



# *High-Grade Nickel-Copper Sulphide Project in Western Australia*

**Precious Metals and Battery Summit,  
Zurich**

**11 November 2019**



**St George Mining Limited | ACN 139 308 973**

**ASX: SGQ**

# Nickel Market – What Changed in 2019



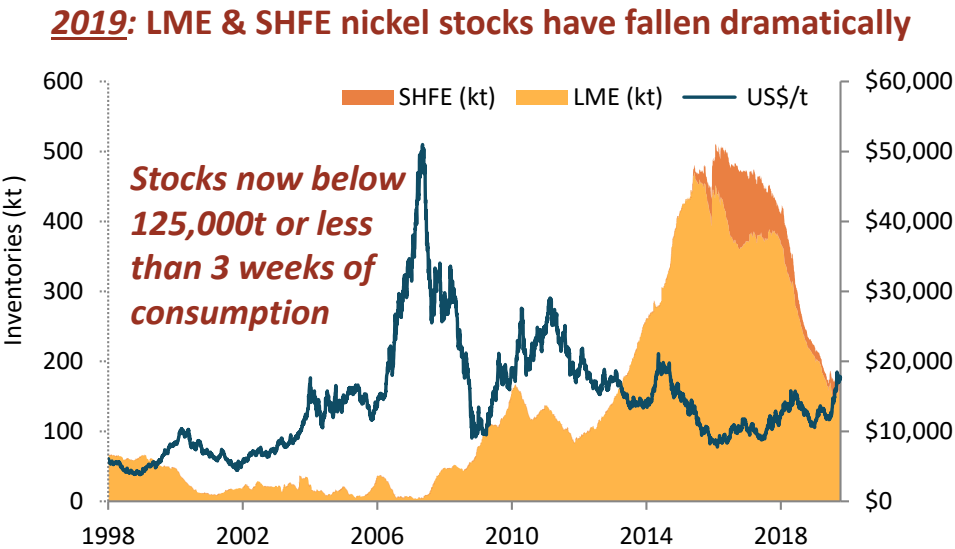
*Predictions of a stronger nickel price proven to be correct*

*UBS, Miner’s Price Review,  
June 2018*



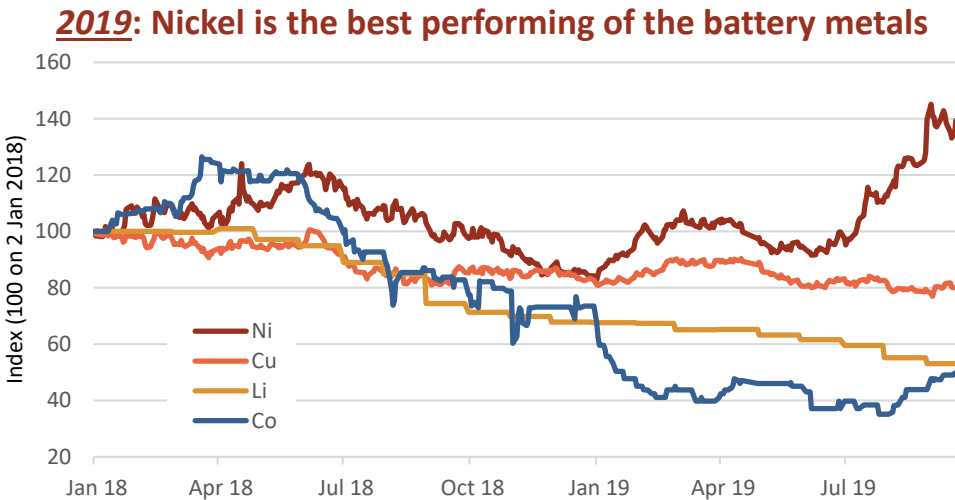
*“Inventory is falling, premia  
are rising, indicating a  
scramble for nickel metal.”*

2019



*“Nickel is our preferred play  
on a >12 month view.”*

2019



# Nickel Price Outlook

## The Next Nickel Boom is Forming

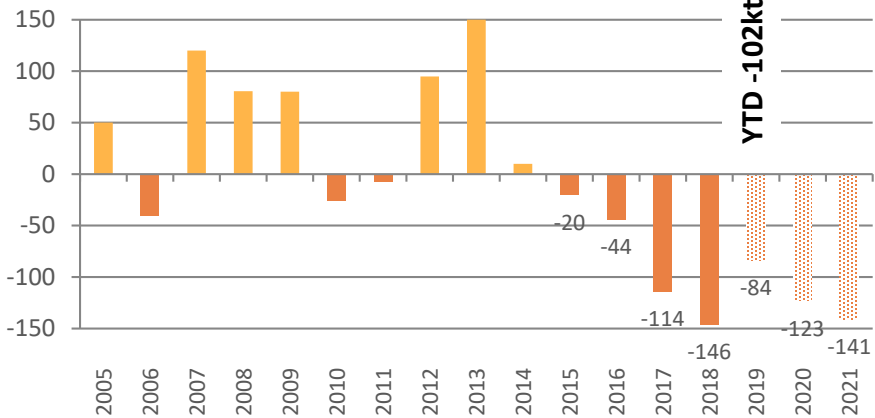


Nickel price history shows strong upswings such as in 1988 and 2006

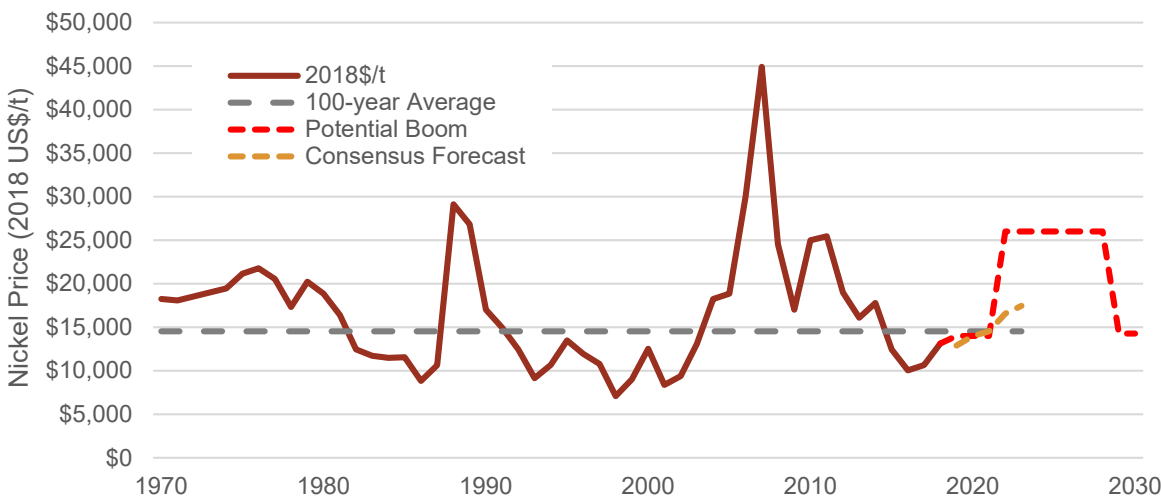
A compelling scenario for the next strong upswing:

- *Market in deficit since 2015*
- *Lack of new projects*
- *Traditional demand growing steadily, plus*
- *Fast growing demand from EV and battery revolution*

Nickel market deficit growing since 2015



Source: INSG, Wood Mackenzie



Consensus forecast appear shy compare to historical price spikes

Source: S&P Consensus Forecast Prices, Terra Studio, USGS

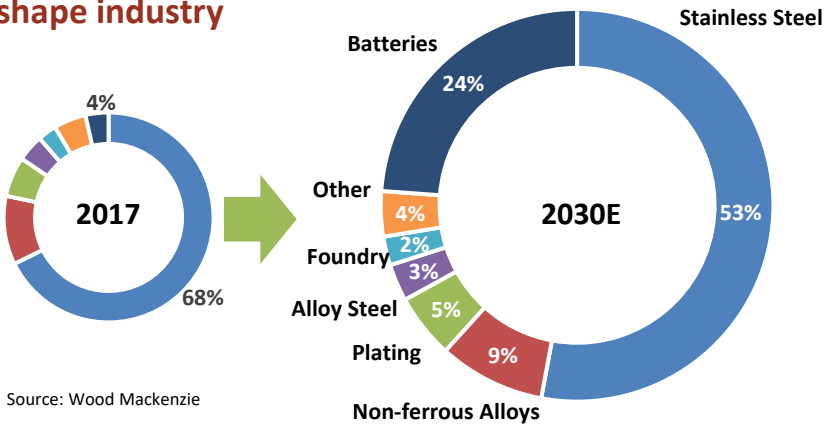
# Nickel Market – Supply Challenge



*Nickel requires substantial increase in reserve base to satisfy EV revolution*

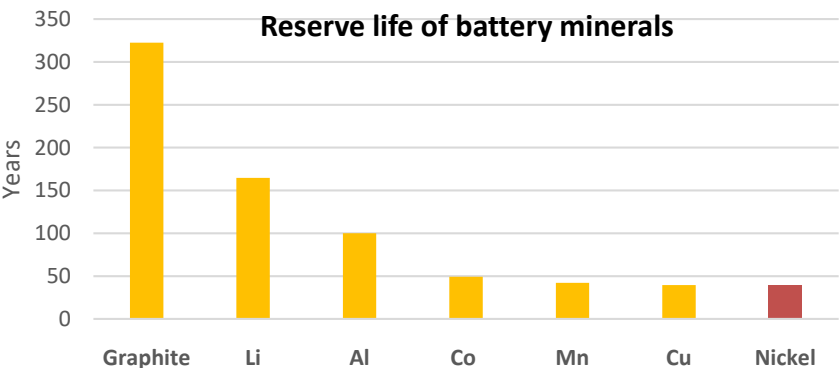
- Traditional demand from stainless steel continues to grow at circa. 4-5% p.a.
- Very large structural demand from the battery EV market will reshape the nickel industry
  - *Wood Mackenzie estimate nickel demand in EV batteries of about 1.2 Mt in 2040, up from 50,000 t in 2017*
- Forecast nickel demand will far exceed nickel production from existing operations

Considerable structural demand growth for EVs to reshape industry



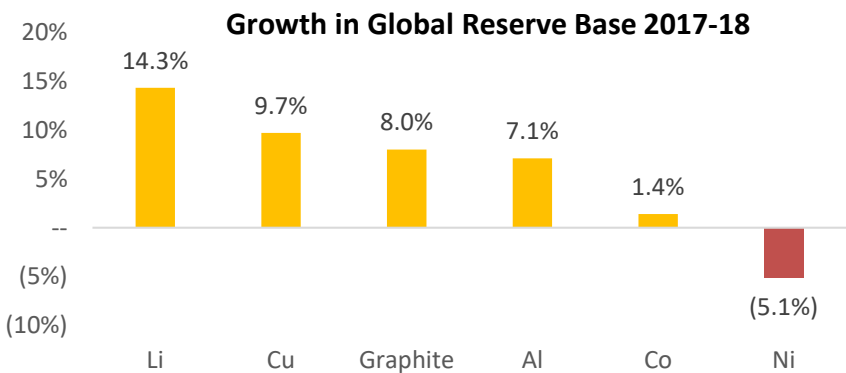
Source: Wood Mackenzie

Higher prices needed to deliver increase in global reserve base



Source: USGS

EV emphasis has been on increasing lithium and graphite reserve base, while nickel reserves overlooked



Source: Bernstein



# St George – Growth Nickel Stock

## *Exploration success at Mt Alexander creates value*

- Discovery of high-grade nickel-copper-cobalt-PGEs
- Drilling continues to expand the resource potential – shallow (30m from surface) deposits are being drilled out and down-plunge extensions are being proven
- New targets offer opportunity for further greenfields discoveries



*Photo: Drill core from MAD152, the Radar discovery hole, with massive nickel-copper sulphides.*



*Photo: Diamond drilling at Mt Alexander for St George Mining by DDH1 Drilling*

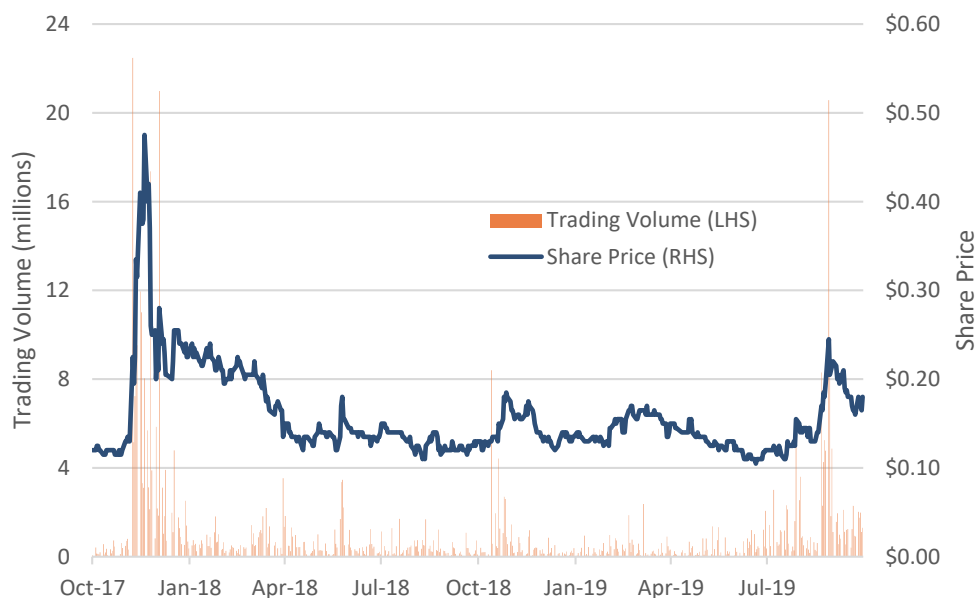
# Corporate Overview

*St George Mining is listed on the ASX*



St George Mining Ltd	SGQ
Listed Shares	412,611,265
Listed Options (20¢, 30 Sep 20)	24,576,114
Share Price (8 Nov 2019)	A\$0.15
Market Capitalisation	A\$62m
Cash (31 Oct 2019)	A\$8m
<b>Top 20 shareholders</b>	<b>27.0%</b>
Directors & Management	9.2%

***Broad Shareholder Base with over 3,500 shareholders including Australian and overseas institutions, high net worth and retail investors***



## Directors and Management - Track Record of Success

**John PRINEAS, Executive Chairman** – founding shareholder with over 25 years experience in mining, and the banking and legal sectors servicing the resources industry.

**John DAWSON, Non-Executive Director** – over 30 years in the finance and mining sectors where he occupied very senior roles with global investment banks Goldman Sachs and Dresdner Kleinwort Wasserstein.

**Sarah SHIPWAY, Non-Executive Director/Company Secretary** – Chartered Accountant with extensive experience in advising listed exploration companies.

**Dave O'NEILL, Exploration Manager** – over 20 years experience as a geologist with expertise in nickel exploration gained in senior roles with WMC Resources, BHP, Western Areas; managed exploration programmes at Mt Alexander for BHP and Western Areas.

**Charles WILKINSON, Technical Consultant** – over 32 years' as a geologist with 16 years at WMC including as Exploration Manager - Nickel. Joined Western Areas in 2008 as General Manager Exploration. During his 9 years at WSA, it significantly grew its resource inventory and became Australia's No. 1 independent nickel sulphide producer.

# High-Grade Discovery at Mt Alexander



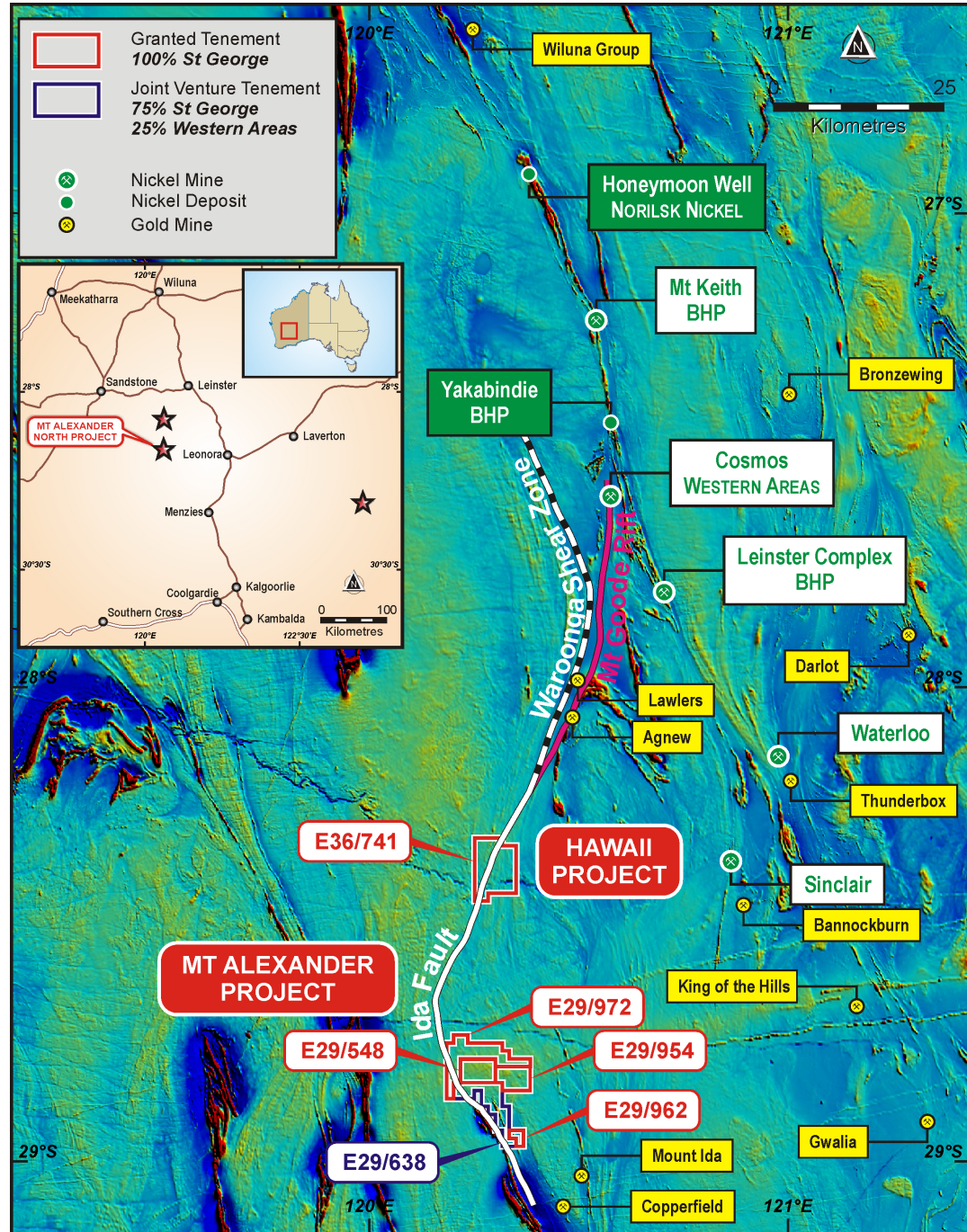
# World Class Address

*Next to the Majors' backyard*

## ***Mt Alexander – St George's Flagship Nickel-Copper Sulphide Project***

- **Highly prospective and strategic tenement holding next to Tier 1 assets**
- **Located S-SW of world class nickel and gold mines of the Agnew-Wiluna Belt**
- **Close to infrastructure, processing plants, mining workforce & service industry**
- **Stable and reliable jurisdiction with numerous successful mines and projects**

*Left: St George Mining Ltd holds 100% of all the Mt Alexander tenements with the exception of E29/638, which is held in Joint Venture: St George Mining Ltd (75%) and Western Areas Ltd (25%). St George is the manager of the Project with Western Areas retaining a 25% non-contributing interest in the Project until decision to mine.*





# Large Project Area

*Nickel camp with several deposits*

## 200 km<sup>2</sup> tenement package:

- Two fertile belts being explored with large unexplored prospective areas

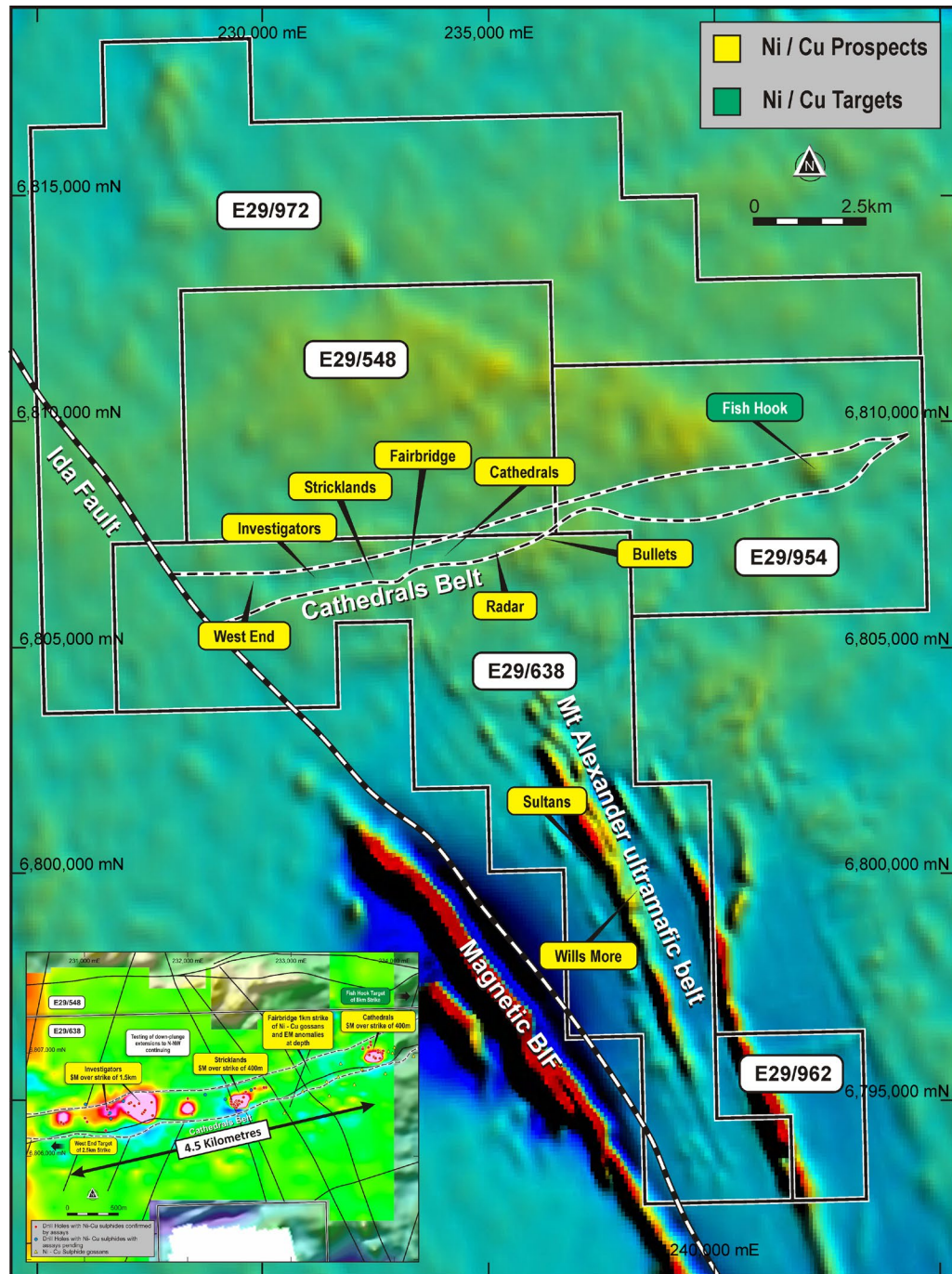
## Cathedrals Belt (east-northeast oriented belt):

- Discoveries at Investigators, Stricklands, Cathedrals and Radar Prospects – within a 5.5km section of the Belt
- Other sections of the 16km Belt remain underexplored but highly prospective
- New targets emerging at West End and Fish Hook

## Mt Alexander Belt (north-northwest belt):

- Ultramafic belt with a strike of 7km
- Widespread intersections of nickel sulphide mineralisation but remains underexplored

*Right: Mt Alexander tenements against RTP magnetics with key prospects highlighted.*



# Cathedrals Belt

## *Exceptional Discovery*

- **Mineralisation from shallow depths:**
  - Massive sulphide mineralisation 30m from surface
  - Intrusive system with potential for significant mineralisation at depth
- **High-grade and polymetallic:**
  - Nickel sulphide plus copper, cobalt and PGEs (70%Pd, 30%Pt)
  - Key high demand battery/EV metals
- **Electromagnetic (EM) targeting:**
  - EM surveys are reliable targeting tool
  - 100% success rate in drill testing EM conductors in the Cathedrals Belt

On right: Drill core from MAD56 that returned assays of  
7.5m @ 3.90% Ni, 1.74% Cu, 0.12% Co and 3.32g/t total PGEs from 57.8m,  
including  
3.15m @ 6.36% Ni, 2.92% Cu, 0.20% Co and 5.03g/t total PGEs from 61.8m





# Large Mineral System

*Extensive strike supports extensions of mineralisation at depth*

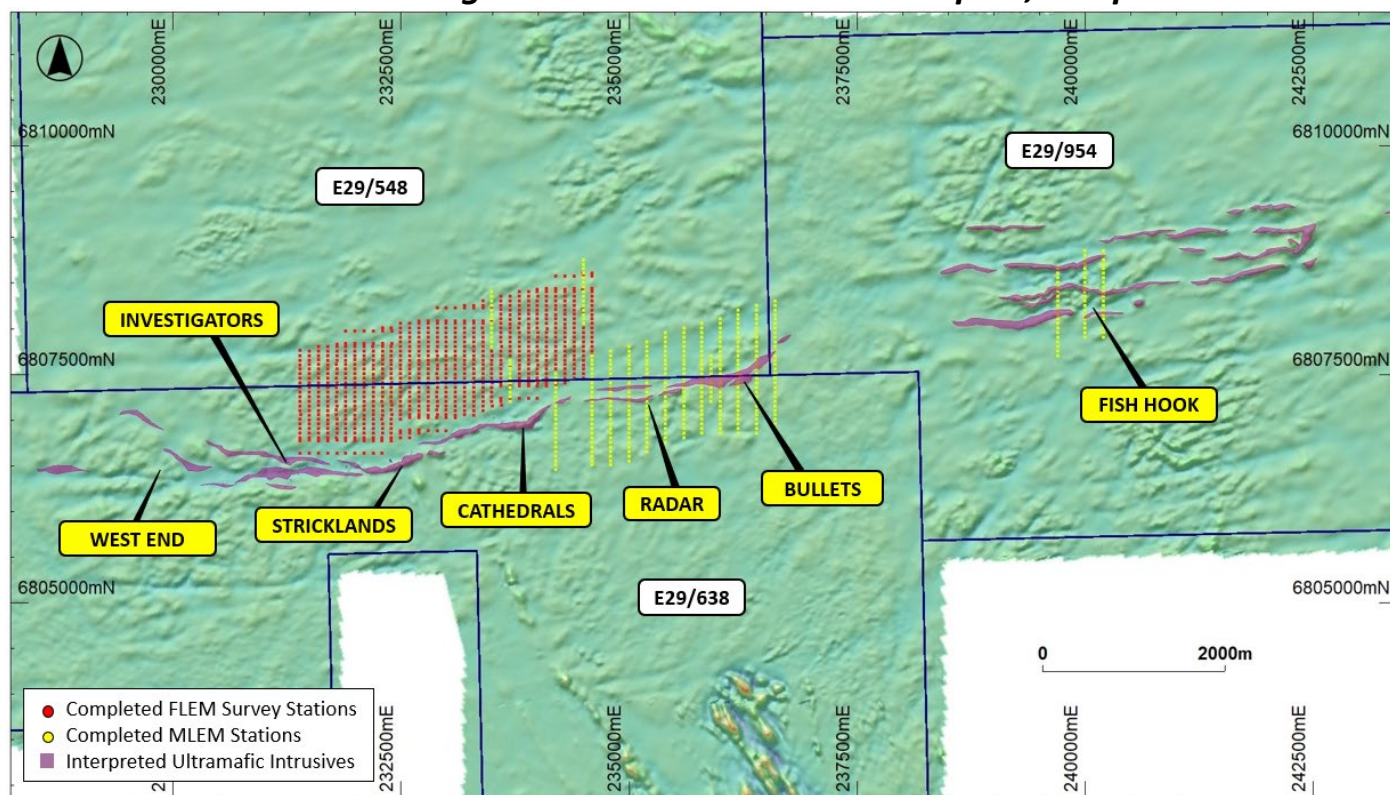


*Radar discovery made in this drill programme – 1.2km east of known nickel-copper sulphides*

**“If the system is this long, it must be deeper than currently defined:** With Radar, the mineralised strike along the Cathedrals Belt now extends for ~5.5km. However, the maximum depth of discovery is just ~200m below surface (hole MAD108 at the Investigators prospect), limited only by drilling. Probabilistically, a system of this scale is unlikely to stop at such a shallow depth. As surface EM only has an effective penetration depth of ~350m at this project, deeper discoveries will rely on drilling and downhole EM.”

***Argonaut Securities Research Report, 2 September 2019***

Right: map of the Mt Alexander tenements (against RTP 1VD magnetic data) with key prospects on the Cathedrals Belt highlighted. New targets generated at Bullets, West End and Fish Hook have potential to significantly extend the strike of mineralisation along the 16km Cathedrals Belt.

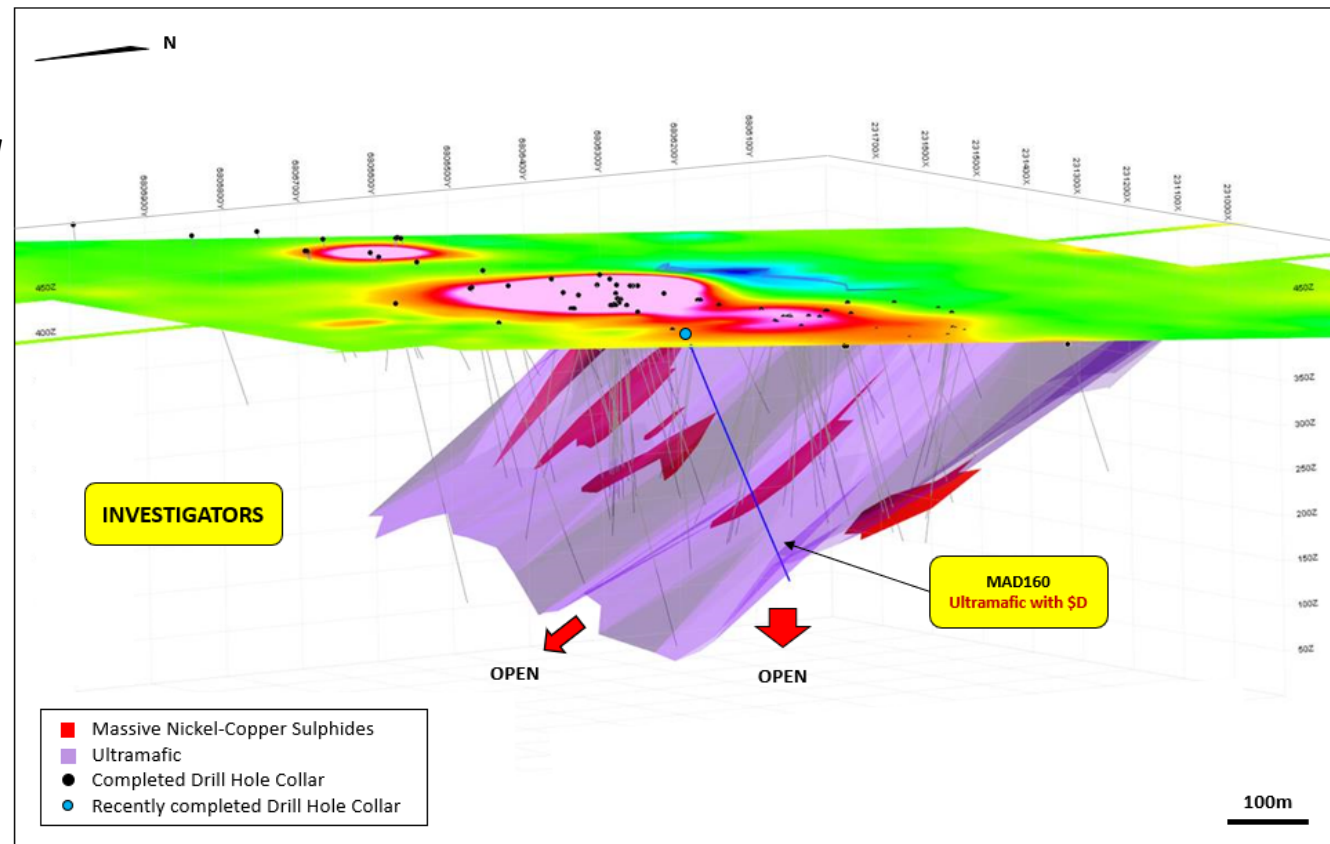


# Deep Drilling Commences

***Confirms the system is 'live' down-plunge with potential to host significant sulphide mineralisation***

- ***MAD160 at Investigators intersected a 20m thick mafic-ultramafic unit from 248m downhole including disseminated and blebby sulphides in a 9m interval from 259m downhole***
- ***Four deep holes so far and all intersected mineralised ultramafic units down-plunge of known nickel-copper sulphides***
- ***Very limited drilling below 300m from surface***
- ***Downhole EM surveys and further drilling down-dip will continue to test for more mineralisation at depth***

Right: 3D orthographic view (looking south-east) of the Investigators ultramafic showing drill holes and known massive nickel-copper sulphide mineralisation. The surface image is the SAMSON EM data showing the large EM anomaly at Investigators. The latest drill results, including MAD160, confirm that mineralisation is open down-plunge with the ultramafic dipping 30-40 degrees to the north-northwest.

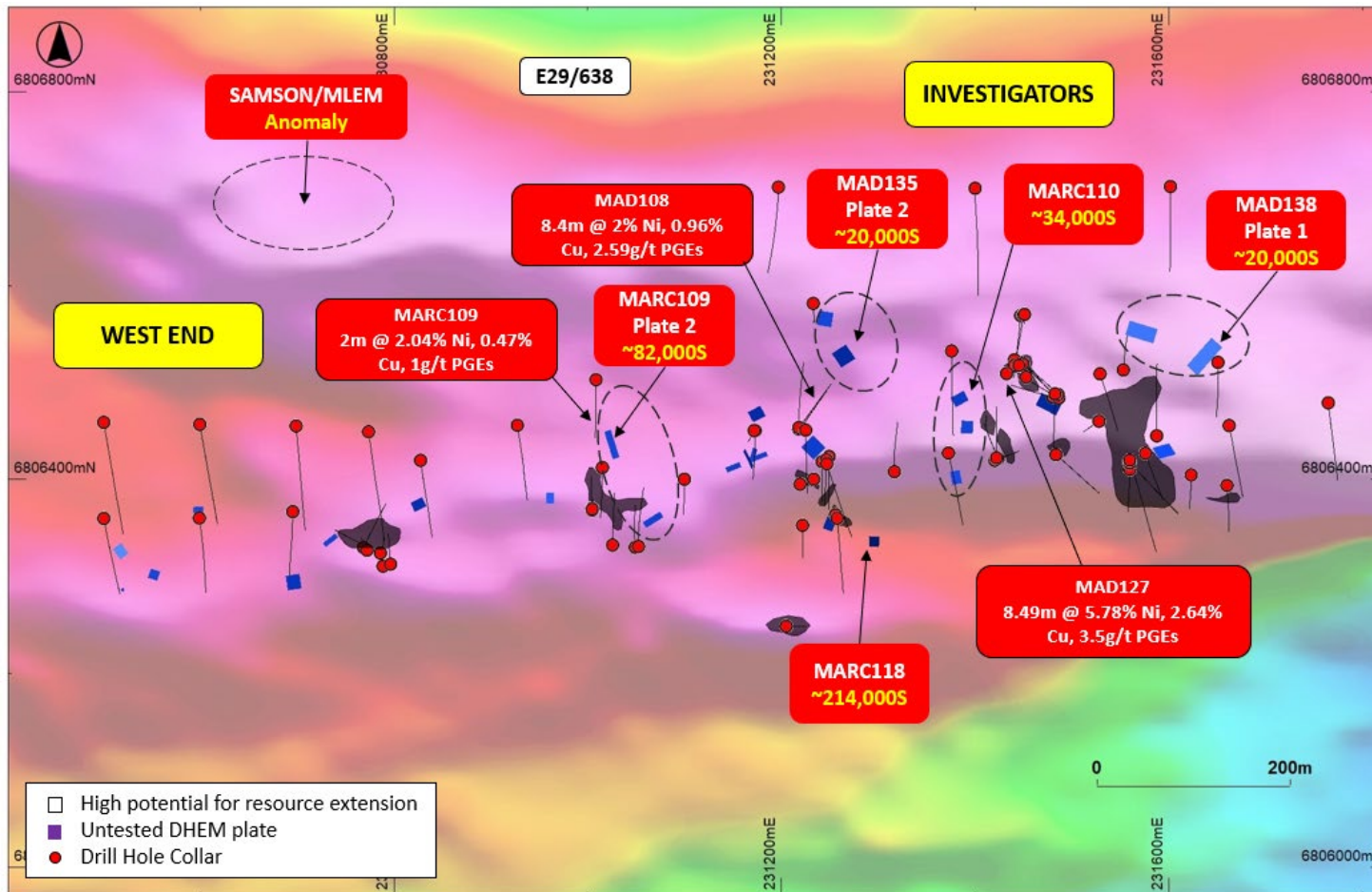




# Major Drilling Programme Continues

*EM conductors and geological targets being tested*

- 42 EM conductors prioritised for drilling in this programme, 30 remain to be drilled
- More conductors being identified by ongoing downhole EM surveys and moving loop EM surveys
- Stratigraphic holes also being drilled to test geological targets and establish platforms for downhole EM surveys



**Quantity and location of the EM conductors indicates outstanding potential to significantly increase the volume of high-grade mineralisation at Mt Alexander**

Left: plan view of Investigators Prospect with drill hole collar locations over SAM (MMC) survey data with untested EM plates shown. The purple areas represent the strongest conductive responses and are interpreted to represent major faults within the Cathedrals corridor, a structural setting that is known to host nickel-copper sulphides in this Belt.

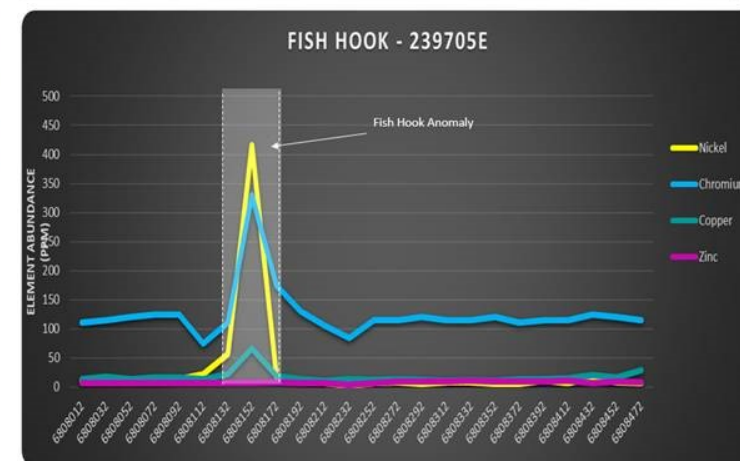
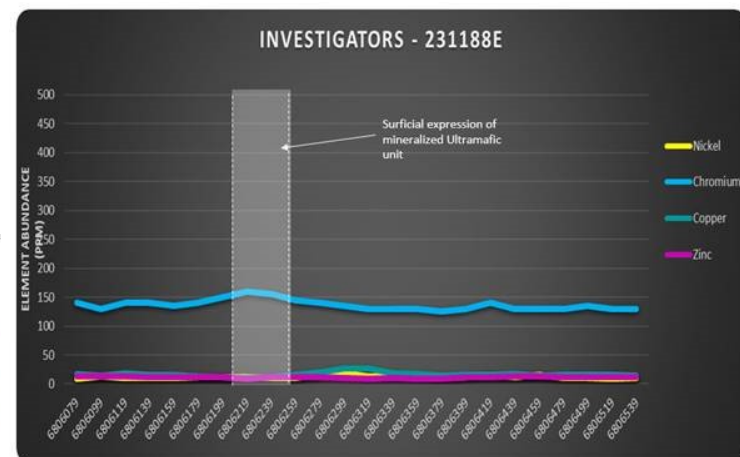
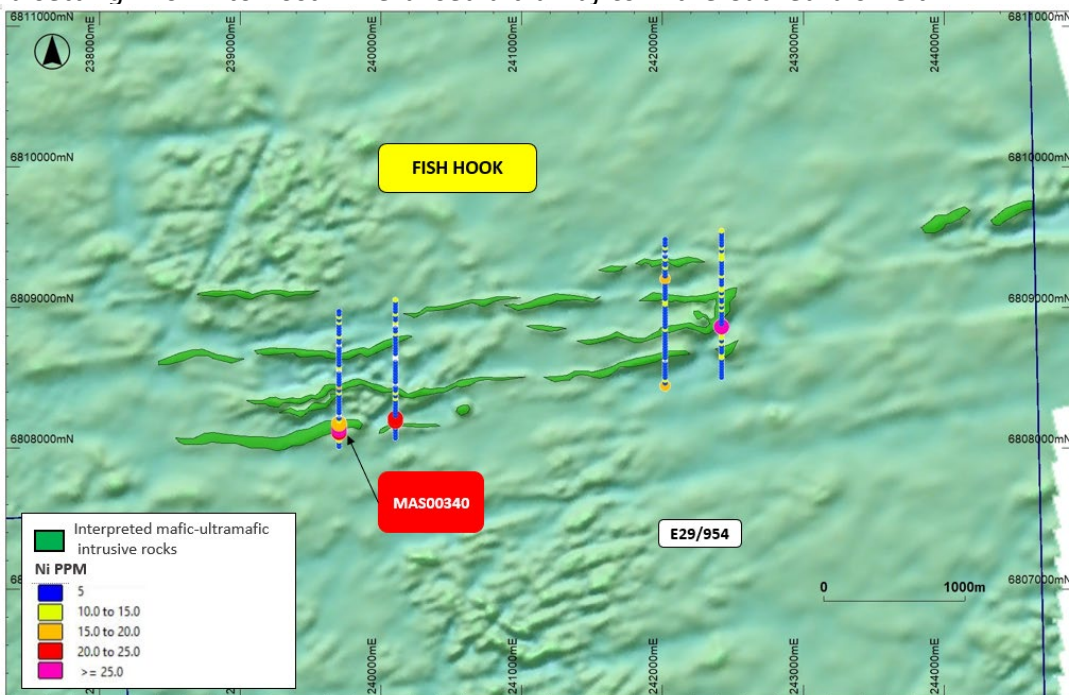
# Fish Hook Prospect

## Potential new greenfields discovery



- Fish Hook covers an 8,000m eastern extension of the highly mineralised Cathedrals Belt, is largely untested by drilling and lies within a tenement 100% owned by St George
- Soil samples at Fish Hook return highly anomalous values for nickel, copper and PGEs – assays are higher than those at Investigators where extensive high-grade nickel-copper sulphides have been discovered
- EM surveys in progress with untested conductors already identified

Below: Map showing the soil survey lines at Fish Hook with nickel assay values (in ppm), set against magnetic data (RTP 1VD). The strong nickel anomalism is co-incident with a linear magnetic feature within a structure, a setting known to host mineralised ultramafics in the Cathedrals Belt.





# Grade is King

## Wide intersections of high-grade Ni-Cu-Co-PGEs

Prospect	Hole	From m	Width m	Ni %	Cu %	Co %	PGE g/t
Stricklands	MAD71 including and	37.5	17.45	3.0	1.3	0.13	1.68
		39.3	5.30	4.4	1.5	0.21	2.09
		50.6	2.02	5.1	2.0	0.21	3.31
Cathedrals	MAD56 including	57.8	7.50	3.9	1.7	0.12	3.32
		61.8	3.15	6.4	2.9	0.20	5.03
Investigators	MAD126 including	184.0	7.86	5.7	2.1	0.18	2.65
		185.0	5.25	7.0	2.7	0.23	3.10
Investigators	MAD127 including	183.9	8.49	5.8	2.6	0.18	3.61
		184.4	6.39	6.5	2.8	0.21	3.68
Investigators	MAD108 including	199.0	8.40	2.0	1.0	0.06	2.59
		206.0	1.37	6.8	2.9	0.21	5.58

### Significant vertical metres of metals

- **High-grade massive sulphide intercepts plus halos of matrix, blebby and disseminated sulphides**
- **Potential for significant metal per vertical metre (TBC by resource drilling)**

Right: Drill core from Hole MAD126



# Project Development



# Development Options

## *Scoping studies initiated*

*Scoping studies to assess a potential mining proposal for Mt Alexander are being initiated:*

- Environmental studies have commenced
- Additional consultants to be appointed soon

### *Preliminary Metallurgical Testwork:*

#### *High Recoveries from Ore:*

- >99% recoveries of Ni and Cu to bulk concentrates
- Separate nickel and copper concentrates produced with 89% and 86% recoveries respectively (*on right: copper being floated in test completed by Strategic Metallurgy Pty Ltd*)

#### *Clean Concentrate:*

No deleterious elements like MgO, talc or arsenic

#### *Standard Flotation:*

Standard re-agents utilised: excellent amenability of ore to flotation process

#### *High Value Concentrate:*

**Nickel concentrate: 18% Ni plus cobalt of 0.55% Co and PGEs+Au of 13.5 g/t**

**Copper concentrate: 32% Cu plus PGEs+Au of 3.2 g/t**



# Opportunity for Low Cost/ High Margin Project

*Key project features support favourable project economics  
which will be assessed by scoping/feasibility studies*

## **Shallow Mineralisation:**

- *Low cost drilling/low cost potential mining*

## **Existing Infrastructure:**

- *Established mining centre*
- *Close to roads, power and workforce*
- *Potential lower capex and/or toll treat*

## **High Value Concentrate:**

- *High grade Ni, Cu + credits for Co, PGEs*
- *Amenable to blending*
- *Clean and high grade concentrate will attract a premium price*

The location and quality of the Mt Alexander Project presents:

- ***Multiple potential development & processing options*** (subject to scoping/feasibility studies)
- ***Strategic value and corporate M&A***



*Right: Tim King Pit at Spotted Quoll mine at Forresteria (owned 100% by Western Areas Ltd) where high grade nickel sulphides were mined from 60m below surface*



## *Creating Shareholder Value through Exploration Success*

Photo: Diamond drilling at Mt Alexander for St George Mining by DDH1 Drilling



# Competent Person Statement



The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Dave O'Neill, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr O'Neill is employed by St George Mining Limited to provide technical advice on mineral projects and holds performance rights in the Company.

This ASX announcement contains information extracted from the following reports which are available on the Company's website at [www.stgm.com.au](http://www.stgm.com.au):

- 24 August 2018 *Mt Alexander Continues to Deliver Outstanding Results*
- 5 September 2018 *Mt Alexander – Drilling Update*
- 18 September 2018 *More Strong Results at Mt Alexander*
- 3 October 2018 *Downhole EM Surveys Light Up Strong Conductors*
- 19 October 2018 *Extension to High-Grade Mineralisation at Mt Alexander*
- 25 October 2018 *Best Ever Intercept At Investigators*
- 1 November 2018 *More Massive Nickel-Copper Sulphides at Investigators*
- 20 November 2018 *Further Extensions to Nickel-Copper Sulphides at Mt Alexander*
- 30 November 2018 *Assays Confirm Best Ever Intercepts*
- 20 December 2018 *Strong Results Continue at Mt Alexander*
- 31 January 2019 *More Outstanding Nickel-Copper Sulphide targets*
- 18 March 2019 *Drilling at Mt Alexander – Strong Results Continue*
- 9 April 2019 *Nickel-Copper Sulphide Drilling at Mt Alexander - Update*
- 13 June 2019 *Assays Confirm Thick Nickel-Copper Sulphides*
- 9 July 2019 *42 EM Conductors Ready to Drill at Mt Alexander*
- 11 July 2019 *Further Priority Nickel-Copper Sulphide Targets.*
- 13 August 2019 *High-Grade Nickel-Copper Sulphide Drilling*
- 2 September 2019 *New Discovery of Nickel-Copper Sulphides*
- 12 September 2019 *Thick Nickel-Copper Sulphides Intersected Down-Plunge*
- 4 October 2019 *Deep Drilling Confirms Continuity of Mineralisation*
- 9 October 2019 *Assays Confirm High-Grade Discovery*
- 8 November 2019 *More Nickel Sulphide targets at Mt Alexander*

The Company confirms that it is not aware of any new information or data that materially affects the exploration results included in any original market announcements referred to in this report and that no material change in the results has occurred. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

## Disclaimer

Certain statements contained in this presentation, including information as to the future financial or operating performance of St George Mining Limited (ASX:SGQ) and its projects, are forward looking statements:

- may include, among other things, statements regarding targets, estimates and assumptions in respect of mineral reserves and mineral resources and anticipated grades and recovery rates, production and prices, recovery 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 a number of estimates and assumptions that, while considered reasonable by St George Mining, 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.

St George Mining disclaims any intent or obligation to update publicly any forward looking statements, whether as a result of new information, future events or results or otherwise. The words "believe", "expect", "anticipate", "indicate", "contemplate", "target", "plan", "intends", "continue", "budget", "estimate", "may", "will", "schedule" and similar expressions identify forward looking statements.

All forward looking statements made in this presentation are qualified by the foregoing cautionary statements. Investors are cautioned that forward looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward looking statements due to the inherent uncertainty therein.