

OCTOBER 2024

# GULF CREEK COPPER ACQUISITION

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



#### 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 <a href="https://www.od6metals.com.au/investors/asx-announcements/">https://www.od6metals.com.au/investors/asx-announcements/</a>. 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.

#### **Forward Looking Statements**

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:

- may include, among other things, statements regarding incomplete and uncertain proposals or targets, production and prices, operating costs and results, capital expenditures, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions:
- 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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#### **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.

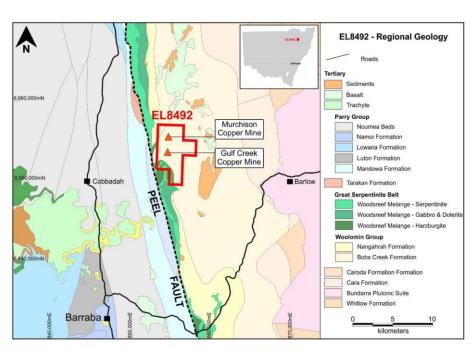


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## **Key Acquisition Points**

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

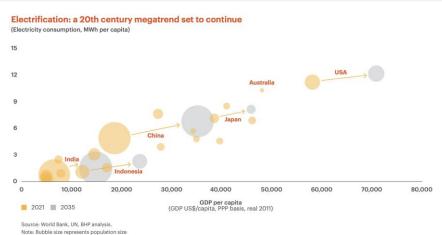
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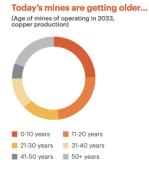
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...and lower grade

(Mined head grade, % Copper)

Copper exploration is not delivering substantial new deposits





Note: Only includes mines >15 ktpa copper.



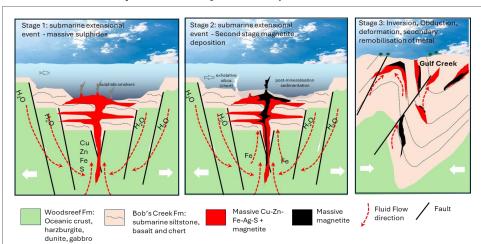
1. BHP Insights - How copper will shape the future September 2024

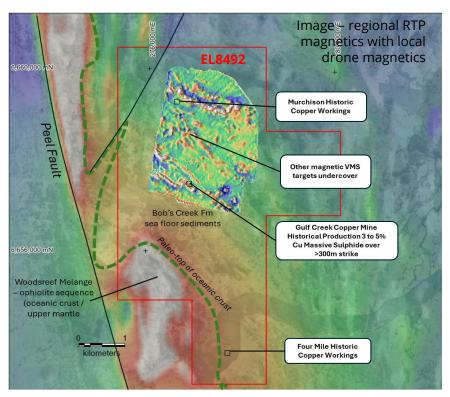
Forecast

## 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

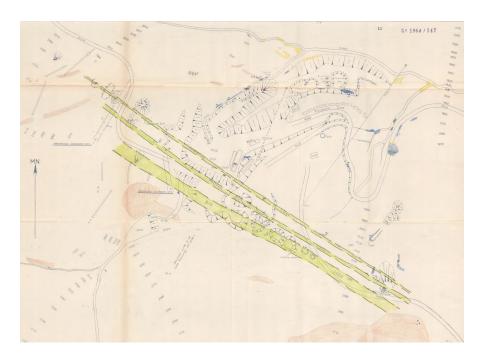


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## High Grade Copper Production History

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



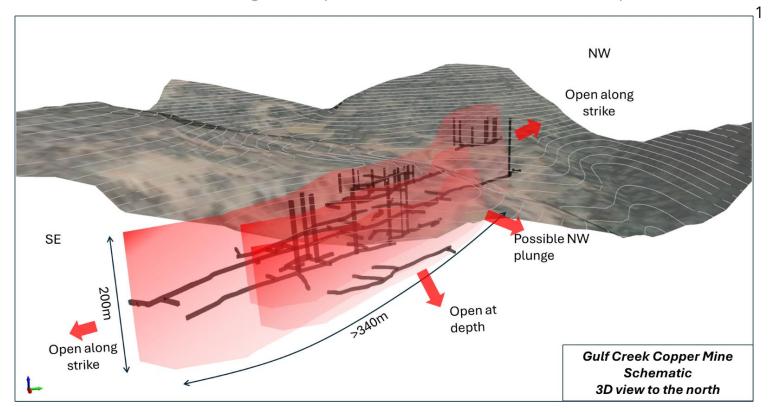
Historic mine plan showing 3 main lodes

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



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



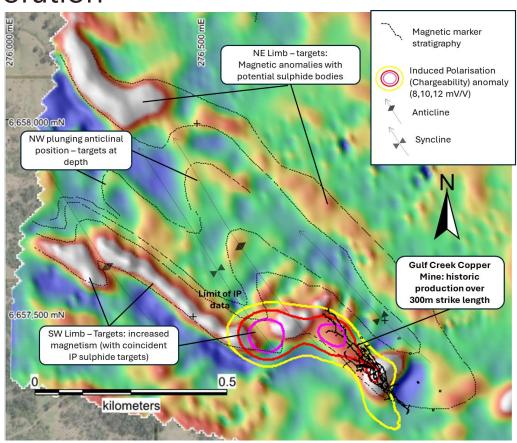
## 66

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)



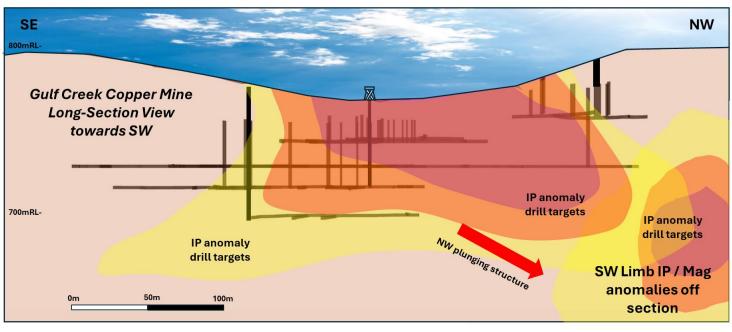


## Magnetics and IP Chargeability Geophysics

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 chargability 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

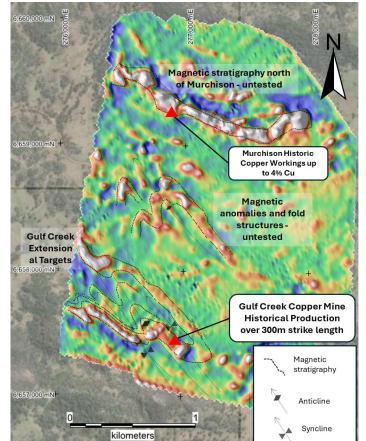


Image – drone magnetics 1VD.<sup>2</sup>

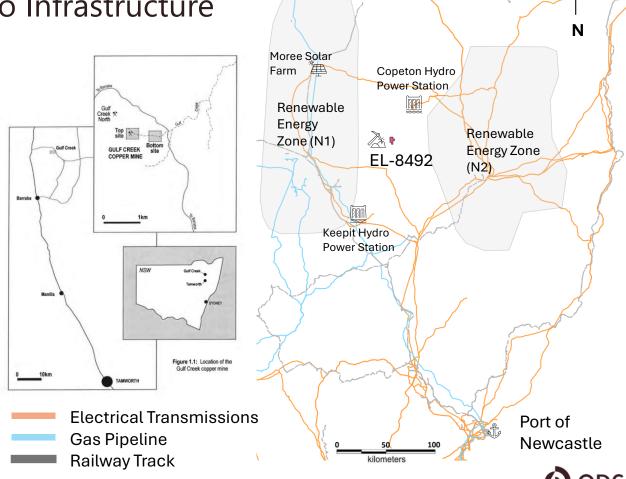
Comet Resources Press Release (13/01/2021)

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





<sup>1.</sup> 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 MININMAL 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



Wayne Bramwell NON-EXECUTIVE CHAIR



Mr Brett Hazelden MANAGING DIRECTOR



Holden

NON-EXECUTIVE
DIRECTOR

**Dr Darren** 



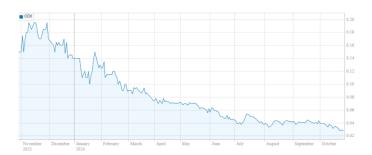
Mr Piers Lewis NON-EXECUTIVE DIRECTOR



**Dr Mitch Loan**NON-EXECUTIVE
DIRECTOR

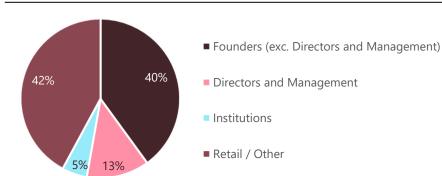
#### Share Price History

#### A\$/share



<sup>1.</sup> As at 25 October 2024

#### **Register Detail**

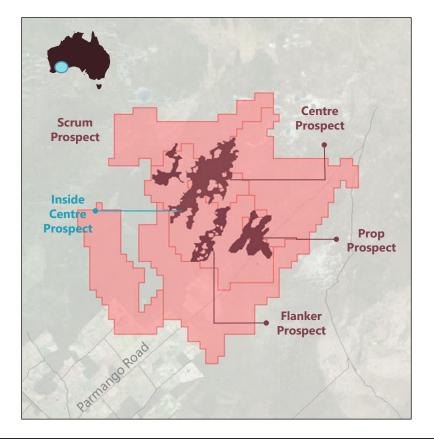




<sup>2.</sup> As at 30 September 2024. Refer to ASX announcement "Quarterly Activities and Cashflow Report"

## 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



OD6 METALS | AUSTRALIAN CRITICAL MINERALS 17

## **CONTACT US**

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#### **LUCAS ROBINSON**

Investor Relations <u>lucas@corporatestorytime.com</u> +61 408 228 889



## 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 <b>employing 300 to 500 workers</b> (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
0004	(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. 🛝

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## Appendix 2: Gulf Creek References

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- (1901) Gulf Creek Copper Mine. The Maitland Daily Mercury, 10 May 1901, P.3. Source: Trove: National Library of Australia
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- (1995) Annual Report E4635, Mogul Mining, Source:- NSW Govt R00001060

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- (2001, 2002) Annual Report EL5724, Rimfire Pacific Minerals, Source: - NSW Govt

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#### Non-Gulf Creek references noted:

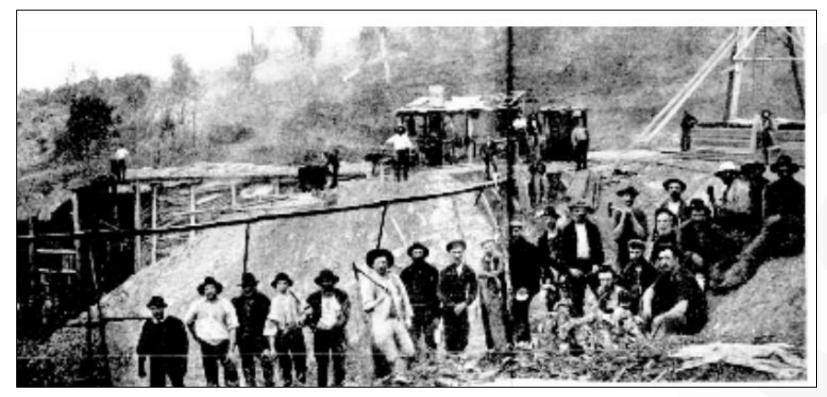
Yildirim, Y et al. A magnetite-rich Cyprus-type VMS deposit in Ortaklar: A unique VMS style in the Tethyan metallogenic belt, Gaziantep, Turkey, *Ore Geology Reviews*. 79 (2016)

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



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## 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

