

# Quarterly Report

Period ended 30 June 2021



Minotaur Exploration Limited | ACN 108 483 601 | ASX: MEP  
minotaurexploration.com.au

## CORPORATE

Minotaur held cash of \$5.1 million at the end of the June Quarter, during which exploration expenditure amounted to \$0.98 million plus joint venture contribution of \$0.28 million to the Great White kaolin joint venture (GW JV). The GW JV partners have established that capital related expenditure (as is being incurred by Andromeda Metals Ltd) preceding publication of a definitive feasibility study is not an expenditure obligation of Minotaur and such expense will be borne by Andromeda until a financial investment decision is made in accordance with the terms of the GW JV agreement.

## Exploration Activities

Minotaur progressed exploration activities across a number of projects, including Breena Plains, Eloise, Pyramid, Windsor and Peake and Denison (Figure 1). Geophysical surveys are complete at Pyramid and progressing at Breena Plains. Preparations are in hand for drilling at Peake and Denison. Project updates are presented below. Activities planned for the September Quarter include EM geophysical surveying at Breena Plains and Eloise projects, mapping and drilling preparation at Pyramid, preparations for a unique copper isotope-in-groundwater survey at Windsor and drilling of copper-gold and base metal targets at Peake and Denison.

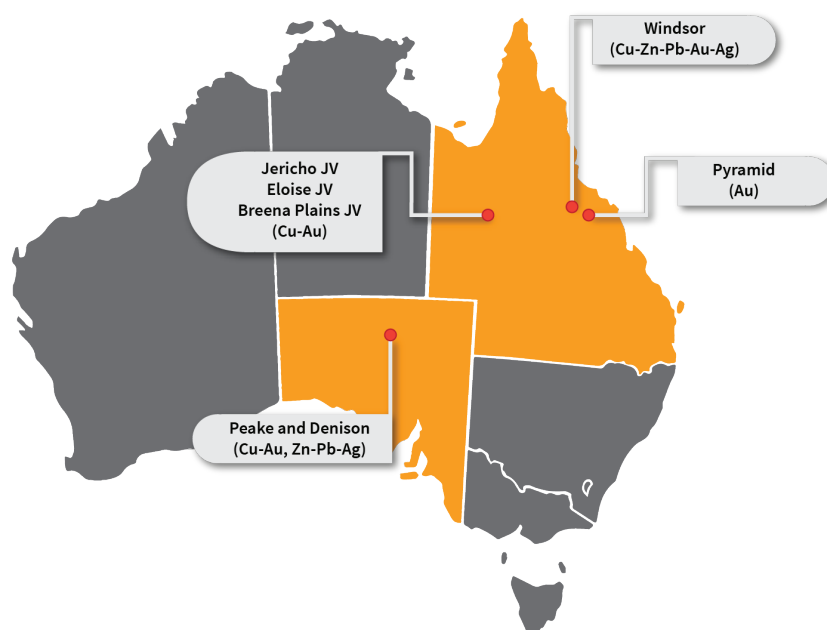


Figure 1: Project location map

## EXPLORATION - Queensland

### Breena Plains JV (SFR 100%: OZL/MEP to earn up to 75%)

Ground EM surveying resumed in late April within the Breena Plains JV to locate copper targets under cover. Surveying continues after two additional areas of investigation were added to the original program; expected to be complete late August.

### Eloise JV (OZL 70%: MEP 30%)

A ground EM geophysical survey is arranged for three areas within the Eloise JV to locate copper targets under cover, employing the strategy that led to discovery of the Jericho system. Surveying will commence in the September Quarter after Breena Plains activity completes.

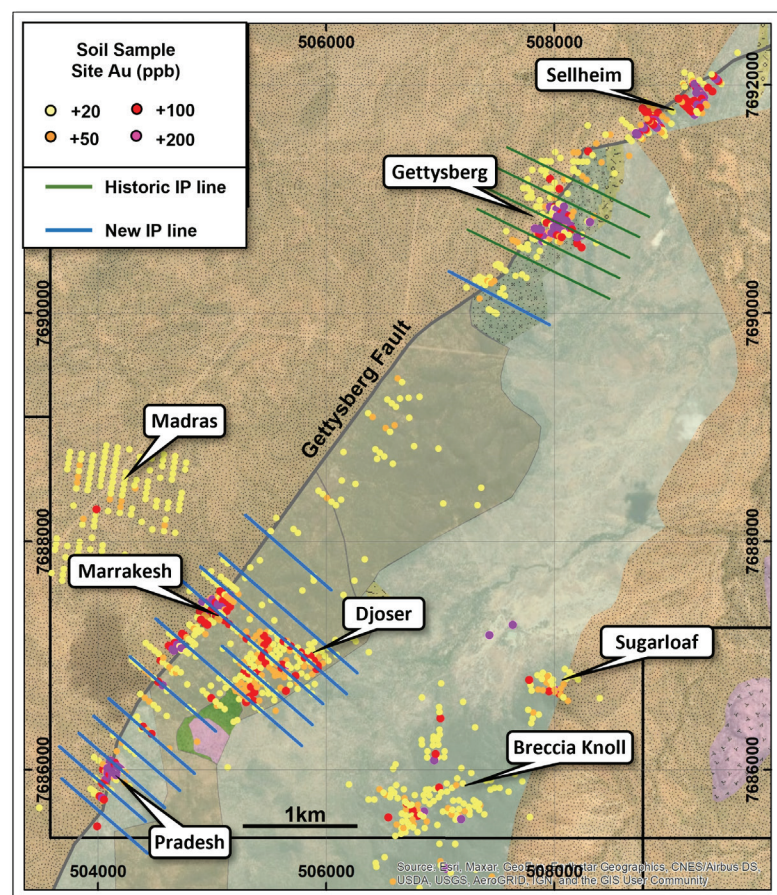


Figure 2: Main prospect locations, gold-in-soil data (+20ppb gold values only) and IP survey lines

### Pyramid Gold Project (MEP 100%)

Minotaur recently carried out its first Induced Polarisation (IP) geophysical survey at the Pyramid project, NE Queensland. The survey commenced on 18 May but suffered unseasonal wet weather delays and was not completed until mid-July. IP chargeability anomalies, possibly associated with basement-hosted gold mineralisation, were defined at Djoser, Pradesh and Gettysberg gold prospects.<sup>1</sup>

13 lines of IP data were collected along parts of the Gettysberg Fault corridor between Marrakesh and Pradesh and east of Marrakesh at Djoser, with a single additional line south of Gettysberg (Figure 2). Survey lines are spaced at 200m or 400m intervals with depth of investigation down to 200m.

<sup>1</sup> Minotaur report to ASX dated 26 July 2021  
*IP geophysical anomalies identified at Pyramid gold project, Queensland*



## Djoser Prospect

Five (5) lines of IP data, spaced 200m apart, were collected over the main soil anomaly (Figure 3). A large IP chargeability response is apparent over the broader prospect area, with a 600m x 400m zone of 15-25mV/V below the central and southern portion of a +50ppb gold-in-soil anomaly. Coincident lead-zinc-copper-arsenic anomalism is also present in soils over a similar area and historic rock chip sampling over the broader soil anomaly area also records highly anomalous values including; gold up to 4.1g/t, lead up to 12.2%, zinc up to 0.62%, copper up to 0.54%, silver up to 220g/t. These IP responses are very encouraging given the highly anomalous soil and rock chip values at surface.

Mapping and additional rock chip sampling will be conducted to better understand the geology in the areas of the IP anomaly and elevate the prospect to drill status.

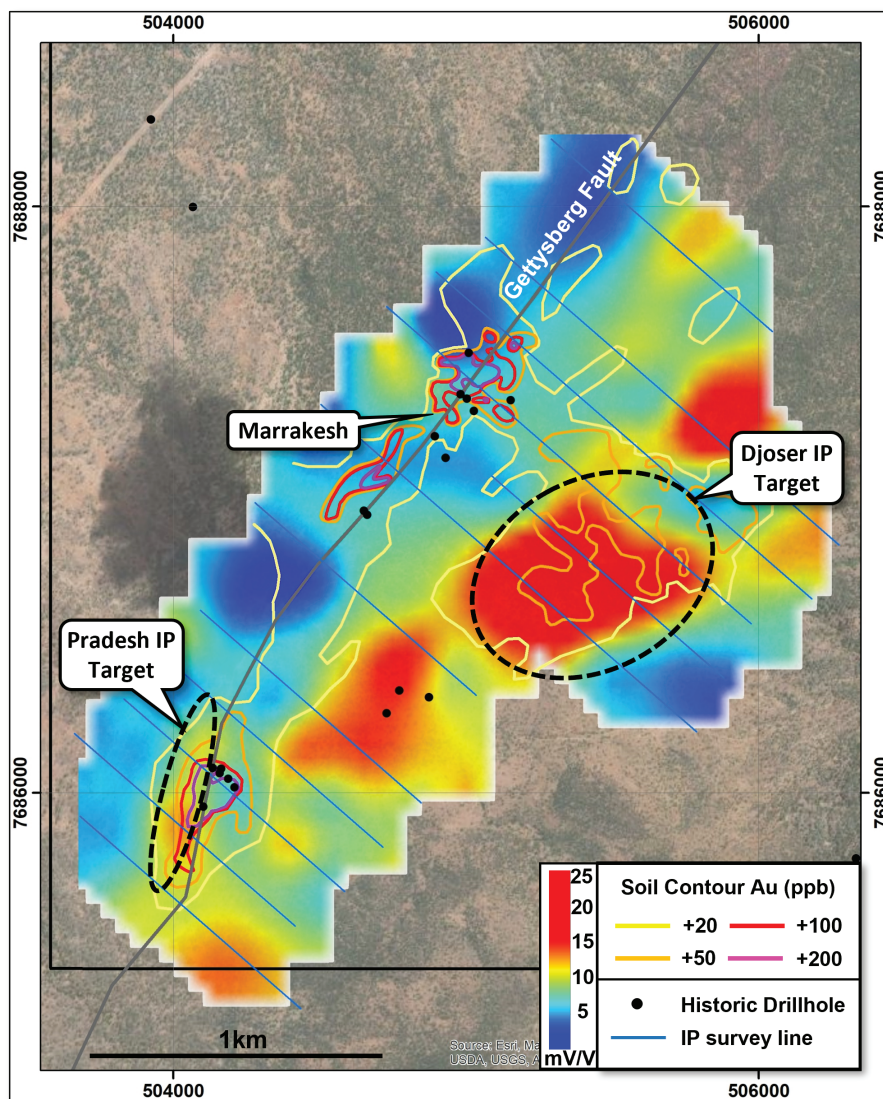


Figure 3: IP chargeability depth slide at 75m below surface, IP targets of interest, gold-in-soils contours

## Pradesh Prospect

Previous drilling at Pradesh comprised 6 holes that targeted a strong +200ppb gold-in-soil anomaly coincident with minor outcropping quartz veins. The best historic drill intercept is in MDRC007 with 84m @ 0.21g/t Au from surface.

Results of the recent IP survey indicate there is no IP chargeability anomaly associated with gold mineralisation where drilled. However, a coherent +16mV/V IP chargeability anomaly is defined on 4 consecutive survey lines covering 600m of strike, immediately west of historic drilling (Figure 3). The chargeability anomaly is offset from the peak of the gold-in-soil anomaly but still lies within the broader +20ppb gold zone. Whilst the known gold mineralisation does not respond to IP, it does not preclude gold being developed with stronger sulphide development, (as is the case at Gettysberg) meaning that the IP chargeability anomaly is still considered prospective, its existence being unknown when previous drilling was undertaken. Minotaur considers the IP chargeability anomaly worthy of further investigation and will soon conduct field checks with the view to advance the target to drill status.

## Gettysberg Prospect

Gettysberg hosts significant gold where previous drilling, including the recent 12-hole program by Minotaur2, outlines mineralisation over an area 600m x 100m. Numerous zones of high-grade gold occur within a lower-grade gold halo over much of that area. That work focused on a +200ppb gold-in-soil anomaly (Figure 4) and is associated with outcropping quartz veining and breccia with attendant strong silica-sericite-chlorite alteration.

The Gettysberg soil anomaly is open along strike to the southwest; less intense (+20ppb) but persistent and has not been tested by drilling. The intensity of the surface gold anomaly could be lower due to the gold system diminishing in strength, or it is deeper and does not outcrop, or there may be other aspects influencing the tenor of the soil anomaly such as soil type, depth of weathering of the bedrock or other factors. Given the main Gettysberg gold system is known to respond to IP geophysics, with a pronounced discrete chargeability anomaly known from an IP survey completed in the mid 2000's, Minotaur placed a step-out IP survey line 400m along strike to the southwest to investigate if the chargeability anomaly extends beyond the limits of the Gettysberg prospect itself.

The new survey line produced a discrete 18mV/V IP chargeability anomaly that corresponds to the on-strike position of the Gettysberg gold system and lies below a +20ppb gold-in-soil anomaly. A second IP chargeability anomaly occurs 300m east, but its significance is not yet known as it does not have a corresponding gold-in-soil anomaly. Both anomalies will be investigated as part of the field follow-up of the Djoser and Pradesh IP anomalies. It appears likely that the western IP anomaly will require further survey lines to fully map the chargeability anomaly extents, which may lead to drill investigation.

2 Minotaur Exploration ASX release dated 29 April 2021: *Gettysberg delivers encouraging assays at Pyramid gold project, Queensland*



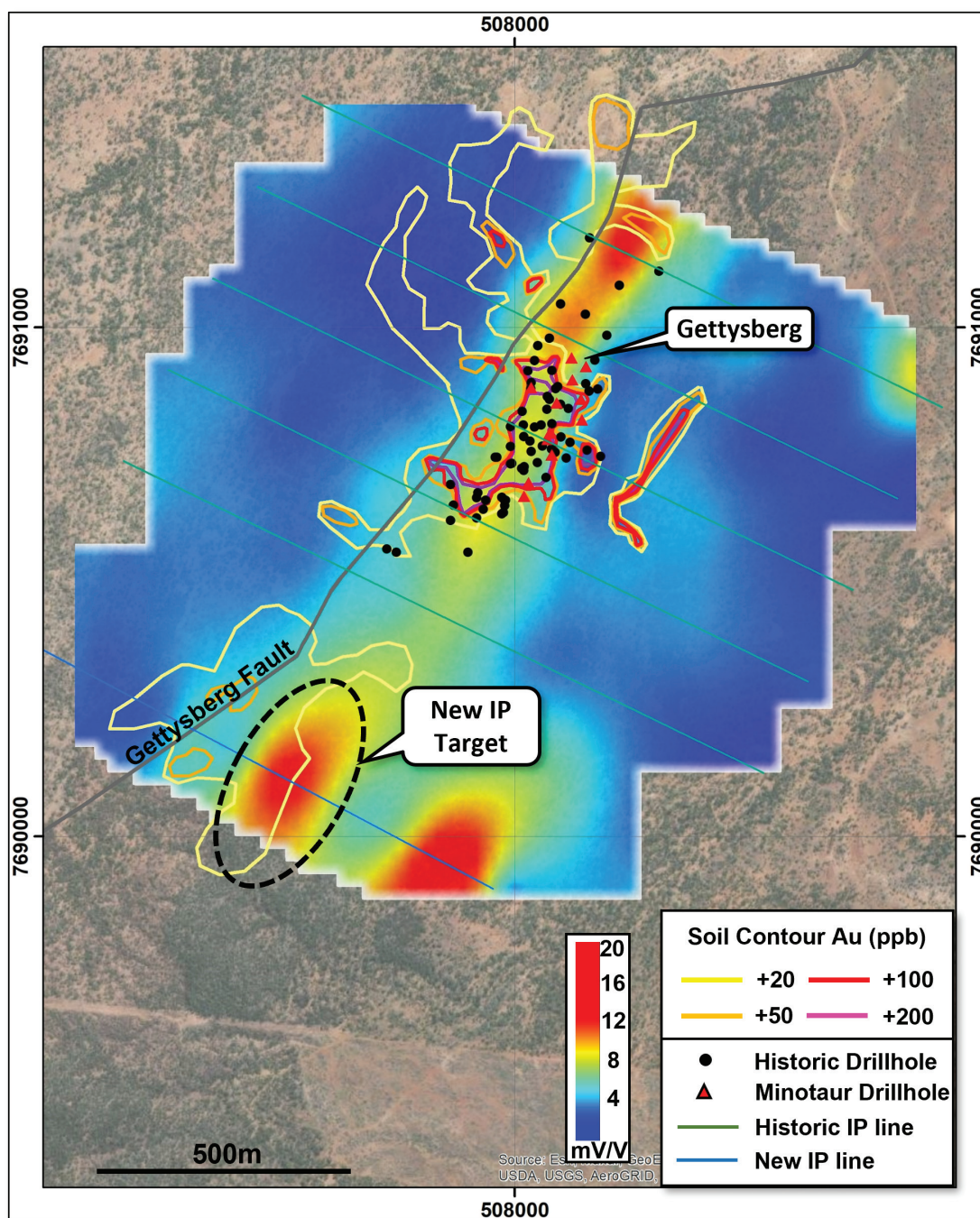


Figure 4: Gettysberg prospect IP chargeability depth slide at 125m below surface, IP target of interest, gold-in-soils contours

## Windsor Project (MEP 100%)

Minotaur applied for funding support under Round 5 of the Collaborative Exploration Initiative (CEI) of the Geological Survey of Queensland (GSQ) to undertake an innovative copper isotope characterisation of groundwater searching for indications of buried Volcanogenic Massive Sulphide (VMS) base metal deposits within the Windsor project area. Round 5 of the CEI is a 100% Government funded initiative meaning companies are not required to match the Government's funding. Minotaur's application was successful with up to \$98,700 being awarded for survey activities.

The Windsor project is in northeast Queensland near the town of Charters Towers. The tenement package lies within the Mount Windsor Subprovince terrane around several significant VMS deposits and prospects including the zinc-rich polymetallic Thalanga, Liontown, and Waterloo deposits, and the Cu- (Au) Highway-Reward cluster of deposits.

Historic exploration across the Windsor Project area has been challenged by poor exposure of the prospective basement rocks where extensive areas of surficial cover renders exploration difficult using conventional methods such as surface mapping and geochemistry, geophysics and localised drilling.

Minotaur proposes to employ a new innovative exploration technique to assess the Windsor Project area utilising methodologies recently employed during a pilot project sampling groundwater and analysing copper isotopes to detect the presence of basement mineralisation, undertaken by GSQ in collaboration with James Cook University (JCU), around the Jericho and Eloise Cu-Au deposits in northwest Queensland.

Arrangements during the September quarter will prepare for the survey in October-November.

## EXPLORATION, South Australia

### Peake and Denison Project (MEP 100%)

The Department of Mining and Energy (DEM) approved the Program for Environment Protection and Rehabilitation (PEPR) allowing drilling activities to proceed at the Peake and Denison project. Arrangements are progressing for the conduct of a Native Title (NT) cultural heritage survey of proposed drill sites with the survey expected to be completed in August. Discussions with prospective drilling companies highlight limitations due to cross-border Covid restrictions. It is anticipated that a suitable drilling contractor can be secured to allow drilling in September on iron oxide copper-gold and sediment-hosted base metal targets, part of that expense to be recouped under the Accelerated Discovery Initiative (ADI), from a \$230,000 funding grant awarded to Minotaur.



## Great White Kaolin-Halloysite Project (ADN 75%; MEP 25%)

Minotaur and Andromeda Metals (ASX: ADN) are joint venture partners in the Great White Kaolin-Halloysite Project with Minotaur contributing its 25% share of DFS phase expenses.

Market demand for a high purity kaolin (low halloysite) product in addition to the project's unique halloysite-dominated product has resulted in a more diversified product strategy (see ADN ASX release 10 June 2021). Consequent changes to mine plan schedules and reserves definition priorities have pushed out DFS completion to Q4 2021. Additional drilling is being undertaken at both ultra bright high kaolin and high halloysite zones respectively to meet these requirements (see ADN ASX release 4 May 2021).

On 30 June, Andromeda announced a \$30M placement and subsequent SPP with proceeds to be used, in part, for long lead capital items at Great White. As Minotaur is under no obligation to fund mine development and capital items until a DFS/BFS has been delivered, its contribution to this expenditure will be carried by Andromeda until those objectives are secured.

## Halloysite R&D (50/50 MEP/ADN)

Natural Nanotech Pty Ltd (NNT), a research and commercialisation venture jointly owned (50:50) by Minotaur and Andromeda, is investigating new technology applications of halloysite and kaolinite nanoparticles. Success will create new user markets for the halloysite nanotube fraction of the JV's high-grade kaolin deposits in South Australia and provide a potential global alternative to expensive manufactured carbon nanotubes.

Minotaur and Andromeda, through Natural Nanotech, are co-funding significant research programs through University of Newcastle's Global Innovative Center for Advanced Nanomaterials (GICAN). Research activity is currently underway with GICAN under 2 specific research agreements:

- 1) Halloysite derived nanomaterials for environmental applications (commenced April 2020). This project continues to optimise conversion processes for a range of potential high technology applications. Additional research support is also flowing from other successful ARC Linkage (nano-plastics) and Soils CRC (nano-fertiliser) collaborations. The conversion process into advanced functionalised nanomaterials is subject of a provisional patent application (MEP ASX release 7 July 2021) with other IP filings to follow in due course.
- 2) Halloysite Based Materials for Carbon Capture and Conversion (commenced April 2021; MEP ASX release 3 May 2021). This project is optimising the processing route and subsequent construction of Carbon Capture and Conversion pilot plants. Great White halloysite-kaolin has been successfully synthesised to create an advanced nanomaterial specifically to adsorb CO<sub>2</sub> from a mixture of gases. Having achieved >1 t per unit weight of CO<sub>2</sub> adsorption (MEP ASX release 12 April 2021), priority has shifted to upscaling the processes and procedures to pilot plant scale to allow commercial evaluation.

The multi-site pilot plant components include:

- upgraded raw material preparation pilot plant at Streaky Bay,
- a halloysite preparation and functionalisation facility to prepare appropriate nanotubes (at GICAN),
- a carbon capture pilot plant for direct air and direct emissions capture (at GICAN), and
- a captured CO<sub>2</sub> conversion facility (at GICAN).

## Project Generation Activities

Minotaur is actively assessing avenues that can replenish its exploration options, particularly in copper and gold. The Company invites holders of tenements with an exploration history to make contact.

## Compliance Statement

Payments made under a commercial lease agreement to a related entity of Dr Antonio Belperio, a Director of the Company, are reported in Appendix 5B, Section 6.1.

## June 2021 Quarter ASX Announcements

The following significant announcements were lodged with ASX during or since the June Quarter:

- Carbon capture utilising Halloysite-derived adsorbent materials, 12 April 2021
- Minotaur completes first-pass drilling at Pyramid gold project, 15 April 2021
- Gettysberg delivers encouraging assays at Pyramid gold project, 29 April 2021
- Natural Nanotech formalises major research project with University of Newcastle, 3 May 2021
- IP geophysical survey underway at Pyramid gold project, 27 May 2021
- Agricultural applications for Halloysite nanotubes, 4 June 2021
- Great White kaolin JV secures major Off-take deal, 10 June 2021
- Patent lodged for Halloysite-kaolin conversion to nanoporous carbon materials, 7 July 2021
- IP geophysical anomalies identified at Pyramid gold project, 26 July 2021