



**BRYAH RESOURCES**  
LIMITED

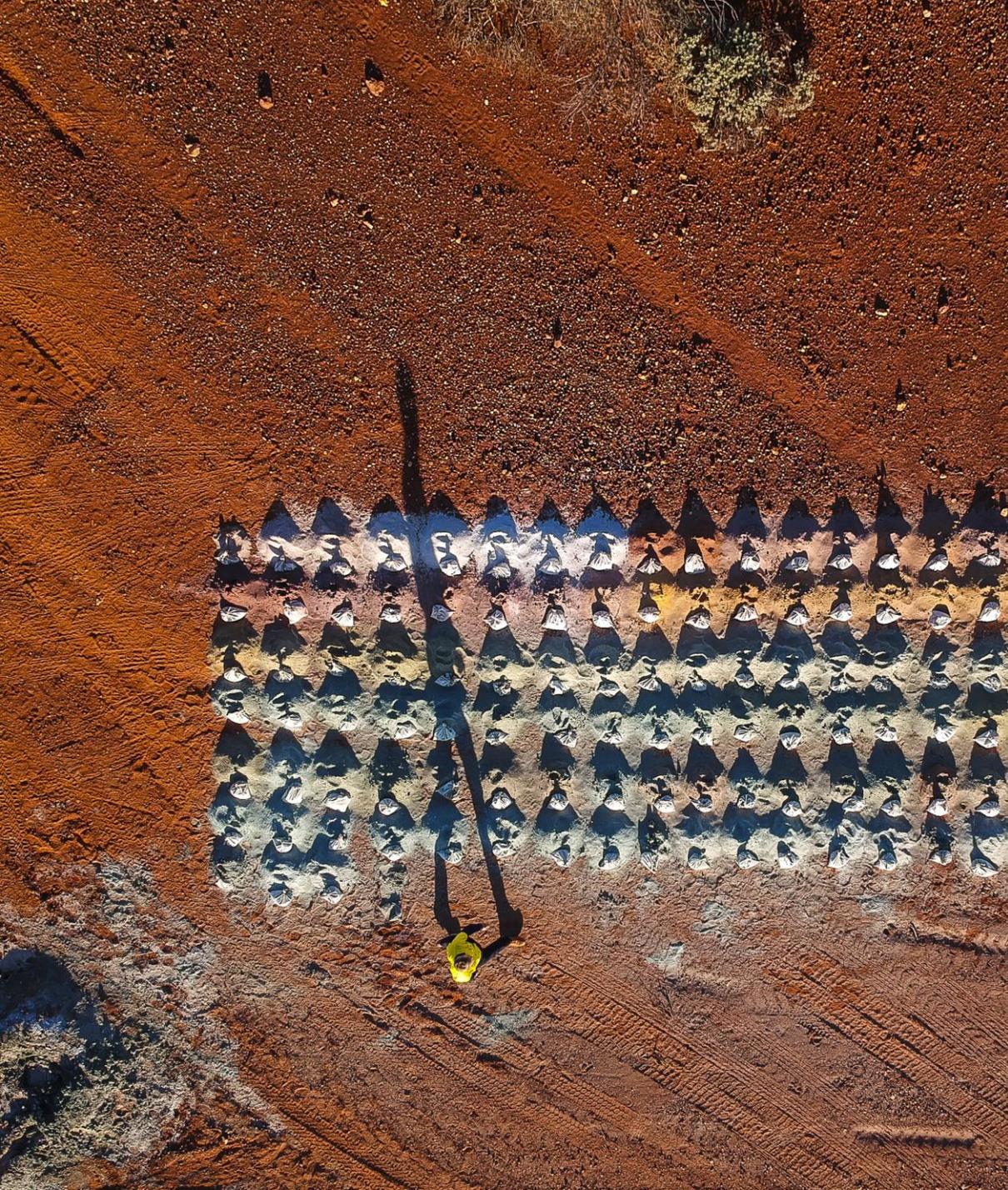
# INVESTOR PRESENTATION

March 2019



## Bryah Resources Limited

- A Western Australian mineral exploration company established with the purpose of exploring for and developing manganese and copper-gold resources located in its two projects areas in the Bryah Basin and at Gabanintha in the Meekatharra region of WA.
- Listed on ASX in October 2017.





## Corporate Strategy

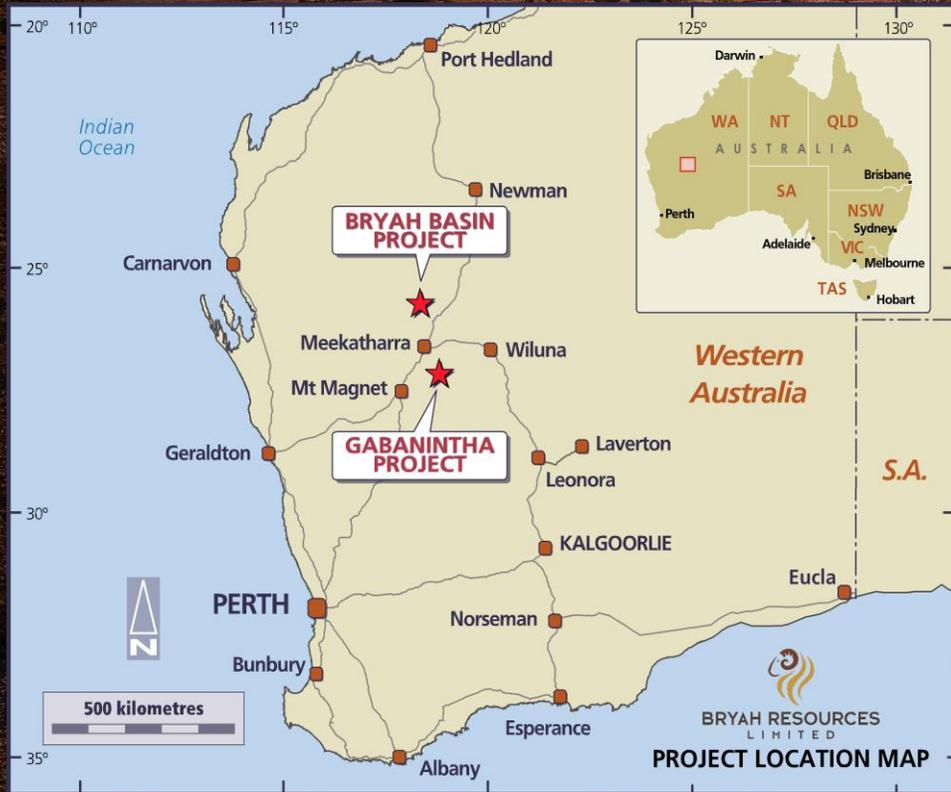
*Bryah Resources aims to advance from explorer to successful producer in the near term.*

We will achieve our strategy by:

- Timely development of manganese mining operations in the Bryah Basin to capitalise on the strong global demand for manganese
- Undertaking exploration for copper-gold deposits in the Bryah Basin. This region also hosts world class copper-gold mines such as DeGrussa, Monty, and Horseshoe Lights.



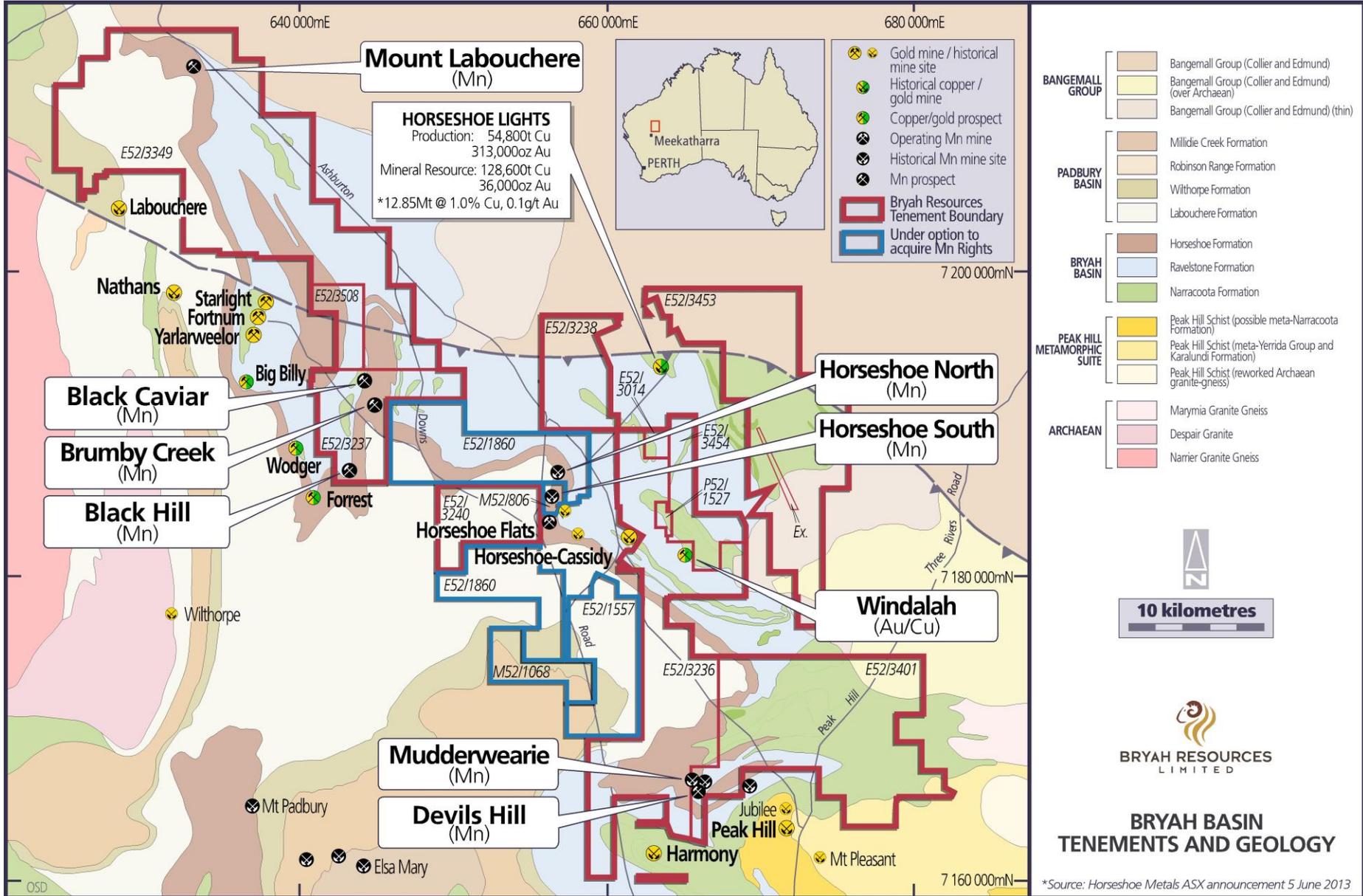
# Our Projects



# Bryah Basin - Manganese



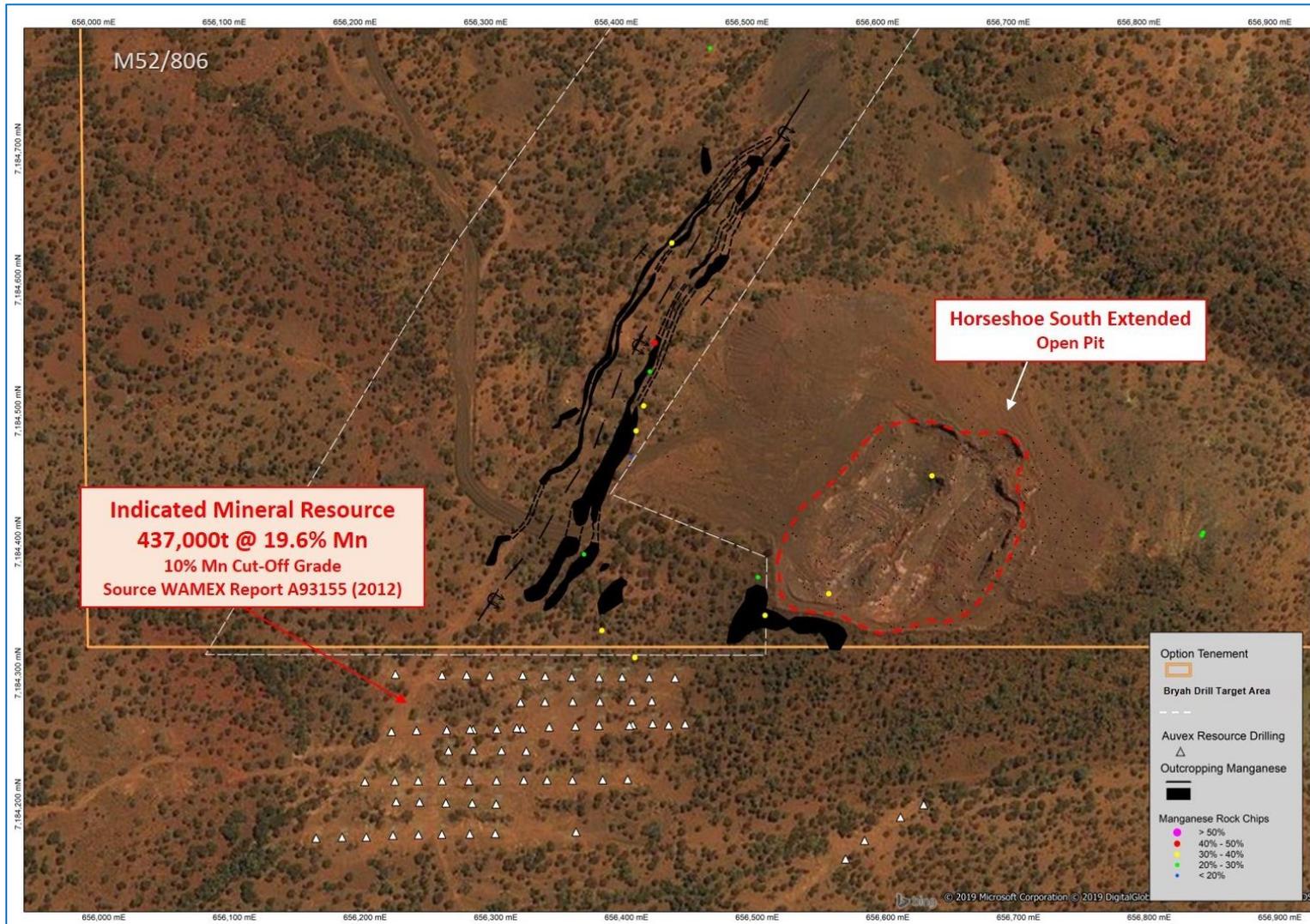
# Bryah Basin Project



# Horseshoe South Manganese Mine



~1Mt of Manganese ore produced from 1948 - 1969 and 2008 - 2011.



- BYH secured 1 year option to purchase M52/806 (3km<sup>2</sup>) over historic Horseshoe South Mine and the Mn Rights over neighbouring ground covering 154 km<sup>2</sup>.
- Granted mining lease means faster pathway to re-commence mining operations.
- Indicated Mineral Resource of **437,000t @ 19.6% Mn** defined in 2012 adjacent to M52/806 southern boundary. Untested on north side of the boundary on M52/806.
- Drilling planned to test outcropping areas and extensions of the neighbouring resource located on M52/806.



## Brumby Creek



**Considered to be the best target area outside of the Horseshoe South Manganese Mine**

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- Includes large area of outcropping manganese which occurs at the northern end of a 2 kilometre strike length of manganese outcrops and covers an area over 100 metres wide and 250 metres long.
- Rock-chip samples graded between 32% and 54% Mn.
- Not previous drilling recorded.
- Aim is to drill test outcrop and down slope valley fill targets.

# Mudderwearie/Devils Hill



- Shallow historical production at Mudderwearie in two open pits.
- Devils Hill has extensive outcropping manganese over 3.7 hectares.
- Rock-chip samples graded up to 50% Mn.
- Limited previous drilling.
- Aim is to drill test outcrop targets.



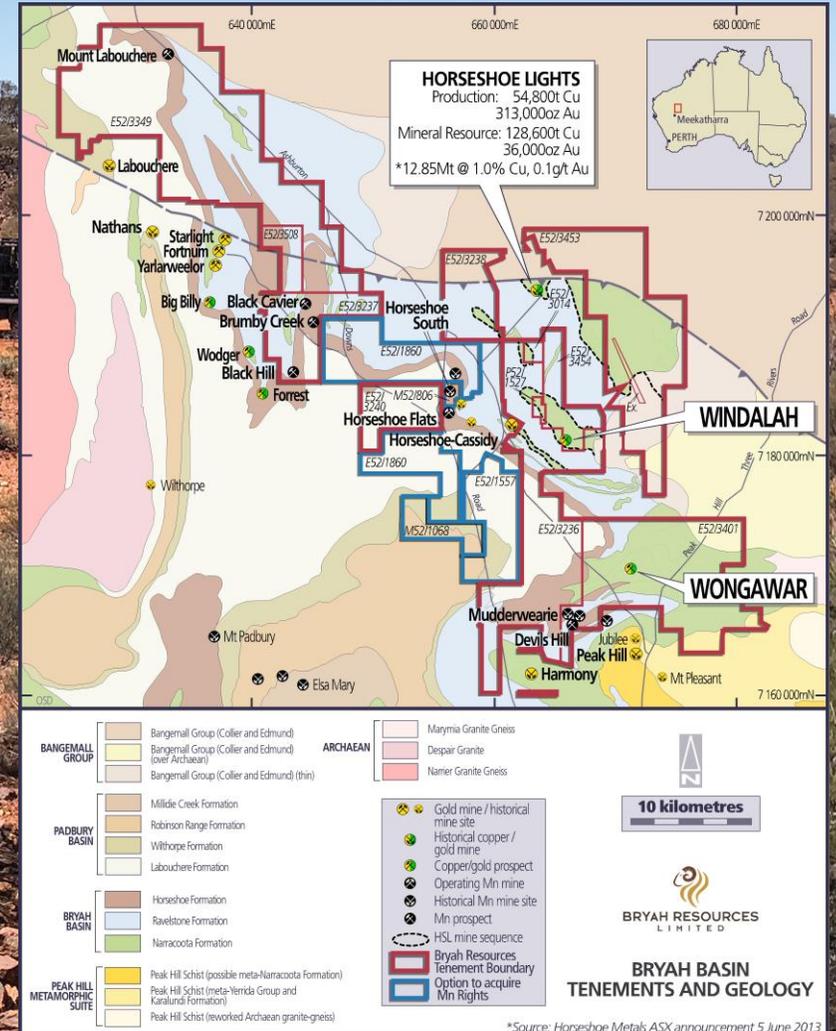
# 2019 Manganese Plan

- Drilling to test target areas
- Complete Mineral Resource Estimates
- Undertake metallurgical testwork
- Evaluate mining options
- Secure mining leases and approvals to mine

# Windalah Gold Discovery



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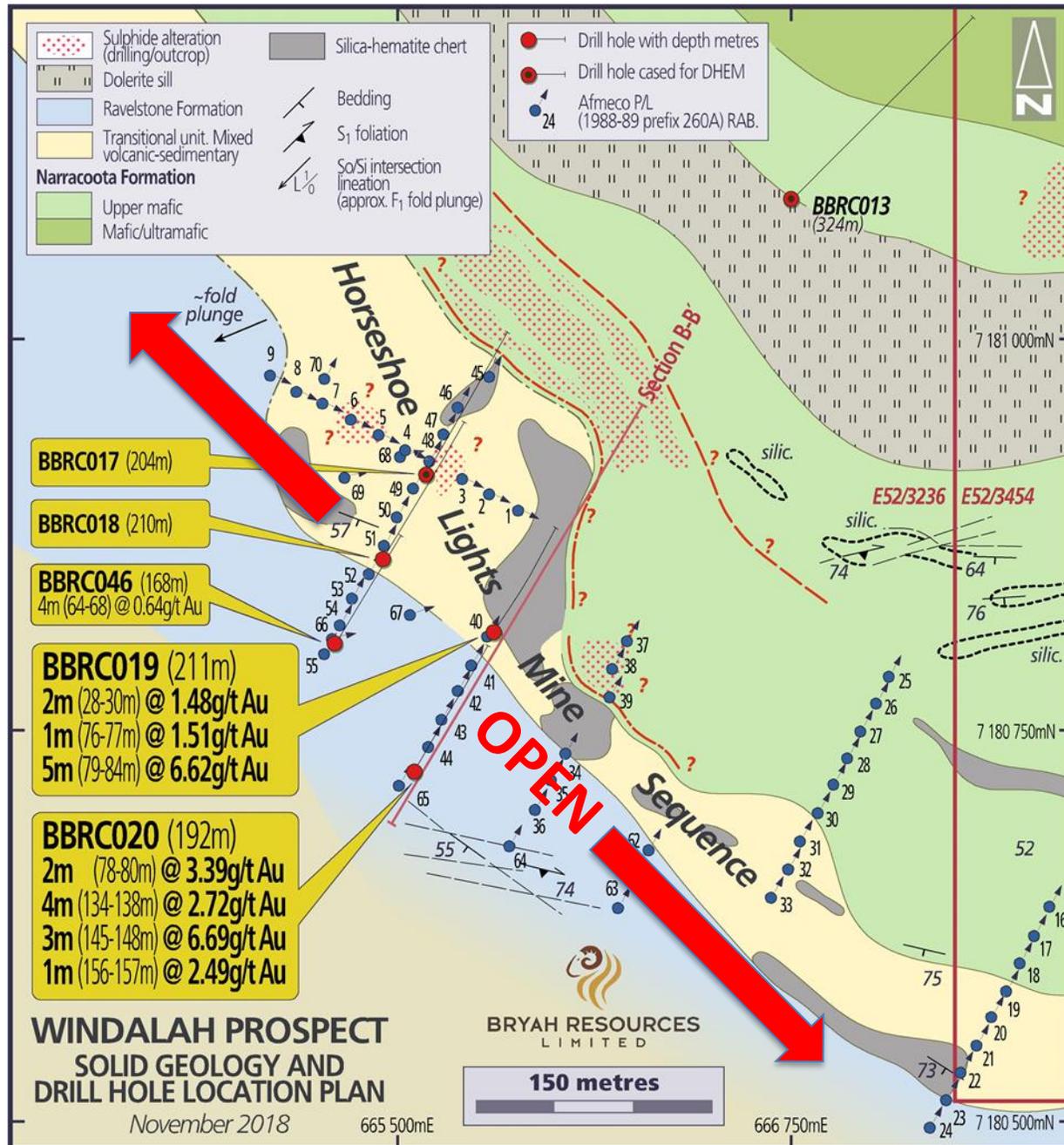




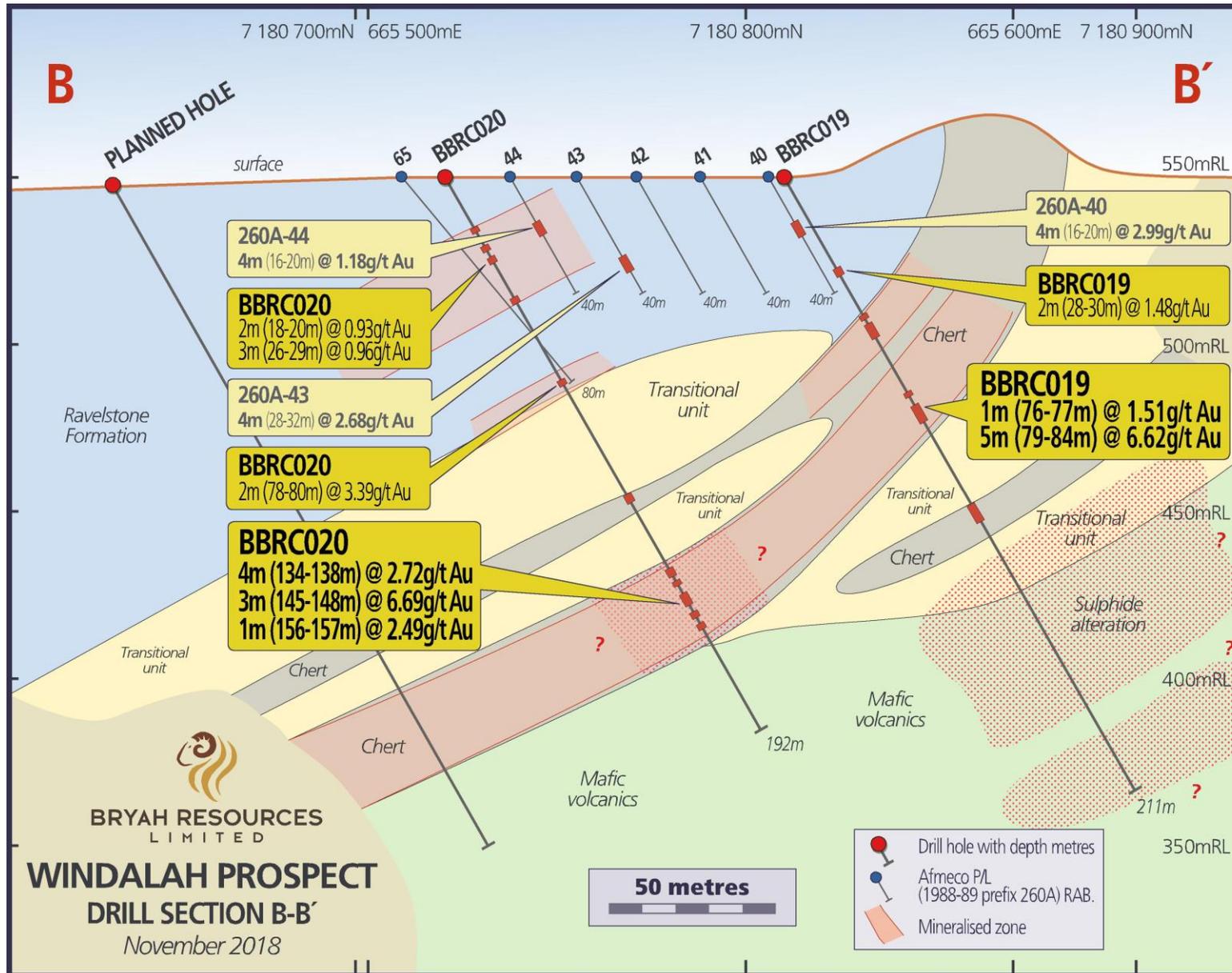
# Windalah Prospect

Mineralisation appears to be in the right stratigraphy – within the “Horseshoe Lights Mine Sequence”, potentially part of a VMS system.

- Geological similarities with Horseshoe Lights mine located 13 km north, which produced 1.6Mt @ 4.2 g/t Au (216,000 oz Au) before mining the deeper high-grade copper-gold mineralisation.
- Gold mineralisation at Windalah is open along strike in both directions and also up and down dip.
- Previous shallow drilling in 1980’s did not go deep enough to intersect high-grade intervals recorded by Bryah.

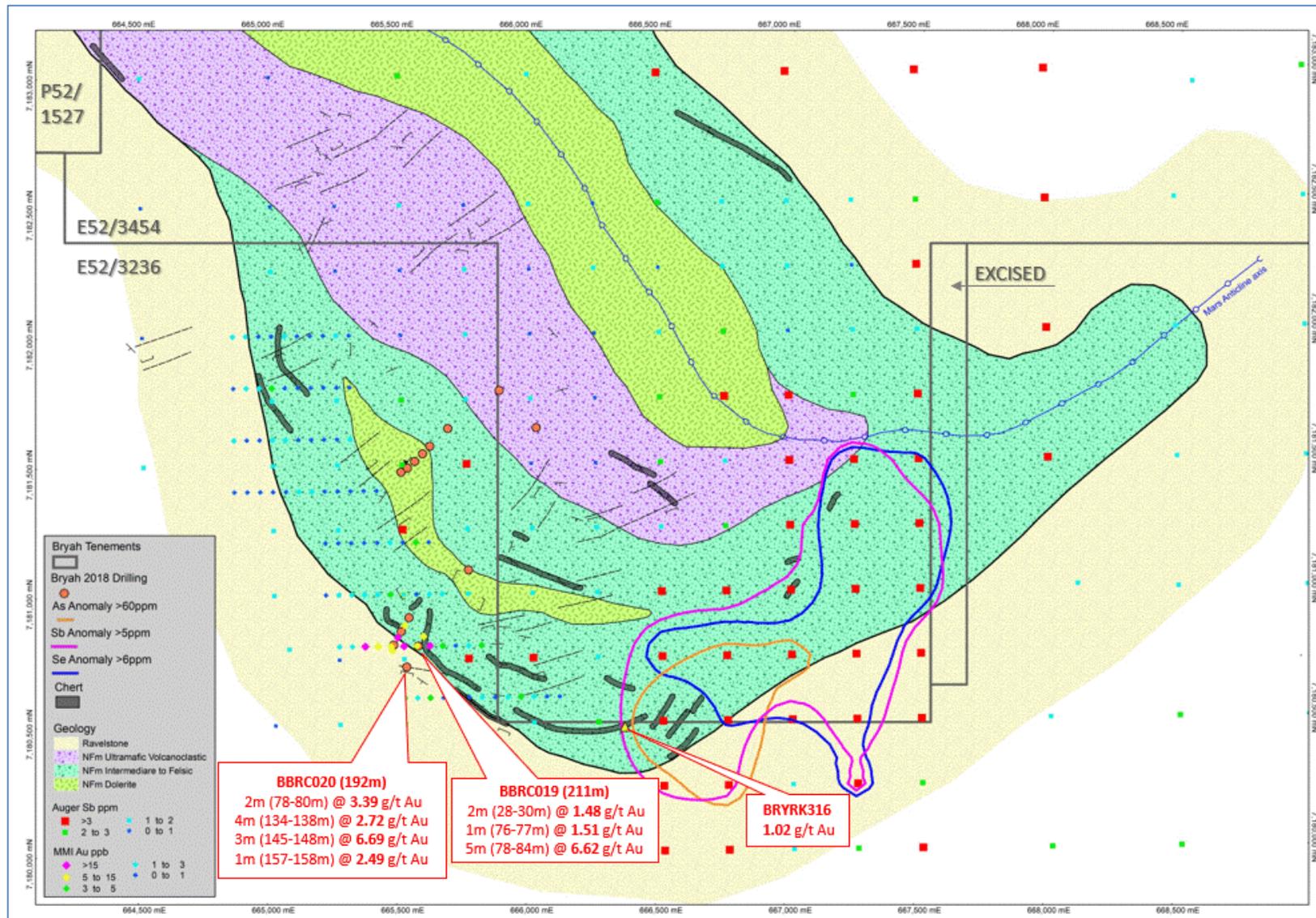


# Windalah Prospect



- Significant pyrite-chlorite ± sericite alteration zone observed.
- Gold occurs within a hematite-rich jasperoidal chert stratigraphically above the pyrite alteration zone, which is potentially indicative of mineralisation being the gold portion of a Volcanogenic Massive Sulphide (VMS) system.

# Windalah Prospect



- Significant anomalism identified with coincident antimony (Sb), arsenic (As) and selenium (Se).
- Anomaly appears to be a large-scale (>1km<sup>2</sup>) alteration cell, potentially associated with VMS base metal and/or orogenic gold deposits.
- Anomaly is to the immediate east of recent drilling which intersected significant gold intervals.



# 2019 Copper-Gold Plan

## *Windalah Gold Project*

- Infill Soil Sampling
- Hi-resolution geophysical Interpretation
- Aircore drilling of VMS Soil Anomaly Target
- Follow-up Drilling (RC and Diamond)

## *Other Areas*

- Continue soil sampling programme
- Evaluation of all geophysical and geochemical targets generated to date
- Reconnaissance aircore/RC drilling – Wongawar, Wodger East, Fiddlers East



# Corporate Snapshot



## Capital Structure

|  |                |
|--|----------------|
| <b>ASX Code</b>                                | <b>BYH</b>     |
| Total Shares on Issue                          | 60,850,120     |
| Listed Options on Issue (ASX:BYHO)*            | 15,750,000     |
| Unlisted Options on Issue**                    | 5,500,000      |
| Market Capitalisation (@ \$0.08)               | \$4.87 million |
| Cash Balance (as at 31 <sup>st</sup> Dec 2018) | \$0.9 million  |

## Shareholders

|                                       |       |
|---------------------------------------|-------|
| Top 20 Holders                        | 70.1% |
| Board and Management                  | 16.4% |
| Australian Vanadium Limited (ASX:AVL) | 12.3% |
| Hutton Group                          | 5.4%  |

## Board of Directors & Senior Management

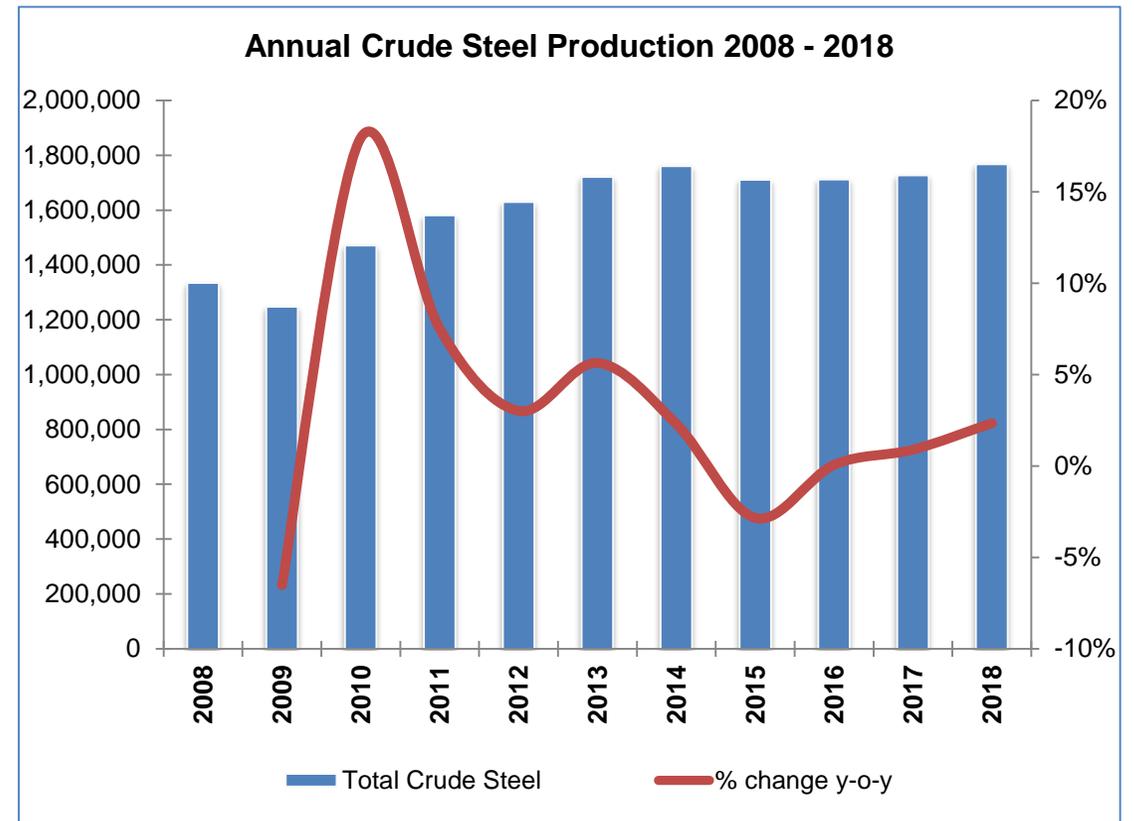
|  |   |
|--|---|
| <b>IAN STUART</b><br>Non-Executive Chairman                  | Geologist with extensive experience in the areas of gold and base metals exploration, capital markets, public company governance & project development. |
| <b>NEIL MARSTON</b><br>Managing Director & Company Secretary | Over 30 years experience in mineral exploration, capital raising, corporate governance, project management and stakeholder engagement.                  |
| <b>LES INGRAHAM</b><br>Non-Executive Director                | Executive Director of AVL, highly experienced in corporate finance and investor relations.  |
| <b>ROHAN WILLIAMS</b><br>Exploration Manager                 | Geologist with extensive experience in gold and copper-gold exploration globally.   |

\* Listed Options – exercise price \$0.30, expiry 31 October 2020.

\*\* Unlisted Options – exercise price \$0.30, expiry 30 April 2020.

# Manganese Market Overview

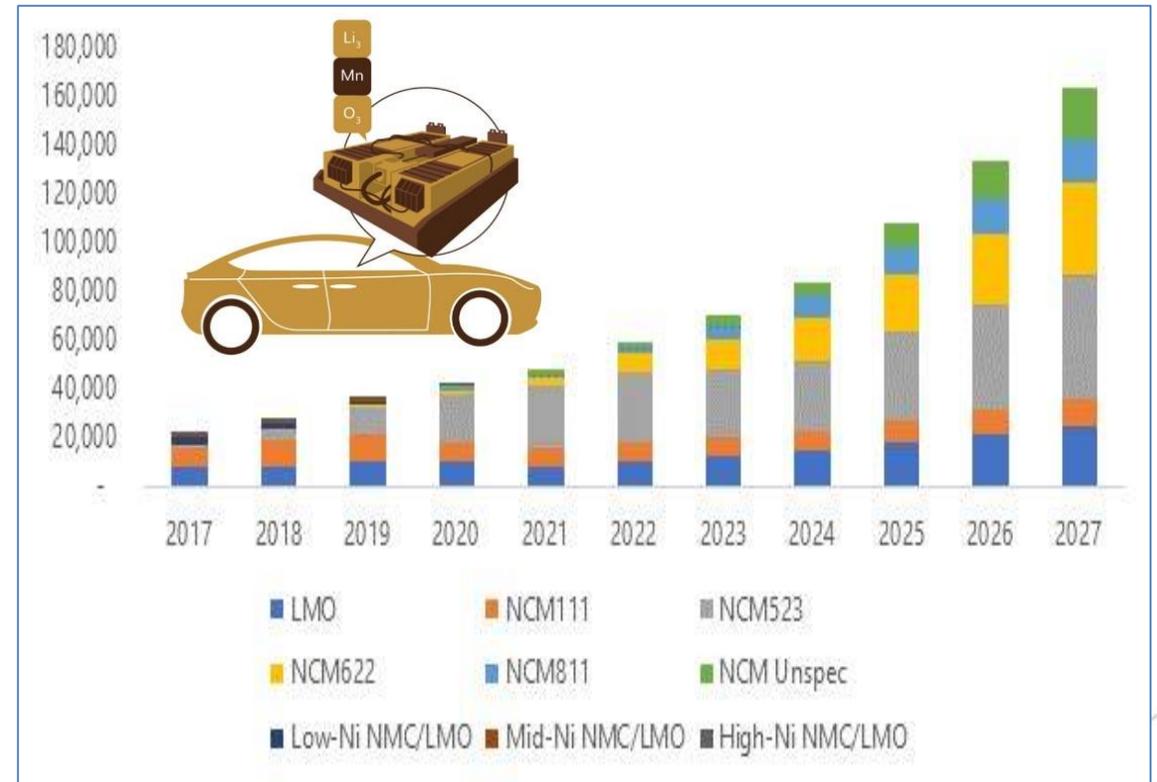
- Manganese is a critical and irreplaceable element in steel production and is mainly used as an alloying agent that increases both the strength and flexibility of steel
- Approximately 90% of all manganese is used in the production of steel.
- Chinese steel production during 2018 was 891 million tonnes, up by 2.3% YoY, driven by improving domestic demand
- China's steel output represents half of all global steel production (1,767 million tonnes)
- Chinese manganese ore imports have increased by 60% since 2016, which is driving strong manganese prices throughout 2018 and into 2019.
- Current manganese ore pricing:
  - 37% Mn CIF China Feb 2019 price - ~US\$6.00/dmtu (~US\$222/t = A\$310/t)
  - 44% Mn CIF China Feb 2019 price - ~US\$6.50/dmtu (~US\$286/t = A\$400/t)



# Manganese Market Overview



- Other applications of manganese include chemicals (fertilisers) and energy storage (batteries).
- Clean energy applications and use in Electric Vehicles (EV) batteries are seen as significant drivers for future manganese demand.
- Battery makers are looking to find alternatives, such as manganese, to reduce the content of expensive materials in their cathodes, such as cobalt and nickel.
- LMO (lithium-manganese-oxide) are notable for their high thermal stability.
- NCM523 (nickel-cobalt-manganese) cathodes are forecast to become the dominant cathode in EV batteries.
- BASF and Tesla aim to create “*manganese-rich*” cathodes in the longer term to drive down the overall cost of EV.



Manganese Consumption by cathode type in lithium-ion, 2017 – 2027  
(mt Mn Contained)

Source: Roskill



# Competent Person's Statement & Disclaimer

The information in this presentation that relates to Exploration Results is based on information compiled by Mr Rohan Williams, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Williams is an employee of Bryah Resources Limited ("the Company"). Rohan Williams 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'. Rohan Williams consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

## 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.



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