



**SANDFIRE RESOURCES NL**

A QUALITY COPPER-GOLD COMPANY ASX Code- SFR



**March 2018 Quarterly Report Presentation and Webcast – 27 April 2018**

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## **DeGrussa and Monty Mineral Resource**

The information in this report that relates to the DeGrussa Mineral Resource is based on information compiled by Mr Callum Browne who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Browne is a permanent employee of Sandfire Resources NL and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserve. Mr Browne consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to the Monty Mineral Resource is based on information compiled by Mr Ekow Taylor who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Taylor was a permanent employee of Sandfire Resources NL at the time of Mineral Resource compilation and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserve. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **DeGrussa and Monty Ore Reserve**

The information in this report that relates to the DeGrussa and Monty Ore Reserve is based on information compiled by Mr Neil Hastings who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Hastings is a permanent employee of Sandfire Resources NL and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hastings consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Black Butte Mineral Resource**

The information in this report that relates to Black Butte Mineral Resource is based on information compiled by Mr Michael J. Lechner who is a Registered Member of SME, a CPG with AIPG, a RPG in Arizona, and a P. Geo. In British Columbia. Mr Lechner is an independent consultant and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Lechner consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# Competent person's statements



## **Thaduna and Green Dragon Mineral Resource**

The information in this report that relates to the Thaduna and Green Dragon Mineral Resource is based on information compiled by Mr Ekow Taylor who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Taylor was a permanent employee of Sandfire Resources NL at the time of Mineral Resource compilation and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Exploration Results Doolgunna**

The information in this report that relates to Exploration Results is based on information compiled by Mr. Shannan Bamforth who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Bamforth is a permanent employee of Sandfire Resources and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bamforth consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Exploration Results Temora**

The information in this report that relates to Exploration Results at Temora is based on information compiled by Mr Bruce Hooper who is a Registered Professional Geoscientist (RPGeo) of The Australian Institute of Geoscientists. Mr Hooper is a permanent employee of Sandfire Resources and has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hooper consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Exploration and Resource Targets**

Any discussion in relation to the potential quantity and grade of Exploration Targets is only conceptual in nature. While Sandfire is confident that it will report additional JORC compliant resources for the DeGrussa Project, there has been insufficient exploration to define mineral resources in addition to the current JORC compliant Mineral Resource inventory and it is uncertain if further exploration will result in the determination of additional JORC compliant Mineral Resources.



# Agenda



- ▶ Highlights
- ▶ Safety
- ▶ Operations and costs
- ▶ Development
- ▶ Mine Plan, Ore Reserve and Mineral Resource
- ▶ Exploration
- ▶ Summary



# March 2018 Quarterly Highlights



## Production and Operations

- ▶ March 2018 Quarter: 15,531t copper and 10,926oz gold produced; C1 US\$0.97/lb
- ▶ FY2018 year-to-date: 47,052t copper and 29,725oz gold produced; C1 US\$0.98/lb
- ▶ FY2018 guidance: 63-66kt of contained copper (maintained), 38-40koz of contained gold (increased); C1 costs ~US\$0.95-1.00/lb (reduced)

## Development

- ▶ Monty Copper-Gold Project (Springfield JV) decline development remains ahead of schedule
- ▶ Permitting final stage (EIS) continues for the Black Butte development (Tintina Resources – SFR holding 78%)

## Exploration

- ▶ Multi-pronged exploration programs continuing at both Sandfire's Greater Doolgunna Project and the Springfield Joint Venture
- ▶ Farm-in agreement with Auris Minerals expands total Doolgunna footprint to 6,276km<sup>2</sup>

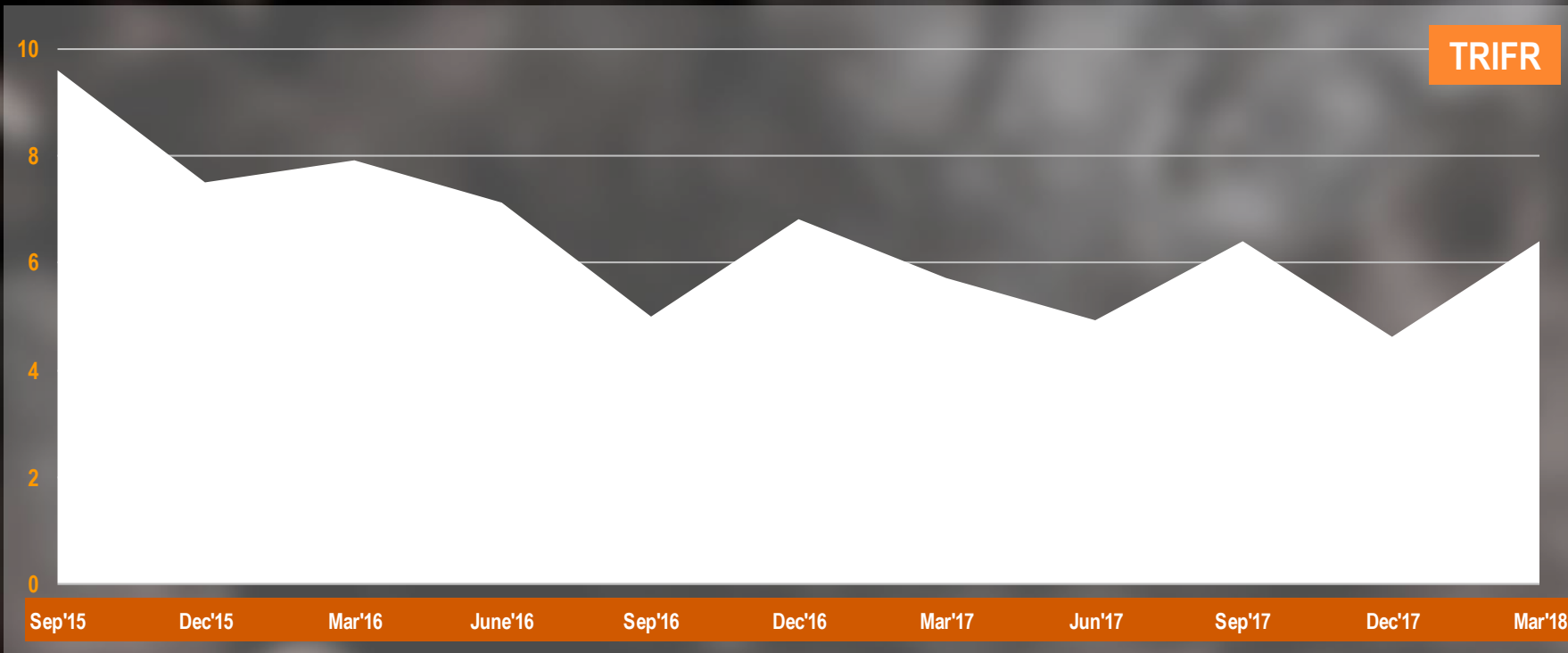
## Corporate and Financial

- ▶ Cash and deposits \$181M (Sandfire); \$188M (Group)





- ▶ Total Recordable Injury Frequency Rate (TRIFR) of 6.4 at Quarter-end (vs. 4.6 at December 2017 Quarter-end)
- ▶ Principal hazard management – key theme to improve safety culture
- ▶ Focus continues to be applied to improving safety leadership, culture and assurance of critical controls





## Underground production

- ▶ Total ore production for the Quarter of 409,457 tonnes grading 4.2% Cu
- ▶ Mine remains in balance between production and back-fill
- ▶ Updated DeGrussa and Monty Mine Plan announced







## Mill throughput

- ▶ 398,985 tonnes milled at average feed grade of 4.3% Cu

## Recovery

- ▶ Quarterly copper recovery of 91.0%; Gold recovery 44.6% (FY2018 guidance: copper ~92%, gold ~44%)

## Concentrate & metal production

- ▶ 64,051 tonnes of concentrate produced
- ▶ 15,531 tonnes of contained copper produced
- ▶ 10,926 ounces of contained gold produced





## Additional concentrate thickener & filter

- ▶ Expected to commence commissioning Q4 FY2018 (\$12M)
- ▶ Increases peak concentrate capacity to 400,000tpa ahead of Monty ore blending from Q2 FY2019

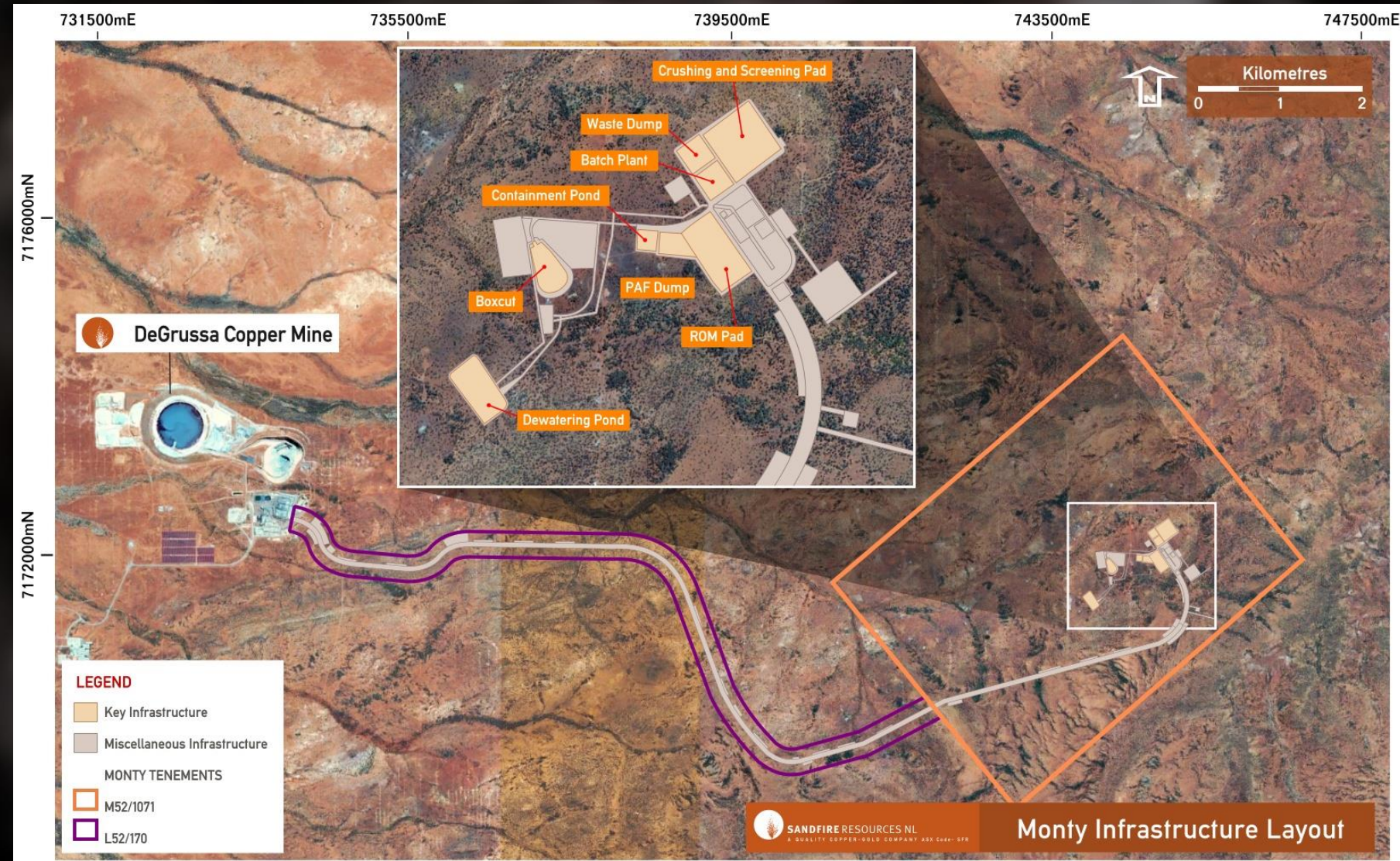




# Development – Monty Copper-Gold Project

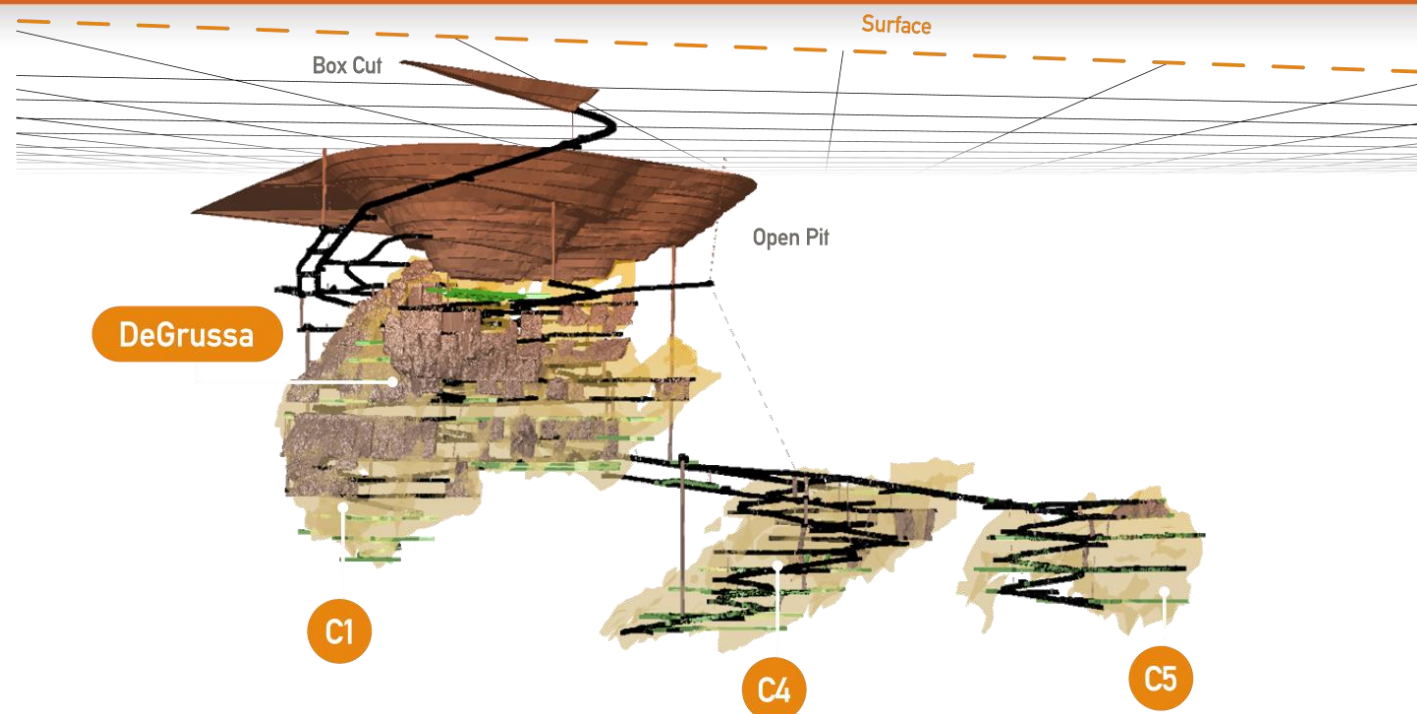


- ▶ Sandfire is Manager of the Springfield JV – interests Sandfire 70%/Talisman 30%
- ▶ Decline works ahead of schedule
- ▶ Works complete
  - Haul and access roads
  - Excavation of box cut for underground access
  - Stockpile and laydown area pads
  - Infrastructure works and drainage





# Updated Mine Plan, Ore Reserve and Mineral Resource



DeGrussa and Monty	Tonnes (Mt)	Copper (%)	Gold (g/t)	Contained Copper (t)	Contained Gold (oz)	Monty basis
Mine Plan**	6.6	5.0	1.7	332,000	354,000	100%
Ore Reserve**	9.1	3.8	1.3	346,000	389,000	70%
Mineral Resource*	8.4	4.5	1.6	380,000	423,000	70%

## Notes:

DeGrussa stated as at 31 December 2017; Monty stated as at 31 March 2017.

Calculations have been rounded to the nearest: 1,000t; 0.1% Cu grade; and 1,000t Cu metal and 0.1g/t Au grade; and 1,000oz Au metal. Differences may occur due to rounding.

\* Mineral Resource for DeGrussa is based on a 1.0% Cu cut-off and allows for mining depletion and sterilisation as at 31 December 2017. Mineral Resource for Monty is based on a 1.0% Cu cut-off.

\*\* Mine Plan and Ore Reserve include mining dilution and mining recovery

Refer ASX release "DeGrussa and Monty Mine Plan, Ore Reserve and Mineral Resource" dated 27 April 2018 for further information.

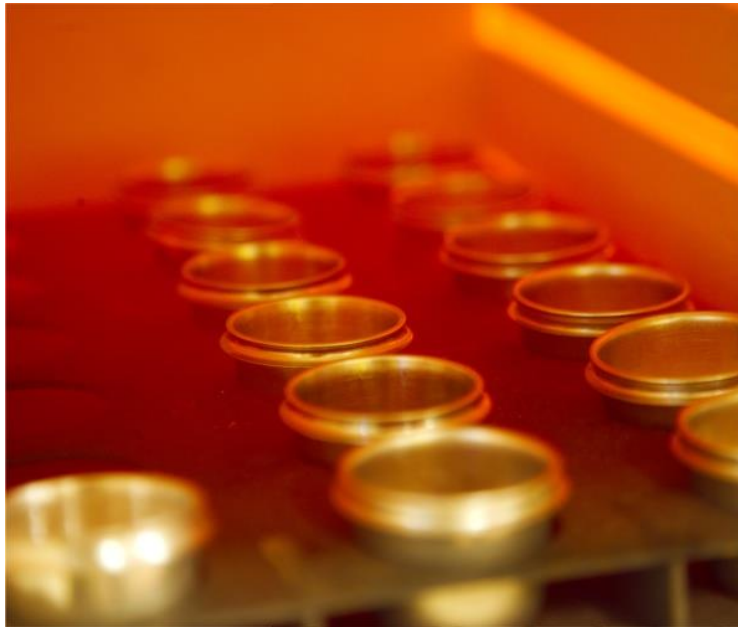
- ▶ Updated DeGrussa and Monty Mine Plan (Monty at 100%):
  - ▶ 6.6Mt at 5.0% Cu and 1.7g/t Au (332,000t Cu, 354,000oz Au)
- ▶ Updated Underground Ore Reserve, incorporating Monty (Monty at 70%):
  - ▶ 6.4Mt at 4.9% Cu and 1.7g/t Au (311,000t Cu, 342,000oz Au)
- ▶ Successful conversion of previously unconverted Mineral Resources located in zones subject to technical and economic review:
  - ▶ Extremities and hanging wall/footwall of main deposits
  - ▶ Geometrically complex areas
- ▶ Extends DeGrussa mine life into CY2022



# Operations – Sales



- ▶ March 2018 Quarter: Sales of 62,666 tonnes of concentrate (dry) containing 15,180 tonnes of copper (14,532 tonnes payable) and 9,922 ounces of gold (9,244 ounces payable)
- ▶ 6 shipments completed for the quarter



# Operations – Q3FY2018 Unit Operating Costs



Unit costs – DeGrussa Mine	Q3 FY2018 (US\$/lb)	YTD FY2018 (US\$/lb)	Commentary
Mining (net of development)	0.49	0.48	FY2018 C1 unit cost guidance reduced to ~US\$0.95-1.00/lb (previously US\$1.00-1.05/lb).
Processing	0.35	0.32	
Business services	0.10	0.11	
Transport, treatment and refining	0.44	0.45	C1 costs continue to be assisted by: - cost control - high gold production and price (increasing by-product credits)
<b>C1 cost (pre by product credit)</b>	<b>1.38</b>	<b>1.37</b>	
By-product credit (gold and silver)	(0.41)	(0.38)	DeGrussa Mine development \$7M for the quarter (FY2018 full year guidance \$31M).
<b>C1 cost</b>	<b>0.97</b>	<b>0.98</b>	
Royalties	0.17	0.18	Monty JV capital \$11M for the quarter (FY2018 full year guidance \$47M) – 100%
<b>Production cost</b>	<b>1.15</b>	<b>1.16</b>	
Depreciation and amortisation	0.81	0.80	Sustaining and strategic capital expenditure \$6M (FY2018 full year guidance \$25M)
<b>Total production cost</b>	<b>1.96</b>	<b>1.96</b>	



# Development and Growth – Black Butte Copper Project, USA



- ▶ 78% stake in Black Butte Copper Project, central Montana (via stake in Sandfire Resources America Inc)
- ▶ Advanced, high quality copper project in stable jurisdiction:
  - Mineral Resource: 18Mt at 3.3% Cu, 14g/t Ag, 0.10% Co for 597,000t of copper, 7,980,000oz of silver and 18,000t of cobalt (JORC)\*
- ▶ One of the top-10 undeveloped copper projects worldwide by grade
- ▶ Outstanding near-mine and district-wide exploration potential
- ▶ Mine Operating Permit (MOP) received for Johnny Lee copper deposit
- ▶ Environmental Impact Statement (EIS) progressing as final stage of state permitting process



\* Refer release "Sandfire Group JORC Mineral Resource and Ore Reserve Statement" (dated 19 October 2017) and associated disclosures.

# Doolgunna Exploration Overview



- ▶ Exploration continuing as a priority along highly prospective VMS corridor that hosts the DeGrussa and Monty deposits:
  - DDH drilling at Monty NE to test geochemical anomalies and provide DHEM platforms.
  - RC and DDH drilling within the Vulcan and Homestead prospects to test areas of geochemical anomalism, provide DHEM platforms, and to inform the geological model.
  - Continuation of a major AC drilling program at the Enterprise Metals farm-in project to test interpreted favourable volcano-sedimentary sequence which hosts the DeGrussa and Monty copper-gold deposits
  - Planned SPECTREM fixed-wing airborne survey over large portion of the tenure including the Great Western Exploration farm in tenements.

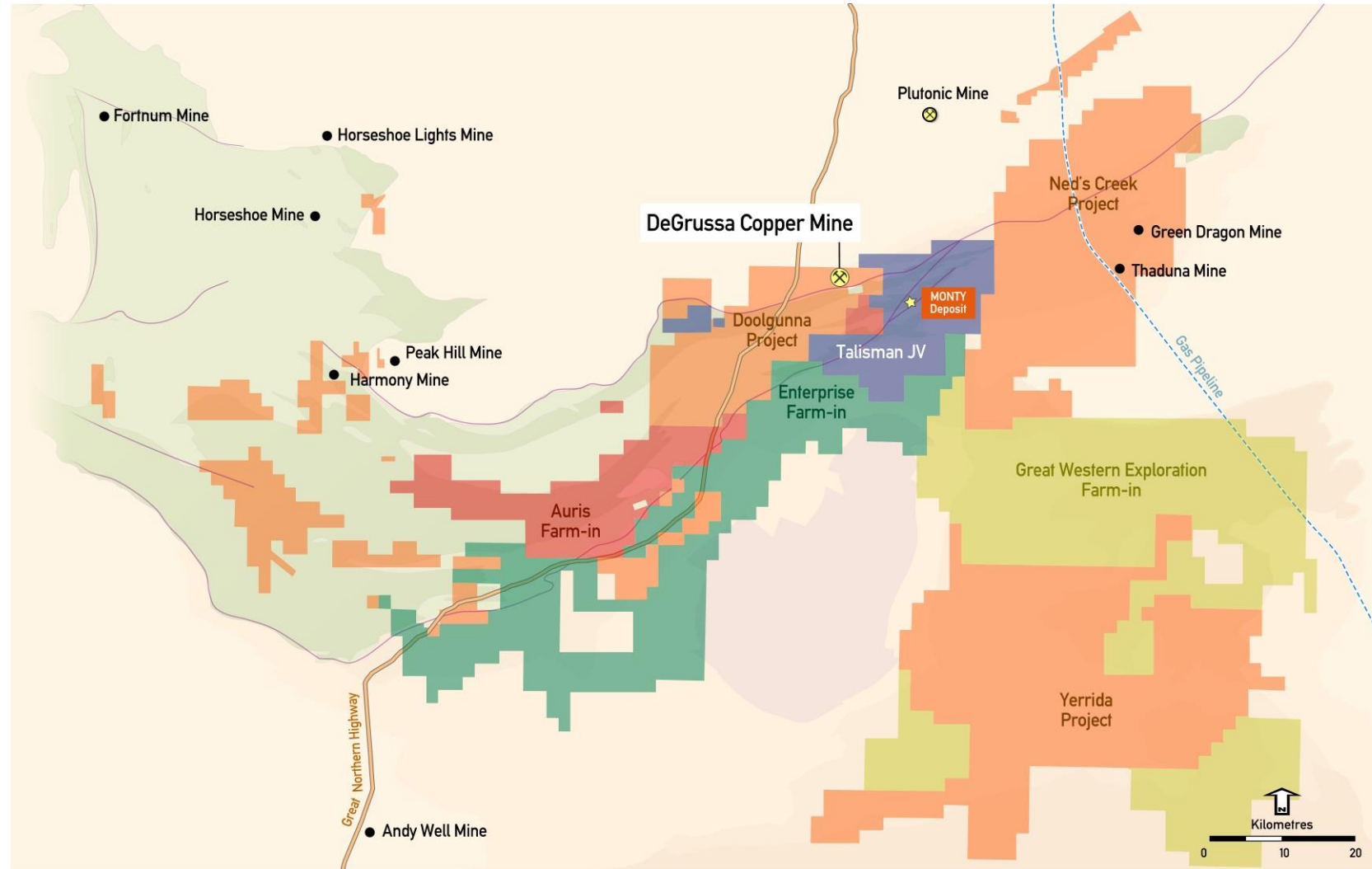




# Doolgunna Exploration Overview



- ▶ Exploration advancing at multiple prospects within Greater Doolgunna area:



- ▶ 41,101m AC/RAB drilling
- ▶ 5,800m RC drilling
- ▶ 12,021m surface and underground DD drilling
- ▶ Total Tenure – 6,276km<sup>2</sup>



**TOTAL = 6,276 km<sup>2</sup>**





- ▶ Production and cost performance
  - FY2018 year-to-date: 47,052t copper and 29,725oz gold produced; C1 US\$0.98/lb
  - FY2018 guidance: 63-66kt of contained copper (maintained), 38-40koz of contained gold (increased); C1 costs US\$0.95-\$1.00/lb (reduced)
  - Monty under development; first ore scheduled Q2 FY2019
- ▶ Progressing permitting for 78%-owned Black Butte Copper Project, USA with the final EIS process
- ▶ Active exploration underway targeting the next VMS discovery
- ▶ Emerging Bryah Basin VMS district – aggregate contiguous exploration area of 6,276km<sup>2</sup>







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