

# DIGGERS & DEALERS PRESENTATION

DAN LOUGHER | 14 October 2020

WESTERN AREAS LTD



**20**  
YEARS



# AGENDA

## CORPORATE



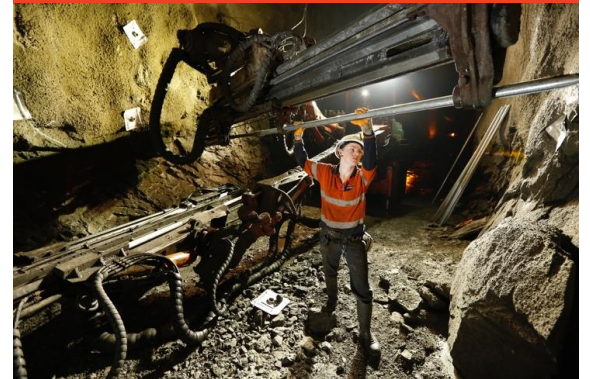
## NICKEL MARKET



## GROWTH



## OPERATIONS



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The information within this PowerPoint presentation was compiled by Western Areas management, but the information as it relates to exploration results, mineral resources or ore reserves was prepared by Mr Graeme Gribbin, Mr Andre Wulfse or Mr Marco Orunesu-Preiata respectively. Mr Gribbin, Mr Wulfse and Mr Orunesu-Preiata are full time employees of Western Areas Ltd. Mr Gribbin is a member of Australian Institute of Geoscientists (AIG). Mr Wulfse is a Fellow of Australian Institute of Mining and Metallurgy (AusIMM) and Mr Orunesu-Preiata is a member of Australian Institute of Mining and Metallurgy (AusIMM) and have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’(2012 JORC Code). Mr Gribbin, Mr Wulfse and Mr Orunesu-Preiata consent to the inclusion in this presentation of the matters based on the information in the form and context in which it appears.

This announcement is authorised for market release by Western Areas Limited Managing Director and CEO, Daniel Lougher.

Western Areas Registered Office: L2, 2 Kings Park Road, West Perth, 6005, Australia

# CORPORATE





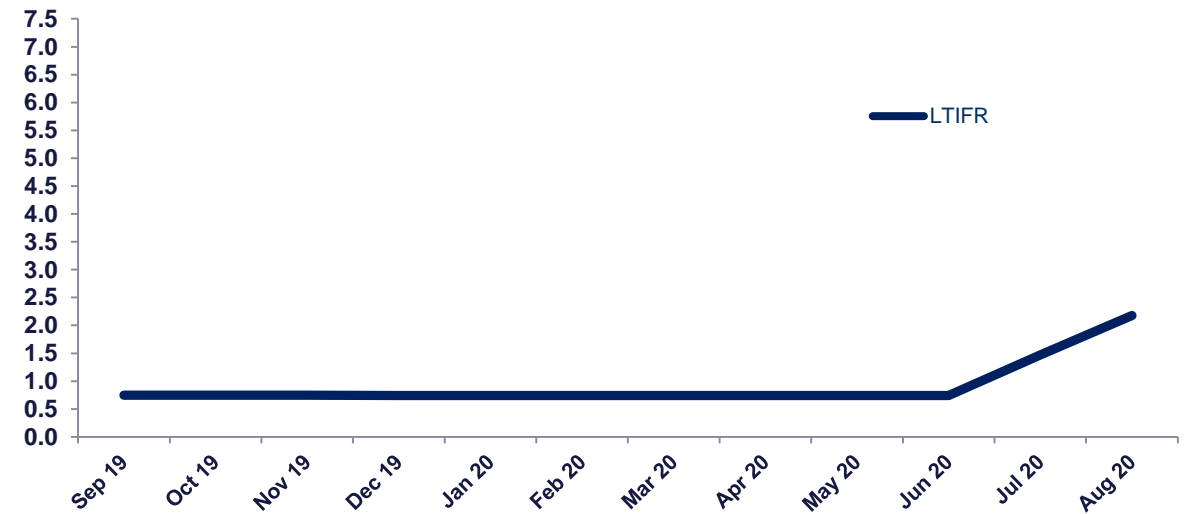
# Western Areas are safe areas



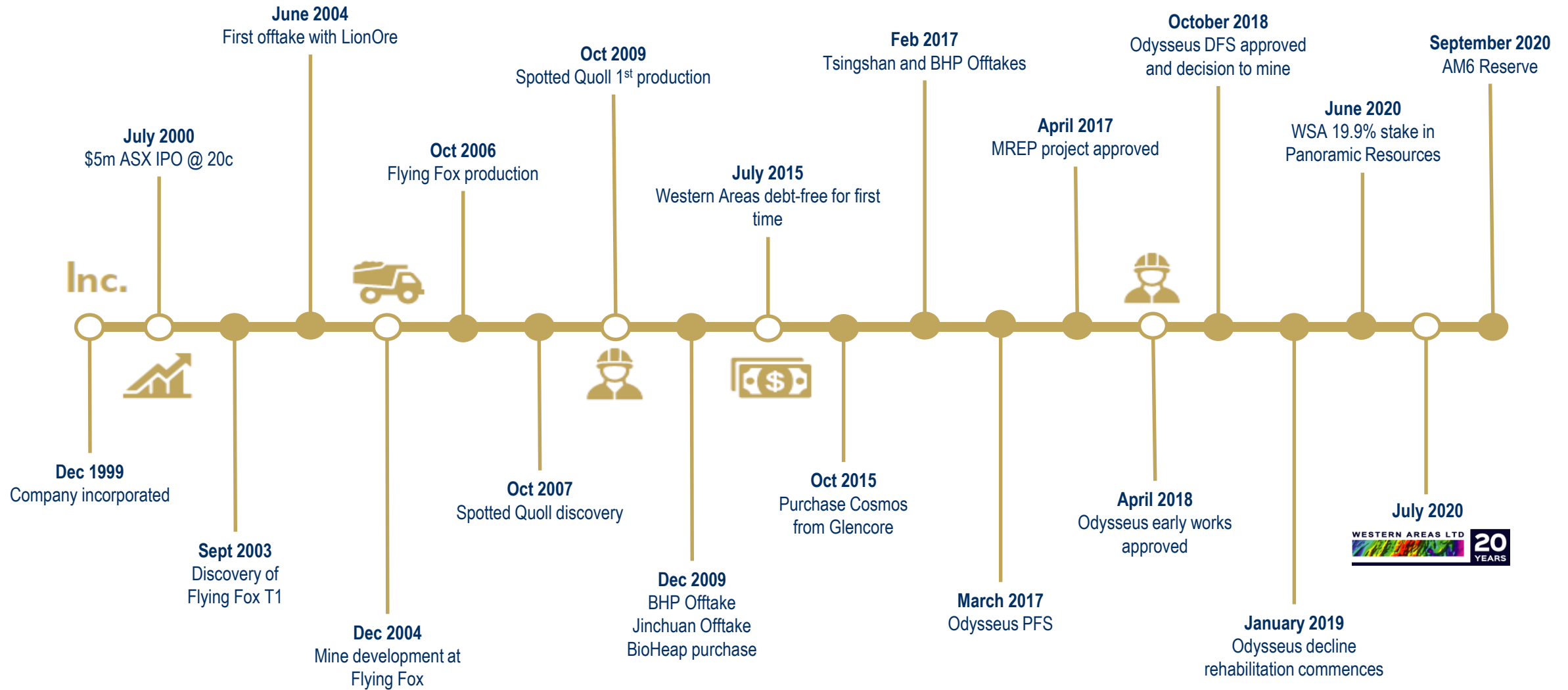
Days LTI free



12 month LTIFR moving average



# Success timeline



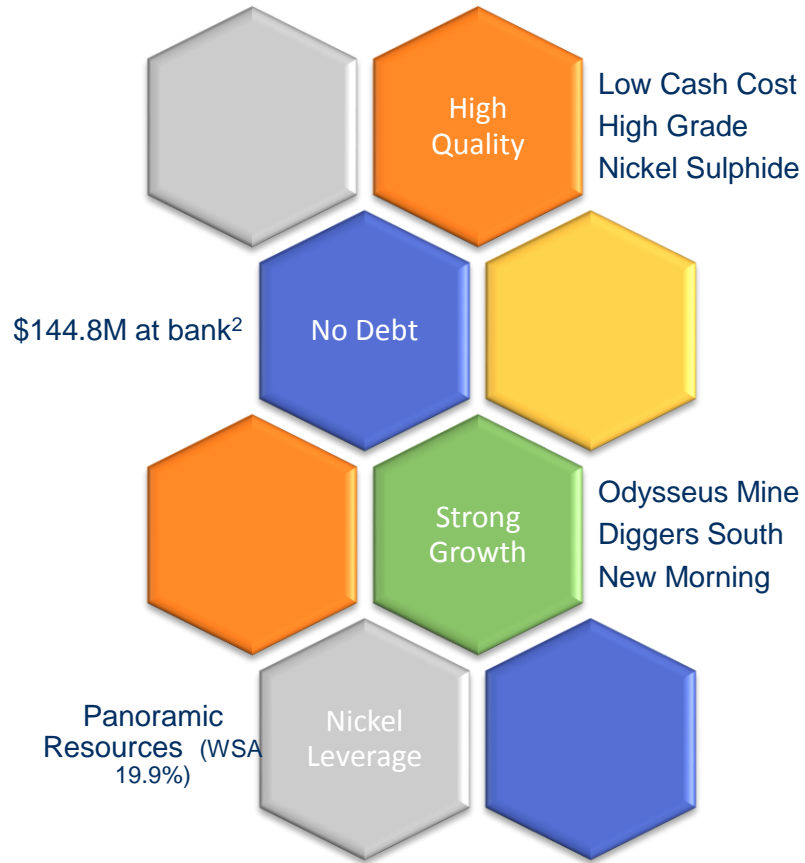


# The past and present!



# Corporate overview

The Company aims to be a sustainable and profitable, nickel focused, base metal miner, building value and scale while maintaining financial strength



ASX code	WSA
Share price	2.24
Shares outstanding (m)	275.1
Market Cap (A\$m) <sup>1</sup>	616.2
Cash (A\$m) <sup>2</sup>	144.8

## COSMOS

### Odysseus

164kt Ni Ore Reserves  
265kt Ni Mineral Resource  
First Production CY2022

### AM6

47kt Ni Ore Reserves  
67kt Ni Mineral Resource

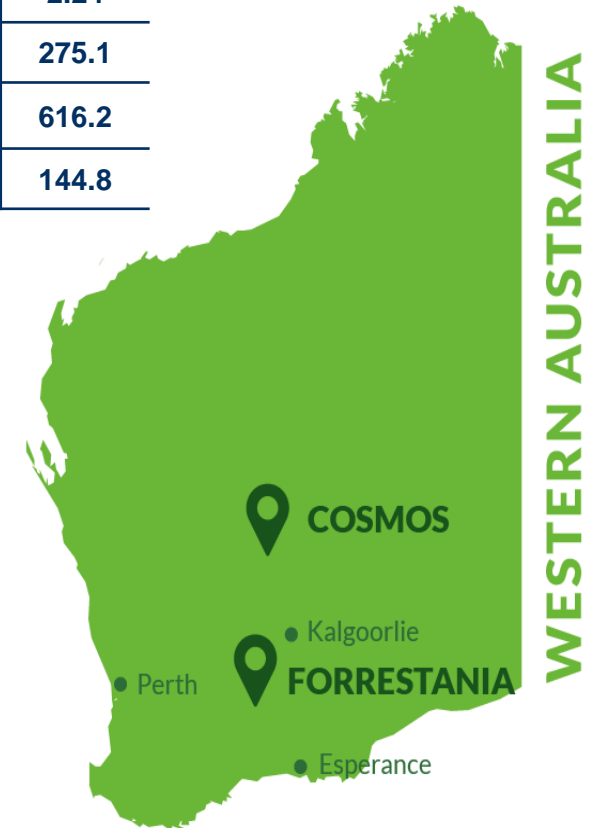
## FORRESTANIA

### Spotted Quoll

49.6kt Ni Ore Reserves  
65.2kt Ni Mineral Resource

### Flying Fox

12.0kt Ni Ore Reserves  
45.3kt Ni Mineral Resource





# NICKEL MARKET



# Offtake contracts best in class

*New contracts executed with strategic partners following successful completion of a highly competitive tender process*

*Seamless transition into new contracts. Full benefit of improved commercial terms (compared to previous agreements) commenced February 2020*

*Premium blending concentrate - superior commercial terms*

## Our Partners:

- **BHP: 50%**
  - ✓ Australia's largest nickel producer
  - ✓ Building a nickel sulphate plant in Kwinana Western Australia
- **Jinchuan: 50%**
  - ✓ China's largest nickel cathode producer
  - ✓ Direct feeder of the Chinese nickel sulphate market

*Discussion ongoing with offtake parties that are linked to the Electric Vehicle battery pre-cursor sector for future MREP production of high grade premium nickel sulphide and potential for Odysseus concentrate to feed this market.*

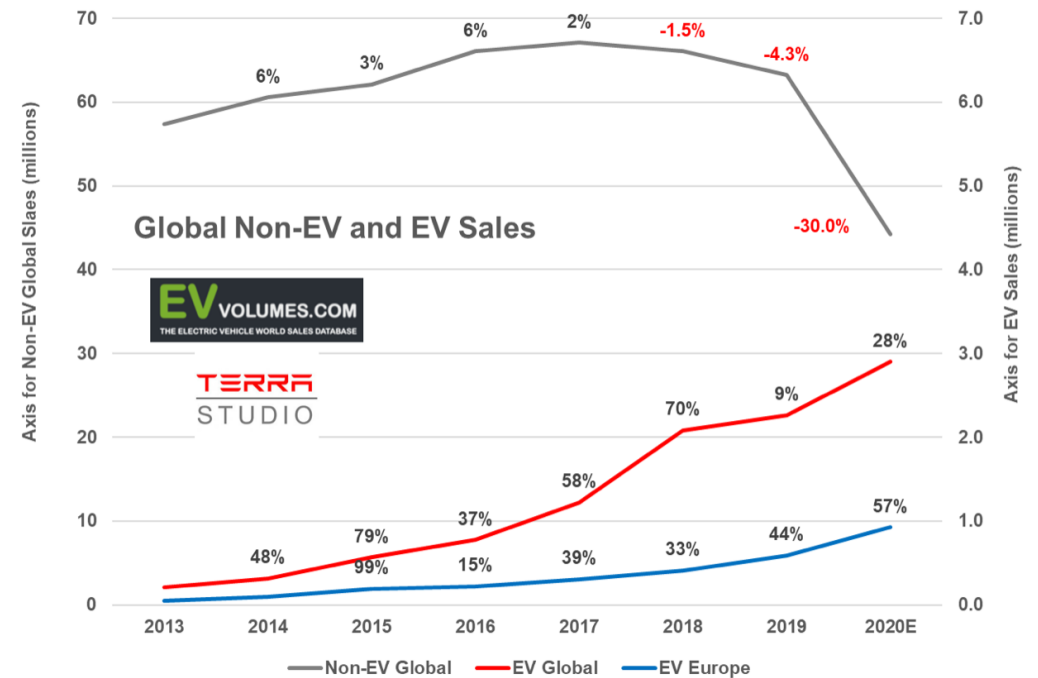


# What we are seeing

- **Tesla announce** that they will manufacture own battery cathode to ensure ongoing supply, due to potential shortage of pre-cursor materials such as nickel
- **Growing EV** demand in first half 2020, especially in Europe
- **Major car OEM's** taking position in Chinese market
- **Technology change to NCM 811** which requires higher quantity of nickel, gaining market momentum
- **Jinchuan** (largest nickel cathode producer in China) increasing nickel sulphate volumes
- **Other stockpiles** shrinking on the back Indonesian ban and stainless demand
- **Indonesia ore** export ban still in place, but NPI volume increasing in-country to supply SS demand

Estimated electrification impact per vehicle (avg NMC battery)

40-50kg <b>Ni</b>	50-75kg <b>Cu</b>
5-15kg <b>Co</b>	+ Cu for charging point + Cu for grid access





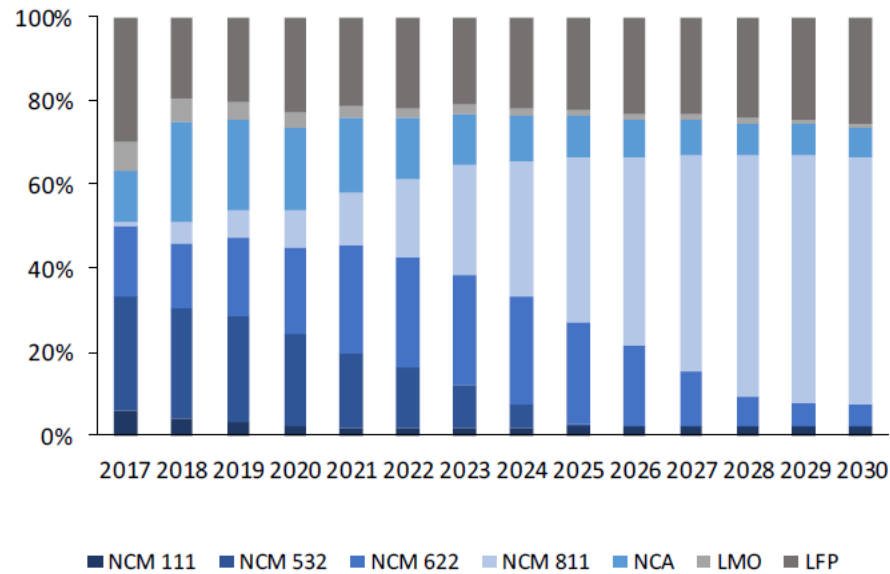
# The future – EV demand for nickel

- **Tesla announce;** "Musk said Tesla's new, larger 4680 cell design used cobalt-free cathodes with a high nickel content as it embraced a mine-to-battery approach to drive battery costs lower, increase manufacturing efficiencies and accelerate the world's transition to sustainable energy."
- **Potentially very** significant incremental demand versus a current nickel market size of c.2,2mt
- **Research indicates NMC 811** will be the fastest growing battery combination by 2025!
- **VW announced its Zwickau Plant** — currently the world's largest automotive plant — produced its last car with a combustion engine
- **BMW iX3 SUV** recently launched with an 811 NCM battery

## MARKET SHARE

BY TYPE OF CATHODE MATERIAL

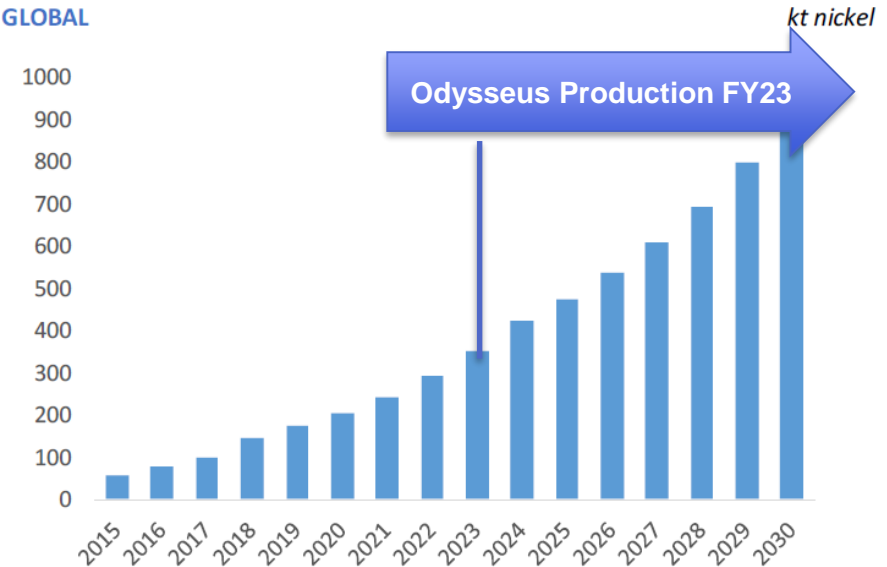
Stated as % of the market



Source: Trafigura Research, SMM

## NICKEL DEMAND IN BATTERIES

GLOBAL

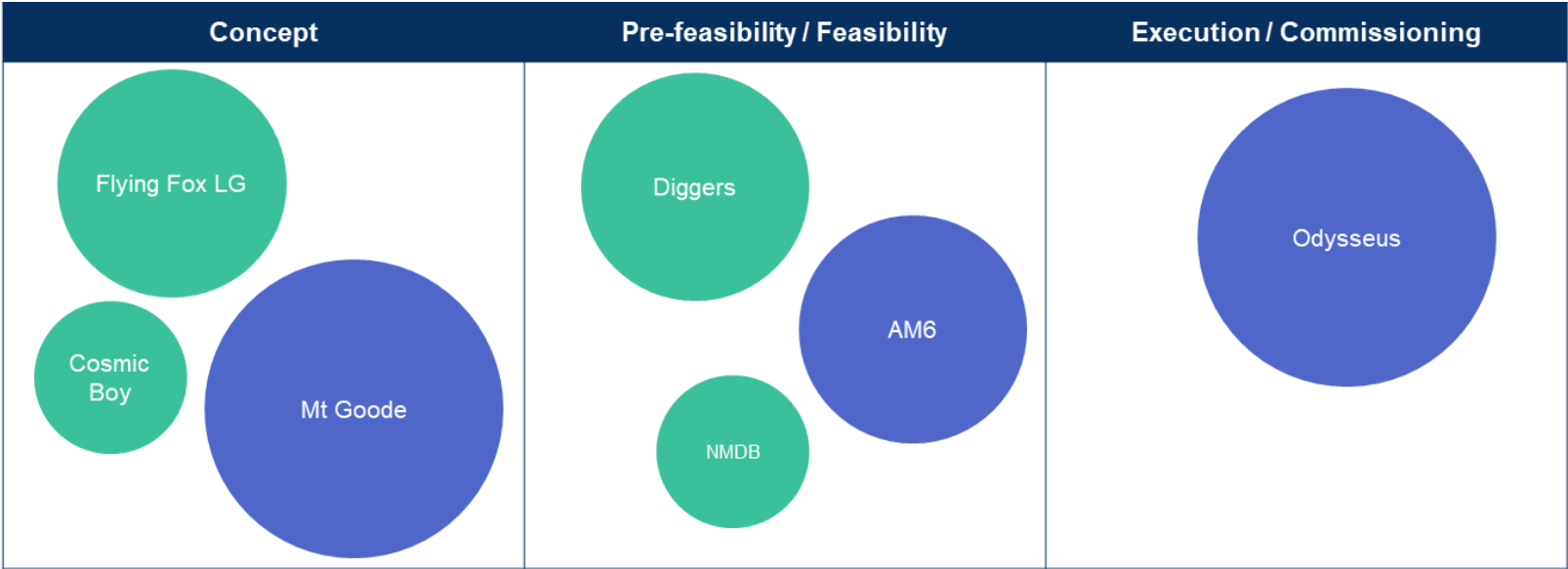


Source: Trafigura Research, SMM, CIAP – March 2020

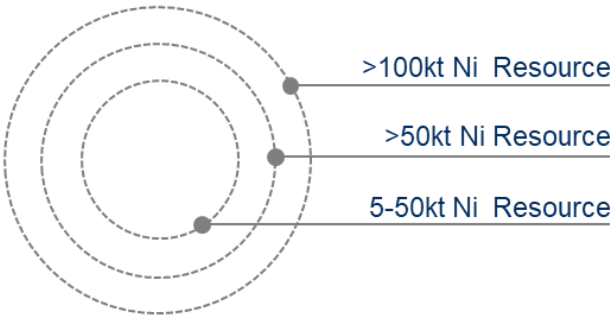
# GROWTH AND EXPLORATION



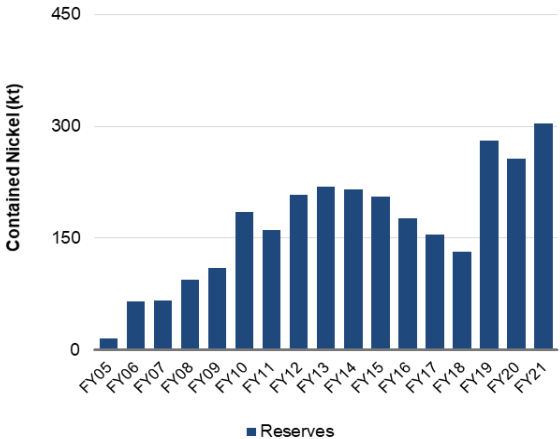
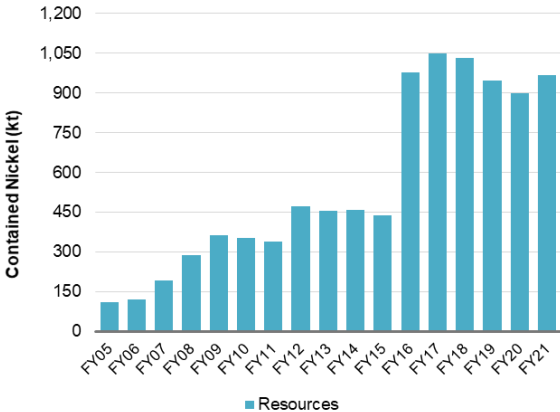
# Nickel growth pipeline



- Many projects in the pipeline to drive nickel production well into the future
- Ore Reserves have substantially increased in FY19 with Odysseus and in FY21 with the addition of AM6



Nickel Resources/Reserves

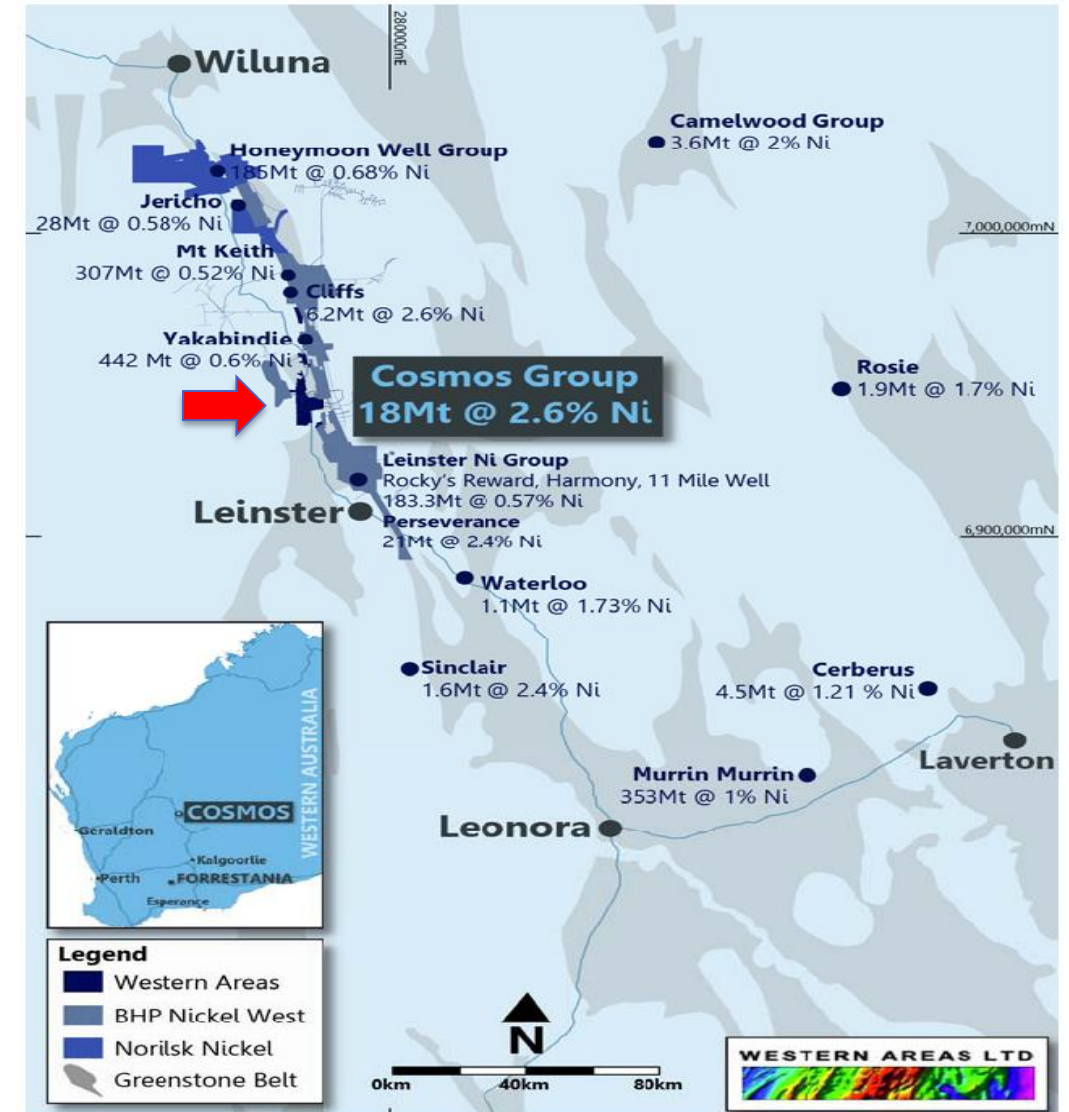




# Cosmos nickel operation – Odysseus mine

## WESTERN AREAS' SECOND OPERATIONAL HUB:

- Outstanding nickel address
- **Total Ore Reserves of 211k tonnes of nickel**
- Strategically located between Nickel West Leinster and Mt Keith mines
- Established infrastructure



# Odysseus mine – a long life, low cost, project 10yrs + +

- **Odysseus - Long life, low cost project:**

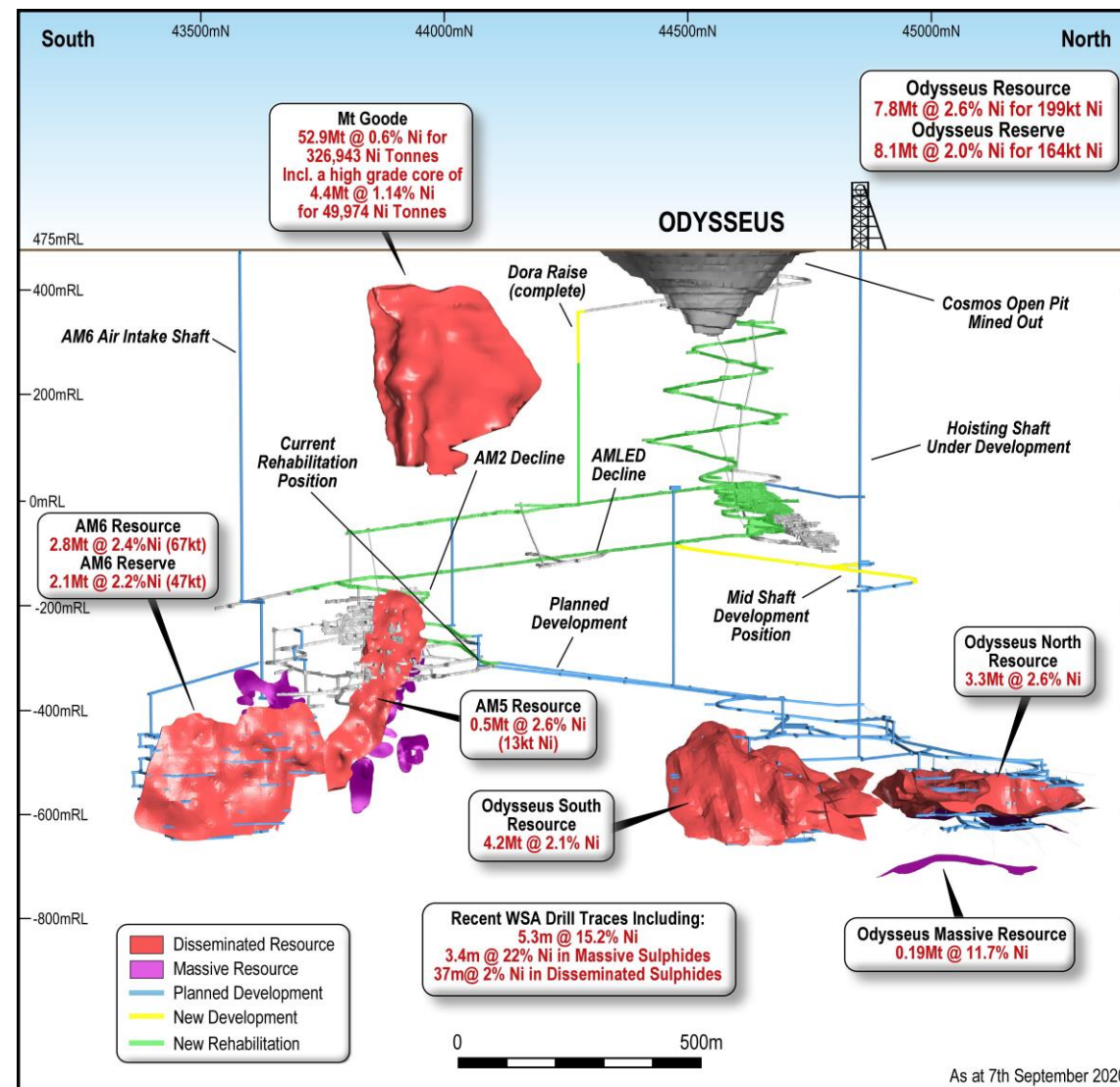
- ✓ Ore Reserve 8.1mt @ 2.0% for 164kt nickel
- ✓ Mine life > 10 years
- ✓ AISC A\$3.50/lb
- ✓ Average nickel in concentrate production 14.5ktpa from FY24

- **AM6 now a value add:**

- ✓ Ore Reserve 2.1mt @ 2.2% for 47kt nickel
- ✓ Increasing mine life and capital efficiency

- **Significant upside:**

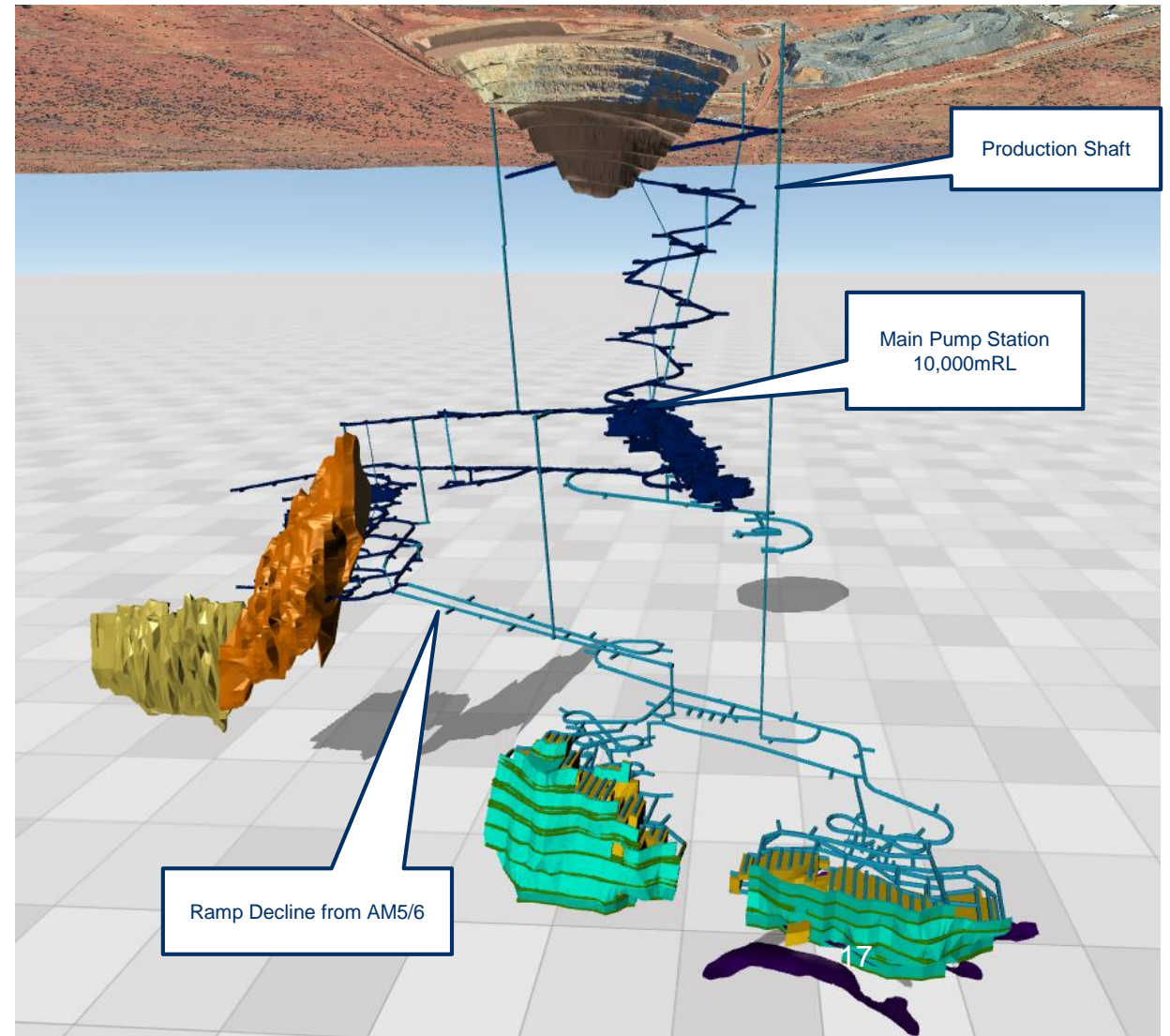
- ✓ Record 22% Ni massive sulphide intersections in lenses below Odysseus



# Odysseus mine – underground infrastructure

## ■ Pre-production Activities:

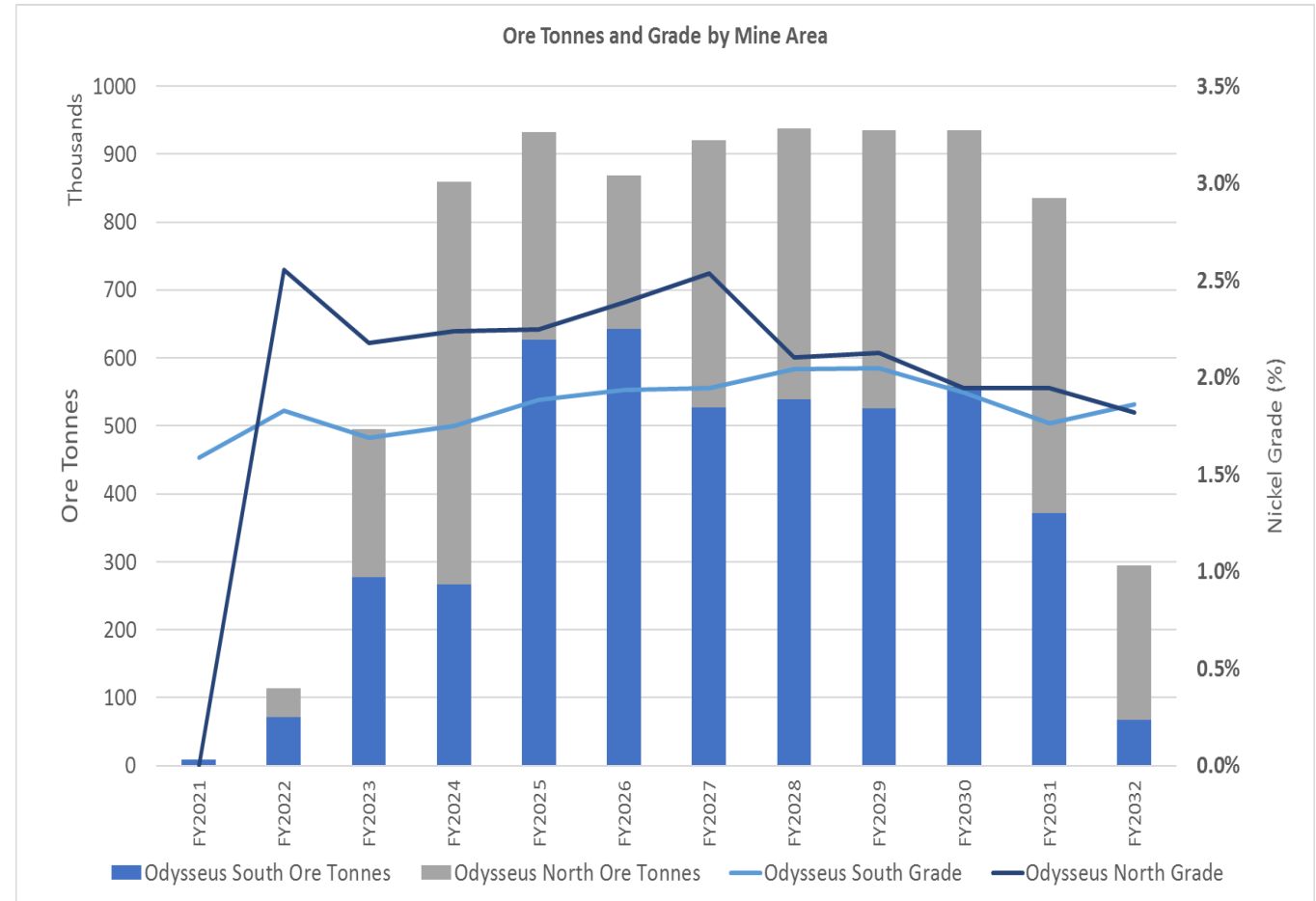
- ✓ Main pump stations and water infrastructure complete
- ✓ Full face development commenced in the Odysseus decline and RAW
- ✓ Mine development expenditure profile:  
FY21 – A\$90m      FY22 – A\$120m  
FY23 – A\$42m
- ✓ Pilot hole commenced for hoisting shaft
- ✓ 900ktpa concentrator – optimisation studies ongoing
- ✓ WSA is well funded with cash and has no debt





# Odysseus production ~900k tpa ore

- Minimum 10 year mine life on reserves (OD only)
- Annual ore production of 900kt. First ore scheduled for late CY 21
- First Ni concentrate late CY 2022
- Consistent annual nickel production
- Significant upside now a reality with inclusion of 47kt Ni Reserve for AM6
- Optimisation studies commenced to integrate AM6 Reserves



# Why a hoisting shaft?

- Shaft infrastructure dismantling and refurbishment completed. Now being delivered to South Africa port, prior to shipping to Perth
- Significant economical and environmental benefits versus trucking
- Combined with renewable power = energy efficient site, 85% reduction in CO<sub>2</sub>
- Low, consistent opex and proven technology
- Cycle time: ~3 mins
- Save 1.5 ML diesel burnt pa (DPM)
- Remove 5 MW of heat generated from diesel engines
- Remove minimum 200m<sup>3</sup>/s of additional ventilation requirement



## Key Metrics:

- 5.7m diam. raise bore
- 4 guide ropes per conveyance
- 1.27Mtpa (ore and waste)
- 12 t skips
- 1 truck required to feed shaft
- 4.5 MW peak power



# Infrastructure works gaining momentum

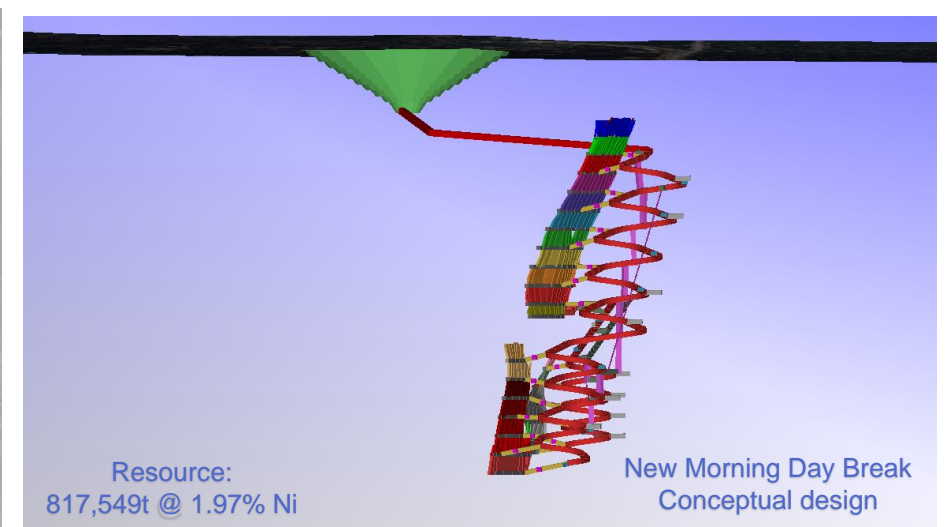
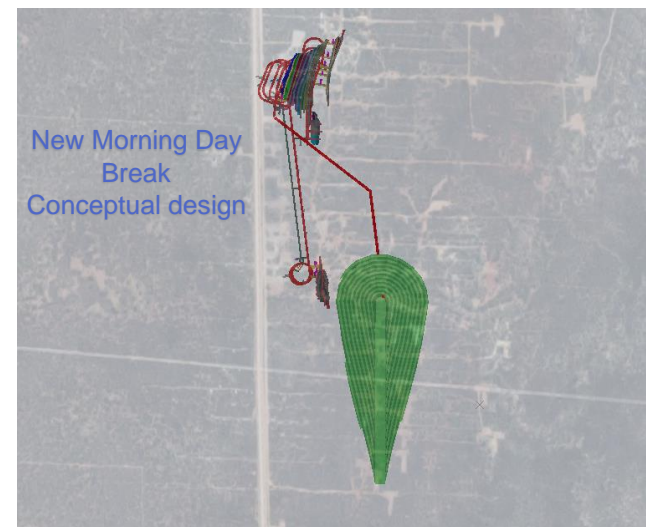
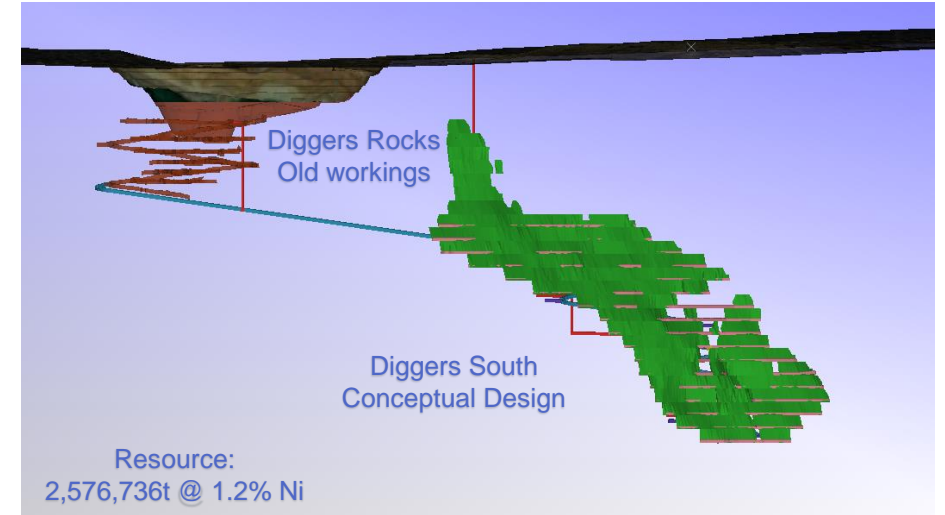
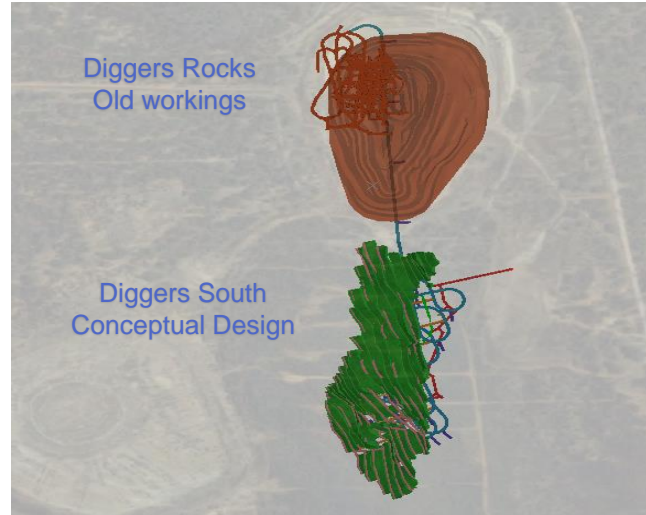




# Forrestania nickel operation – opportunities

## WESTERN AREAS' CURRENT OPERATIONAL HUB:

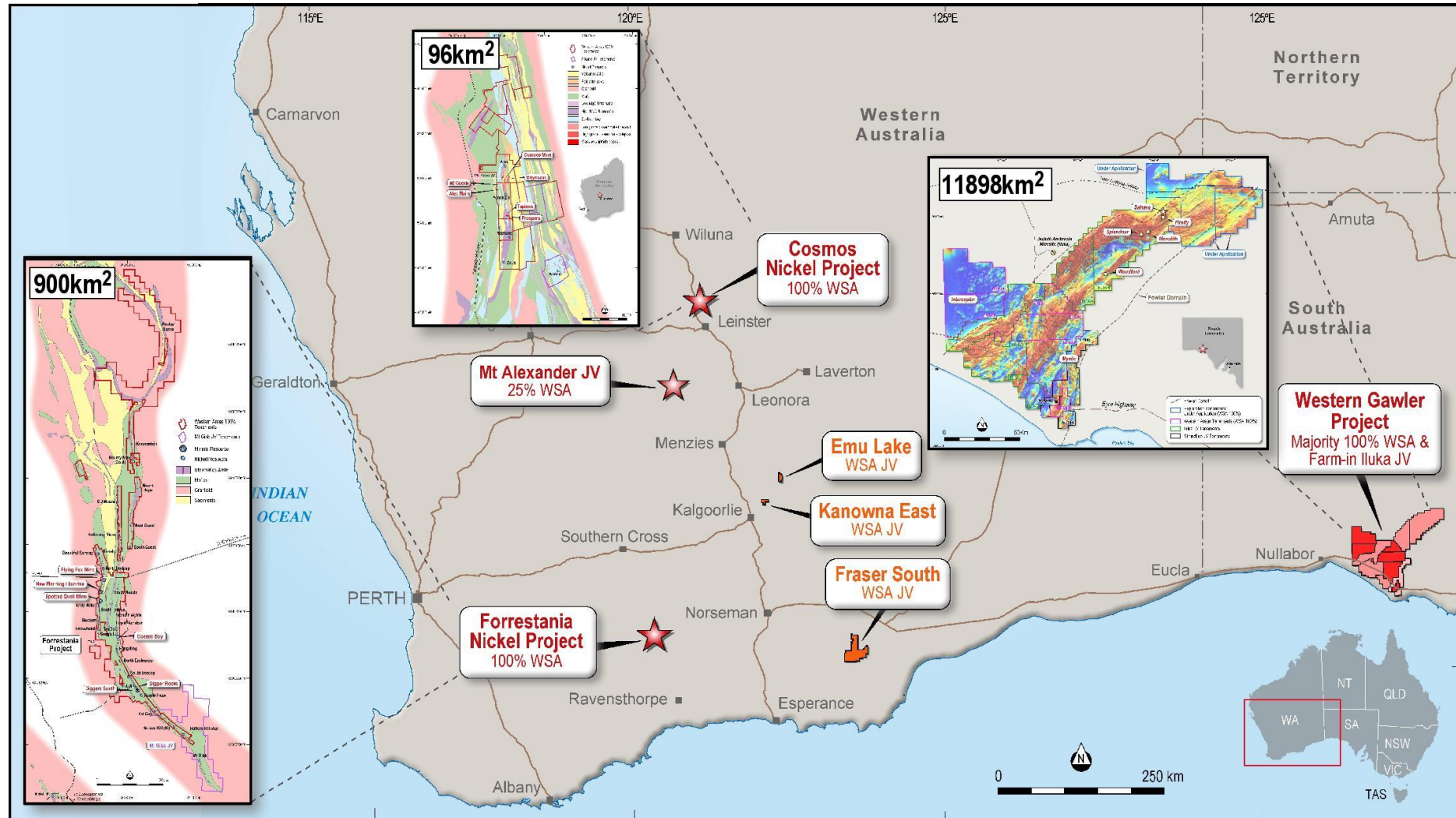
- Outstanding nickel address
- **Total Resources of 307k tonnes of nickel**
- Mining since 2005
- Established infrastructure
- Two operating mines Flying Fox and Spotted Quoll
- **New projects developing:**
  - Scats Heap Leach
- **Strong upside potential:**
  - New Morning Daybreak
  - Diggers South



# MREP unlocks value- mill scats heap leach project



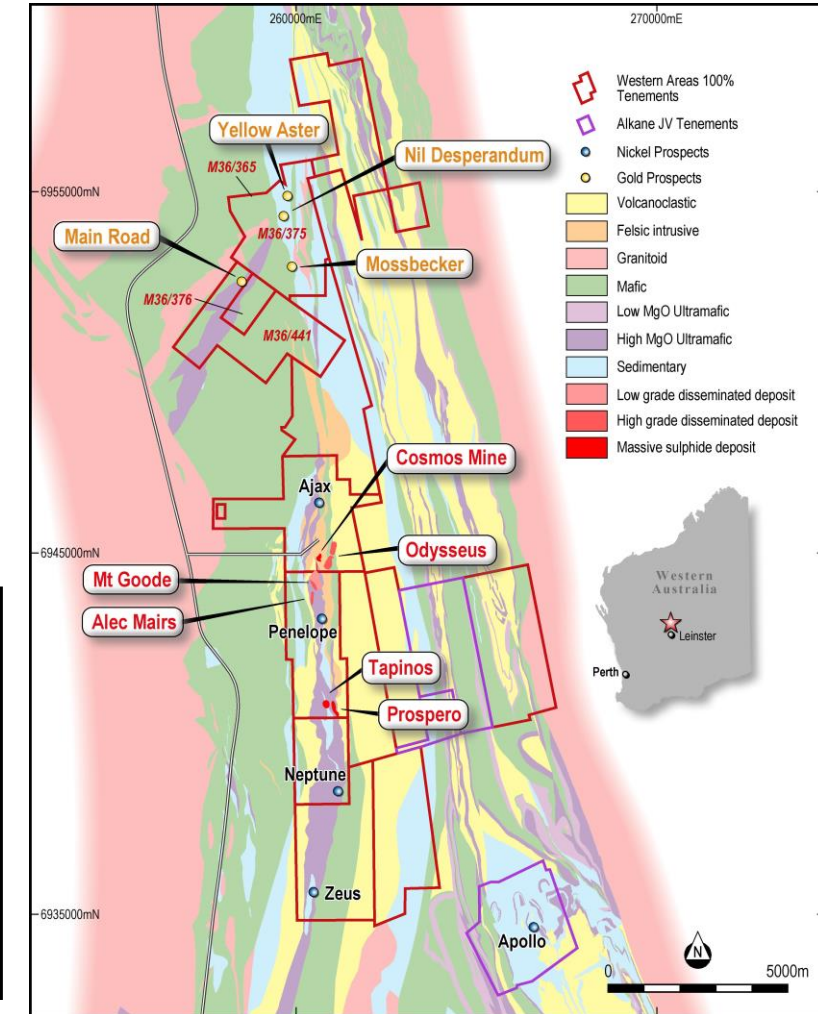
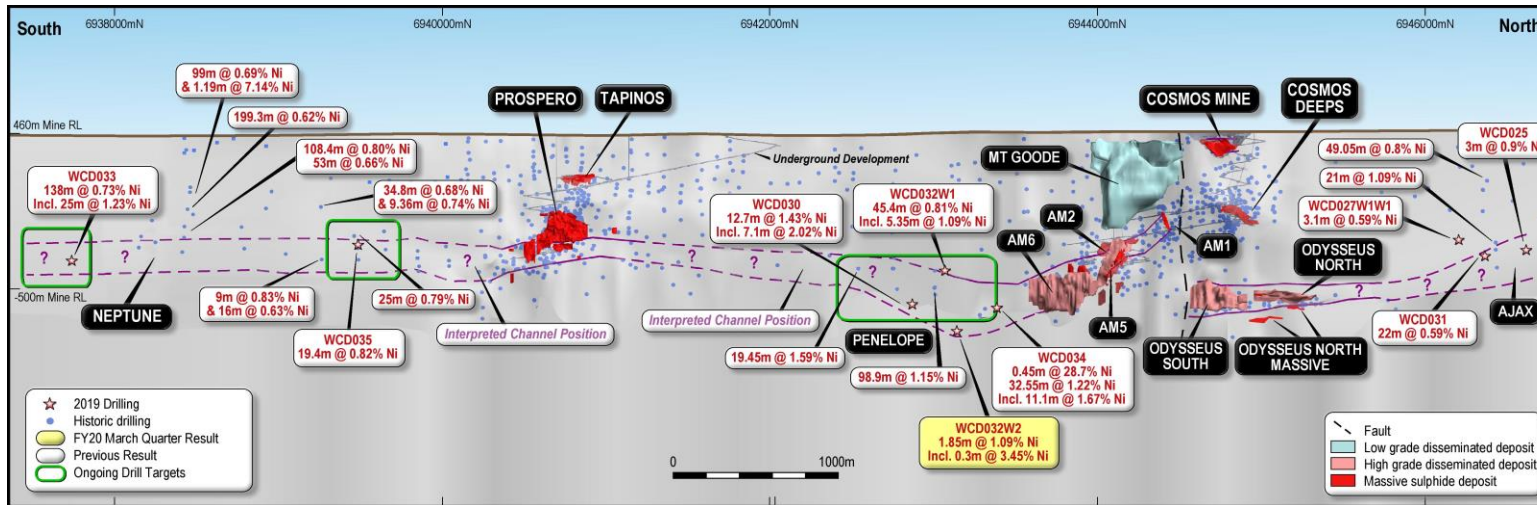
# Exploration - key tenement holdings





# Cosmos nickel exploration

> 9km of prospective host rocks

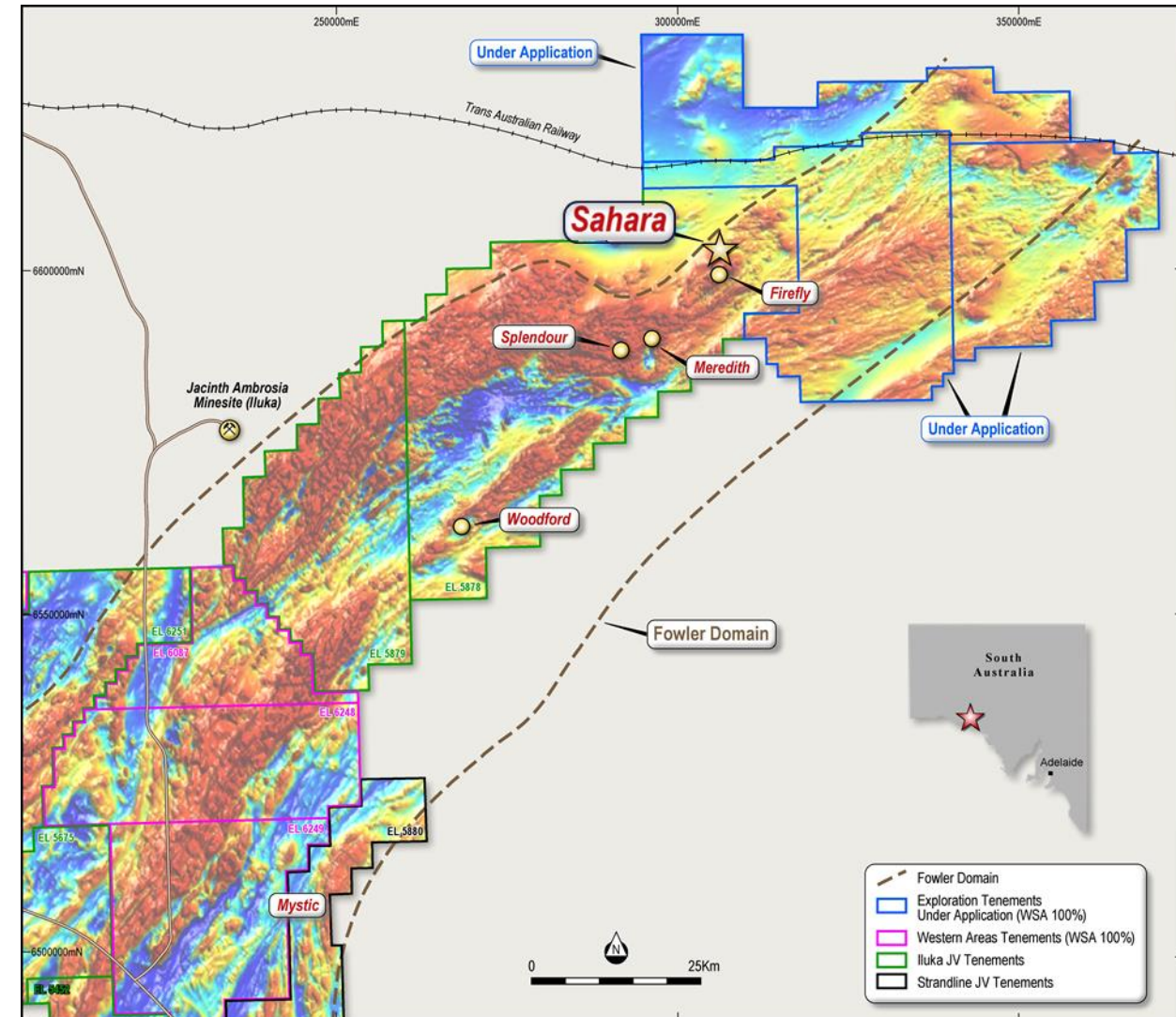


- Centred within the prolific Leinster – Wiluna Nickel corridor
- Potential for mineralisation to extend south from Alec Mairs (AM6) to Penelope.
- Underground exploration holes planned to further test this highly prospective corridor



# Western Gawler project (South Australia)

- Exploring within the highly prospective (Ni – Cu) Fowler Domain, with geological setting similar to districts hosting Nova-Bollinger and Nebo-Babel.
- Significant accumulations (over 250m) of nickel and copper bearing sulphides intersected within first diamond drill hole at the Sahara prospect (Iluka JV with WSA earning up to 75%).
- An additional three tenements (2378km<sup>2</sup>) under application, with the company now able to explore across 11,898km<sup>2</sup> of contiguous Fowler Domain tenure.
- Numerous interpreted intrusive targets to be tested through FY21 including prospective targets at Sahara, Firefly, Splendour, Meredith and Mystic.

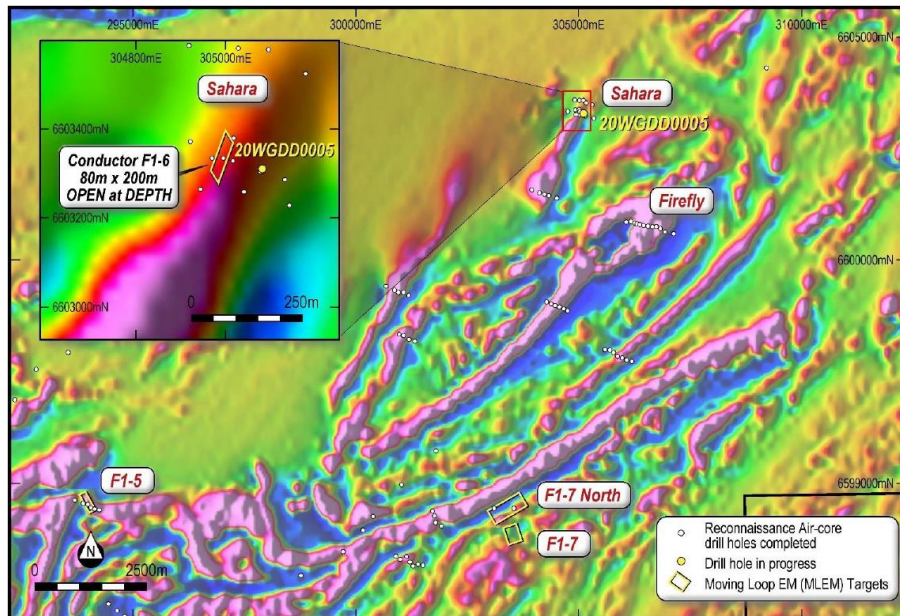




# Western Gawler project (South Australia)

## SAHARA (ILUKA JV) EARLY RESULTS

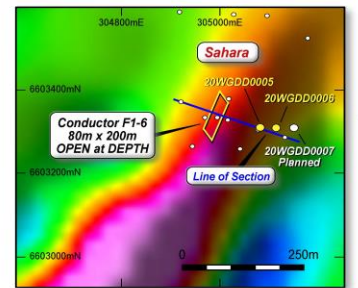
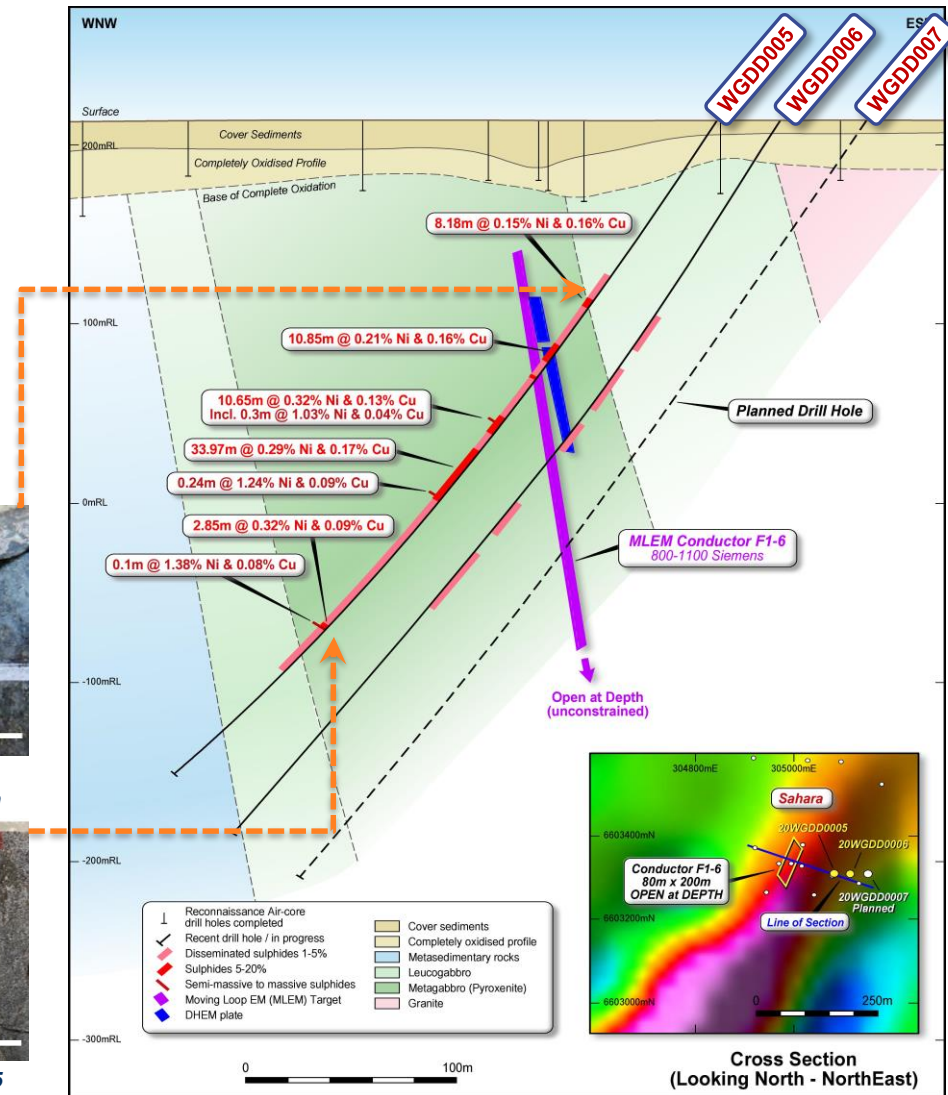
- Broad intervals of elevated nickel sulphide mineralisation returned including
  - ✓ **104.42m @ 0.21% Ni, 0.12% Cu including 33.97m @ 0.29% Ni, 0.17% Cu**
- Elevated nickel assays within semi-massive to massive sulphide accumulations including
  - ✓ **0.24% Ni @ 1.24% Ni and 0.10m @ 1.38% Ni**
- Regionally extensive Fixed Loop EM survey completed at Sahara with interpretation of results and additional targeting well underway.



Late – stage pyrrhotite – chalcopyrite vein set with disseminated sulphide at 121.6m @ 121.6m



Massive sulphide intersected in 20WGDD0005 (340.4 – 340.5m) grading 1.38% Ni



Cross Section (Looking North - NorthEast)

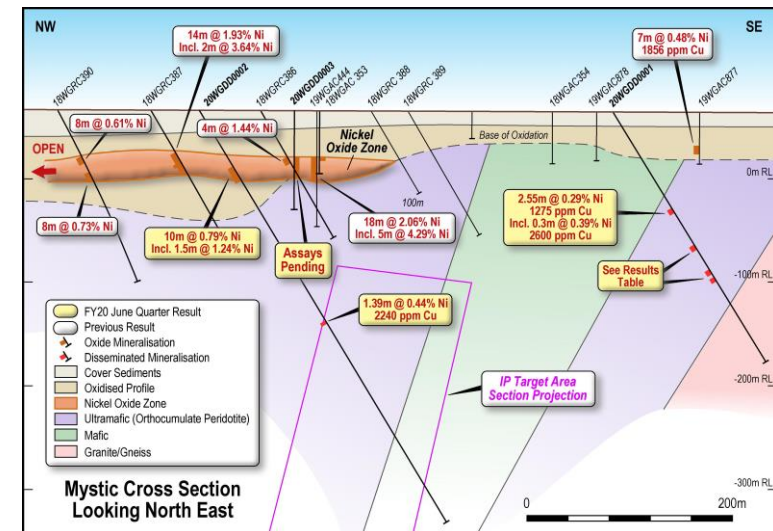
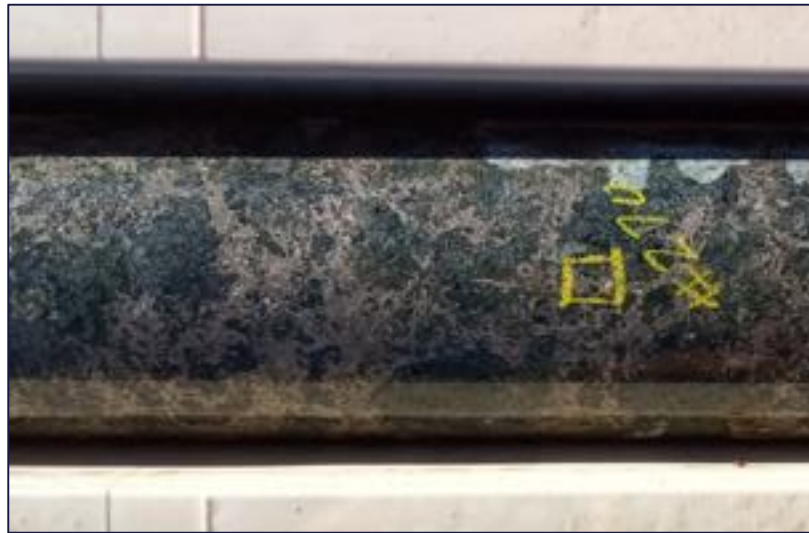
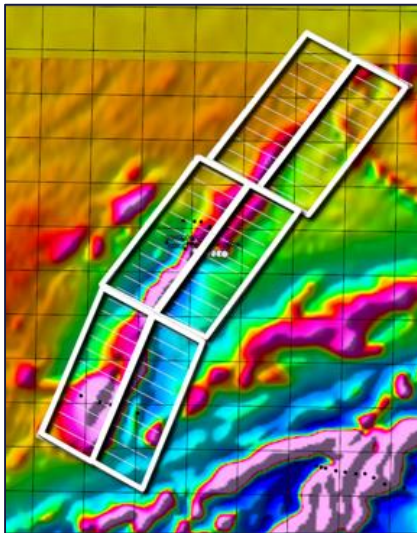


# Western Gawler project (South Australia)

## FORWARD PLAN

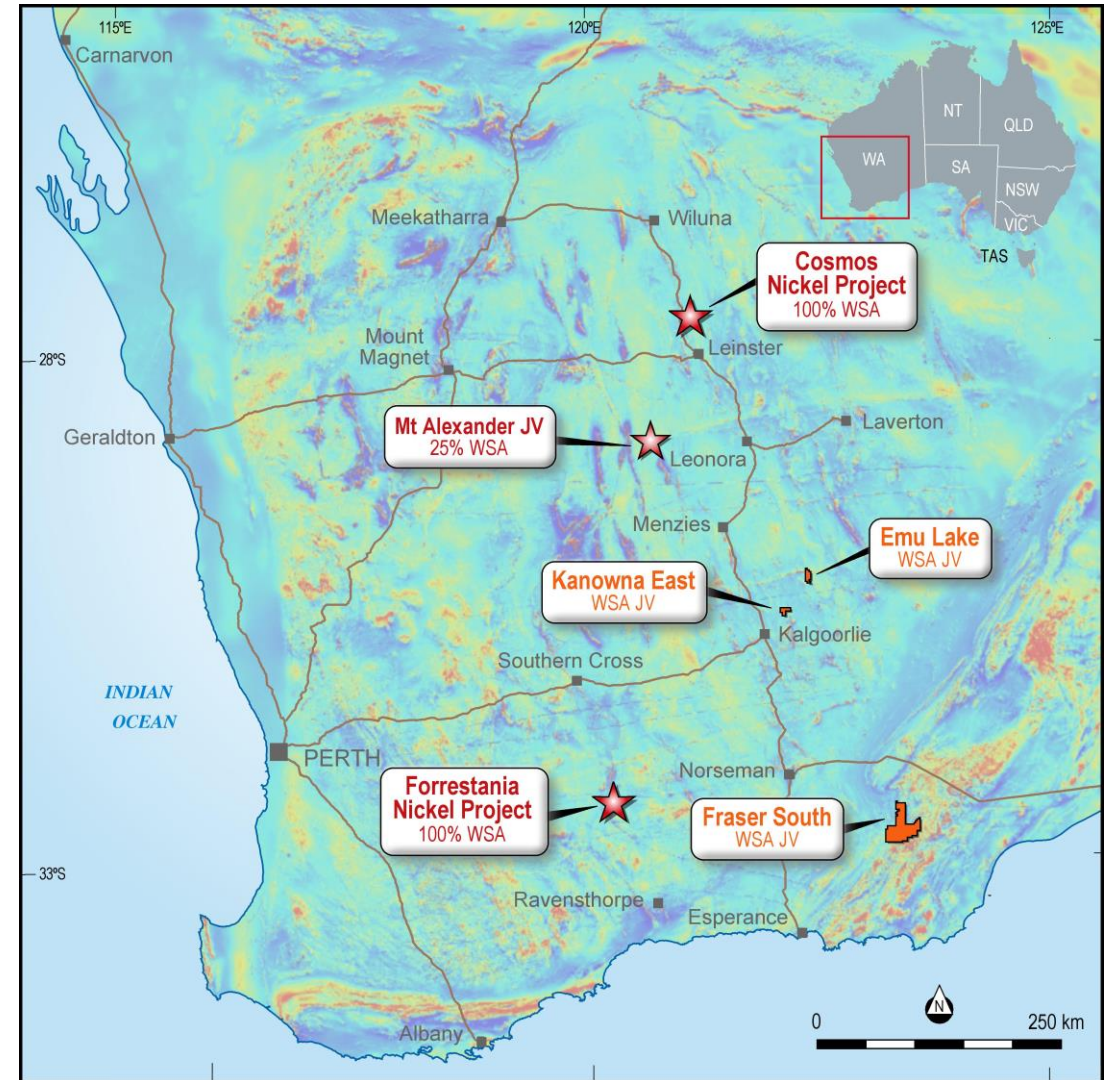
Elevated exploration programs extending through 2020 and into March quarter FY21 focused on:

- Advancement of geological understanding of mineralisation controls at Sahara, through detailed structural / lithological logging and petrographic analysis
  - ✓ evidence for dynamic magmatic processes vectoring towards Ni-sulphide accumulations
- Drill test Sahara mineralisation extensions along strike to the north-east and south-west guided by ground EM.
- Progress highest priority 100% WSA held advanced target at Mystic Prospect



# Metal Hawk JV

- Western Areas has entered into a strategic partnership with Metal Hawk Ltd on highly prospective base metals tenure within both the Eastern Goldfields and Albany – Fraser
- Kanowna East (*earning in to all non-gold rights*)
  - ✓ 10km south of high-tenor Silver Swan complex
- Emu Lake (*earning in to all non-gold rights*)
  - ✓ Along strike from Binti Binti Nickel prospect
- Fraser South (*earning in to all mineral rights*)
  - ✓ Southern, underexplored structural continuation of Albany-Fraser
- Stage 1: \$3m over 3 years for 51%
- Stage 2: \$4m over 2 years for total 75%





# OPERATIONS



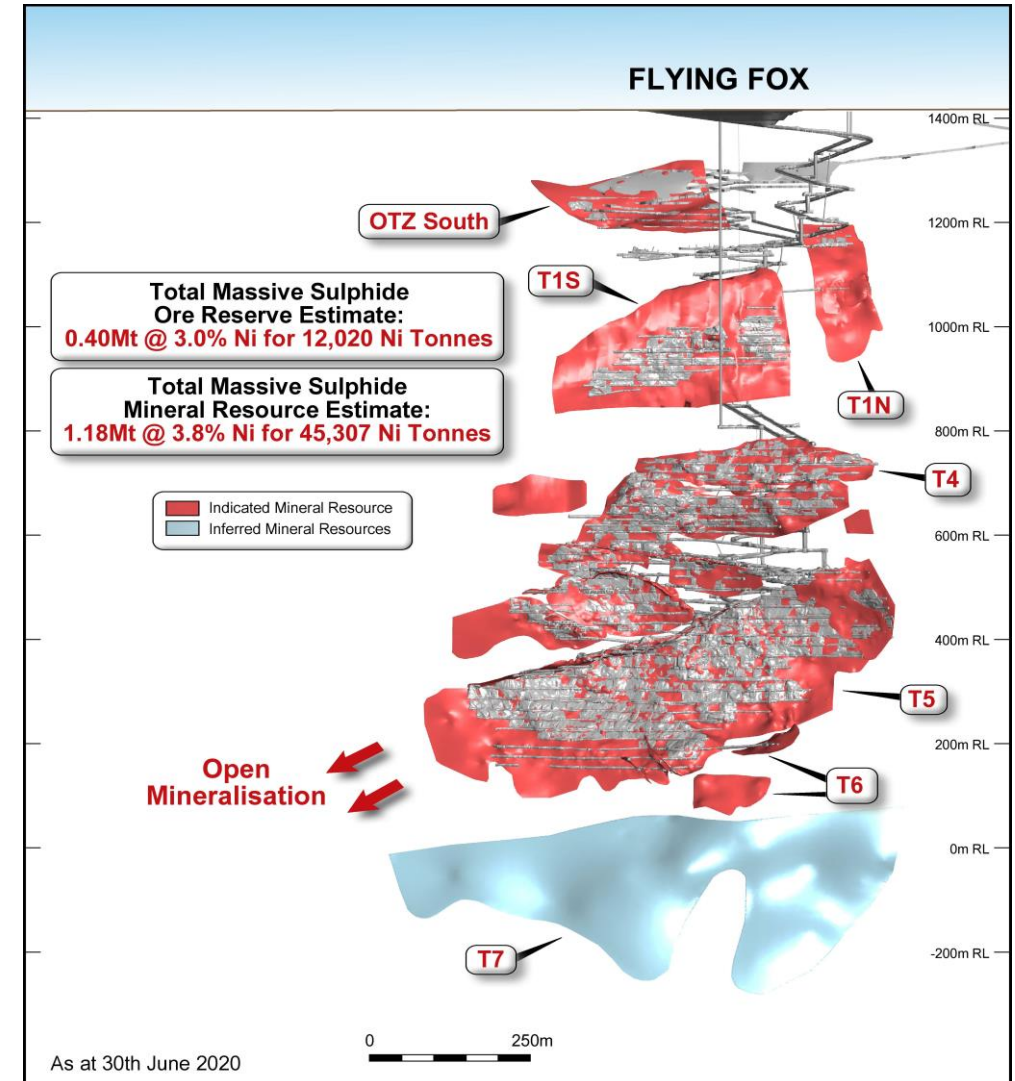


# Flying Fox mine

Reserve Contained nickel	0.40Mt @ 3.0% 12,020 Ni tonnes
Resource Contained nickel	1.18Mt @ 3.8% 45,307 Ni tonnes
Mine life (on reserves)	2 years

## Key points:

- FY20 production – 10.1k Ni tonnes
- Has been operating for over 15 years
- Significant low grade disseminated resource

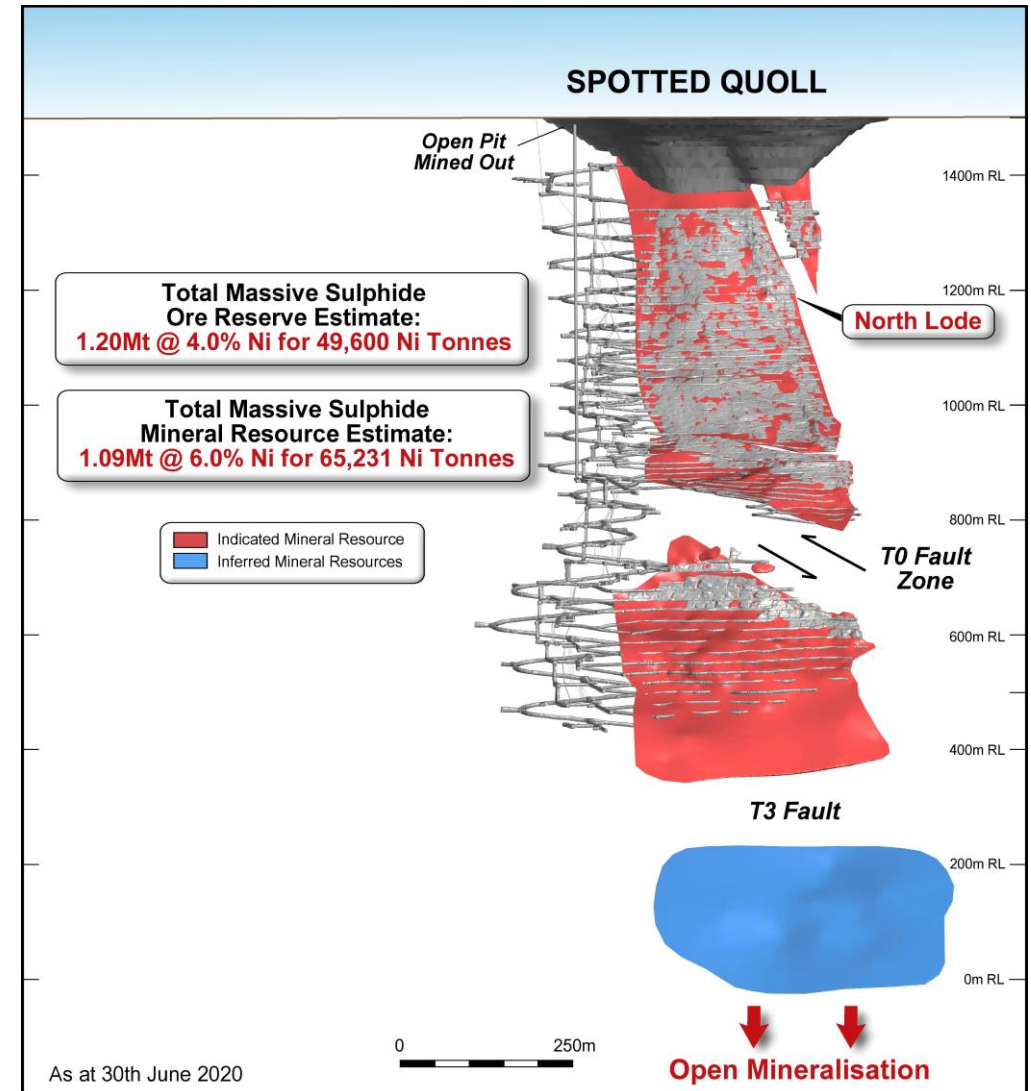


# Spotted Quoll mine

Reserve Contained nickel	1.20Mt @ 4.0% 49,600 Ni tonnes
Resource Contained nickel	1.09Mt @ 6.0% 65,231 Ni tonnes
Mine life (on reserves)	5 years

## Key points:

- FY20 production – 13.3k Ni tonnes
- Production has outperformed reserve tonnes and grade consistently
- Top down mining with paste fill
- Resource extension drilling on going – nickel tonnes being added to Resource



# Cosmic Boy nickel plant

## Concentrator Summary

- 12% above name plate capacity of 550,000 tpa
- Concentrate grades of between 15.0% to 16.0% Ni
  - ✓ Premium blending product (Fe/Mg ratio >15:1)
  - ✓ Desirable to smelters

## MREP Summary

- Enhances average concentrator nickel recovery and generates value from waste tailings streams
- Produces additional higher-grade product (45%-50% Ni), being sold to new, EV battery linked customers – mainly refineries
- Current contract with Sumitomo Metals & Mining. Combined with several spot sales to other refineries







**WESTERN AREAS LTD**



**20**  
YEARS

[www.westernareas.com.au](http://www.westernareas.com.au)

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