



**BRYAH RESOURCES  
LIMITED**

# ***“Exploring Australia for the Energy Metals of the Future”***

## **INVESTOR PRESENTATION**

November 2021



**AMEC**  
ASSOCIATION OF MINING  
AND EXPLORATION COMPANIES  
2021 MEMBER

# Competent Person's Statement & Disclaimer



## Competent Persons Statement – Exploration Results

The information in this Presentation that relates to Exploration Results is based on information compiled by Mr Ashley Jones, Consultant with Kamili Geology Pty Ltd. Mr Jones is a member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Jones is a consultant to Bryah Resources Limited (“the Company”). Ashley Jones has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to 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’. Ashley Jones consents to the inclusion in this Presentation of the matters based on his information in the form and context in which it appears.

## Competent Person Statement — Mineral Resource Estimation

The information in this presentation that relates to Gabanintha Base metals Mineral Resources (see BYH ASX announcement dated 1st June 2021) is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Barnes and Mr Davis are both members of the Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG). Both have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits.

The Company confirms that it is not aware of any new information or data that materially affects the information included in this presentation and all material assumptions and technical parameters underpinning the Mineral Resource estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons findings are presented have not materially changed from the original announcement.

## Forward Looking Statements

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The presentation contains “forward-looking information” within the meaning of applicable securities legislation. Forward-looking information may include, but is not limited to, information with respect to the future financial and operating performance of the Company, its affiliates and subsidiaries, potential investments, the estimation of mineral reserves and mineral resources, realization of mineral reserves and resource estimates, costs and timing of development of the Company's projects, costs and timing of future exploration, timing and receipt of approvals, consents and permits under applicable legislation, results of future exploration and drilling and adequacy of financial resources.

Forward-looking information is based on the reasonable assumptions, estimates, analysis and opinions of management of the Company made in light of their experience and their perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made, but which may prove to be incorrect. The Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable.

Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities laws.

# Corporate Snapshot



## Capital Structure

<b>ASX Code</b>	<b>BYH</b>
Total Shares on Issue	224,207,175
Options on Issue*	71,000,000
Market Capitalisation (@ \$0.062)	\$13.9 million
Cash Balance (as at 30 <sup>th</sup> Sep 21)	\$3.0 million*

- 7,500,000 Unlisted Options – ex. price \$0.09, expiry 30 September 2022.
- 63,500,000 Listed Options (BYHOA) – ex price \$0.09 expiry 31 Jan 2023.
- \* excludes BBMJV funds and proceeds from sale of Tumblegum South

## Active Shareholders - ~1,150

Top 20 Holders, includes:	42.47%
- Board and Management	7.11%
- Australian Vanadium Ltd (ASX:AVL)	5.02%



# Our Projects



*“Our Projects are quality exploration assets in Western Australia, a Tier 1 exploration jurisdiction”*



# Lithium Market Overview

## Major Australian Lithium deposits



## Lithium facts



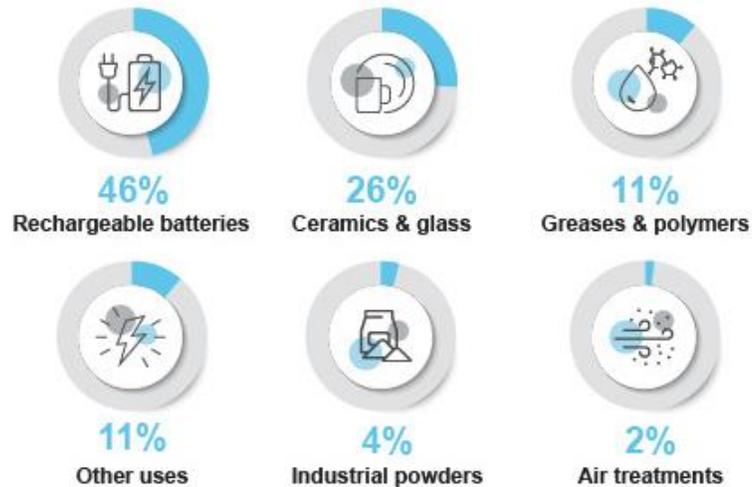
**Electric vehicle sales** are expected to increase from 3m to 30m by 2030

**Lithium exports** were A\$1.1b in 2020-21

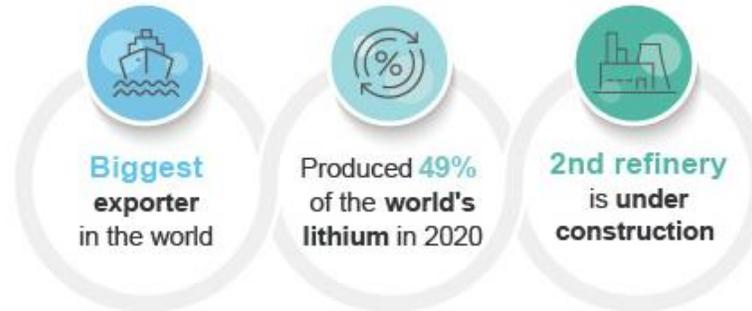
Australian lithium exports are tipped to rise to **3.9m tonnes** in 2025-26

Australia's production of lithium is **recovering strongly**

## World consumption

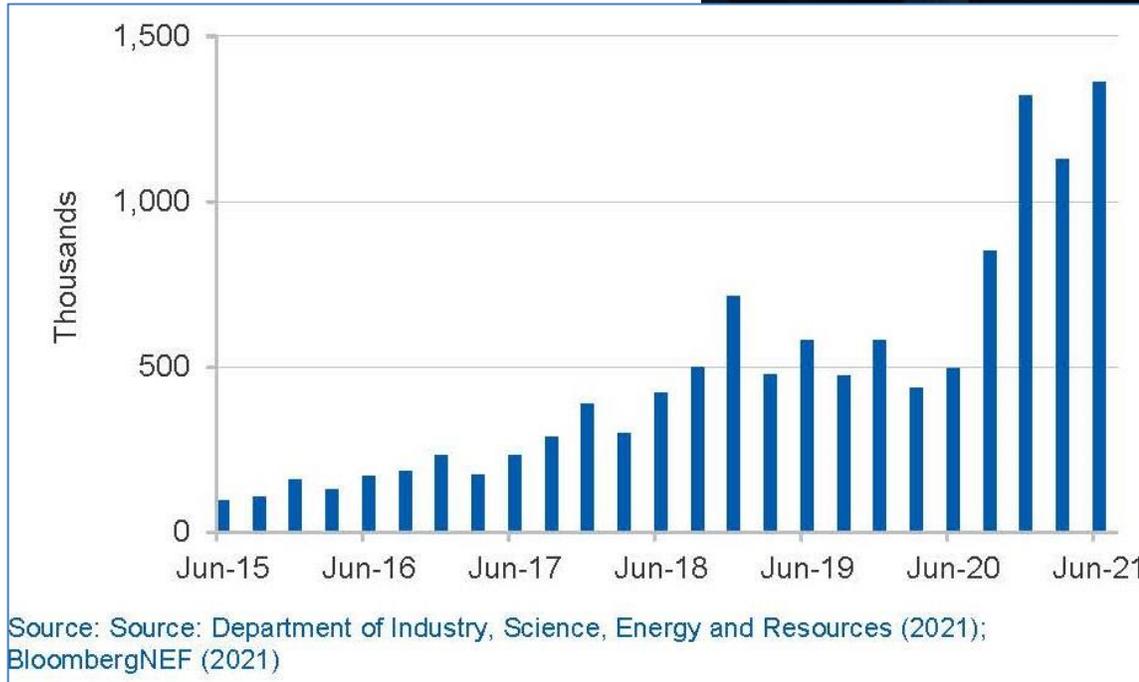


## Australia's lithium

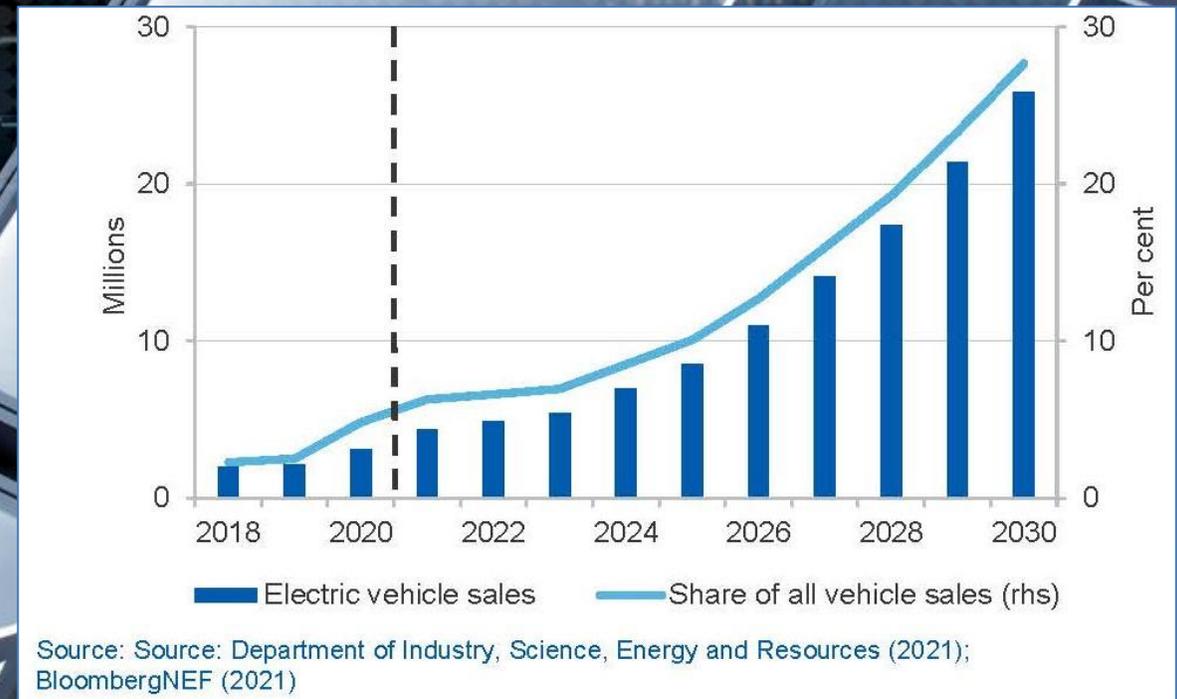


# Lithium Market Overview

## World Quarterly Electric Vehicle Sales

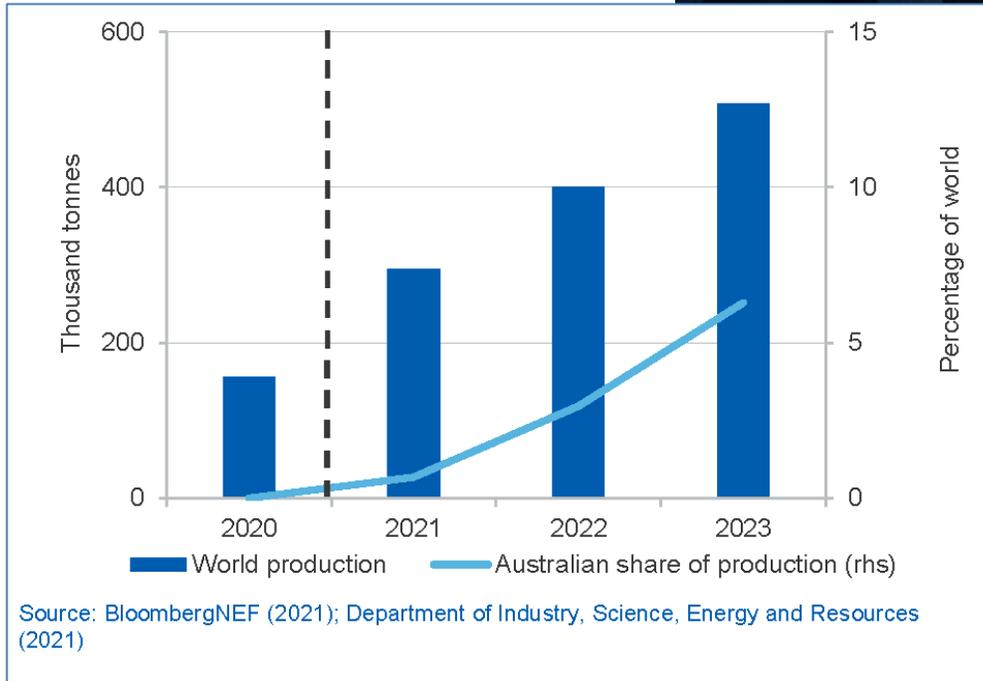


## Long Term Electric Vehicle Sales Projections

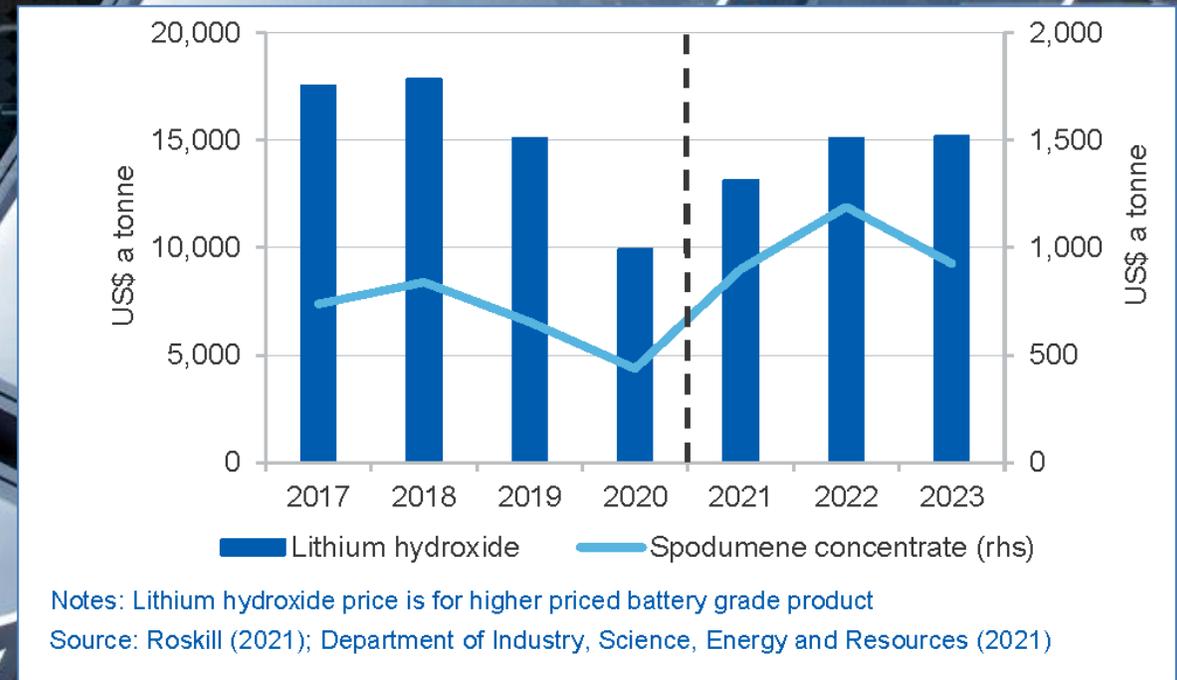


# Lithium Market Overview

## World and Australian Lithium Hydroxide output



## Spodumene concentrate/lithium hydroxide prices



# Lake Johnston – Investment Thesis

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## The Right Commodities

- Lithium and nickel
- Battery metals of the future
- Massive growth in Li demand forecast
- Complements Bryah's other energy assets

## The Right Location

- Lake Johnston: 400km east of Perth
- Known pegmatite fields in the area
- World class Mt Holland Lithium Project 10km to the west
- Adjacent to POS Maggie Hays/Emily Ann Nickel mine with plant on C&M

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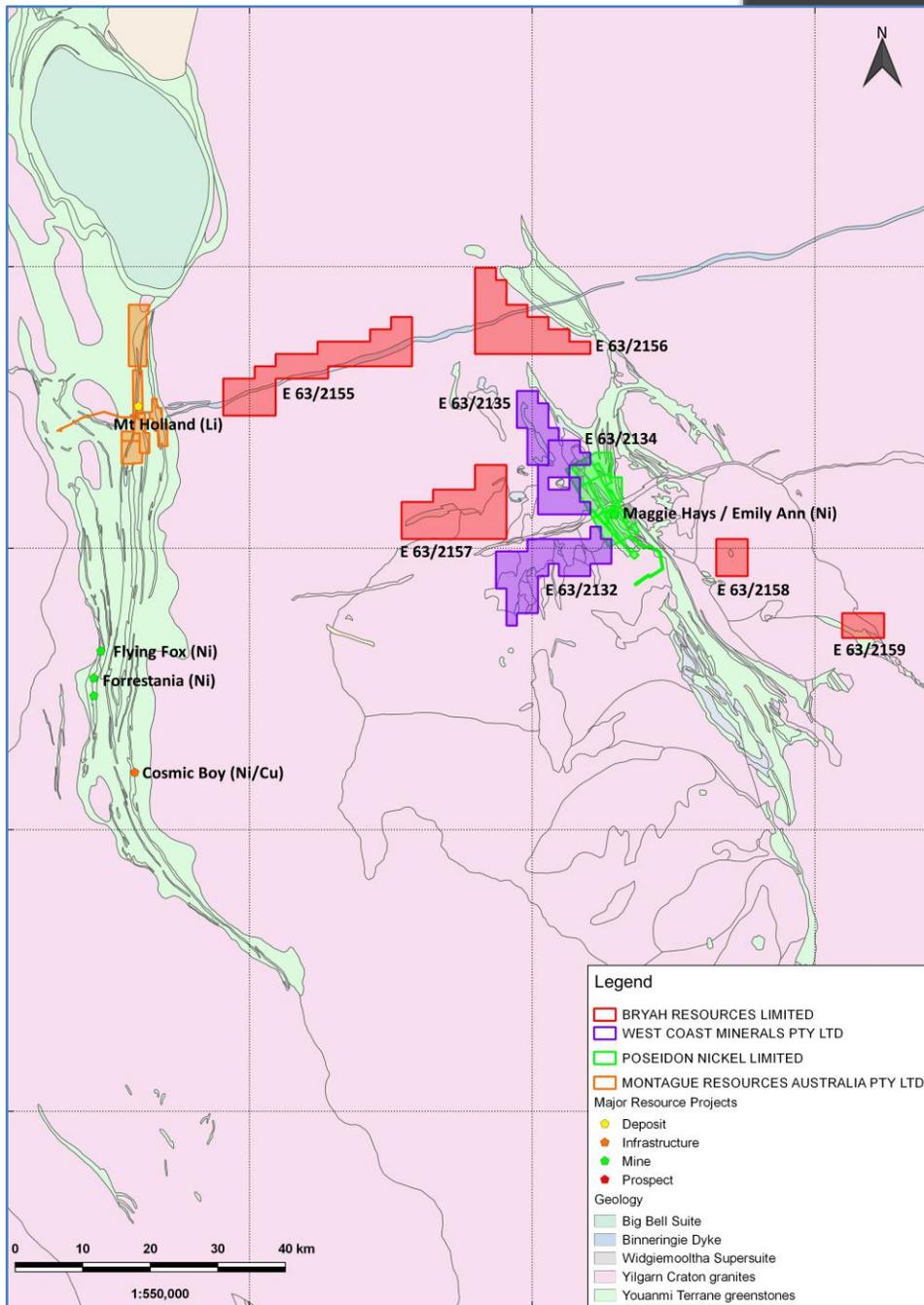
## Compelling Acquisition

- Large area of unexplored granite intrusions in the region with associated pegmatites
- Limited previous work identified lithium targets
- Low cost acquisition

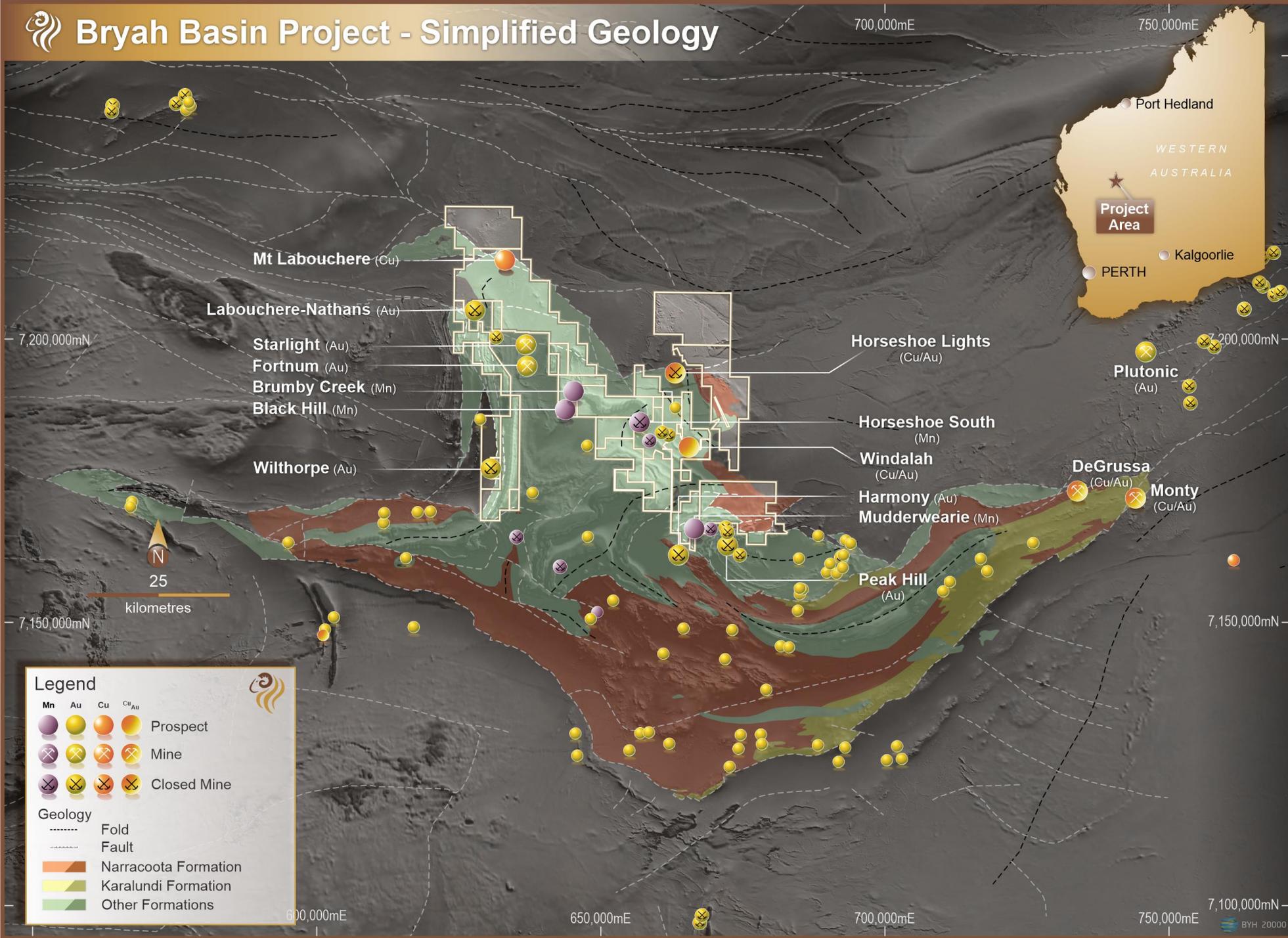
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# Lake Johnston Lithium – Nickel Project

- 690km<sup>2</sup> under 8 Exploration Licence applications
- Tenure close to Mount Holland Lithium Mine (ASX:WES/SQM JV) and historic Maggie Hays/Emily Ann Nickel deposits held by Poseidon Nickel Limited
- Limited exploration history
- New exploration techniques and remote sensing methods will be used to generate exploration targets before a start of field work in 2022



# Bryah Basin Project - Simplified Geology



- Bryah Basin hosts world class **Volcanogenic Massive Sulphide (VMS)** copper – gold deposits (DeGrussa, Monty and Horseshoe Lights) and several epigenetic gold mines (Fortnum, Peak Hill) as well as several manganese deposits
- Bryah Resources' landholding (1,048km<sup>2</sup>) surrounds the Horseshoe Lights copper-gold mine and the Fortnum gold mine
- Prior to the DeGrussa copper-gold discovery in 2009 the area had been largely unexplored for copper.
- VMS copper-gold deposits are not usually isolated occurrences, e.g. Monty found close to and after DeGrussa discovery.

An aerial photograph of a manganese mining operation in the Bryah Basin. The landscape is dominated by dark brown, eroded earth with sparse, low-lying green vegetation. In the center-left, there is a mining facility with several pieces of equipment, including a conveyor system and a large pile of material. The background features rolling hills under a blue sky with scattered white clouds. The text "Bryah Basin Manganese" is overlaid in the top right corner in a bold, yellow font.

# Bryah Basin Manganese

*“The Company identified an opportunity to develop low-cost, high-grade Manganese mining operations in the Bryah Basin and in the process has made new discoveries and attracted a quality global Manganese business as our Joint Venture partner.”*

# Manganese Market Overview



- Manganese (Mn) is the fourth most utilised metal globally.
- Manganese is a critical and irreplaceable element in steel production and is mainly used to increase both the strength and flexibility of steel



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## BASF is betting on high purity manganese to supply battery makers

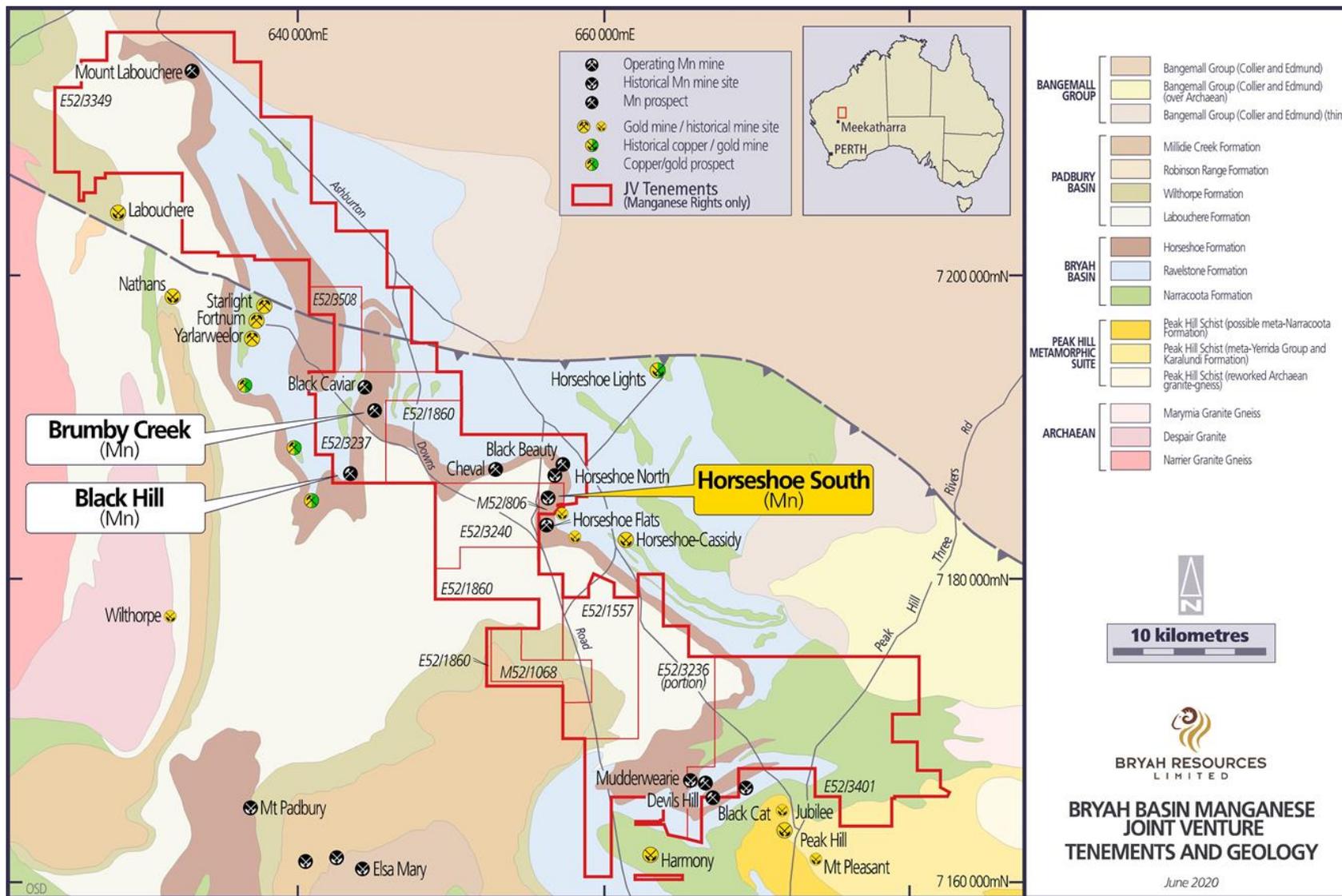
By Trevor Hoey. Published at May 6, 2021, in Features



German multi-national chemical company, and the largest chemical producer in the world, BASF SE (ETR: BAS), recently unveiled ambitious plans to boost investment in battery cathode active materials (CAM), including a new family of manganese-rich products.

- Approximately 90% of all manganese is used in the production of steel
  - Recent manganese ore pricing:
    - 44% Mn CIF China Nov 2021 price - ~US\$5.58/dmtu (US\$245/t = ~A\$330/t)
- Source: Fastmarkets MB
- Manganese also becoming a critical metal for use in EV batteries – seen as a cost effective way of reducing the overall price of EVs without drop in performance
  - It is the cheapest, most abundant of the NMC cathode materials (Nickel, Manganese, Cobalt)

# Bryah Basin Manganese Joint Venture



- Manganese occurs within the Horseshoe Formation – over 70 line km covered by JV tenements
- In 2019 Bryah acquired the historic **Horseshoe South Mine**, the largest Manganese mine in the region
- Joint Venture established with **OM Holding Ltd (ASX:OMH)** in 2019
- **OMH are funding exploration** to earn a 51% JV interest.
- Exploration focus to date has mainly centred on 3 areas (Horseshoe South Mine, Brumby Creek and Black Hill)
- JV currently 60% BYH/40% OMH

# Horseshoe South Manganese Mine



- **Largest historical Manganese Mine in Bryah Basin.**
- **Past production - 1948 to 1969: approximately 490,000 tonnes of high-grade ore at 42% Mn**
  - **2008 to 2011: Minerals Resources Ltd (ASX:MIN) produced over 400,000 tonnes of ore using Dense Media Separation to produce saleable Mn ore**
- **Recent drilling intersected significant manganese mineralisation adjacent to or beneath existing open pits**
- **Granted Mining Lease means short approvals process for the restart of mining operations**



# Brumby Creek

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- Drilling to date has tested 3 main areas with sufficient drilling to establish maiden mineral resource estimates at Brumby West, Brumby East and Area 74
- Mineralisation is shallow in depth (<40m depth) and in some cases without any surface outcrop/staining
- Further drilling recently completed – assays pending ahead of mineral resource estimate



# Bryah Basin - Manganese Development Strategy



## Stage 1 - Focus on Exploration (2021)

- ✓ Drilling – testing new target areas – assays pending
- Preliminary Metallurgical testwork - underway
- Complete Mineral Resource estimates and exploration targets

## Stage 2 – Preparing for Mining (2022)

- Drilling – for metallurgical testwork samples and to increase mineral resources
- Drilling – infill areas with mineral resources to increase certainty
- Update Mineral Resource estimates
- Advanced Metallurgical testwork
- Feasibility Study - process design and costings
- Update environmental studies
- Transportation and Shipping Studies
- Commence approvals process for mining

# Windalah Copper-Gold Prospect

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*Bryah's discovery of a significant VMS system at Windalah confirms the potential for a new copper-gold discovery at a time when demand for copper is set to grow significantly.*

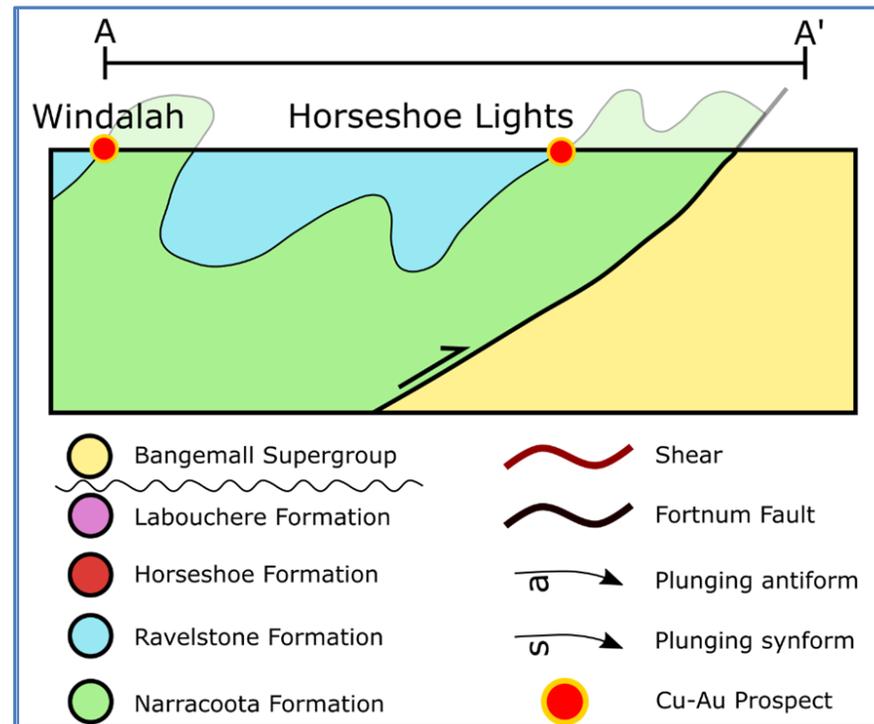
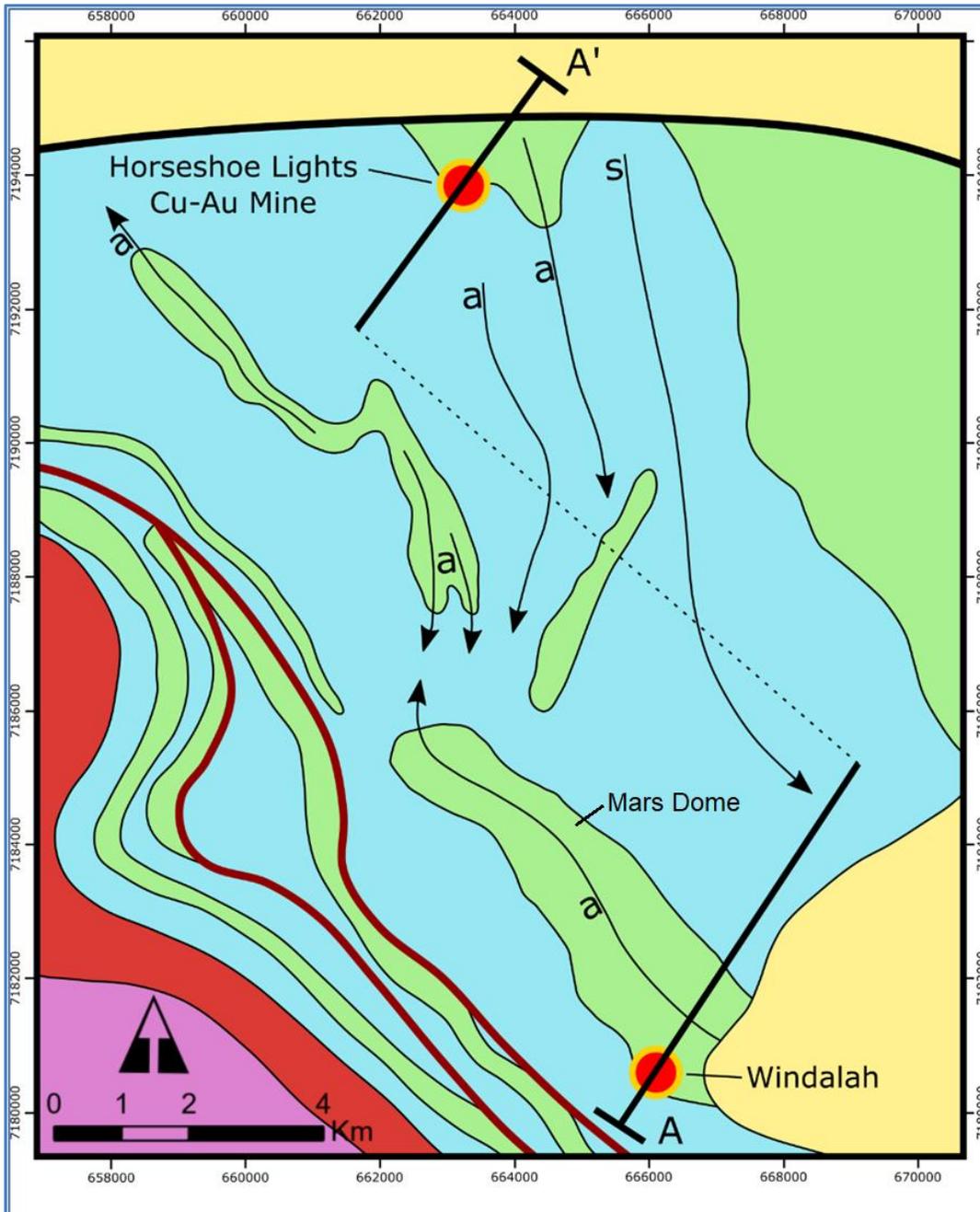


# Windalah Copper-Gold Prospect



*Analogous to Horseshoe Lights Copper-Gold Mine*

- Same stratigraphic position (at the contact of the volcanic Narracoota and sedimentary Ravelstone Formations)
- Same VMS pathfinder elements identified at both locations
- Copper mineralisation at Horseshoe Lights was at depth (>100m) with gold resource above it. Gold in shallow drilling at Windalah has been recorded

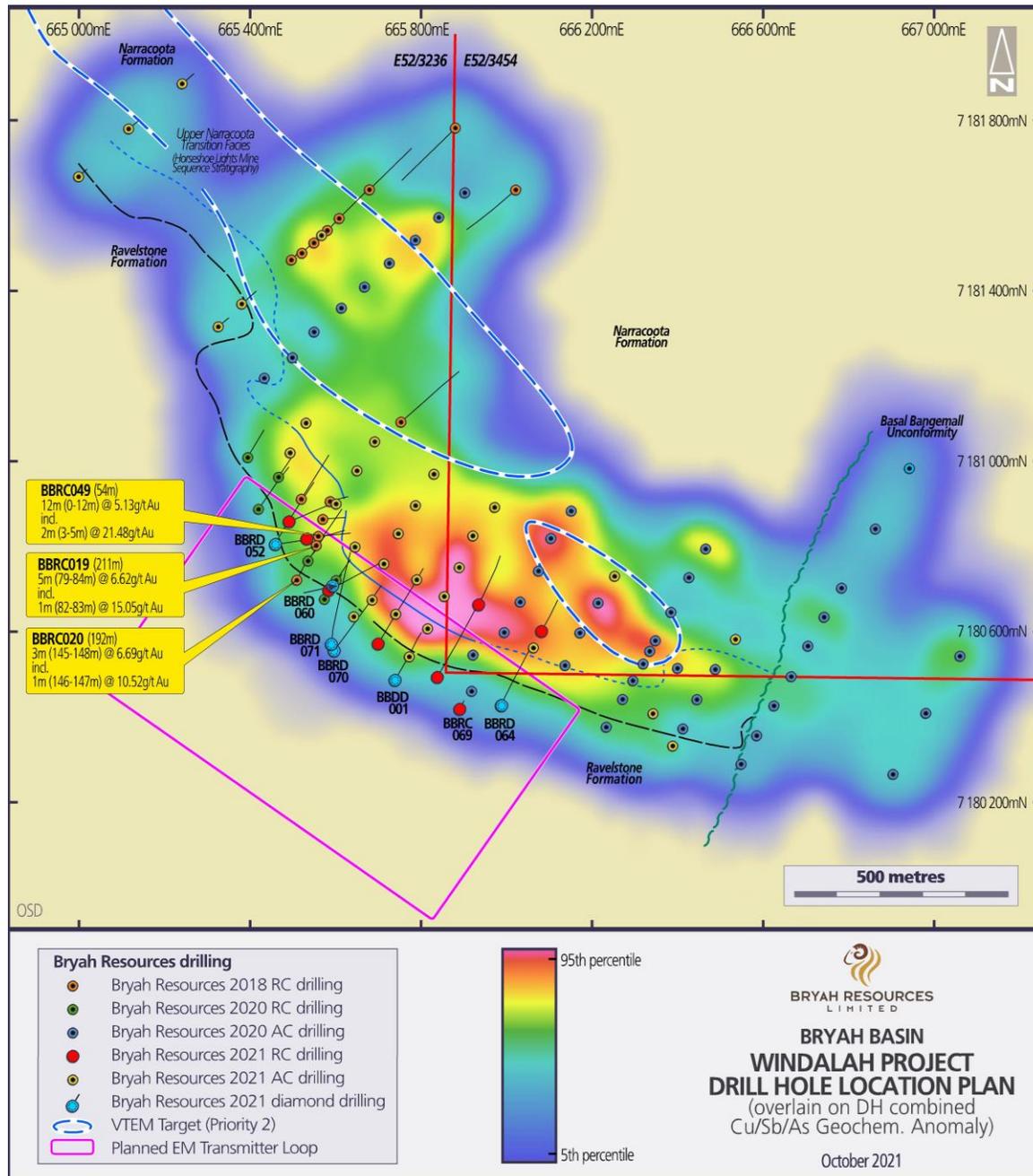


# Windalah Copper-Gold Prospect



## Diamond drilling confirms VMS system

- 6 diamond drill holes completed (1,259m core) in Oct 2021
- Mineralisation that is typical of VMS deposits identified
- **Laminated semi-massive pyrite** horizon with interflow sericite-haematite volcanic rocks
- Exhalative sulphide horizon located at the **equivalent stratigraphic position of the Horseshoe Lights Cu-Au mine**, beneath the Upper Narracoota-Ravelstone Formation contact
- Drill core being cut and sent to laboratory for analysis – assays results to be reported when available
- **Down Hole Electromagnetic surveys** to be completed on all six diamond holes in November 2021



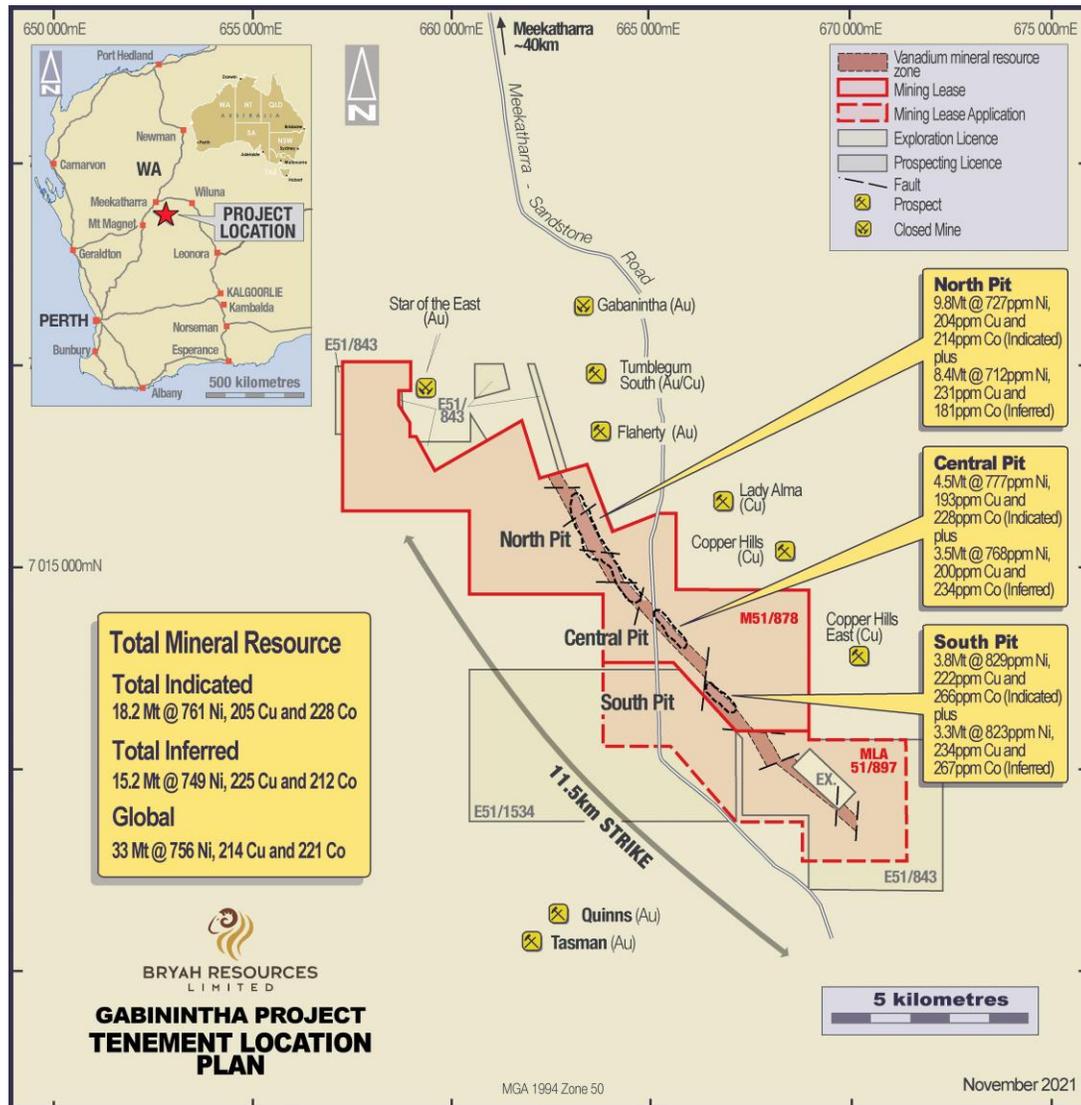
# Gabanintha Copper-Nickel-Gold Project

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- *At Gabanintha, Australian Vanadium Limited (ASX:AVL) retains 100% rights in Vanadium, Uranium, Cobalt, Chromium, Titanium, Lithium, Tantalum, Manganese & Iron Ore (Excluded Minerals).*
- *Bryah holds 100% rights to all other minerals including Copper Nickel and Gold.*



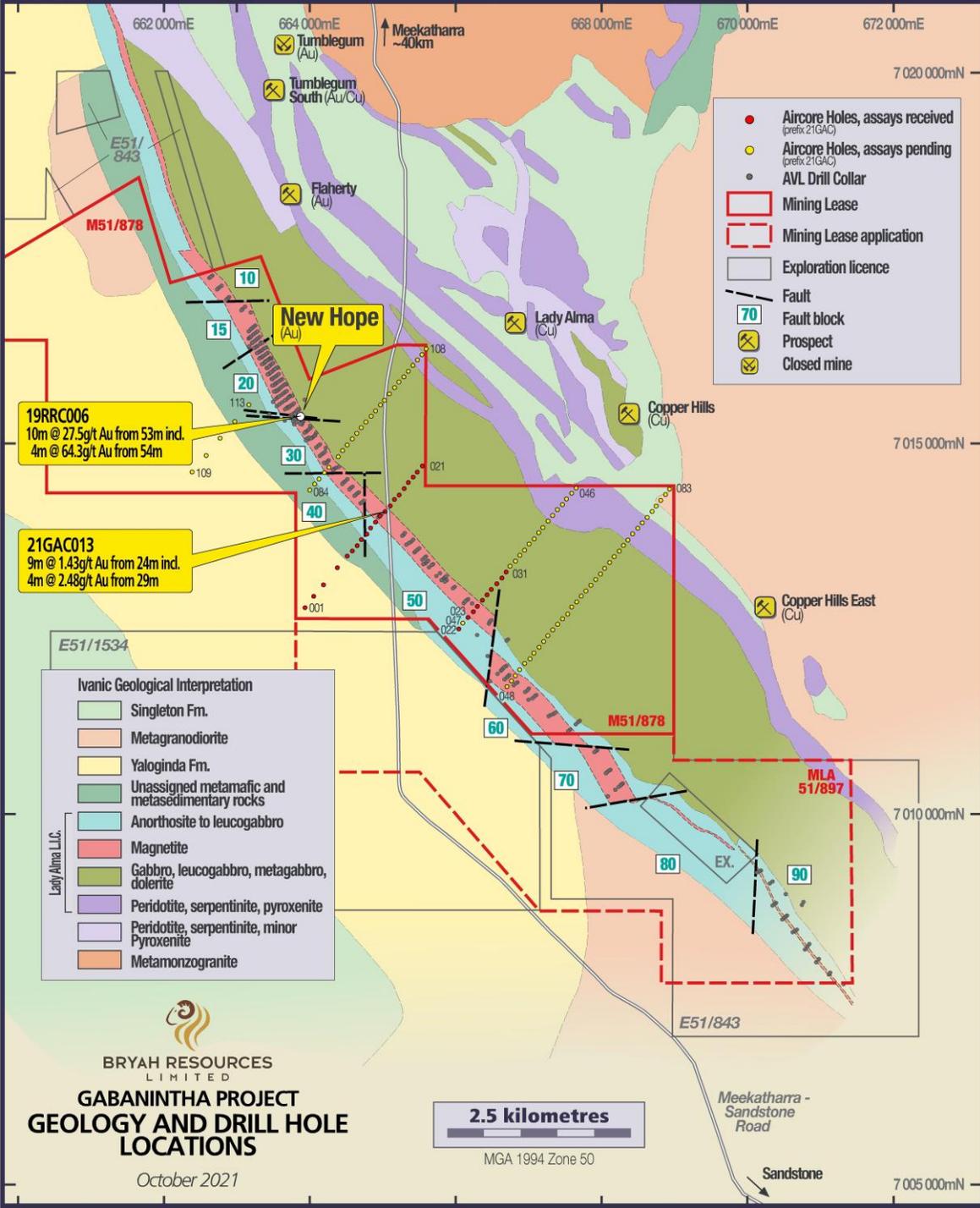
# Gabanintha - Nickel and Copper Potential



- Testwork on AVL's Vanadium project shows the **presence of nickel, copper and cobalt** in the non-magnetic reject material (tails) of the vanadium-magnetite concentrate
- Flotation testwork of non-magnetic tails produced sulphide-rich concentrates that contained **up to 6.3% base metals** including up to 2.02% Co, 2.58% Ni and 1.70% Cu
- Potential identified to economically recover the sulphide-rich Co-Ni-Cu concentrate by-product, thereby eliminating these sulphides from the tailing storage facility, improving the long-term environmental impact of the project
- Base Metals Indicated and Inferred Mineral Resource is **31.3 Mt @ 761 ppm Nickel (23,770 t), 210 ppm Copper (6,556 t) and 228 ppm Cobalt (7,116 t)** identified within and below the 3 planned open pits of the Vanadium Project
- Additional testwork by Bryah currently underway ahead of further feasibility studies on flotation circuit costs



# Gabanintha - Gold Potential



- Sampling at **New Hope prospect** in 2021 recorded significant gold values:
  - 19RRC006 - **10 metres @ 27.5 g/t Au** from 53m
- 5,539m aircore drilling recently completed, early results:
  - 21GAC013 – **9 metres @ 1.43 g/t Au** from 24m
  - 455 assay results received - >1,000 assays pending
- Latest aircore results support **potential for significant gold mineralization** in nine structural corridors over 11 km in **cross-cutting fault zones** adjacent to the vanadium-titanium-magnetite (VTM) deposit
- Gold also identified from limited sampling in the earlier flotation testwork of the non-magnetic tails, additional testing underway will comprehensively assay for gold
- **+1,300 metre RC drilling program** planned for **November 2021** to target shallow gold at New Hope and beneath hole 21GAC013



**BRYAH RESOURCES**  
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## VALUE PROPOSITION

- Cashed up - \$3 Million to fund exploration
- Lake Johnston Project – highly prospective greenfields exploration asset with major lithium and nickel mines nearby
- Bryah Basin Project -
  - Manganese JV Interest – early pathway to significant production and cashflow with guaranteed Offtake partner
  - Quality exploration targets – potential for the next high-grade copper-gold discovery
- Gabanintha Project – evolving Nickel, Copper and Gold play

## Contact us

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