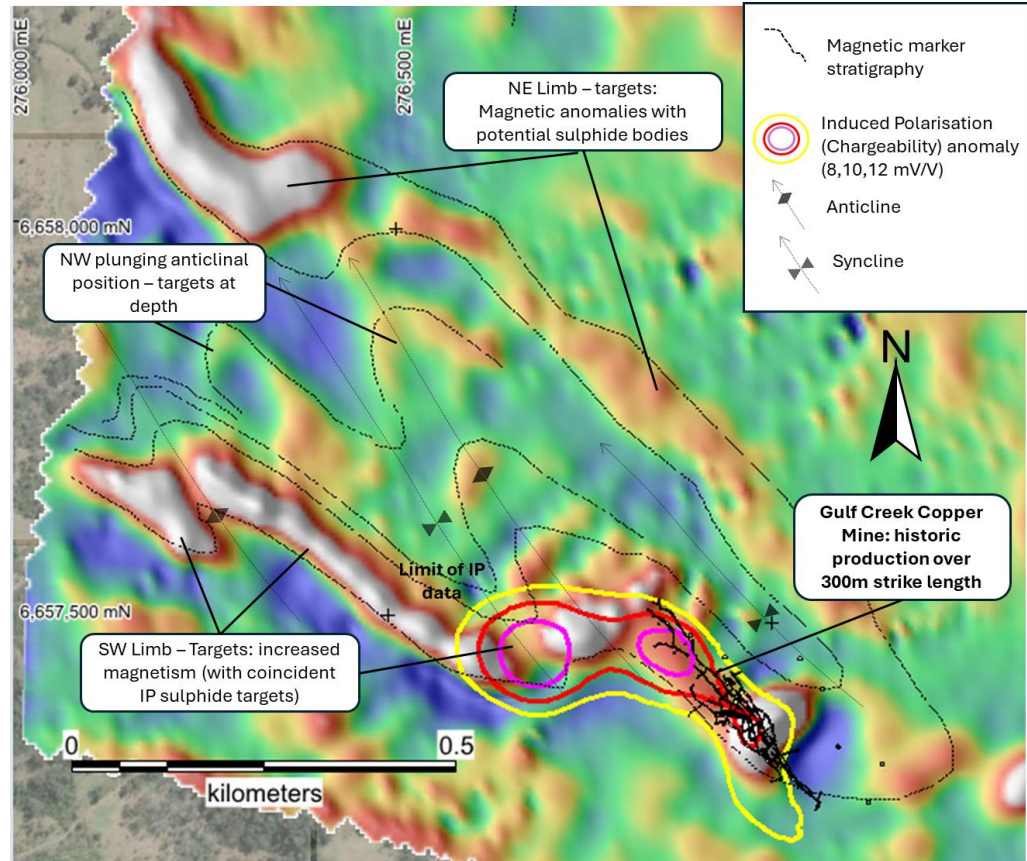
“Gulf Creek”  
Maitland Daily Mercury,  
10 May 1901 (Page 3)



# Gulf Creek – Extensional Exploration

Strong potential for repeat high-grade VMS structures with repeat blind structures identified

- **Strong association of magnetite** with massive sulphide units as reported by UNE Thesis<sup>1</sup>
- 2021 **drone magnetics**<sup>2</sup> matches known mineralization over **>340m strike-length** of historic ore-body
- IP Chargeability<sup>3</sup> geophysics **coincident with extensional magnetic targets**
- Extended magnetic survey indicates a series of NW plunging folds providing **>3km** of local strike length of **target magnetite-VMS target horizon** within the Gulf Creek Syncline



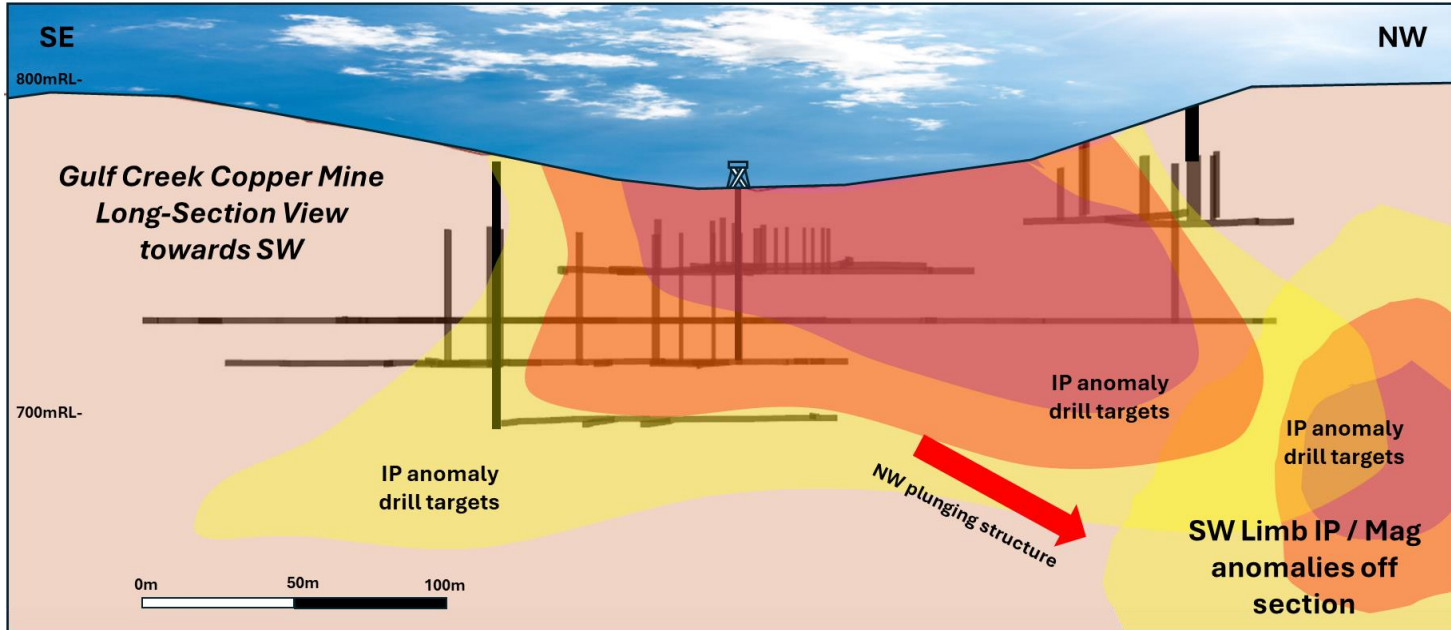
1. McCarron, J. (1991);
2. Rampe., M. (2022)
3. Willets, G. & Fletcher, M., (2008)

# Magnetics and IP Chargeability Geophysics

Providing early and future targeting



Magnet suspended from magnetic rock sample from Gulf Creek. Refer also slide 2 on cautionary statement.



Long section<sup>1</sup> view NE of historical workings showing I.P Survey chargeability anomalies (drill targets)

1. Modified after, Willets, G. & Fletcher, M., (2008)

# Phase 1 Program Permitted

OD6 set to “hit the ground running” in Early 2025 with near term exploration activity

- A 14 hole, 1,500 to 3,000m diamond or RC drill program is planned, permitted and drill-ready
- All flora, fauna, land access and native title permits in place
- Downhole EM is likely to be a suitable targeting technique for mineralisation/off-hole conductors
- Reprocessing and reinterpretation of IP and drone magnetics with latest modeling techniques
- New drone geophysical survey across the whole tenement
- Phase 2 Program to expand drill targets outside of Gulf Creek workings area

# Regional Extensional Exploration Upside

Multiple untested comparable drill targets

- **Historic Murchison Mine** to the north – also associated with magnetic stratigraphy and reports of >4% Cu<sup>1</sup>
- Other significant folded magnetic stratigraphy **completely untested with potentially over >10km of magnetic VMS target horizon stratigraphy**
- **This remarkable project has had no modern concerted regional soil geochemistry, electromagnetics and drilling**
- Tenement renewed until December 2029

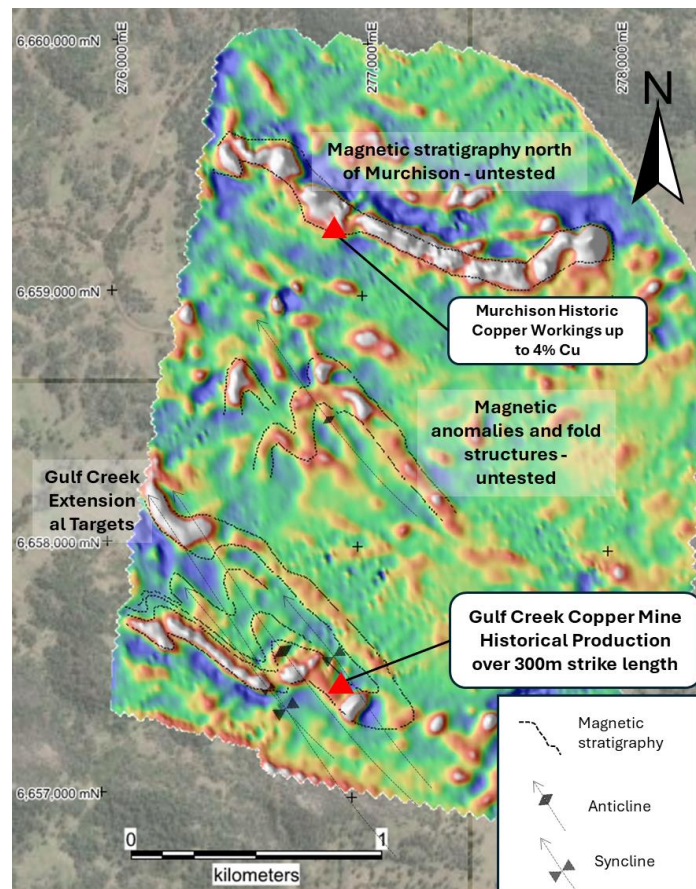


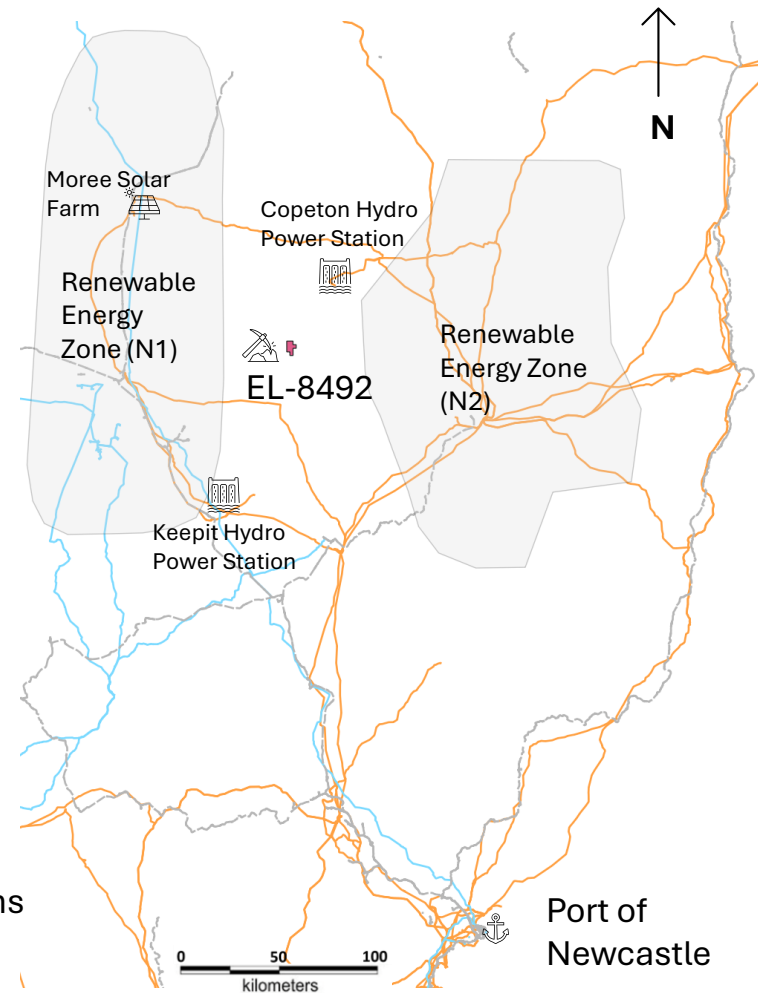
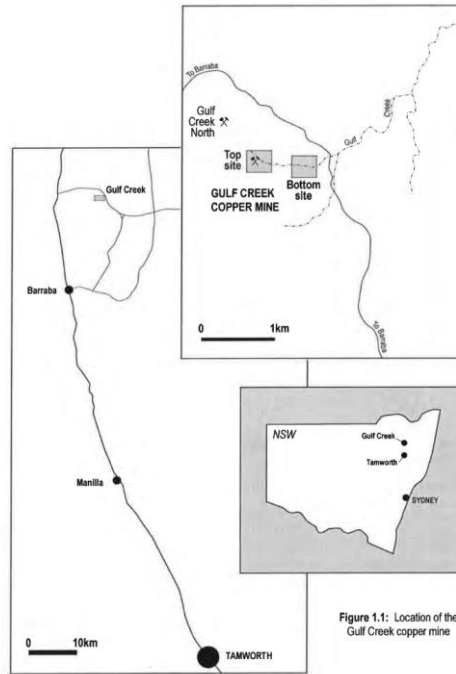
Image – drone magnetics 1VD.<sup>2</sup>

1. Comet Resources Press Release (13/01/2021)  
2. Rampe., M. (2022)

# Excellent Proximity to Infrastructure

Supporting Project Development

- Tier 1 Location
- Ideally located ~400km by road to the Port of Newcastle.
- Situated between two NSW renewable energy zones (REZ) with existing solar and hydro power infrastructure within close proximity.
- 83km from the nearest gas pipeline and rail lines.



# Metallurgy likely to be simple

Not tested but did produce Copper Matte Historically

- No modern test work on fresh samples available<sup>1</sup>
- Sulphide ore means concentrator likely to be utilised
  - Two stage crushing
  - Two stage grinding mill
  - Staged flotation plant
  - Copper & Zinc Concentrates
- Potential for Magnetite recovery as additional by-product



1. CRA conducted preliminary testwork on weathered surface samples recovered from surface dumps, and concluded a commercially marketable Cu-Zn concentrate could be achieved. (CRA, 1992).

# INVESTMENT HIGHLIGHTS

Gulf Creek has boundless potential to host a significant, high-grade Cu-Zn system & is open for business



## HIGH GRADE HISTORICAL COPPER-ZINC PRODUCTION

Production grades of >3% Cu with grades of up to 12% mined



## LITTLE TO NO EXPLORATION IN OVER 100 YEARS

Only two (ineffective) drill holes attempted. Minimal exploration since mining ceased in 1912



## MAGNETICS and IP ANOMALIES NEAR MINE WORKINGS

Copper associated with Magnetite provides pathfinder magnetic feature targeting with >10km of untested horizon stratigraphy



## PLANNED PHASE 1 PROGRAM, PERMITTED AND DRILL-READY

All flora, fauna and native title permits received for initial drill programs to facilitate near term activity



## LOW-CASH ACQUISITION TERMS WITH MINIMAL DILUTION

Favourable acquisition terms with no private royalty

# CORPORATE SNAPSHOT

High Calibre Leadership Team And Tight Capital Structure

## Capital Structure

ASX: OD6

|  |          |
|--|----------|
| Price per share <sup>1</sup>                   | A\$0.029 |
| Total number of shares on issue <sup>1</sup>   | 128.69M  |
| Performance rights and options <sup>1</sup>    | 41.55M   |
| Market capitalisation (undiluted) <sup>1</sup> | A\$3.73M |
| Cash <sup>2</sup>                              | A\$1.85M |
| Debt <sup>2</sup>                              | Nil      |
| Enterprise value                               | A\$1.88M |

## Share Price History

A\$/share



**Wayne  
Bramwell**  
NON-EXECUTIVE  
CHAIR



**Mr Brett  
Hazelden**  
MANAGING  
DIRECTOR



**Dr Darren  
Holden**  
NON-EXECUTIVE  
DIRECTOR

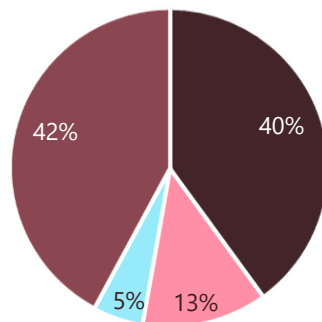


**Mr Piers  
Lewis**  
NON-EXECUTIVE  
DIRECTOR



**Dr Mitch  
Loan**  
NON-EXECUTIVE  
DIRECTOR

## Register Detail



- Founders (exc. Directors and Management)
- Directors and Management
- Institutions
- Retail / Other

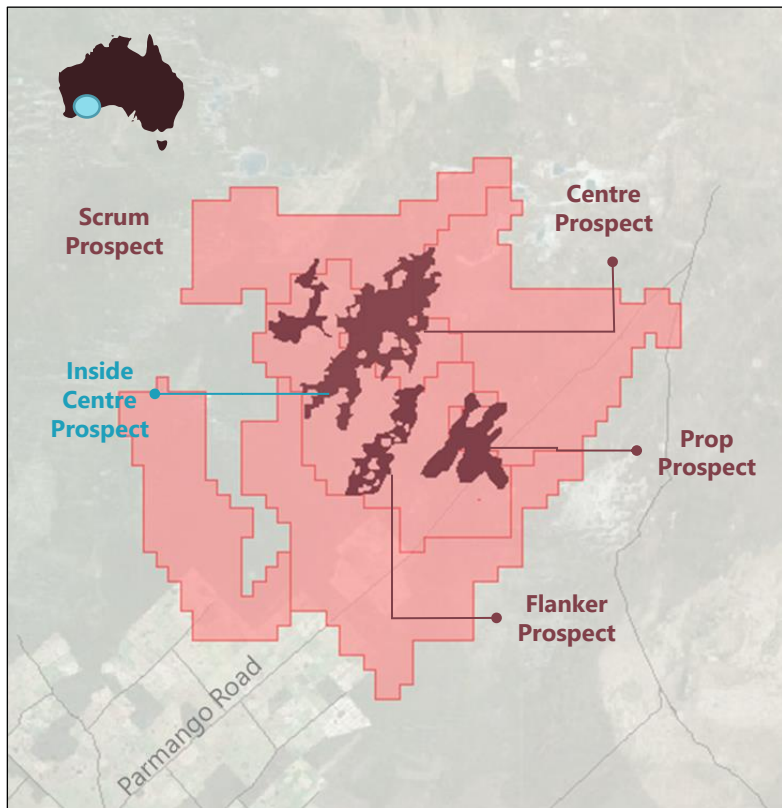
1. As at 25 October 2024

2. As at 30 September 2024. Refer to ASX announcement "Quarterly Activities and Cashflow Report"



# Globally Significant Clay Hosted Rare Earth Project

Gulf Creek Acquisition to Compliment the Splinter Rock Project whilst Rare Earth Prices Recover



## Splinter Rock Highlights

- Located in one of the world's great mining jurisdictions proximate to key infrastructure
- **682Mt at 1,338 ppm TREO** (at a 1,000ppm cut-off grade) for **910 kt contained TREO**
- High-value MagREO represents an average of ~23% of TREO grade **for 205 kt contained MagREO**
- The MRE positions Splinter Rock as the **largest & highest grade** Australian clay-hosted Rare Earth Deposit
- **Inside Centre Prospect 119Mt at 1,632ppm TREO (Indicated)**
- **Recent Heap Leach Recoveries of up to 80% at Inside Centre**
- Heap Leach has the potential to remove several expensive processing steps, which would reduce capital and operating costs significantly
- Located away from farmland with no private royalties

Recoveries only reflect initial rare earth leaching, with further losses expected in precipitation, impurity removal, purification and drying

# CONTACT US

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## SHARE REGISTRY

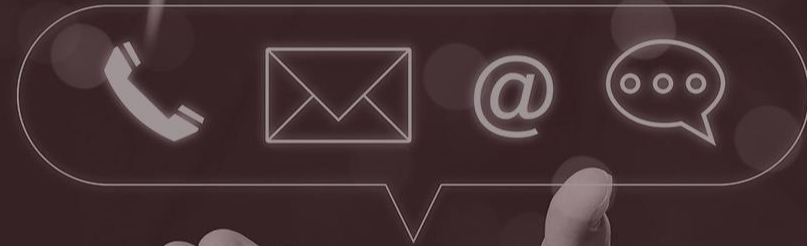
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ASX:OD6

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# Appendix 1: Gulf Creek History

- 1896** Discovery of high-grade gossanous samples at surface at Gulf Creek. Maitland Daily Mercury (1901)
- 1896-1912** Underground mine and on-site smelter – for a period, the best in the country **employing 300 to 500 workers** (Carne, 1908, Maitland Daily Mercury, 1904, 1911, Manilla Express, 1899).
- 1912** Mine closed due to low copper prices and lack of transport logistics for product. (Maitland Daily Mercury, 1911)
- 1963-1964** Carpentaria Exploration (a subsidiary of Mt Isa Mines) conducted surface mapping and drilled two holes. One hole intersected old workings and was terminated. The other hole drilled beneath the plunge of the mineral system, missing the main lodes, yet intersected copper and silver mineralisation (no assays for zinc) over 3m. Carpentaria Exploration (1965) & Darlington (1964)
- 1967** Austminex reviewed the region for copper deposits as part of regional exploration. Austminex (1967).
- 1971-1975** Serpentine Resources and Western Mining Corporation reviewed the region as part of extensional exploration of the Woodsreef asbestos mine located ~20km to the south of Gulf Creek; highlighting the presence of regional prospectivity for high-grade copper. Hall (1971), Mckenna, 1987.
- 1982** Newmont Holdings assessed the area principally for gold associated with copper mineralisation, and withdrew citing poor outcrop hampering mapping and prospecting activities. Newmont (1982)
- 1991– 1993** University of New England conducted geological investigations of the sediments and volcanics, including potential for Volcanogenic Massive Sulphides. McCarron (1991), Lawie, (1993)
- 1992 -** CRA Ltd mapped the regional geology and despite concluding there was potential for additional stacked lenses of blind mineralisation, withdrew from the project. CRA, 1992
- 2001-2002** Rimfire Pacific explored the area, though their exploration was focused elsewhere in the region principally towards gold and diamonds. Rimfire (2001,2002)
- 2006-2007** Graynic Minerals conducted surface reconnaissance and IP Geophysics. Despite identifying several high priority targets, did not undertake any drilling. Graynic (2006,2008)
- 2011-2012** Corazon Minerals conducted reconnaissance and a scoping study showing as little as 2 to 3Mt of ore could be economic in this area. Corazon (2011-2013); Byass & Roberts (2011)
- 2013-2014** Peel Mining conducted a review, concluding that Gulf Creek was a promising target, but could not divert exploration budget from their projects in Cobar Basin. Marshall, (2013, 2014).
- 2017-2022 –** Downes and Comet Resources carried minor amount of soil sampling and reconnaissance, and fly drone magnetics. This included permitting for drilling, but due to delays on Heritage (now solved) and other issues, did not continue with the project, Laursen (2017, 2018, 2019) & Rampe (2020, 2021, 2022)
- 2024** **OD6 Metals agrees to acquire the project from Downes and is committed to the first substantial drill program on the project.**

# Appendix 2: Gulf Creek References

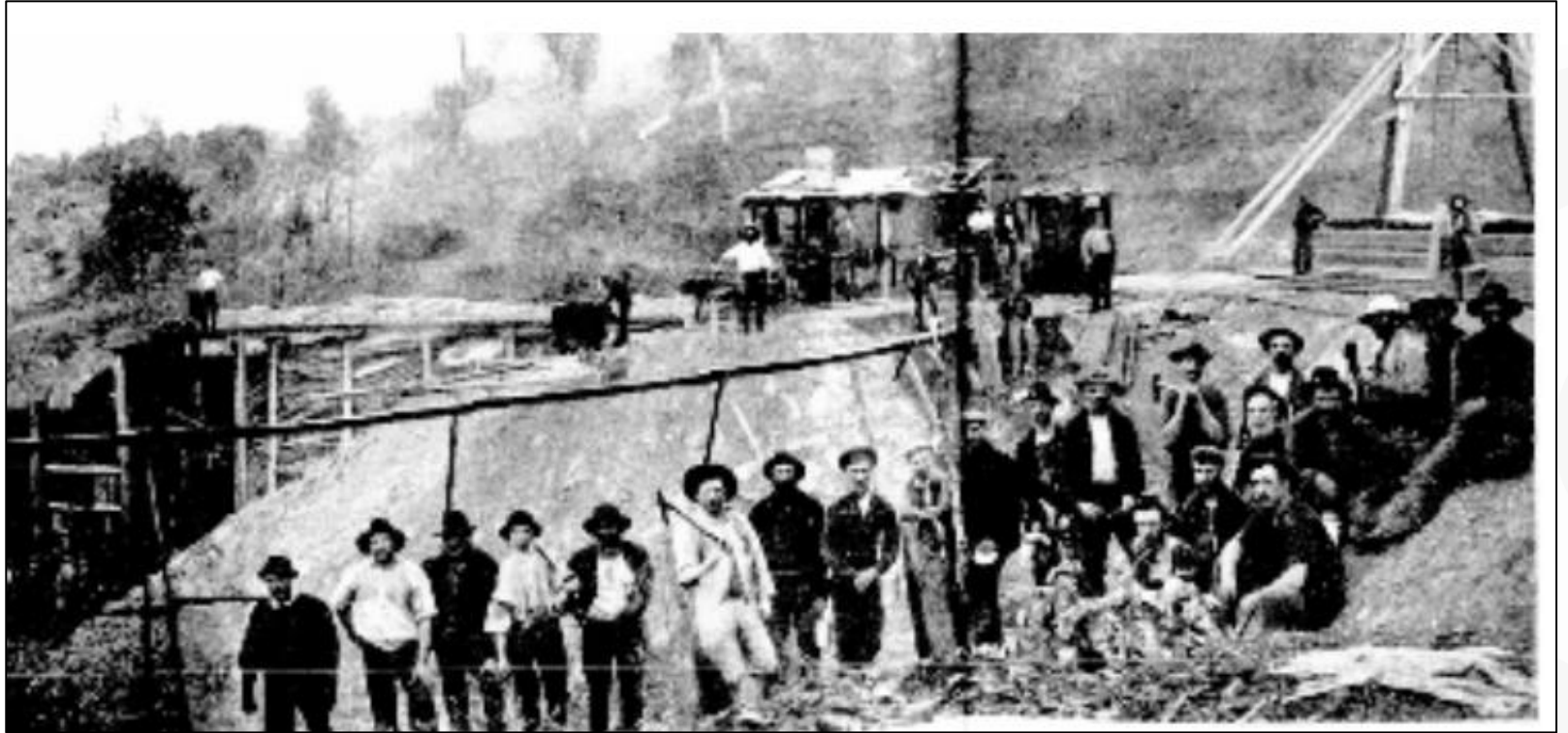
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- (1903) Assorted historic plans and maps, NSW Geol. Survey, Source:- NSW Govt R00042838
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Yildirim, Y et al. A magnetite-rich Cyprus-type VMS deposit in Ortaklar: A unique VMS style in the Tethyan metallogenic belt, Gaziantep, Turkey, *Ore Geology Reviews*. 79 (2016)

Watanabe, M. et al. Mineralogy and geochemistry of Besshi-type deposits and related greenrocks in the Sanbagawa Belt, Japan: implications for their metallogenic evolution. *Resource Geology Special Issue No17*: 213-228

## Appendix 3: Historic Photo



“Gulf Creek”  
Sydney Mail & NSW  
Advertiser, 20 July 1901

## Appendix 3: Historic Photo



"Gulf Creek"  
Sydney Mail & NSW  
Advertiser, 20 July 1901